

# Educate students



Students learn about locally grown vegetables

Students are more likely to eat new items in the lunchroom if they first learn about the food and where it comes from. Turn your students into more adventurous eaters with comprehensive farm to school education activities both inside and outside the classroom! Use the following tools to help you, the teaching staff or other partners on your farm to school team get started.

There are many opportunities to educate students about the local food served in the cafeteria, and to expand their knowledge of where food comes from and how it's raised. Harvest of the Month is a great way to incorporate food into the cafeteria, classroom and community. A variety of curriculum resources for farm to school are listed below, and many of these lessons meet the Wisconsin Model Academic Standards, which are listed by academic area at <https://dpi.wi.gov/standards>. Specifically, many farm to school activities and lessons align with the **Wisconsin Model Academic Standards for Nutrition**.



## Wisconsin Model Academic Standards for Nutrition

Taste testing is a valuable way to introduce students to new food items by providing them with small samples in the classroom or cafeteria. Taste testing can be incorporated into lessons or school meals, and it can provide students with an opportunity to evaluate new food items. Vermont FEED (Food Education Every Day) created a robust farm to school **guide to taste testing** that can help you get the most out of your classroom or lunchroom tasting experiences.

Vermont FEED's Guide to Taste Testing:

<http://vtfeed.org/resources/guide-taste-testing-local-foods-schools>

Composting in the classroom or in the lunchroom is an excellent way to educate students, reduce waste and create fertile soil for your school garden. Use the **school composting guide** to explore ideas for both classroom- and lunchroom-based methods.



## School composting guide

Interested in starting or expanding a school garden? The **Got dirt? Youth garden toolkit** provides guidance on how to get started, along with many helpful examples of successful gardens. A companion online school garden curriculum training called **Cultivating childhood wellness through gardening** is now available online.

# Educate students



**Got dirt? Youth garden toolkit**



**Cultivating childhood wellness through gardening**

Use the **Got veggies? Garden-based nutrition education curriculum** to inspire students to learn about and eat foods fresh from the garden. This curriculum is designed for kindergarten through second grade students.



**Got veggies? Garden-based nutrition education curriculum (grades K-2)**

Read how one farm to school program incorporated a garden into its curriculum and engaged students in experiential learning.



**Wisconsin Farm to School Success Story: Thomas Jefferson Elementary School Garden (Wausau)**

For older elementary students, the **Nutritious, Delicious, Wisconsin Curriculum** links the study of Wisconsin to the food grown and processed in our state.



**Nutritious, Delicious, Wisconsin (grades 3-5, relevant to 4th grade Wisconsin studies)**

Farm field trips are fantastic for engaging students. Field trips are a fun way to increase students' knowledge and excitement about fresh fruits and vegetables. Maximize your students' educational experience by using **the hayride: a resource for educational farm field trips**.



**The hayride: a resource for educational farm field trips**

In addition to the resources included in this toolkit, there are hundreds more websites, curriculum guides and lesson plans related to food and nutrition. We have combed through many of them to create this list of **food education resources** that build an appreciation of food and create connections between farms and schools.



**Food education resources**



Bayfield County students enjoy school garden produce

WISCONSIN'S MODEL  
ACADEMIC STANDARDS FOR  
**Nutrition**



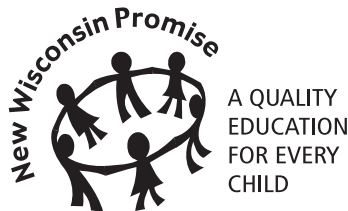




# Wisconsin's Model Academic Standards for Nutrition Education

*Students will gain the knowledge and skills to select foods for a healthy diet that supports health and reduces the risk of illness and future chronic diseases.*

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# Foreword



Well-nourished children are ready to learn. Nutrition education provides students with the knowledge to develop good eating and exercise habits, and the skills they need to make the right choices in the future.

The New Wisconsin Promise calls for a comprehensive approach to improving student health and readiness to learn. Educators, parents, and community members can use the Nutrition Education Standards as a K-12 framework to send students consistent, age-appropriate messages about the importance of preparing for life as healthy, well-informed adults.

With funding from the U.S. Department of Agriculture and Wisconsin Action for Healthy Kids, the Department of Public Instruction convened a committee of teachers and nutrition experts to develop these standards. While they are not mandatory, we hope that school districts will use them to develop a comprehensive K-12 nutrition education program.

An essential element of nutrition education addressed in these standards is equipping students with the critical thinking skills needed to judge the reliability of information that is presented to them. Other key concepts presented in the standards promote healthy eating behaviors, food safety, and nutrition for growth, health, and energy. The standards support variety, moderation, and balance in food choices, with the ultimate goal of engaging students in their education as they make healthier choices for themselves and their families.

The health of this generation of children will reflect our priorities as educators, parents, community members, and as a society. Healthy students are part of healthy communities. Both are essential for a healthy Wisconsin.

Elizabeth Burmaster  
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February 2009





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# Introduction

Eating well can make a positive difference in a student’s ability to achieve in school. Undernutrition during any period of childhood can negatively impact on a student’s behaviors, school performance, and overall cognitive development. Overnutrition, specifically in relation to obesity, can also hamper academic and social growth and development. Nutrition education in school promotes healthier eating in students.

*The Wisconsin Nutrition Education Standards (preK-12)* provides guidance to students, parents, educators, administrators, policy makers and the community to support state and local school district nutrition education efforts by:

- Setting appropriate expectations for learner performance and achievement by the end of fourth, eighth and twelfth grades
- Suggesting a framework for effective and comprehensive nutrition education programs and curricula
- Demonstrating how nutrition education can be used to help meet core academic standards and to give students opportunities to synthesize knowledge and experience across disciplines
- Defining the methods, goals and outcomes of nutrition education
- Providing a mirror and a window to cultural diversity within the US and the world through food

These standards help set the bar for high-quality, comprehensive nutrition education across the state of Wisconsin. Learning about healthy eating and nutrition is part of understanding the importance of being mentally, socially and physically fit and taking responsibility for leading a healthy and active lifestyle. Preparing students for life as productive adults requires critical thinking skills, content knowledge, and more. To succeed in the 21st century, all students will need to master core subject material, and gain the skills that enable them to navigate the complex life and work environments in this globally competitive information age. Learning about nutrition is one way to help students apply knowledge and critically view multiple aspects of food, health and society, while developing higher level thinking skills.

## Overview of Nutrition Education

### **Purpose of Nutrition Education Standards**

Nutrition education has the potential to improve student’s consumer and health literacy, which are critical 21st century skills, and contributes to the development of healthy eating and physical activity behaviors. Students learn to choose healthy foods through effective nutrition education. Teaching nutrition can improve students’ eating habits, but students need consistent messages that build on skills already in place. Developing sound nutritional and exercise habits early in life will help children become healthy adults. This is one of the most important life skills that we can teach our students, and requires a comprehensive approach to be effective. Teachers can use the nutrition education standards as a framework to develop age-appropriate lessons that are consistent in scope and sequence.

### **Using the Nutrition Education Standards**

These standards set an expectation of skills and knowledge that should be acquired by the end of fourth, eighth and twelfth grades. As with other Wisconsin Model academic standards, each subject is divided into *content standards* that tell what students should know and be able to do. Each subject is

also divided into *performance standards* that identify how students will show they meet the content standards.

Implementing these standards is voluntary. Districts may use the standards to develop local grade-by-grade level curriculum. Implementing standards may require some school districts to upgrade school and district curriculums. In some cases, this may result in changes in instructional methods and materials, local assessments, and professional development opportunities for the teaching and administrative staff.

### **Defining Curriculum in Relationship to the Standards**

These standards are statements about what students should know and be able to do, what evidence of learning they will demonstrate, and how well they should be expected to know or do it. Curriculum is devised by local school districts to focus instruction in grades PreK-12 to prepare students to meet the standards. It consists of activities and lessons at each grade level, instructional materials, and various instructional techniques. In short, standards define what is to be learned at certain points in time, and from a broad perspective, what performances will be accepted as evidence that the learning has occurred. Curriculum specifies the details of the day-to-day learning at the local level.

### **Applying the Nutrition Education Standards Across the Curriculum**

Nutrition and food studies provide real world contexts for curriculum and instruction. Using foods, labels and other hands on nutrition examples helps teachers create meaningful learning activities that can connect core curriculum topics with real life. When students see the connection between what they are learning and real world issues that matter to them, their motivation and learning soars. Content knowledge and skill connect with rigorous standards in science, health, mathematics, and other subject areas. Nutrition Education Standards also integrate this rigorous content with real-life applications providing motivation for learning through relevance to students' daily lives.

#### **Nutrition education meets 21st century skills**

**Global Awareness:** Various cultures express themselves through foods through nutrition education; students identify where foods originated, where they are produced, and the export-import chain. Such content prepares students to interpret current events such as contaminated products from one country showing up in another. Nutrition education also teaches different diets around the world and their impact on health and longevity. Students understand that different cultures have developed different ways to achieve a balanced and healthy diet.

**Financial, Economic, Business and Entrepreneurial Literacy:** Nutritional status can relate to economic status. The financial situations of individuals and families, and the economic situation of a location, state and country directly impacts the ability to afford adequate and appropriate food. Skills expected of 21st century graduates include knowing how to plan menus and shop for a nutritionally smart diet, knowing how to make appropriate personal economic choices relating to diet, nutrition, health and fitness and understanding the role of food in the economy.

#### **Health Literacy:**

Health literacy is defined in Healthy People 2010 as “The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.” Health Literacy in Nutrition includes the ability to understand food labels and supplement bottles, and to evaluate diet information for credibility and quality when

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seeking preventative health care and managing chronic health conditions. Students develop nutrition knowledge and skills through direct experiences, and can relate these to everyday life. Health-literate citizens are critical thinkers, problem solvers, and self-directed learners. They communicate effectively, and they are responsible and productive citizens. The need for young people to develop literacy with respect to health food choices is crucial to improving the health of the population and is supported in each of the skills addressed in the health education standards. Students are expected to understand how to access and use basic health and nutrition information to make decisions to enhance health and how proper diet and nutrition play a role in preventing chronic disease.

**Learning, Innovation, Creativity Skills:** Nutrition education can serve as a vehicle to foster learning, creativity and innovation through cooking and creating healthy menus and other projects that pertain to foods and nutrition. Furthermore, critical thinking is learned and practiced by analyzing nutrition information, reading labels, and choosing nutritious foods.

**Information, Media and Technology Literacy:** Accessing nutrition information efficiently and effectively has become easier, but evaluating information critically and competently and using information accurately and creatively requires additional effort in the 21st century. Students need to understand how to use technology to research nutrition topics and health claims, and then be able to evaluate the reliability and validity of the information they find. In addition, students need to analyze how media messages relating to food choices and nutrition are constructed, for what purposes, and using which tools, characteristics and conventions. It is important for students to examine how individuals interpret messages differently, how values and points of view are included or excluded, and how media and culture can influence beliefs and behaviors.

### **Nutrition Education and School District Wellness Policies**

Good nutrition affects the health and well-being of children. There is a positive correlation between a student's health and well-being and his/her ability to learn. Good nutrition and health goes beyond weight – it involves food choices and eating behaviors to prevent disease and maintain or improve physical, emotional, and mental status. Schools can play an important role in helping students establish healthy eating habits by providing nutritious meals and snacks through the schools' meal programs, providing nutrition education and by supporting the development of good eating habits through a healthy school environment. Local school wellness policies serve as standards for food choices, and include nutrition education to support the policies. These wellness policies help define and focus the school environment as a healthy place to learn and grow.

### **Nutrition Education Beyond the School Day**

Healthy behaviors and habits with regard to eating and exercise cannot be accomplished by the schools alone. Nutrition education extends beyond the school environment, and it is necessary for school staff, parents and the community to be involved in cooperative efforts to promote, support, and model healthy eating behaviors and habits. Children will be able to learn and practice good nutrition at home and school when there are cooperative efforts between home, school, and after-school activities.

### **High Quality Nutrition Education**

Because proper nutrition has a significant impact on a student's ability to learn and to live a healthy life, the goal of nutrition education is to positively influence students' eating behaviors by educating students on good nutritional habits and making healthy food choices. School-based nutrition education has the potential to impact positively the nutritional health and dietary behaviors of children, and is included as an important element in comprehensive school health. Nutrition

education, both formal education in schools and informal education by parents and others can help children to make more informed food and beverage choices.

Nutrition education is designed to help students learn all of the following:

- Nutritional knowledge, including but not limited to, the benefits of healthy eating, essential nutrients, nutritional deficiencies, principles of healthy weight management, the use and misuse of dietary supplements, and safe food preparation, handling, and storage.
- Nutrition-related skills, including, but not limited to, planning a healthy meal, understanding and using food labels, and critically evaluating nutrition information, misinformation, and commercial food advertising.
- How to assess their own personal eating habits, set goals for improvement, and achieve those goals by using a food guidance system, such as MyPyramid, the Dietary Standards for Americans, and Nutrition Fact Labels.

High quality nutrition education will provide children with the knowledge and skills needed to lead healthy lives. The nutrition education standards will assist teachers in providing age appropriate, sequential lessons from preschool through high school.

Ideally, nutrition education will be integrated into other subjects to complement, but not replace, standards-based nutrition education. Other characteristics of quality nutrition education include:

- linking nutrition education and physical activity for lifestyle balance
- behavior-focused and interactive activities
- coordination with school food service
- clear, consistent and coherent nutrition messages throughout the school, classroom, and cafeteria
- adequately prepared staff
- accurate and current nutritional advice
- opportunities for students to practice what they are learning
- promotion of eating as an enjoyable activity, as well as one that contributes to good health
- encouraging students encouraged to develop positive attitudes towards eating, both through the formal curriculum and all the other learning opportunities that occur during the school day

### **Youth Nutrition Education Concepts**

To be effective, nutrition education must be developmentally appropriate and consider the environment and other factors that influence behavior. The Cognitive Development Theory (Table 1) describes characteristics of youth at different ages and gives a framework for what is developmentally appropriate. Prior education, the attitudes and actions of adults such as parents and teachers, and the media also influence the behavior of youth and their understanding of nutrition.



Table 1. Cognitive Development Theory

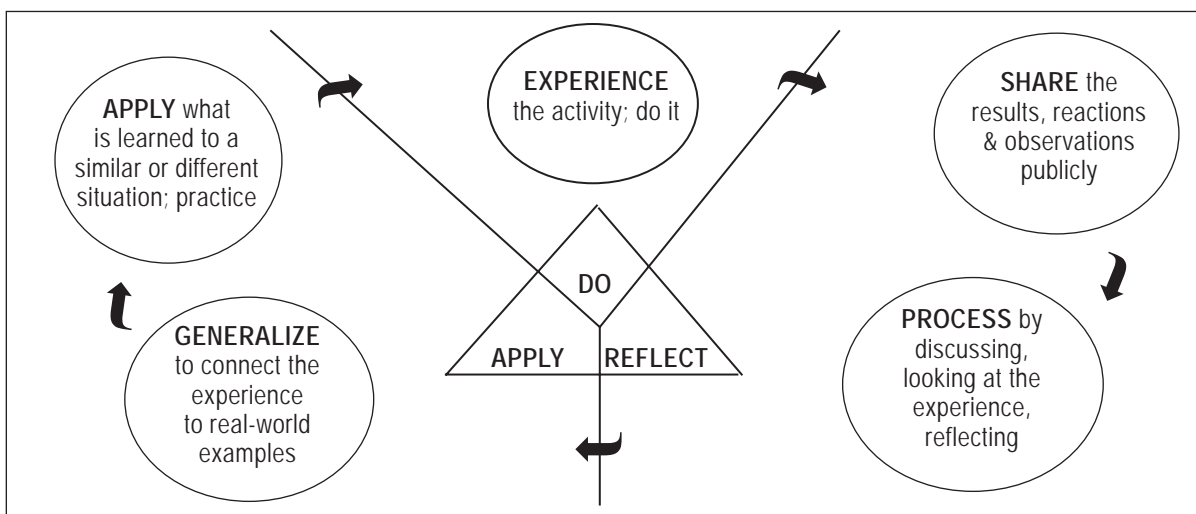
Stage	Characteristics
Pre-operational (Ages 2 to 6 or 7)	<ul style="list-style-type: none"> <li>• Can repeat words or phrases without understanding them</li> <li>• Are egocentric</li> <li>• Don't consider cause and effect</li> <li>• Have difficulty with categories</li> </ul>
Concrete Operational (Ages 6 or 7 to 11 or 12)	<ul style="list-style-type: none"> <li>• Are beginning to consider cause and effect</li> <li>• Can think through a chain of events</li> <li>• Can classify objects and concrete ideas</li> <li>• Are oriented in the present</li> </ul>
Formal Operational (Ages 11 or 12 and older)	<ul style="list-style-type: none"> <li>• Are beginning to understand the abstract</li> <li>• Are beginning to form hypotheses</li> <li>• Are beginning to consider multiple consequences</li> </ul>

The Cognitive Development Theory summarizes much of what we know about developmentally appropriate education. However, there are still gaps in our knowledge. For example, there may a lag between what children understand and their ability to express this understanding. There are multiple challenges with assessing understanding: Do youth understand the question being asked? Are they able to communicate the answer clearly? Are they trying to give socially desirable answers? Culture also could affect understanding. Concepts often build from one grade level to the next. For example, in Grade 3 youth learn what it means for a food to be made from whole grain, and in Grade 4 youth use food labels to determine which foods are whole grain foods. Questions throughout the lessons can help educators gauge how well youth understand the material.

### Experiential Learning Model

The Experiential Learning Model offers a format for effective nutrition education using hands-on learning. Youth learn from experience – the “Do” portion of The Experiential Learning Model (Figure 1). Questions and opportunities related to the activity can help them process this experience – the “Reflect” and “Apply” portions of the model.

Figure 1. Experiential Learning Model



## Cognitive Development and Nutrition Education

Table 2: Pre-operational Operational Stage

Stage	Characteristics	Implications for Nutrition Education
Pre-operational Stage (Ages 2 to 6 or 7)	Have trouble focusing on wholes and parts at the same time	It is not possible to be part healthy and part unhealthy; for example, if you have a sore throat you are not healthy
	Have difficulty with categories	All edible items are food, have difficulty seeing peas as a type of vegetable, will sort foods into groupings such as breakfast
	Attend to one aspect of a message at a time	For example, you might say "eating lots of different vegetables like peas, carrots, and broccoli is a healthy way to eat" but they hear "eating peas makes you healthy"
	Cannot "reverse" an experience	For example, cannot go from "if I eat too much I will get fat" to "if I don't eat too much, I won't get fat"
	Don't consider cause and effect	For example, "I know I am healthy because I am in school today"
	Can repeat words and phrases without understanding them	For example, might say "vegetables are good for you" but might not be able to name vegetables or tell why vegetables are good for you
	Have difficulty understanding change	For example, no understanding of digestion or how food affects their bodies

Table 3: Concrete Operational Stage

Stage	Characteristics	Implications for Nutrition Education
Concrete Operational Stage (Ages 6 or 7 to 11 or 12)	Are beginning to consider cause and effect	Understand their actions are related to their health but can't explain how
	Can reverse thinking to consider the original and changed state	For example, "I was healthy and then I got a sore throat and then I got better and now I'm healthy again"
	Can think through a chain of events	For example, can understand how food goes from farm to table
	Can classify objects and concrete ideas	Can categorize foods into food groups by similarities (e.g., foods in meat group come from animals); still consider foods as "good" or "bad"
	Are oriented in the present	For example, future effects of nutrition on health are not important

Table 4: Formal Operational Stage

Stage	Characteristics	Implications for Nutrition Education
Formal Operational Stage (Ages 11 or 12 and older)	Beginning to understand abstract ideas	For example, understanding that dietary fat contributes to heart disease
	Beginning to form hypotheses	For example, understanding that eating too much can lead to weight gain and eating less food than their bodies need can lead to weight loss
	Beginning to see things from another's point of view	For example, "It must be hard for her to be overweight and have kids tease her"
	Beginning to consider multiple consequences of an action	For example, understanding that eating healthy meals might help them do better in sports or maybe it won't make a difference
	Can make good decisions based on their own value system	Food and behavior choices are related to appearance, peers, and independence

**Abstract Nutrition Concepts**

- Vitamins, minerals
- Nutrients (for example, protein, fat)
- Chronic disease risks
- Process by which food affects health
- Classifying foods by nutrients

**Concrete Nutrition Concepts**

- Eat lots of different foods each day
- Whole food items
- Classifying foods by source (for example, meat, milk, plant foods)

Sources used by Gayle Coleman, UW-Extension, Madison, Wisconsin to develop Tables 2, 3, and 4.

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## Organization of the Standards

Nutrition is a complex, far-reaching subject, and these standards will help educators use developmentally-appropriate nutrition messages in the classroom. Six key concepts were used to organize key messages:

- Nutrition for growth and energy
- Food safety
- Critical thinking skills and practical reasoning
- Promotion of healthy behaviors
- Diversity
- Identification and classification of food

The concepts also have underlying messages to support variety, moderation, and balance in food choices and encourage lifelong healthy eating behaviors.

The nutrition education standards have performance goals that specify a desired outcome. The standards are organized to provide a structure, scope, and sequence to build nutrition education and health literacy skills. There are many ways to meet the standards and build a strong nutrition education curriculum. Nutrition can be an exciting and fun way to reinforce math, science and English language skills while helping students develop the skills for a healthy future.

# *Wisconsin Model Academic Standards for Nutrition Education*

Students will gain the knowledge and skills to select foods for a healthy diet that supports health and reduces the risk of illness and future chronic diseases.



# A. NUTRITION FOR ENERGY AND GROWTH

## CONTENT STANDARD

*Students in Wisconsin will understand the concepts related to and the connections between food choices, eating habits, activity, and healthy growth.*

Rationale: Nutritional needs vary across the lifecycle. Growth and energy are dependent on healthy eating and nutrition. Students who understand the personal relationship of food choices to energy and growth may be more likely to maintain or improve health.

► **BY THE END OF GRADE 4 STUDENTS WILL:**

- A.4.1 Identify why people need to eat different kinds of foods
- A.4.2 Identify feeling hungry vs. feeling full/satisfied
- A.4.3 Identify the benefits of relationship between physical activity (using energy) and the need for food and water; state that people need to eat food to have energy and grow
- A.4.4 Match food groups to their primary contribution for a healthy body, realizing that some foods are better fuel than others (nutrient density)







## B. FOOD SAFETY

### CONTENT STANDARD

*Students in Wisconsin will understand/know how to keep food safe for consumption and how to prepare food safely.*

**Rationale:** Food borne illness is a common and serious consequence of poor hygiene, unsafe food handling and improper food preparation.

### ► BY THE END OF GRADE 4 STUDENTS WILL:

- B.4.1 Identify when adults should help with food preparation
- B.4.2 Identify ways to keep food fresh and safe to eat
- B.4.3 Recognize that eating improperly prepared or spoiled food can make you sick
- B.4.4 Trace a food from origin to table
- B.4.5 Describe a food chain
- B.4.6 Explain the importance of hand-washing during food preparation



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► **BY THE END OF GRADE 8  
STUDENTS WILL:**

- B.8.1 Identify and explain the importance of key food safety messages (clean, cook, chill, avoid cross-contamination)
- B.8.2 Verbalize how to safely prepare/pack foods
- B.8.3 Explain the relationship between food safety practices and health
- B.8.4 Describe factors associated with a safe food supply (food handling, production, storage, and preparation techniques)
- B.8.5 Construct a food chain
- B.8.6 Identify points in food preparation where hand washing is needed

► **BY THE END OF GRADE 12  
STUDENTS WILL:**

- B.12.1 Identify and explain the importance of key food safety messages (clean, cook, chill, avoid cross-contamination) and identify Critical Control Points in a HACCP (Hazard Analysis Critical Control Point) plan
- B.12.2 Identify the effects of food preparation techniques on the nutritional value of the food
- B.12.3 Explain how food importing/exporting, processing, food handling, and cooking methods can affect the safety of our food supply
- B.12.4 Identify potential sources of food contamination between the origin of a food and consuming the food
- B.12.5 Explain how contaminants may enter the food supply at various points in a food chain
- B.12.6 Explain why the USDA has a food recall process and how the process works

## C. CRITICAL THINKING AND PRACTICAL REASONING

### CONTENT STANDARD

*Students in Wisconsin will understand and use critical thinking and practical reasoning skills to address food choices, nutrition, and health concerns*

**Rationale:** Critical thinking and practical reasoning are used in everyday problem solving. Students who develop these skills are more likely to approach everyday problem solving more deliberately, with greater flexibility, and increased open-mindedness.

### ► BY THE END OF GRADE 4 STUDENTS WILL:

- C.4.1 Be able to distinguish between food and nonfood items
- C.4.2 Identify a healthy eating habit
- C.4.3 Graph progress toward achieving a set nutrition goal, using a simple log chart
- C.4.4 Compare and contrast snacks which can contribute to or undermine healthy eating habits and identify why one snack might be a better choice than another snack
- C.4.5 Recognize factors in advertisements to sell foods
- C.4.6 Demonstrate how to use food labels to select a healthy food or snack







## D. NUTRITION FOR HEALTH PROMOTION OF HEALTHY BEHAVIORS

### CONTENT STANDARD

*Students in Wisconsin will understand concepts related to personal health promotion and disease prevention, and will practice behaviors to promote health, prevent disease, and reduce health risks.*

**Rationale:** Making nutritious food choices is a cornerstone of healthy behaviors. Knowledge of nutrition concepts will assist students in making informed choices regarding their lifestyles.

► **BY THE END OF GRADE 4 STUDENTS WILL:**

- D.4.1 Understand the concept of variety, and identify that eating a variety of foods is important to health
- D.4.2 Describe the consequences of overeating
- D.4.3 Identify sources of fat, sugar, salt, fiber, protein, and calcium in the diet
- D.4.4 Recognize the relationship between diet and chronic diseases, such as blood pressure, heart disease and obesity







## E. DIVERSITY

### CONTENT STANDARD

*Students in Wisconsin will understand that nutritional status and health can be impacted by many factors, and healthy eating must be individualized to meet personal preferences and characteristics.*

**Rationale:** The Wisconsin population is growing more diverse. Nutritional status is affected by the food choices available and the nutritional adequacy and appropriateness of the food available. In addition, diversity in body size and shape, economic resources and racial and ethnic background may influence and impact food choices.

### ► BY THE END OF GRADE 4 STUDENTS WILL:

- E.4.1 Understand that people eat many different foods as part of a healthy diet
- E.4.2 Recognize that people come in many shapes and sizes
- E.4.3 Identify examples of cultures and their food customs and habits
- E.4.4 Identify different dietary needs related to food allergies and medical conditions
- E.4.5 Describe how food choices are influenced by availability, individual and family preferences, media and background



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► **BY THE END OF GRADE 8  
STUDENTS WILL:**

- E.8.1 Locate supplier(s), source(s) or retail outlet(s) for ethnic foods within the community
- E.8.2 Demonstrate respect for others body weight, size, shape, and abilities and identify factors that contribute to differences in people (genetics, lifestyle behaviors, age)
- E.8.3 Describe the food customs and habits, or various cultures, and recognize that our culture, ethnicity and health status may impact our food choices
- E.8.4 Discuss different dietary needs related to food allergies and medical conditions

► **BY THE END OF GRADE 12  
STUDENTS WILL:**

- E.12.1 Analyze the availability and variety of affordable and nutritionally adequate foods in the community, including ethnic and other local markets
- E.12.2 Examine genetic and cultural connections to weight, size and body shape
- E.12.3 Analyze how culture, family traditions and economic situations influence eating and activity behaviors
- E.12.4 Evaluate the nutritional and health implications of eating habits of various cultures, economic situations, family traditions and lifestyles
- E.12.5 Identify how social and cultural messages about food and eating influence nutrition choices
- E.12.6 Provide examples of how our health status and belief system may impact our food choices

## F. IDENTIFICATION AND CLASSIFICATION OF FOOD

### CONTENT STANDARD

*Students in Wisconsin will be able to appreciate and classify foods. They will also demonstrate an interest and appreciation for a variety of foods.*

**Rationale:** Foods are classified in many ways. Awareness of the variety and types of foods available may increase willingness to try unfamiliar foods. Identifying and trying new foods is one of the first steps leading to knowledge of foods. Students who understand why foods are processed, and how foods change during processing establish a foundation for understanding how nutritional content can change with changes in form of a food.

### ► BY THE END OF GRADE 4 STUDENTS WILL:

- F.4.1 Recognize foods by name
- F.4.2 Describe different kinds of food (by physical and sensory characteristics — shape, taste, color, texture, etc)
- F.4.3 Categorize foods by source (plant, animal), including processed foods
- F.4.4 Identify the basic food groups, and give examples from each group for meals and snacks



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► **BY THE END OF GRADE 8  
STUDENTS WILL:**

- F.8.1 Identify foods by food group and nutrient contributions
- F.8.2 Use descriptive words and sensory characteristics to evaluate and classify foods
- F.8.3 Identify processed foods by source (plants and animal products) and explain how food may change during processing
- F.8.4 List the basic food groups, give examples from each group and use the food groups to plan a meal and snack

► **BY THE END OF GRADE 12  
STUDENTS WILL:**

- F.12.1 Identify foods by form, function and source (plant, animal)
- F.12.2 Explain why foods are processed, analyze how foods change during processing (form, texture, additives, nutritional value), and describe how processed foods fit into a food guidance system
- F.12.3 Describe the relationship between the food guidance system and the Dietary Standards for Americans
- F.12.4 Explain the role of food manufacturing in a global economy, including the negative and positive ramifications of food processing and importing/exporting

# Nutrition Facts, Definitions, and Tips

Selected terms from <http://www.nutritiondata.com/help/glossary> for an online dictionary of nutrition terms

**Body Mass Index (BMI):** Body Mass Index is a standardized ratio of weight to height, and is often used as a general indicator of health. Your BMI can be calculated by dividing your weight (in kilograms) by the square of your height (in meters). A BMI between 18.5 and 24.9 is considered normal for most adults. Higher BMI's may indicate that an individual is overweight or obese. BMI is a screening tool, and may be inaccurate due to muscle mass, bone mass, etc. 1 pound = kg; one inch = 2.54 cm

**Calcium:** Of all the essential minerals in the human body, Calcium is the most abundant. Calcium helps the body form bones and teeth and is required for blood clotting, transmitting signals in nerve cells, and muscle contraction. Calcium helps prevent osteoporosis; of the two to three pounds of calcium contained in the human body, 99% is located in the bones and teeth. Calcium also seems to play a role in lowering blood pressure, and has been shown to reduce the risk of cardiovascular disease in postmenopausal women.

**Calorie:** Calorie is a unit of measurement for energy. One calorie is formally defined as the amount of energy required to raise one cubic centimeter of water by one degree Centigrade. For purpose of measuring the amount of energy in food, nutritionists most commonly use kilocalories (equal to 1000 calories), and label the measurement either as “kcal” or as “Calories” with a capital “C”. One kcal is also equivalent to approximately 4.184 kilojoules.

**Carotenoids:** Carotenoids are natural fat-soluble pigments found in certain plants. Carotenoids provide the bright red, orange, or yellow coloration of many vegetables, serve as antioxidants, and can be a source for vitamin A activity.

**Cholesterol:** Cholesterol is a soft, waxy substance present in all parts of the body including the nervous system, skin, muscle, liver, intestines and heart. It is both made by the body and obtained from animal products in the diet. Cholesterol is manufactured in the liver for normal body functions including the production of hormones, bile acid and Vitamin D. It is transported in the blood to be used by all parts of the body.

In the blood stream, cholesterol combines with fatty acids to form high-density (HDL) and low-density (LDL) lipoproteins. LDL's are considered the “bad cholesterol”, since they can stick together to form plaque deposits on the walls of your blood vessels, leading to atherosclerosis.

One-fourth of the adult population in the U.S. has high blood cholesterol levels. More than half of the adult population has blood cholesterol levels that exceed the desirable range, as specified by the medical community. Elevated cholesterol often begins in childhood. Some children may be at higher risk than others due to a family history of high cholesterol.

**Daily Values (DV):** Daily Values are the dietary reference values that are used on all current US Nutrition Facts labels. These values were determined by the FDA to best represent the minimum needs of the general population. For many nutrients, DV's will exceed your actual minimum needs, since they conservatively allow for the minimum needs of more demanding conditions, such as pregnancy or lactation. Most DV's are derived from Dietary Reference Intakes (DRI) and other recommendations made by the Food and Nutrition Board, Institute of Medicine (IOM).

For use on food labels, Daily Values formally obsolete all other previous used references, including Daily Reference Values (DRV), Reference Daily Intakes (RDI), and Recommended Dietary Allowances (RDA).

**Dietary Fiber:** Dietary fiber comes from the thick cell wall of plants. It is an indigestible complex carbohydrate. Fiber is divided into two general categories: water soluble and water insoluble.

*Soluble fiber* has been shown to lower cholesterol. However, in many studies, the degree of cholesterol reduction was quite modest. For unknown reasons, diets higher in insoluble fiber (mostly unrelated to cholesterol levels) have been shown to correlate better with protection against heart disease in human trials. Soluble fibers can also lower blood sugar levels, and some doctors believe that increasing fiber decreases the body's need for insulin—a good sign for diabetics.



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*Insoluble fiber* acts as a stool softener, which speeds digestion through the intestinal tract. For this reason, insoluble fiber is an effective treatment for constipation. The reduction in “transit time” has also been thought to partially explain the link between a high fiber diet and a reduced risk of colon cancer.

**Enzyme:** Enzymes are complex proteins that assist or enable chemical reactions to occur. “Digestive” enzymes, for example, help your body break food down into chemical compounds that can more easily be absorbed. Thousands of different enzymes are produced by your body.

**Essential Amino Acids:** Essential Amino Acids are amino acids that your body does not have the ability to synthesize. Hundreds of different amino acids exist in nature, and about two dozen of them are important to human nutrition. Nine of these – histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine – are considered essential, since they must be supplied by your diet.

While the essential amino acids requirements vary among different individuals, the Food and Agricultural Organization of the United Nations (FAO) has proposed a standard that specifies the minimum amount of each essential amino acid that should be supplied per gram of protein consumed. This standard is the reference by which protein quality is determined. By comparing the limiting (i.e. lowest level) amino acid in a food with this standard, the amino acid score is determined. A score of 100 or above indicates a complete or high-quality protein; a score below 100 indicates a lower quality protein.

**Minerals:** The minerals (inorganic nutrients) that are relevant to human nutrition include water, sodium, potassium, chloride, calcium, phosphate, sulfate, magnesium, iron, copper, zinc, manganese, iodine, selenium, and molybdenum. Minerals are needed for growth, maintenance of body weight in adulthood, and for reproduction.

**Nutrient Density:** Nutrient density is the measurement of the amount of a nutrient per fixed portion of food. If you know the nutrient density of a food, you can better compare its nutritional value to that of other foods, regardless of serving size.

**Potassium:** Potassium is an essential mineral needed to regulate water balance, levels of acidity and blood pressure. Potassium, together with sodium-potassium inside the cell and sodium in the fluid surrounding the cell, work together for the nervous system to transmit messages as well as regulating the contraction of muscles.

People with low blood levels of potassium who are undergoing heart surgery are at an increased risk of developing heart arrhythmias and an increased need for cardiopulmonary resuscitation. Potassium is also required for carbohydrate and protein metabolism.

**Protein:** Protein is one of the basic components of food and makes all life possible. Amino acids are the building blocks of proteins. All of the antibodies and enzymes, and many of the hormones in the body are proteins. They provide for the transport of nutrients, oxygen and waste throughout the body. They provide the structure and contracting capability of muscles. They also provide collagen to connective tissues of the body and to the tissues of the skin, hair and nails.

**Protein Quality:** See Essential Amino Acids.

**Satiety:** Satiety refers to the feeling of satisfaction or “fullness” produced by the consumption of food.

**Saturated Fat:** A saturated fat is a fat or fatty acid in which there are no double bonds between the carbon atoms of the fatty acid chain. Saturated fats are usually solid at room temperature. Diets high in saturated fat have been shown to correlate with an increased incidence of atherosclerosis and coronary heart disease. Dehydrogenation converts saturated fats to unsaturated fats, while hydrogenation accomplishes the reverse.

Common saturated fats include butter, lard, palm oil, coconut oil, cottonseed oil and Palm Kernel Oil. Saturated fat is found in dairy products, especially cream and cheese and in meat, as well as in many prepared foods. Some studies suggest replacing saturated fats in the diet with unsaturated fats will increase one’s ratio of HDL to LDL serum cholesterol.

Alternatives to saturated fats include monosaturated fats such as olive oil and polyunsaturated fats such as canola oil and corn oil.

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**Sodium:** Sodium is a mineral, an essential nutrient. It helps to maintain blood volume, regulate the balance of water in the cells, and keeps nerves functioning. The kidneys control sodium balance by increasing or decreasing sodium in the urine. One teaspoon of salt contains about 2,300 milligrams of sodium, more than four times the amount the body requires per day.

Most Americans consume far more sodium than their bodies need. Many foods contain sodium naturally, and it is commonly added to foods during preparation or processing or as a flavoring agent. Sodium is also found in drinking water, prescription drugs and over-the-counter medications.

In the United States, about one in four adults have elevated blood pressure. Sodium intake is only one of the factors known to affect high blood pressure, and not everyone is equally susceptible. The sensitivity to sodium seems to be very individualized. Usually, the older one is the more sensitive they are to salt.

**Soluble Fiber:** See Dietary Fiber.

**Trans-Fat:** Trans fat (also known as *trans* fatty acids) is a specific type of fat formed when liquid oils are made into solid fats like shortening and hard margarine. However, a small amount of *trans* fat is found naturally, primarily in some animal-based foods. *Trans* fat behaves like saturated fat by raising low-density lipoprotein (LDL or “bad”) cholesterol that increases your risk of coronary heart disease (CHD). *Trans* fat can be found in some of the same foods as saturated fat, such as vegetable shortenings, some margarines, crackers, candies, cookies, snack foods, fried foods, baked goods, and other processed foods made with partially hydrogenated vegetable oils.

**Unsaturated Fat:** An unsaturated fat is a fat or fatty acid in which there are one or more double bonds between carbon atoms of the fatty acid chain. Such fat molecules are monounsaturated if each contains one double bond, and polyunsaturated if each contain more than one.

Hydrogenation converts unsaturated fats to saturated fats, while dehydrogenation accomplishes the reverse. Unsaturated fats tend to melt at lower temperatures than saturated fats, which tend to be solid at room temperature.

Both kinds of unsaturated fat can replace saturated fat in the diet. Substituting unsaturated fats for saturated fats helps to lower levels of total cholesterol and LDL cholesterol in the blood

**Vitamin A (Retinol):** Vitamin A is a fat-soluble vitamin with multiple functions in the body. It helps cells differentiate, an essential part of cell reproduction. Cells that are not fully differentiated are more likely to undergo pre-cancerous changes. It is a central component for healthy vision; vitamin A nourishes cells in various structures of the eye and is required for the transduction of light into nerve signals in the retina. It is required during pregnancy, stimulating normal growth and development of the fetus by influencing genes that determine the sequential growth of organs in embryonic development. It influences the function and development of sperm, ovaries and placenta and is a vital component of the reproductive process.

**Vitamin B1 (Thiamin):** Vitamin B1 is a water-soluble vitamin that the body requires to break down carbohydrates, fat and protein. Every cell of the body requires vitamin B1 to form adenosine triphosphate (ATP). Vitamin B1 is also essential for the proper functioning of nerve cells.

**Vitamin B2 (Riboflavin):** Vitamin B2 is a water-soluble vitamin that helps the body process amino acids and fats, activate vitamin B6 and folic acid, and helps convert carbohydrates to adenosine triphosphate (ATP). Under some conditions, vitamin B2 can act as an antioxidant.

**Vitamin B3 (Niacin):** Vitamin B3 is required for cell respiration and helps release the energy in carbohydrates, fats, and proteins. It also supports proper circulation and healthy skin, functioning of the nervous system, and normal secretion of bile and stomach fluids. It is used in the synthesis of sex hormones, treating schizophrenia and other mental illnesses, and as a memory-enhancer.

Nicotinic acid (but not nicotinamide) supplementation improves the blood cholesterol profile, and has been used to flush the body of organic poisons, such as certain insecticides. People report more mental alertness when this vitamin is in sufficient supply.



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A shortage of niacin may be indicated with symptoms such as canker sores, depression, diarrhea, dizziness, fatigue, halitosis, headaches, indigestion, insomnia, limb pains, loss of appetite, low blood sugar, muscular weakness, skin eruptions, and inflammation.

**Vitamin B5 (Pantothenic Acid):** Vitamin B5 is a water-soluble vitamin involved in the Krebs's energy production cycle and is needed for the production of acetylcholine, a neurotransmitter. Vitamin B5 also triggers the adrenal glands, is essential in transporting and releasing energy from fats, and enables the synthesis of cholesterol, vitamin D, and steroid hormones. Pantethine — a vitamin B5 byproduct — has been shown to lower cholesterol and triglycerides in the blood.

**Vitamin B6:** Vitamin B6 is a water-soluble vitamin and is part of the vitamin B complex. Vitamin B6 plays a role in the synthesis of antibodies by the immune system, which is needed to fight many diseases. It helps maintain normal nerve function and also acts in the formation of red blood cells. Vitamin B6 is also required for the chemical reactions needed to digest proteins. The higher the protein intake, the more vitamin B6 the body needs.

Large doses of vitamin B6 can cause neurological disorders and numbness. Deficiency of this vitamin can cause mouth and tongue sores, irritability, confusion, and depression. Vitamin B6 deficiency is uncommon in the United States.

**Vitamin B9 (Folate):** Vitamin B9, also known as Folic acid, is a B vitamin necessary for cell replication and growth. Folic acid helps form building blocks of DNA, which holds the body's genetic information, and building blocks of RNA, needed for protein synthesis. Folic acid is most important, then, for rapidly growing tissues, such as those of a fetus, and rapidly regenerating cells, like red blood cells and immune cells. Folic acid deficiency results in an anemia that responds quickly to folic acid supplements.

The need for folic acid increases considerably during pregnancy. Deficiencies of folic acid during pregnancy are associated with low birth weight and an increased incidence of neural tube defects in infants. Most doctors, many other healthcare professionals, and the March of Dimes recommend

that all women of childbearing age supplement with 400 mcg per day of folic acid. Such supplementation may protect against the formation of neural tube defects during the time between conception and when pregnancy is discovered.

**Vitamin B12 (Cobalamine):** Vitamin B12 is a water-soluble vitamin needed for normal nerve cell activity, DNA replication, and production of the mood-affecting substance SAME (S-adenosyl-L-methionine). Vitamin B12 acts with folic acid and vitamin B6 to control homocysteine levels. An excess of homocysteine has been linked to an increased risk of coronary disease, stroke and other diseases such as osteoporosis and Alzheimer's.

Vitamin B12 deficiency causes fatigue. A small trial reported that even some people who are not deficient in B12 showed a marked increase in energy after vitamin B12 injections. However, the relationship between B12 injections and the energy level of people who are not vitamin B12-deficient has been rarely studied. Oral B12 supplements are unlikely to achieve the same results as injectable B12, because the body has a relatively poor absorption rate for this vitamin.

**Vitamin C (Ascorbic Acid):** Vitamin C is an essential water-soluble vitamin that has a wide range of functions in the human body.

One of vitamin C's important functions is acting as an antioxidant, protecting LDL cholesterol from oxidative damage. When LDL is damaged the cholesterol appears to lead to heart disease, but vitamin C acts as an important antioxidant protector of LDL. Vitamin C may also protect against heart disease by reducing the stiffness of arteries and the tendency of platelets to coagulate in the vein.

The antioxidant properties also protect smokers from the harmful effects of free radicals. Small doses of Vitamin C taken by nonsmokers before being exposed to smoke have been shown to reduce the free radical damage and LDL cholesterol oxidation associated with exposure to cigarette smoke.

Vitamin C has a range of additional functions. It is needed to make collagen, a substance that strengthens many parts of the body, such as muscles and blood vessels, and plays important roles in healing and as an antihistamine. Vitamin C also aids in the formation of liver bile which helps to detoxify alcohol and other substances. Evidence indicates that

vitamin C levels in the eye decrease with age and that vitamin C supplements prevent this decrease, lowering the risk of developing cataracts.

Vitamin C has been reported to reduce activity of the enzyme, aldose reductase, which theoretically helps protect people with diabetes. It may also protect the body against accumulation or retention of the toxic mineral, lead.

**Vitamin D (Cholecalciferol):** Vitamin D is a fat-soluble vitamin that helps maintain blood levels of calcium, by increasing absorption from food and reducing urinary calcium loss. Both functions help keep calcium in the body and therefore spare the calcium that is stored in bones. Vitamin D may also transfer calcium from the bone to the blood, which may actually weaken bones. Though the overall effect of vitamin D on the bones is complicated, some vitamin D is certainly necessary for healthy bones and teeth.

Vitamin D is also produced by the human body during exposure to the ultraviolet rays of the Sun. However, seasonal changes, latitude, time of day, cloud cover, smog and sunscreen can all affect UV exposure. Vitamin D deficiency is more common in northern latitudes, making Vitamin D supplementation more important for residents of those areas.

Vitamin D plays a role in immunity and blood cell formation and also helps cells differentiate—a process that may reduce the risk of cancer. From various other studies, researchers have hypothesized

that vitamin D may protect people from multiple sclerosis, autoimmune arthritis, and juvenile diabetes. Vitamin D is also necessary to maintain adequate blood levels of insulin. Vitamin D receptors have been found in the pancreas, and some evidence suggests that supplements may increase insulin secretion for some people with adult-onset diabetes.

**Vitamin E (Tocopherol):** Vitamin E is an antioxidant that protects cell membranes and other fat-soluble parts of the body, such as LDL cholesterol (the “bad” cholesterol), from damage. Several studies have reported that supplements of natural vitamin E help reduce the risk of heart attacks.

Vitamin E also plays some role in the body’s ability to process glucose. Some trials suggest that vitamin E may help in the prevention and treatment of diabetes.

In the last decade, the functions of vitamin E have been further clarified. In addition to its antioxidant functions, vitamin E has now been shown to directly affect inflammation, blood cell regulation, connective tissue growth and genetic control of cell division.

**Vitamin K (Phylloquinone):** Vitamin K is necessary for proper bone growth and blood coagulation. Vitamin K accomplishes this by helping the body transport calcium. Vitamin K is used to treat overdoses of the drug warfarin. Also, doctors prescribe vitamin K to prevent excessive bleeding in people taking warfarin but requiring surgery.



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## Nutrition and Nutrition Education Web Resources

Wisconsin Department of Public Instruction: <http://dpi.wi.gov/ne/index.html>

USDA Team Nutrition; –Wellness Policy Section; –Making It Happen  
–Changing the Scene: <http://teammnutrition.usda.gov/healthy-schools.html>

School Nutrition Association (formerly American School Food Service Association) Keys to Excellence: [www.schoolnutrition.org/keys](http://www.schoolnutrition.org/keys)

Action for Healthy Kids: [www.actionforhealthykids.org](http://www.actionforhealthykids.org)

National Dairy Council: [www.nationaldairycouncil.org](http://www.nationaldairycouncil.org)

5 A Day: [www.5aday.org](http://www.5aday.org)

CDC Guidelines for School Health Programs to Promote Lifelong Healthy Eating  
[www.cdc.gov](http://www.cdc.gov)

American Dietetic Association: [www.eatright.org](http://www.eatright.org)

Physical Activity and Physical Education Resources  
National Association for Sports and Physical Education (NASPE)  
[www.naspeinfo.org](http://www.naspeinfo.org)

National Association for Sports and Physical Education (NASPE)  
Appropriate Practices in Movement Programs for Young Children 3-5  
Appropriate Practices for Elementary School Physical Education  
Appropriate Practices for Middle School Physical Education  
Appropriate Practices for Secondary School Physical Education  
<http://www.aahperd.org/naspe/template.cfm?template=peappropriatepractice/index.html>.

Active Start: A Statement of Physical Activity Guidelines for Children Birth to Five Years  
Physical Activity for Children: A Statement of Guidelines for Children 5-12, 2nd Edition  
[http://www.aahperd.org/naspe/template.cfm?template=ns\\_index.html](http://www.aahperd.org/naspe/template.cfm?template=ns_index.html)

Quality Physical Education:  
[http://www.aahperd.org/naspe/template.cfm?template=publications-nationalstandards\\_3.html](http://www.aahperd.org/naspe/template.cfm?template=publications-nationalstandards_3.html)

Recess Before Lunch: [www.opi.state.mt.us/school-food/recessBL.html](http://www.opi.state.mt.us/school-food/recessBL.html)

CDC Guidelines for School and Community Programs to Promote Lifelong Physical Activity among Young People: [www.cdc.gov](http://www.cdc.gov)





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# School Composting

Schools all over the country are starting to compost as a part of a nation-wide movement to incorporate waste reduction, nutrient cycling and food system awareness into our education system. Involvement ranges from simple classroom worm bins to large, school-wide operations that produce tons of compost a year.

At Wisconsin Homegrown Lunch, we have focused our energy on classroom composting with worm bins, but there are plenty of examples of successful school composting projects going on around the country at every level of involvement. See our resource guide on the following page for more information.

## Classroom composting

A classroom worm bin acts as an introduction to natural sciences and recycling for students of any age. Worm bins are the easiest transition into composting, even for an indoor setting like a classroom. They are cheap and quick to construct, fun for kids (hundreds of classroom pets!), they don't produce any foul odors, and they are a source of endless lessons and activities. Teachers across the country are realizing the valuable lessons present in a bin full of worms and decomposing organic matter!



Image courtesy of the Center for Urban Education about Sustainable Agriculture, [www.cuesa.org](http://www.cuesa.org)

## What is Compost?

Composting is the natural process of organic matter, anything that comes from a plant or animal, breaking down into nutrient-rich soil, called compost. This process is carried out by millions of "decomposer" organisms such as worms, mites, fungi, and microscopic organisms. Composting transforms organic waste from an unstable and rotting state into a stable, rich, earthy state.

## Why Compost?

Nearly 25% of the waste from American households that ends up at landfills is comprised of food scraps and yard debris. This means that 59 million tons of the waste that is sitting in our landfills, emitting tons of methane gas into the atmosphere, is the very same waste that can easily and quickly be converted into nutrient-rich soil. When we compost, we avoid wasting all those valuable nutrients that are infinitely useful for gardens and farms.

## It's Easy!

Whether you want to get involved by constructing a worm bin for your classroom, putting a simple wire compost bin in the back of your school, or encouraging your school district to implement a district-wide zero waste program, there is somewhere for everyone to start.

**Step 1 Choose** your composting system. Depending on time, money, and community support, this could be an indoor or outdoor worm bin, a compost tumbler, a plastic compost container, a multi-bin rotation system, or many others.

**Step 2 Learn to separate** compostable waste from other waste. This is perhaps the most valuable life-long lesson that kids gain from school composting.

**Step 3 Rally up support** in your community. Parents, local students, and other groups are often willing to help.

**Step 4 Construct** your compost system and start composting!

Wisconsin Homegrown Lunch is a joint project of:



REAP Food Group:  
[www.reapfoodgroup.org](http://www.reapfoodgroup.org)

UW-Madison Center for Integrated  
Agricultural Systems: [www.cias.wisc.edu](http://www.cias.wisc.edu)





## School Compost Web Resources

The school composting movement is taking off across the country! For someone looking to start a school composting project, it can be overwhelming to try to navigate the vast array of resources available. We have put together the following list of success stories and how-to resources as a useful place to start.

### School-wide composting

#### Success Stories and Tips

**Alice Ott Middle School** in Portland, OR has successfully implemented a compost project for over a year now:

<http://waste.environmental-expert.com/resultEachArticle.aspx?cid=6042&codi=31084&idproducttype=6>

**KidsPeace**, an alternative school in the Town of Muhlenberg, PA, started a compost program with red worms. They cut trash volume by 80% and reduced trash pickup from 6 times per week to once, saving about \$6,000 per year.

<http://readingeagle.com/article.aspx?id=123630>

#### How-to Guide

**Mansfield Middle School** in Mansfield, CT started a composting project in the fall of 2000. This how-to manual addresses reasons for composting, developing a plan and gathering support, school community involvement, infrastructure, day-to-day, and what to do with finished compost:

[http://www.ct.gov/dep/lib/dep/compost/compost\\_pdf/schmanual.pdf](http://www.ct.gov/dep/lib/dep/compost/compost_pdf/schmanual.pdf)

#### All About Compost

**Mansfield Middle School's Composting website** has great information about compost and its benefits, as well as links to further resources:

<http://www.mansfieldct.org/schools/mms/compost/index.htm>

**Growing Power** in Milwaukee, WI is at the forefront of Urban Agriculture. Using materials readily available within the city, they compost 100,000 pounds of waste every week!

<http://www.growingpower.org/compost.htm>

<http://www.growingpower.org/worms.htm>

### Classroom composting

#### Teaching with a Worm Bin

Our **"Worm Bin Exploration Lesson"** focuses on the nutrient cycle and the connection between healthy soil, healthy plants, and healthy people. It includes instructions for how to make and care for a worm bin and a Nutrient Cycle Diagram. An electronic copy of the lesson can be found on the WHL Educators page:

<http://reapfoodgroup.org/farmtoschool/educators.shtml>

**Cornell University** has put together a comprehensive resource for teachers, including info on why to compost and example science projects:

<http://compost.css.cornell.edu/schools.html>

#### How to Build a Worm Bin

The **New York City Compost Project** has a great step-by-step set of instructions with pictures:

<http://www.nyccompost.org/how/wormbin.html>



#### Success Stories and Tips

Staff and students at **Oneida Nation's Turtle Elementary School** in Wisconsin proudly care for thousands of worms that process food scraps and old newspapers into valuable compost. Check out pages 17-19, "Students and Teachers Worm up to Vermicomposting":

<http://www.epa.gov/epawaste/wycd/tribal/pdftxt/twj-4.pdf>

Wisconsin Homegrown Lunch is a joint project of:



REAP Food Group:  
[www.reapfoodgroup.org](http://www.reapfoodgroup.org)

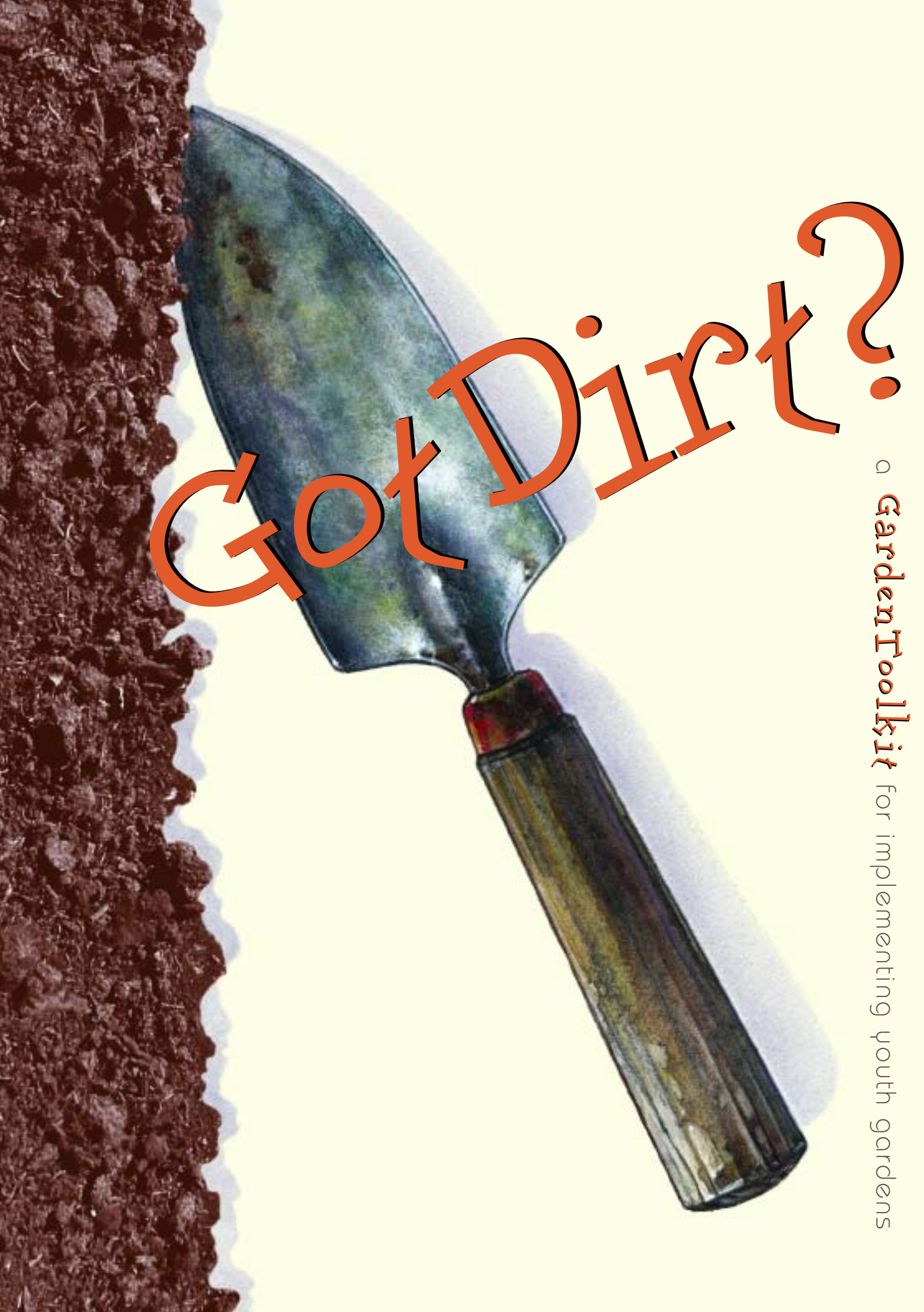
UW-Madison Center for Integrated  
Agricultural Systems: [www.cias.wisc.edu](http://www.cias.wisc.edu)





# Got Dirt?

a *Garden Toolkit* for implementing youth gardens





Wisconsin Department of Health Services  
Division of Public Health  
Nutrition, Physical Activity and Obesity Program



Wisconsin Department of Public Instruction



**For more information about this garden toolkit contact:**

Nutrition, Physical Activity and Obesity Program  
Division of Public Health  
P.O. Box 2659  
Madison, WI 53701-2659  
Phone: (608) 267-9194  
Fax: (608) 266-3125  
Email: [amy.meinen@wisconsin.gov](mailto:amy.meinen@wisconsin.gov)  
Website: <http://dhs.wisconsin.gov/health/physicalactivity/index.htm>

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Control and Prevention. Its contents are solely the  
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# Preface

Childhood obesity and its health related consequences are increasing in Wisconsin's youth. Nutrition research supports the role of increased fruit and vegetable consumption for prevention of cancer, heart disease, and obesity.<sup>1</sup> Thus, youth gardens could emerge as an important tool for nutrition and wellness in public health interventions. Recent research has documented that involving children in gardening is a promising strategy for increasing fruit and vegetable consumption.<sup>2</sup> School gardens may positively impact children's food choices by improving their preferences for vegetables and increasing their nutrition knowledge.<sup>2</sup> Furthermore, gardening is a wonderful means of increasing physical activity. A 130-pound person can burn around 295-calories an hour while gardening. Similarly, a 150-pound person can burn around 300-calories an hour.

Thus, to encourage healthy eating and increased physical activity, the Department of Health Services' Nutrition, Physical Activity & Obesity Program produced this garden toolkit. To ensure the inclusion of accurate gardening information, several gardening experts from around the state contributed or reviewed the Got Dirt? Garden Toolkit including University of Wisconsin Extension Horticulture Agents and Community Garden Coordinators, Master Gardeners, and other local gardening experts. This toolkit is a component of the Got Dirt? Garden Initiative. The Got Dirt? Garden Initiative also includes:

- Hands-on trainings on how to start a youth garden
- Ancillary resources for starting a youth garden
- Lesson plans and activities for use with the youth garden
- Connection to local gardening expertise/Master Gardeners

The purpose of the Got Dirt? Garden Initiative is to improve access to fresh fruits and vegetables through increasing the implementation of youth fruit and vegetable gardens in Wisconsin. The overall health outcome of the Got Dirt? Garden Initiative is to increase consumption of fruits and vegetables among children, adolescents, and adults. Moreover, by encouraging you to start a garden, the toolkit attempts to support a number of the following national and state initiatives:

- **Fruits & Veggies—More Matters®:** A national initiative, Fruits & Veggies—More Matters®, seeks to provide a consistent message regarding the importance of eating fruits and vegetables. Fruits and veggies matter in maintaining a healthy weight and may reduce the risk of many diseases. Eating a colorful variety of fruits and veggies provides a wider range of valuable nutrients like fiber, vitamins, and potassium. Incorporating the produce from the garden into meals and snacks are wonderful ways to increase the amount and variety of fruits and vegetables eaten each day. For more information, visit: [www.fruitsandveggiesmorematters.gov](http://www.fruitsandveggiesmorematters.gov).
- **Wisconsin Nutrition, Physical Activity & Obesity Program:** The Program seeks to encourage healthful eating and increased physical activity as a means for reducing overweight and obesity in Wisconsin. Currently, 62% of Wisconsin adults are considered overweight or obese and 25% of high school students are overweight or obese.<sup>3,4</sup> Furthermore, only 18% of high school students and 24% of adults in Wisconsin consume fruits and vegetables 5 or more times per day.<sup>3,4</sup> Thus, the Program focuses on developing resources, providing technical assistance,



and working with partners to create environments through policy and environmental change that support individuals in their quest to eat healthy and be physically active.

- **Wisconsin Farm-to-School AmeriCorps Program:** The Wisconsin Department of Agriculture, Trade, and Consumer Protection in partnership with the Wisconsin Department of Public Instruction, Wisconsin Department of Health Services, Wisconsin Rural Partners, and the Center for Integrated Agricultural Systems received an AmeriCorps State Grant to support a statewide Farm-to-School AmeriCorps Program. The goal of the Wisconsin Farm-to-School AmeriCorps Program is to increase access to locally produced foods (including fruits and vegetables) in Wisconsin schools. Farm-to-School is a potential approach to reducing childhood obesity by promoting healthy eating habits, while increasing access to local foods in schools, and while creating another market for local farmers and other food businesses.
- **Wisconsin Fresh Fruit and Vegetable Program:** Funded through the 2008 Farm Bill, the Wisconsin Fresh Fruit and Vegetable Program provides free fresh fruits and vegetables to children of participating elementary schools. The purpose of the program is to expand and increase the variety and amount of fruits and vegetables children experience and consume. Combined with nutrition education and a reinforcement of healthful eating habits, the program emphasizes the long-term goals of positively influencing children's life-long eating habits, specifically fruit and vegetable consumption. This program also encourages schools to reach out to area farmers/growers for purchasing local fresh whole produce. For more information, visit: [www.dpi.wi.gov/fns/ffvp.html](http://www.dpi.wi.gov/fns/ffvp.html)
- **Wisconsin Food Security Consortium:** The Wisconsin Food Security Consortium, representing diverse sectors in the fight against hunger, is dedicated to the elimination of food insecurity in Wisconsin. From 1996 to 2000, almost 9% of Wisconsin households were food insecure.<sup>5</sup> A household that is food insecure is one that has uncertain or limited access to food. The Wisconsin Food Security Consortium's State Plan, titled **Ending Hunger in Wisconsin — An Action Plan**, includes goals related to improving access to healthy and affordable food. A bountiful garden's produce can be donated to local food pantries or other public and private programs working to eliminate food insecurity in Wisconsin. For more information on the Wisconsin Food Security Consortium, visit, [www.endhungervi.org](http://www.endhungervi.org)

In addition to these initiatives, several new approaches to increasing fruit and vegetable consumption are currently being piloted. Creating and supporting youth gardens is a way to work towards improving the health of all Wisconsin residents.

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For more information on the Got Dirt? Garden Initiative, visit the web site which is continuously updated with the latest resources, training information, and funding sources. Visit the web site at [www.gotdirtwisconsin.org](http://www.gotdirtwisconsin.org)

Additional information on the Got Dirt? Garden Initiative can be viewed at: <http://dhs.wisconsin.gov/health/physicalactivity/gotdirt.htm>

# About Your Garden Toolkit

The Wisconsin Department of Health Services' Nutrition, Physical Activity and Obesity Program and the Wisconsin Fruit and Vegetable Nutrition Program, along with other contributors, have compiled this easy-to-use garden toolkit to provide you with a framework for starting a fruit and vegetable garden. The toolkit is designed to walk you through the basic steps of starting and maintaining a garden. Also, we have included several examples of successful community, childcare, and school gardening projects in Wisconsin. These stories highlight key points including tips on funding, finding local resources, and engaging adults and children in gardening. In addition, there are stories on programs that can enhance your gardening experience including providing ideas on what to do with all the fruits and vegetables harvested and where to get more information on service learning and school curriculum resources.

The garden toolkit is separated into two main parts:

- Part One: Basic Steps for Gardening
- Part Two: Gardening Examples and Resources

In Part One, a comprehensive guide provides you with a start to finish approach that begins with finding a garden plot and ends with tips on preparing your garden for the next year. Part Two provides several resources to ensure that you have a successful gardening experience. Gardening can be a great deal of fun, but a lot of work. To further assist you with your garden, it may be beneficial to engage others to help you. Here are some suggestions for people you may want to contact:

- Co-workers
- Teachers
- School Administrators
- School Food Service Staff
- Students
- Parents
- Children
- Community Leaders
- Coalition Members
- Local Faith-Based Organizations
- Local Health Care Organizations
- Neighborhood Associations
- Local Businesses
- Representatives from Other Local Organizations

Gardening is a wonderful way to increase your physical activity, while having access to healthful foods such as fruits and vegetables. We hope that you find this toolkit useful and that it encourages you to start a garden. If you have any comments or suggestions for improving this gardening toolkit, please direct them to Amy Meinen, Nutrition, Physical Activity and Obesity Program, at [Amy.Meinen@Wisconsin.gov](mailto:Amy.Meinen@Wisconsin.gov).

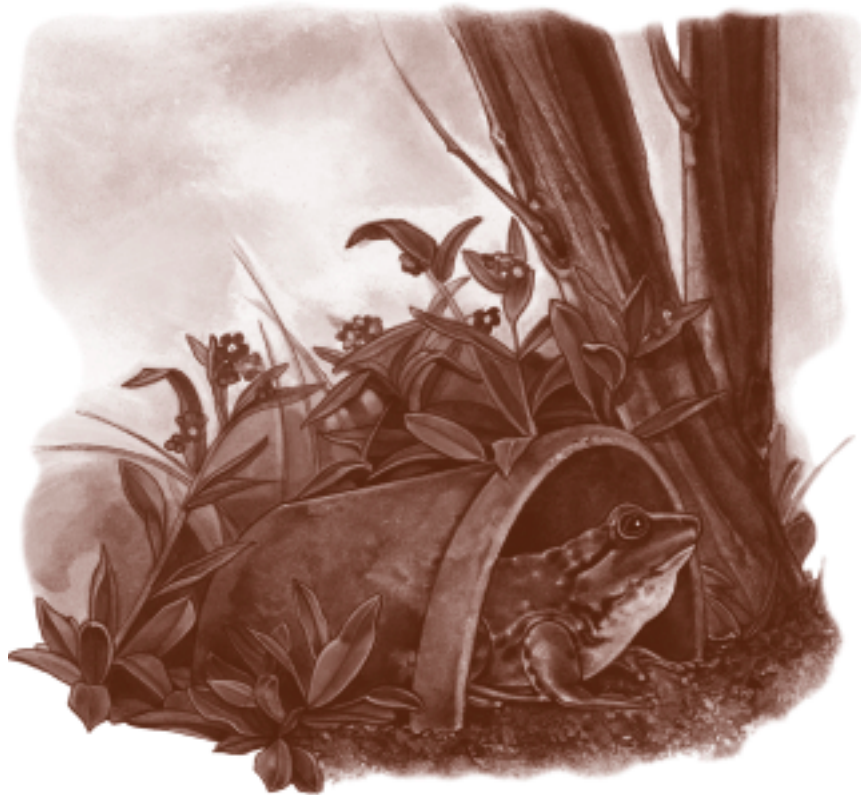
Basic Steps  
for Starting  
a Garden





# Find a Place to Plant

Steps



## Where Can You Find Land?

Here are a few ideas of where you can start to look for land for your garden.

- Your Yard (Front or Back)
- Vacant Lots
- Private Land (A Neighbor's Yard)
- School Grounds
- Hospital Grounds
- Community Parks
- Farm Land
- County Fairgrounds
- County UW-Extension Office Grounds



Need help finding land? Contact these organizations:

- Wisconsin Park & Recreation Association  
[www.wpraweb.org](http://www.wpraweb.org)
- Urban Open Space Foundation  
[www.uosf.org](http://www.uosf.org)

If you can only find a small amount of land...try small plot vegetable or container gardening. It's amazing how many vegetables can grow in pots! Keep in mind if you are using vacant land that you may need to obtain permission to use it. Permission may be necessary as vacant lots are still considered to be private land.





# Small Plot Vegetable Gardening

## overall points

- Choose a site that receives at least 6 hours of sun each day.
- If the land has never been used for a garden, rototill or dig up the area to a depth of 6 to 8 inches in the early spring.
- Even if space is limited, remember not to crowd the plants. They need air and elbow room.

## space saving techniques

- 1. Try Interplanting:** This is a technique that involves growing two or more vegetables in one area by planting slow-and-fast maturing crops among each other. The fast maturing vegetables will be harvested before the crops begin to crowd each other. You can also alternate rows of fast and slow maturing vegetables. For example, plant a row of tomatoes (slow maturing) and lettuce (fast maturing).
- 2. Try Succession Planting:** This involves planting another crop once the other is harvested or finished. For example, when spinach has been harvested, replant the space with beans or beets.
- 3. Wide Row Planting:** This technique involves scattering fruit and vegetable seeds over an 8 to 12 inch band rather than a single row. This method works best for leafy vegetables like spinach and lettuce, which ultimately form a leaf canopy that prevents weed growth.
- 4. Use Vertical Space:** Using a trellis or fence to support pole beans, cucumbers, and squash is a great way to maximize a limited space. You can also cage or stake the tomato plants.
- 5. Plant Bush Varieties:** By planting "bush" varieties, the plants take up less space in the garden than standard varieties. Bush varieties, available as seeds, are found in cucumbers, muskmelon, watermelon, and squash.
- 6. Square Foot Gardening:** This technique involves marking squares of space for crops rather than planting in straight rows. Common arrangements involve marking off 1 foot by 1 foot areas of garden space. Plants are planted according to their space needs.
- 7. Bottom Line:** Gardens don't have to be square. They can be planted in a circle or a triangle.

## suggested fruits & vegetables for small garden plots

- a. Beets
- b. Carrots
- c. Cucumbers  
(grow on a trellis or plant a bush-variety)
- d. Eggplant
- e. Green Beans
- f. Lettuce
- g. Kohlrabi
- h. Muskmelon  
(grow on a trellis or plant a bush-variety)
- i. Onions
- j. Peppers
- k. Potatoes
- l. Radishes
- m. Shallots
- n. Spinach
- o. Summer Squash  
(bush variety)
- p. Swiss Chard
- q. Tomatoes  
(standard, patio, & cherry)



## Container/Raised Bed Gardening

### overall points

- To begin, be sure to select a container that is large enough to hold the plant and its root system.
- For most vegetable crops, a 3 to 5 gallon container is preferred
- Soilless potting mixes are the best for container gardens. The mix is less likely to compact, holds moisture and plant nutrients very well, and is typically lightweight.
- Plants grown in containers require frequent watering because they dry out quickly from sun and wind. Some plants may require daily watering.
- Clay, wood, plastic, cement, and metal are all suitable materials for growing plants.
- Raised beds that are two to three feet wide permit easy reaching across for weeding and harvesting.
- When using raised beds you can plant the fruits and vegetables closer together because you don't need to walk on the soil.
- For the best results, use drip lines or slow-release watering units in containers.

### types of containers

- Examples of possible containers included clay pots, old pails, bushel baskets, plastic buckets, wash tubs, wooden planters, or hanging baskets. Almost any type of container can be used as long as it has good drainage via holes in the sides or bottom.
- Wood containers can be easily constructed, but last longer if heartwood of durable trees is used (i.e. cedar or redwood).
- A typical size for a wooden container is 18" X 24" X 8". Drainage holes must be drilled in the bottom or around the sides near the bottom of the box. A mesh screen can be cut to fit the bottom of the container to allow water, but not soil, to drain. Soil 6 to 8 inches deep is the minimum for most vegetables.
- Dairy supply plastic tanks (35 gallons or less) cut in half make excellent containers as well.



For more information on container or raised bed gardening visit the following website:

- University of Wisconsin Extension: Specialized Gardening Techniques <http://learningstore.uwex.edu/pdf/A3384.PDF>
- University of Minnesota Extension Services: Gardening in Raised Beds [www.extension.umn.edu/projects/yardandgarden/ygbriefs/h233raisedbed.html](http://www.extension.umn.edu/projects/yardandgarden/ygbriefs/h233raisedbed.html)
- Iowa State University Extension: Container Vegetable Gardening [www.extension.iastate.edu/Publications/PM870B.pdf](http://www.extension.iastate.edu/Publications/PM870B.pdf)



## Where Should Your Garden Go?

**1. Think Location:** Plenty of sunlight and well-drained, level soils are important factors in deciding where to put your garden. The site should be fairly level to avoid erosion problems. A garden should be located away from trees and shrubs, not only because of shade, but also because they compete for soil moisture and plant nutrients. Ideally, your garden should be at least 75 to 100 feet away from any trees, especially from any walnut or nut trees.

**2. Check the Soil:** Fruits and vegetables grow best in well-drained, fertile soil. Improving drainage and soil structure can help poor soil. Organic matter (compost, peat moss, manure, and decayed ground bark) mixed with tight soils will open them up and improve drainage. It is very important to complete a soil test if the land being used has not been previously tested. For more information on soil testing contact your county UW Extension office. Note: If working with young children, it is especially important to check for lead in the soil.

**3. Needs Sun:** At least six hours of full sunlight daily is necessary to produce healthy, top-quality vegetables. If the best, well-drained location has some shade, locate cool-season crops, such as lettuce, radishes, carrots, and cabbage, in partial shade. Full sun is needed to grow such crops as sweet corn, snap beans, tomatoes, and peppers.

**4. Water Supply:** Water is one of the most important needs of a garden. Make sure an adequate water supply is nearby. Water generously once per week with a 1-inch application. You can set out a watering can, with a one inch mark inside, to collect sprinkler water. That way you will know when you have watered appropriately. Last, if your garden plot is located near a garage, you can collect rainwater from the eave spouts. If you use this as your main water source, be sure to have your water tested every 5 years or so.

**5. Think Size:** Your garden's size depends on the kind and amount of vegetables desired, land availability, and your time commitment. A manageable size for a garden is 100 square feet, but smaller or larger spaces can be used. Make sure that your first garden is not TOO BIG!

**6. Map it Out:** Make a garden map, plan or graph so that after the growing season you will know where not to plant your fruits or vegetables the following year. Crop rotation helps cut down on the spread of diseases, especially for the cabbage family and tomatoes.



### suggested fruits & vegetables for container raised bed gardens

- a. Beets
- b. Carrots
- c. Cucumbers
- d. Eggplant
- e. Green Beans
- f. Kohlrabi
- g. Lettuce
- h. Onions
- i. Peppers
- j. Radishes
- k. Summer Sauash
- l. Spinach
- m. Swiss Chard
- n. Tomatoes



# Get Seeds & Tools



Step 2

## Selecting Seeds for Planting

### overall suggestions

- Buy seeds early in the year (January through March) for the best selection.
- Select seeds based on time of maturity (how long they need to grow), and disease tolerance. This information should be on the package label.
- To ensure germination, purchase new seeds every year.
- Some seeds may have been chemically treated and will be labeled as such. Make sure to wash your hands following the handling of the treated seeds.
- Purchase new seeds every year. However, if you do choose to save seeds from the vegetables in this year's garden, make sure to store them in a closed container for next year. If using saved seeds, make sure to pre-test a few of the seeds for germination. In order to do this, moisten a plain white paper towel and fold it in half. Place a few seeds on 1/2 of the paper towel and then fold it in half again. Place the paper towel in a plastic sandwich bag, close the bag, and store it for a week to ten days. Then remove the paper towel from the bag and see how many seeds have sprouted.
- Choose varieties marked "easy to grow".

### quick tips

1. **Look for Purity:** For the best results, buy quality seeds from a reliable dealer.
2. **Check Packages:** Seeds sold in packages should show the crop, cultivar, germination percentage, and chemical seed treatments, if any.
3. **Check Storage:** Seeds should be kept in a cool and dry place to ensure good germination at planting. Paper packets are best kept in tightly closed cans or jars until seeds are planted. Laminated foil packets ensure dry storage.
4. **Hybrid Seeds:** Hybrid seeds often cost more than the seeds of non-hybrid cultivars. However, hybrids tend to have better uniformity, yields, and increased disease-specific resistance.
5. **Saving Seeds:** Some gardeners save seeds from the previous growing season. This requires knowing how to select, produce, handle, and store the seed.



For additional information on seed saving, visit:

<http://infosource.uwex.edu>

Click on Garden and Landscaping and then on Saving Seeds.



## Tools and Other Items Needed for Your Garden

### *the necessities*

- a. Rake
- b. Shovel
- c. Garden hoe

### *other accessories*

- Small hand trowels
- Watering cans
- Turning fork
- Small buckets
- Plant labels or row markers
- Rope or twine to mark rows if planting in straight rows
- Garden hose
- Lawn sprinkler
- Wheelbarrow



### *quick tip*

The Baraboo High School FFA started several plants in a school greenhouse. FFA would sell the started plants for a minimal cost at the beginning of the planting season. Check your local high school to find out if there are students involved with starting plants indoors. You may be able to purchase these plants.



— Beth Kramer,  
Sauk County, Master Gardener

# Prepare the Soil



## A Word about Wisconsin Soil

Some soils in Wisconsin are "heavy" because of high amounts of clay particles. These fine-textured soils hold lots of nutrients, but do not drain well and take longer to warm up in spring. Most of these soils also have a higher pH, which means the soil is more alkaline (basic) than acidic. Soil pH is an important factor, as some plants prefer more acidic "sour" soil, while others prefer more alkaline "sweet" soil. Soil can have a pH value of 7 (soil pH ranges from 0 to 14), meaning the soil is neutral, which is neither acidic or alkaline. Soils should never be tilled when wet or they will clump. In order to test the soil, grab a handful of soil and squeeze it between your thumb and forefinger. If it crumbles, it is dry enough. If not, your soil is too wet and it may be too soon to start "working" your garden.

## The Ultimate Garden Soil

The ultimate garden soil is deep, loose, fertile, well drained, slightly acidic (pH of 6.2 to 7.0), and has lots of organic matter. Most garden soils don't meet all these requirements. So it is a good idea to try to improve your soil to the best of your abilities.







## How to Improve Your Soil

### kinds of soil

There are several types of garden soils, which range from sandy to clay.

### test your soil

Getting a soil test is one practical way to know the nutrients your soil may need and whether your soil's pH is too low, high, or just right. The soil test helps you determine if you need to add lime (for low pH) or elemental sulfur (for high pH). For more information on soil testing, contact your county UW Extension office. Also, a pH indicator can be purchased from a local garden center. The pH for an ideal garden is around 6.8.



For more information on soil testing visit these websites:

- UW-Extension Office (county) : [www.uwex.edu/ces/cty](http://www.uwex.edu/ces/cty)
- The Soil and Plant Analysis Lab <http://uwlab.soils.wisc.edu>

### add organic matter

To yield quality fruits and vegetables, garden soils need lots of organic matter. You can improve soils by adding organic matter. Organic matter helps create good crumb-like soil structure. This helps for better water and air movement and easier root penetration. The key to improving either sandy or heavy soils is to add organic matter frequently. Types of organic matter include rotted manure (aged), leaves, grass clippings (from a non-chemically treated lawn), compost, green manure, crop residues or peat moss. Add about 1-4 inches of organic matter over the soil. Then, blend the organic matter into your soil at least six inches deep. The best time to add organic matter is in the fall, after the previous growing season, when soils are reasonably dry. If you add it in the spring, make sure the soil is dry enough and work it in right away.



if I do container or raised bed gardening, will I get a good crop?

Raised bed and container gardening is a great way for anyone to get started gardening, and is particularly well suited for school gardens where space may be at a premium. You can get a great harvest in containers and raised beds. In fact, yields are often superior in raised beds compared to standard in-ground gardens. The key to good harvests with any gardening method is enough (not too much) fertility and water and plenty of direct sunlight. Containers will need to be watered more frequently than raised beds or in-ground gardens. Depending on the crop, a good rule of (green) thumb for container soil is  $\frac{1}{4}$  compost,  $\frac{1}{2}$  peat moss,  $\frac{1}{4}$  soil with some vermiculite mixed in to keep it fluffy. Raised beds can be filled with  $\frac{1}{4}$  compost and  $\frac{3}{4}$  rich topsoil. Top dress heavy feeding crops like corn, squash, and tomatoes with compost when the plants are fruiting and add additional compost before each new season to maintain optimum harvests and to keep the beds and containers filled with soil.



— Mark Voss  
teacher and organic market gardener



# Start Your Garden



## *finding the best time to start your garden*

In Wisconsin, the start of the growing season can vary greatly, depending on the weather. Sometimes, seeds requiring longer growing seasons may be started indoors to ensure a crop before fall's harvest. If this is the first time you have gardened, you may see better results with purchasing vegetable plants that have already been started.

## Timeframe For Starting Your Garden

- 1. Timeline for Your Garden:** When should you start your garden? That depends on where you live in Wisconsin. To find out when you can start planting, check the University of Wisconsin Horticulture Department's website at [www.uwex.edu/ces/wihort/fruitveggies/VeggiePubs.htm](http://www.uwex.edu/ces/wihort/fruitveggies/VeggiePubs.htm) for their annually-produced Planting Guide for Wisconsin Gardens. It gives anticipated start dates for most areas of the state. An important point to remember is that some vegetables grow best in cool temperatures, while others require warm soil and air.
- 2. Getting Ready to Plant in the Garden:** If you purchase plants, they will have to be "hardened off" prior to planting them in the garden. Hardening off plants first reduces severity of "transplant" shock and gives them a better chance of survival in the garden. Gradually introduce the starter plants to outdoor growing conditions by setting them outside for short periods of time about 7 to 10 days before planting in the garden. Place the plants in a shady, protected location outdoors. Be aware of spring frosts and move plants indoors if the forecast calls for temperatures below 40 degrees. A cold frame is another way for getting plants used to the weather. A cold frame is like a miniature greenhouse. It is an unheated plastic or glass covered box that is heated by sunlight. A cold frame is ideal during spring weather when sudden drops in temperature can occur. You can construct your own cold frame by using a couple of bales of hay, straw or a wood frame for the sides and an old storm window for a top/cover.
- 3. Planting in the Garden:** The best time to transplant started plants into the garden is in the late afternoon or during a cloudy day. Newly planted vegetables can be protected from the bright sun by boards or floating row covers. Plastic row covers are not recommended. They can actually cook seedlings too easily.



### *a few things to consider*

**1. Buying or Growing Transplants:** Many crops need to be started early indoors or in "cold frames" and later transplanted to the garden. This head start allows a crop that needs a long-season to grow the ability to mature before frost in the fall. Some gardeners start their own seeds indoors. Others find it easier to purchase plants from garden centers and greenhouses. If buying, be very selective by choosing the dark green, stocky plants over leggy, yellow, weak ones.

**2. Remove Any Fruit:** Prior to planting, make sure to remove any fruit. If fruit is left on the plant, the nutrient resources will go towards the fruit and not into developing a strong, adequate root system (which will in the long run, help produce more vegetables).

**3. Setting Transplants into the Garden:** The main goal is to avoid root disturbance as much as possible. Try to transplant late in the afternoon or during a cloudy day. Protect newly set plants with light shade during bright days for the first 3 to 5 days. If planting early in the spring, you may want to consider covering plants to avoid damage from frost. When using a covering, be sure to provide some ventilation so the heat generated from the sun does not "cook" your plants. Water the transplants the day before you are planning to plant them into the garden. If you have individuals helping to plant that smoke, make sure they wash their hands or wear gloves prior to handling any of the transplants.



## *how do I protect my garden from frost?*

One of the best ways I have found is to use floating row covers to cover plants whenever there is a threat of frost. These fabrics are light weight, easy to fold and store, and are available through most seed catalogues.



— Bill Wright  
Community Garden Coordinator  
Brown County UW-Extension





#### 4. Planting Garden Vegetables:

**Check the Year's Planting-to-Harvest Schedule:** The University of Wisconsin Extension releases a planting schedule prior to the growing season each year. You can read it and make a copy at: <http://learningstore.uwex.edu/pdf/A1653.PDF>. It is also important to pay particular attention to the weather. If the ground is still cold, you may want to wait to plant. You may begin planting when there have been at least 4 or more consistent days above 65 degrees with sun. **Use the table (at right) to help you decide the best time to plant your garden.** Since the weather varies by region in Wisconsin, you may want to plant 1 to 2 weeks later if you are along the lower lakeshore or central part of the state. Plant 2 to 3 weeks later in northern Wisconsin counties.

**5. Watch for Frost:** Pay attention to frost warnings. Frost can destroy newly-planted fruits and vegetables. Plant your garden after the frost has subsided. If you have planted already and there is still a chance of frost, protect your plants by covering them with cloth, plastic, newspaper, or straw. Mulch around plants can also help trap heat in the soil to prevent freezing. Some vegetables tolerate frost and cold temperatures better than others do. If there is a chance of frost, plant "tolerant" fruits and vegetables.



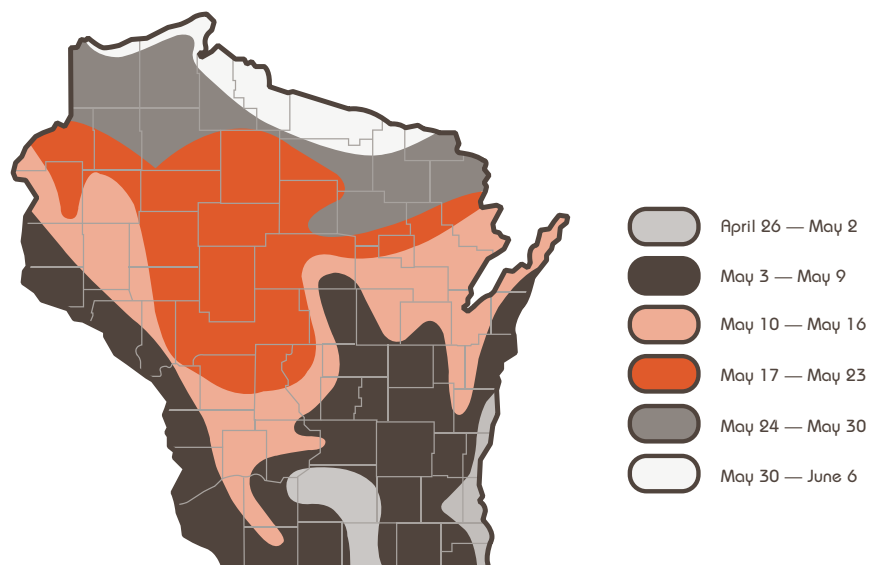
For Additional Resources Regarding Frost, visit:

University of Wisconsin Extension Infosource:

<http://learningstore.uwex.edu/pdf/A1653.PDF>

Click on Garden and Landscape and then Frost Protection

#### *typical dates of last spring killing frost*





Fruit/Vegetable	Plant Date Madison, WI	Seed or Plant	Days until 1st Harvest
Asparagus	April 15	Seed	1-2 years
Bean, bush (snap)	May 10	Seed	50-60 days
Bean, pole (snap)	May 10	Seed	60-65 days
Beet	April 15	Seed	50-60 days
Broccoli	May 1	Plant	60-70 days
Brussels Sprouts	May 15	Seeds	90-100 days
Cabbage (early)	May 1	Plant	60-70 days
Cabbage (late)	May 15	Seeds	90-100 days
Carrot	April 15	Seeds	60-70 days
Cauliflower	May 1	Plant	50-60 days
Celery	May 20	Plant	100-110 days
Collards	June 20	Seeds	60-85 days
Corn	May 10 or May 2*	Seeds	65-90 days
Cucumber	June 1	Seeds	38-55 days
Eggplant	June 1	Plant	70-80 days
Endive	June 25	Seeds	90 days
Kale	June 25	Seeds	50-70 days
Lettuce (head)	May 1	Plant	60-70 days
Lettuce (leaf)	April 15	Seeds	40-50 days
Muskmelon	May 20	Plant	80-90 days
Okra	June 1	Plant	50-60 days
Onion	May 1	Plant	110-120 days
Onion, sets	April 15	Plants	40-50 days
Pea	April 15	Seeds	60-70 days
Pepper	June 1	Plant	60-70 days
Potato (early)	April 15	Seeds	80-100 days
Potato (midseason)	April 15	Seeds	100-120 days
Potato (late)	April 15	Seeds	120-140 days
Pumpkin	May 10 (Seeds)	May 20 (Plant)	90-110 days
Radish	April 15	Seeds	25-30 days
Rhubarb	April 15	Seeds or Crowns	1 year
Rutabaga	June 15	Seeds	100-110 days
Spinach	April 15	Seeds	40-50 days
Squash, summer	May 20-June 1	Seeds	50-60 days
Squash, fall	May 20 – Early June	Plants	90-120 days
Tomato	May 20 – Early June	Plants	65-80 days
Watermelon	May 20-June 1	Seeds	75-90 days



## cool & warm season crops

Cool season crops can be planted when the ground temperature is around 50 degrees; warm season crops are planted when the ground is at 60 degrees.

### cool season crops:

beets  
carrots  
peas  
lettuce  
chard  
mustard  
greens  
cabbage  
broccoli  
brussel sprouts

### warm season crops:

corn  
beans  
squash  
pumpkins  
peppers  
eggplant  
melons  
cucumbers

\*depends on variety

# Planting



## Different Ways to Plant Your Garden

There are several different ways that you can plant your garden. Here are some examples:

**1. Straight-Row Furrows:** Although straight-row furrows are not the most efficient use of space, they make cultivation, insect control, and harvesting easier. To plant a straight-row furrow, first stretch a tight cord or rope between stakes at each end of the row. A 1 1/2 to 2-inch furrow can be made using the blade of a garden hoe. Use this method when planting large seeds, such as beans and corn. The handle of a garden hoe can be used to make 1/4 to 1/2 inch shallow furrows for small-seed crops such as lettuce, beets, carrots, etc.

**2. Wide Row Planting:** This method involves scattering seeds across a wide row to produce greater yields of smaller vegetables. This allows for a more efficient use of sunlight, space, and soil nutrients. Set your wide row by drawing a rake over the ground. Seeds can be planted in 4-to-24 inch wide bands, rather than rows. The bands reduce the chance of malformed roots. Some thinning is required during the growing season to ensure quality vegetables. Careful hand weeding is required. If using a raised bed, plants such as broccoli, tomatoes, peppers, and eggplant can be set closer together than in a typical straight row format.

### quick tip

"Keep in mind that a garden cannot be planted in one day. Some fruits and vegetables grow best in cooler temperatures, while others require warm soil or hot air."

— Iowa State University Extension







**3. Square-Foot Gardening:** Similar to the wide-row planting method, extra hand weeding may be required. However, this method is a very efficient use of garden space. Instead of planting in rows, the garden is divided into squares that are 1 foot by 1 foot (1' X 1'). The number of plants in each square depends on the variety, how big the plant will get, and how far apart it needs to be from other plants in order to develop properly.

**4. Hill Planting:** This method is most commonly used for vine crops, such as squash, melons, and cucumbers. Hills let the roots range out from a central growing point, which helps the plant obtain more soil nutrients and water. Begin by raking dirt into a round hill that is raised from the ground, creating a 12-inch circle. Next, plant 4 to 5 seeds. Later, when the plants begin to grow, thin the hill to no more than 3 plants. Raised mound plantings are not highly recommended for the entire garden, as the soil will dry out much more quickly than if it were level. This can result in poor germination.



For an Additional Resource on Special Planting Techniques visit:  
University of Wisconsin-Extension:  
Specialized Gardening Techniques (publication):  
<http://learningstore.uwex.edu/pdf/A3384.PDF>



### *how often should you water your garden?*

Most gardeners use the 1 inch of water per week rule. Unfortunately, it is a bit more complicated because temperature, wind, soil, mulch, sun/clouds, and plant variety all need to be considered. Most gardeners monitor the soil and determine that the plant needs water when the soil appears to be dry. The key is to check the soil about an inch or two below the surface. Too much water will leach out the much needed nitrogen fertilizer and excessive water could actually suffocate the plants by depriving the roots of oxygen.



Dennis Lukaszewski, RLA  
UW Extension Service, Milwaukee County



# Caring for the Garden



## general upkeep

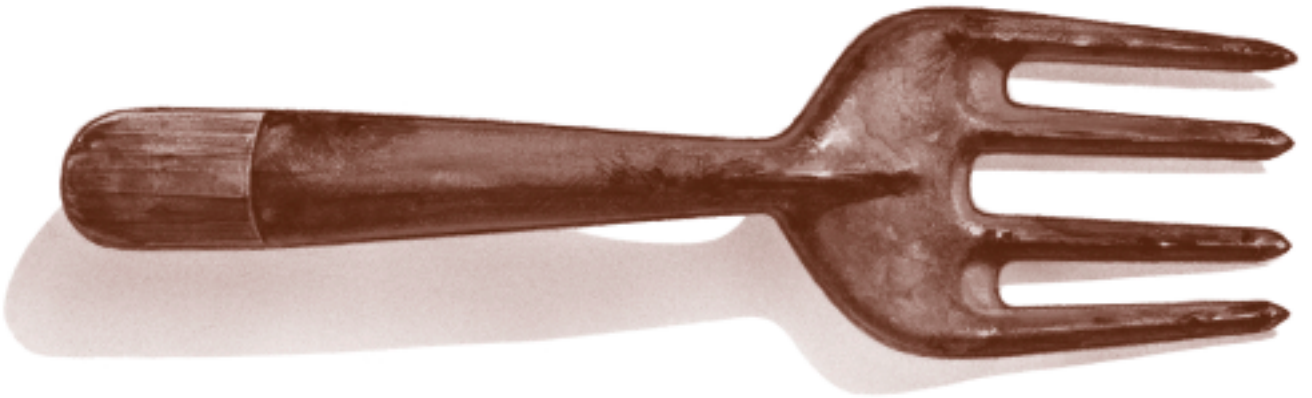
**1. Thinning Seedlings:** Once your seeds have begun to sprout and grow in the garden, pull out the extras to provide growing space for the remaining plants. Make sure to remove the extras when the plants are still small, before they compete with others for light, air, and water. When fruits and vegetables grow too close together, the plants growth may be stunted, root crops become distorted, and vine crops grow poorly due to self-shading.

**2. Weeding:** If you keep weeds out of your garden, you'll have a better harvest! Weeds compete with your plants for water, light, and nutrients. Weeds also encourage insects and diseases that attack your garden plants. Mulch and cultivation can help keep the weeds in your garden under control. Use organic materials such as grass clippings (from a non-chemically treated lawn) or a good weed-free straw, specifically clean wheat or rye straw, as means for controlling weeds in your garden. Old newspapers combined with a top layer of grass clippings can be placed around and in between plants to provide an excellent barrier for weeds. The coarser the material, the thicker the layer of mulch.

### quick tip

Check the Weather Forecast! View the Gardener's Local Forecast, courtesy of The Weather Channel. Check here [www.weather.com/activities/homeandgarden/garden/](http://www.weather.com/activities/homeandgarden/garden/) and enter your zip code to find out if you'll need to water your garden today.





**3. Watering:** The best time to water is in the early morning or early afternoon. This allows for the leaves to dry off before nightfall, reducing the chance for disease. Drip irrigation or soaker hoses can be used to keep plants dry during watering, which also reduces the chance of disease infection. However, drip irrigation can be done anytime during the day if used under newspaper, straw, or grass mulch. Some plants, like tomatoes, do not like their leaves wet. In this case drip hoses work especially well. Note: Watering between 10:00 am and 2:00 pm could burn the plants, unless it is an overcast or cloudy day.

**4. Garden Fertilizer:** An inorganic garden fertilizer can be used according to your soil test. If you did not get a soil test, a rule of thumb would be to use 2-3 pounds per 100 square feet. It is best to determine which type of fertilizer you need based on the results of your soil test. Follow label directions for application of fertilizer.

**5. Adding Organic Matter:** "Organic matter" provides nutrients for plants. Plants take food from the soil as they grow, so organic matter needs to be applied yearly. Some organic matter sources include: well-rotted cow or horse manure, compost made from tree leaves, lawn clippings (without chemicals), garden refuse (disease-free), green manure, and other organic residues. It is important to keep in mind that some fruits and vegetables are "heavy feeders" (i.e. corn and tomatoes), while others are not (i.e. green peppers). It is best to incorporate organic matter in the fall or early spring, as you prepare the garden soil.



## *how do I keep the weeds to a minimum in my garden?*

At the Ho-Chunk Youth Fitness Garden, we found that a layer of leaf mulch did a great job of keeping the weeds down; especially around the squash, pumpkins, and vine plants.

— Roxanne Lane  
Master Gardener  
Sauk County



## 6. Integrated Pest Control Management

- a. **Purchase Quality Seeds & Plants:** Start by selecting healthy plants or seeds from reputable seed companies and nurseries. There are several different disease-resistant varieties of seeds you can purchase.
- b. **Plant Spacing:** Leave plenty of distance between plants to provide air movement, which reduces the chances for diseases to begin.
- c. **Plant Appropriately:** Setting plants out too early or late can make them weak and more susceptible to a pest attack.
- d. **Set up Barriers:** Use physical barriers between the plants and the pests by using row covers or nets that allow the sunlight and water to penetrate, but keep out pests. The barrier DOES have to be in place before the pest appears. Remember to remove the barriers during the blossoming stage so that insects will be able to pollinate the plants.
- e. **Pick the Pests:** Hand-pick and destroy insect pests.
- f. **Prevent Weeds:** A layer of mulch helps to control weeds and conserve soil moisture. A garden full of weeds is a major attraction to pests!
- g. **Learn to Look:** Monitor your garden weekly for any new pests. Regularly inspect your plants and their leaves for any trace of insect feeding, etc.
- h. **Keep it Clean:** After you have harvested everything from your garden, discard any diseased plant material from the site. Remove debris as soon as possible, as many pests will remain over winter in or under dead plant material. Plow or till the garden in the fall.
- i. **Rotate Crops Next Year:** Move crops to different garden locations each year to reduce buildup of plant-specific pests in the soil.



For more information for controlling diseases in your garden, visit the following websites:

- The Insect Diagnostic Lab, UW-Madison, Department of Entomology: [www.entomology.wisc.edu/entodiag.html](http://www.entomology.wisc.edu/entodiag.html)
- The Plant Diseases Diagnostic Lab, UW-Madison, Dept. of Plant Pathology: [www.plantpath.wisc.edu/pddc](http://www.plantpath.wisc.edu/pddc)
- University of Minnesota Extension Service: Controlling Diseases in the Home Vegetable Garden [www.extension.umn.edu/gardeninfo](http://www.extension.umn.edu/gardeninfo)
- Ohio State University yard and garden pest information: <http://ohioline.osu.edu/hyg-fact/2000/>





## how can I engage youth in gardening?

Getting youth interested in gardening is easy — just provide a safe location, a hand trowel, some seeds and plants, and a volunteer to show them what to do — kids love learning how to grow things. Start small, either with a container garden or a small raised bed no larger than 4 x 4 feet. Square foot gardening is a technique that works well with kids. Have them map out their one foot squares and choose which plants they want in each square, then have them post their map at the garden while they plant. Caring for their garden and watching it grow will be a delight.

**7. Keep the Beneficial Insects:** Over 90% of insects around the garden are harmless to people and plants. Without the help of these “beneficial insects”, most plants would be overrun with pest insects every year. These beneficial insects feed on many different pest species. Furthermore, several of these beneficial insects are pollinators. With more pollination taking place, more high quality fruits and vegetables can be produced. To keep beneficial insects around your garden, limit or eliminate pesticide use. Consider leaving flowering weeds around the garden (i.e. dandelions and clover) to provide alternate nectar sources for pollination. To have beneficial insects attracted to your vegetable garden, be sure to add some flowers and herbs. Examples of annual flowers that attract pollinators include alyssum, marigolds, nasturtiums, dill, and cosmos.

**8. Mulching:** Mulching with untreated, chemically free grass clippings, leaves, or straw in late June provides several benefits. The mulch will help to suppress weeds, conserve soil moisture, prevent compaction of soil by heavy rains, and add more organic matter to your soil.



For Additional Resources on Composting:

- Wisconsin Department of Natural Resources: Recipes for Composting: [http://dnr.wi.gov/org/caer/ce/eeek/earth/recycle/compost\\_waste.htm](http://dnr.wi.gov/org/caer/ce/eeek/earth/recycle/compost_waste.htm)
- Iowa State University Horticultural Guide: Composting Yard Waste [www.extension.iastate.edu/Publications/PM874.pdf](http://www.extension.iastate.edu/Publications/PM874.pdf)



For Answers to General Gardening Questions,  
Visit These Websites:

- University of Wisconsin Urban Horticultural Website <http://wihort.uwex.edu/>
- University of Wisconsin Extension-Milwaukee County Yard & Garden Line (Milwaukee County Residents only) [www.uwex.edu/ces/cty/milwaukee/hort/consumer/HortLine.cfm](http://www.uwex.edu/ces/cty/milwaukee/hort/consumer/HortLine.cfm)



— Patti Nagai  
UW Horticultural Agent,  
Racine County

# Harvest Time



*so, when is it a good time to pick?*

**Asparagus:** Pick when the spears are 6 to 8 inches tall, and before the tips begin to open. Cut or break off stems at the soil line.

**Beans (Snap):** Pick when the pods are almost full size, but before the seeds begin to bulge. Never pick beans that are wet or have dew on them.

**Beets:** Pick the greens when the leaves are 4 to 6 inches long. If you want to use the tops or small beets, pick when the beets are 1 to 1 1/2" in diameter. If you want to use the roots only, pick when the roots are 1 1/2" to 3" in diameter.

**Broccoli:** Pick when flower heads are fully developed, but before flower buds start to open. Cut 6 to 7 inches below the flower heads.

**Brussels Sprouts:** Pick when sprouts at base of plant have become solid. Remove sprouts (buds) higher on the plant as they become firm, but do not strip the leaves, as they are needed for further growth. They tend to taste better if harvested after the first fall frost.

**Cabbage:** Pick when the cabbage head has become solid. Leave older leaves, stems and roots to produce small, lateral heads later in the season.

**Carrots:** Pick when roots are 1/2 to 1 inch or more in diameter. If you want to store carrots, pull them just before the ground freezes in the fall.

**Cauliflower:** Pick when curds (flower heads) are 6 to 8 inches, but still are compact, white, and smooth. Curds that are exposed to sunlight become cream colored, rough, and coarse in texture. Therefore, cover curds when they are 3 to 4 inches across by tying the outer cauliflower leaves loosely above the curds.

**Celery:** Pick when the plants become 12 to 15 inches tall. When the plant is still young and tender, the lower leaves (8 to 10 inches long) may be removed from a few plants and used in salads, soups or cooked dishes.

**Chard:** Break off new leaves at the ground level as they appear in early spring. Pick the tender leaves throughout the season.

**Collards:** Pick by breaking off outer leaves when they are 8 to 10 inches long. New growth from the center of the plant will provide a continuous harvest throughout the growing season.

**Cowpeas/Black-Eyed Peas:** Pick when seeds are near full size, but still bright green. Dry seed can be used for cooking, baking, or in soups. Pick dry seeds when they are full size and dry.

**Cucumbers:** Pick burpless cucumbers when they are 10 to 12 inches long. For sweet pickles, pick cucumbers when they are 1 1/2 to 2 1/2 inches long. For dill pickles, pick when the cucumbers are 3 to 4 inches long. For slicing, pick cucumbers when they are 6 to 9 inches long and are bright green and firm.

**Eggplant:** Pick when eggplant is about 4 to 6 inches long, but still firm and bright in color. Older eggplants may become dull in color, soft and seedy.

**Endive:** Pick when plant is 10 to 12 inches across and after blanching the center leaves of the plant by covering or tying loosely to exclude light for 2 to 3 weeks.

Steps



## how to use the produce

**Garlic:** Pull the garlic when tops begin to bend over or die.

**Gourds:** For eating, pick gourds when they are 8 to 10 inches long, young and tender. For decoration, pick when gourds are mature and fully colored, but before the first fall frost. Also, you'll know a gourd is mature if a finger nail doesn't leave a mark on them.

**Horseradish:** Dig up roots in the late fall or early the following spring.

**Kale:** Break off outer leaves when they are 8 to 10 inches long. New leaves will grow from the center of each plant for harvest throughout the growing season.

**Kohlrabi:** Pick when bulbs (thickened stems) reach 2 to 4 inches in diameter; depends on variety.

**Leeks:** Pull when leeks are 1 to 1½ inches in diameter and before the ground freezes.

**Lentils:** Pick when lentil pods turn yellow. Mature seeds can be used in soups.

**Lettuce:** If growing leaves, pick when outer, older leaves are 4 to 6 inches long. If growing heads, pick when it is moderately firm and before seed stalks start. Leaves taken from either leaf or head lettuce can be harvested once the leaves are 4 to 6 inches long. New leaves provide a continuous harvest throughout the growing season, until hot weather may bring a bitter flavor and seed stalks begin.

**Mushrooms:** If growing edible mushrooms, pick when the mushroom is 1 to 2 inches across, but before the cap separates from the stem.

**Muskmelon:** Pick when the base of the fruit stem begins to separate from the fruit. The fruit is almost ripe when the separation begins, but will be fully ripe when a crack appears completely around the base of the fruit stem.

**Mustard:** Pick when outer leaves are 8 to 10 inches long. New leaves will provide continuous harvest, until flavor becomes too strong and the leaves become tough in texture from hot weather. Seeding again in late summer will provide for a crop with a milder flavor and tender texture.

**Okra:** Pick when young and tender pods are 3 to 4 inches long, but still bright green.

### Growing Vegetable Soup

A great garden book for children preschool to age 8 that explains the process of growing and using vegetables.

[www.uwex.edu/ces/wnep/tch\\_res/res\\_detail.cfm?resource\\_id=209](http://www.uwex.edu/ces/wnep/tch_res/res_detail.cfm?resource_id=209)

### Produce Oasis

For information on how to prepare and/or cook fruits and vegetables, visit:

[www.produceoasis.com](http://www.produceoasis.com)

### Fabulous Fruits, Versatile Vegetables:

Provided by the United States Department of Agriculture, this valuable handout provides tips on how you can meet the current recommendations for daily consumption of fruit and vegetables.

[www.cnpp.usda.gov/](http://www.cnpp.usda.gov/)

[DGAsPreviousGuidelines2000Guidelines.htm](http://DGAsPreviousGuidelines2000Guidelines.htm)

### Get Fresh! Videos

Available for purchase, this video series provides tips on selecting, storing, and preparing fruits and vegetables. For more information on the content and how to purchase these videos, visit the University of Wisconsin-Extension, Wisconsin Nutrition Education Program's site at:

[www.uwex.edu/ces/media/catalog/nutri.cfm](http://www.uwex.edu/ces/media/catalog/nutri.cfm)





*good time to pick* continued...

**Onions:** For green onion sets, pick when onions are 6 to 8 inches tall. Harvest any with round, hollow seed stalks when they appear. Continue harvesting onions until all are used. Mature onion sets do not store well. If planted from seeds or plants, harvest when tops fall over and begin to dry. Pull with tops on and dry them in a protected place, cutting tops 1 inch above bulb for further drying.

**Parsnips:** Pick in very late fall, after early frosts, and in very early spring before growth starts. If roots are to be left in the soil over the winter, cover after early frosts with 3 to 5 inches of soil to avoid injury from alternate freezing and thawing.

**Peas:** Pick when pods are fully developed, but still green. Edible pod peas can be picked when pods reach near full size (about 3 inches) and before seeds show appreciable enlargement. If you only want seeds for eating, pick peas when seeds are fully developed, but pods are still fresh and bright green. For Sugar Snap and Sugar Ann peas, pick when the pods are filled out.

**Peppers:** Pick when peppers are firm, good size, and appropriate in color. In 2 to 3 weeks "mature" green peppers will be fully ripe (green will change to red).

**Potatoes:** Pick when tubers are full size and skin is firm. "New" potatoes can be harvested at any size, but generally after the tubers are 1 1/4 to 1 1/2 inches in diameter. If you plan to store your potatoes, it is best to wait for the top of the plant to die, then dig up the potato.

**Pumpkins:** Pick when fruits are full size, the rind is firm and glossy, and the portion of the pumpkin touching the soil is cream or orange in color.

**Radicchio:** Pick in fall, after the first frost for the best flavor. The burgundy red leaves with white midribs should be folded to resemble a small, loose, head of cabbage.

**Radishes:** Pick when 1 to 1 1/2 inches in diameter.

**Rhubarb:** Pick when stalks are 8 to 15 inches long. Flavor and tenderness are best in spring and early summer. Harvesting from well established plants may be continued throughout the season; may want to pull all leaves present just before the first fall frost.

**Spinach:** Pick when larger leaves are 6 to 8 inches long. Pull larger, whole plants from the row until you harvest all plants. Spinach that is planted in early spring goes to seed when the days get longer. If spinach is planted in early August, it does not usually go to seed during the shorter days of fall.

**Squash:** Pick winter squash when it is full size, the rind is firm and glossy, and the portion of the squash touching the soil is cream to orange in color. Pick summer squash when 6 to 10 inches long.

**Sweet Corn:** Pick when kernels are fully rounded, but still filled with milky juice. Harvest about 21 days after silk appears. Pull each stalk once the last ear of corn has been harvested.

**Sweet Potatoes:** Pick in late fall, but just before the first early frost. Make sure to dig up carefully to avoid cuts, bruises, and broken roots. Use smaller, younger roots soon after harvest, as sweet potatoes typically do not store well.



## other helpful resources

University of Wisconsin  
Urban Horticulture Website  
[www.uwex.edu/ces/wihort/fruitveggies/HarvestDates.htm](http://www.uwex.edu/ces/wihort/fruitveggies/HarvestDates.htm)

Harvesting Vegetables from the Home Garden  
UW-Extension Publication  
[www.learningstore.uwex.edu/pdf/A2727.PDF](http://www.learningstore.uwex.edu/pdf/A2727.PDF)

Freezing Fruits and Vegetables  
UW-Extension Publication  
[www.learningstore.uwex.edu/pdf/B3278.PDF](http://www.learningstore.uwex.edu/pdf/B3278.PDF)

Safe Canning Methods  
UW-Extension Publication  
[www.learningstore.uwex.edu/pdf/B2718.PDF](http://www.learningstore.uwex.edu/pdf/B2718.PDF)

Canning Vegetables Safely  
UW-Extension Publication  
[www.learningstore.uwex.edu/pdf/B1159.PDF](http://www.learningstore.uwex.edu/pdf/B1159.PDF)

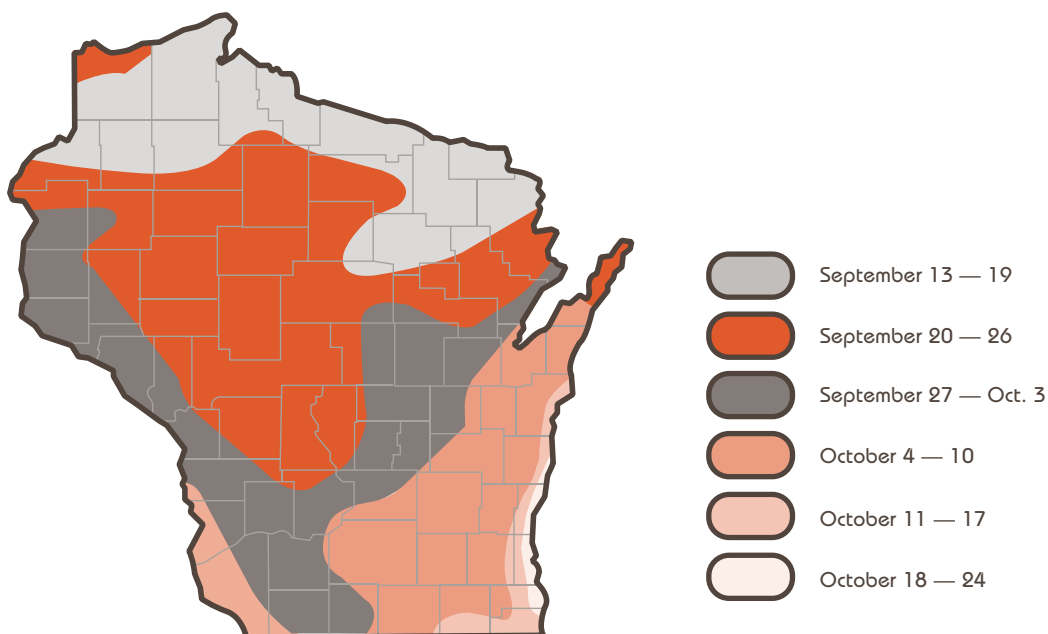
**Tomatoes:** Pick when fruits are fully colored. For fully ripe tomatoes, leave completely red fruits on healthy plants for 5 to 8 days during the warm, sunny days of August and very early September. Pick only fully ripe tomatoes for juice or canning to ensure full flavor, good color, and maximum sugar content. Tomatoes will ripen indoors if picked at a mature green stage or when some color is showing.

**Turnips:** Pick when roots are 2 to 2½ inches in diameter, but before heavy fall frosts.

**Watercress:** Pick tips of stems 6 to 8 inches long, especially in spring and fall. This is when leaves and stems are fully developed but still bright green and tender.

**Watermelon:** Pick when watermelon is full size, dull in color, and the portion touching the soil turns from greenish white to cream. The tendrils nearest a melon will curl and dry up when a melon is ripe.

## typical dates for first fall killing frost



Map information provided courtesy of Wisconline® [www.wisconline.com](http://www.wisconline.com). Used by permission.

# Preparing for Next Year

## During the Growing Season

### *try composting*

Compost, which is decomposed organic material, can be used in many different ways including as a soil amendment to add nutrients to your soil, as mulch around plants, or as an ingredient in potting soil. Furthermore, it can help fight disease, neutralize the pH of your soil, improve soil, protect against soil erosion, hold moisture, and help moderate soil temperature. To begin composting, find an area of level, bare ground near a water source. After choosing a place or container to store your compost, mix 1/3 "green" and 2/3 "brown" materials. Examples of "green" materials include grass clippings (from a chemical-free lawn), vegetable/fruit scraps, coffee grounds, weeds and other garden debris, feathers, hair, manure, or egg shells. Examples of "brown" materials include dry leaves, hay or straw, paper, cardboard, or dried grass clippings. Sawdust and small brush or twigs should be stored in a separate pile than the compost pile, as they tend to take longer to decompose. A sawdust or small brush pile can take up to 10 years or longer to fully decompose.

## After the Growing Season

### *removing spent vegetable plants*

Once the plants in your garden have stopped producing fruits and vegetables, entirely remove it from your garden. For example, remove all the cucumber, pumpkin, and squash vines in your garden. You can compost these spent plants, if they have not been infected by disease or insects.

### *add organic matter*

You can improve soils by adding organic residues. Organic matter helps to create good crumb-like soil structure. This allows for better water and air movement and easier root penetration. The process of decomposition using organic residues is what helps loosen heavy soils. The key to improving "heavy" soils is to add organic matter frequently. Types of organic matter that you can use include rotten manure (aged), leaves, grass clippings (from a non-chemically treated lawn), compost, green manure, crop residues or peat moss. It is best to "dig" the organic matter into your soil at least six to eight inches deep. The best time to add organic matter is in the fall, after the previous growing season. This is when soils are reasonably dry. Plant a cover crop in the fall, such as annual rye, that can be tilled into the garden soil the next spring.





### *till it up*

Tilling can be done mechanically via a rototiller or by hand using a spade or fork. Turning soil over and exposing the lower portion helps bury surface residue so microorganisms can decompose it. If left on the surface, crop residues act as an insulator and will slow the soil warming the next spring. If you take extra time to prepare your soil in the fall, it will make it easier come spring for next year's garden. Remember to NEVER, EVER TILL or work the soil when it is wet. If you do, the soil will form large clumps and balls and it will take even more time to create workable soil.

### *saving seeds*

In general, it is not advised to save seeds from fruits and vegetables grown in the garden. Home-saved seeds of some crops can carry disease and seeds from hybrids will not grow true again. Some vegetables can be stored over the winter and transplanted outdoors the following spring for seed propagation. These vegetables include: beets, cabbage, carrots, onions, and rutabagas. Some vegetable seeds may be successfully saved. These include bean, lettuce, pea, pepper, and tomato seeds.

### *additional gardening resources and tips*

For additional information on gardening check with your local county UW-Extension office or local garden shops. They can help with all sorts of gardening questions you may have including pests and diseases that you may experience in your garden.



## *last minute gardening tips*

- 1. Spread Out Your Rewards:** Replant beds or rows in the garden when vegetables pass their prime. For example, once the lettuce is done producing, replace the row with green beans.
- 2. Not Sure About the Difference of Good & Bad Bugs:** Collect a sample of insects that you think are doing damage. Take your sample to an Extension agent or a garden center for identification.
- 3. Don't spray insecticides when crops are flowering,** because it may also kill the pollinating insects.
- 4. If using floating row covers,** be sure to lift them off of the plants occasionally to allow pollinating insects a chance to do their job.

*"In the end, plants want only four things: plenty of soil moisture, plenty of air in the soil, plenty of plant food, and plenty of sunlight."*

— The Old Farmer's Almanac Book of Garden Wisdom

examples  
AND  
resources





## community garden examples

### Hunger Taskforce of La Crosse

**By Linda Lee, Hunger Task Force Board Member, La Crosse, WI**

Hunger Task Force members were seeing very low fruit and vegetable consumption among low-income families they served and sought to help get these foods on to low-income families' tables by providing them free of charge. As a result, the Kane Street Community Garden was started in 1999. We were looking for free land to site the garden on. After we made several requests to the parks department, the City of La Crosse stepped forward and offered a one-block parcel in a low income neighborhood on the north side of the city. Initially the Planning Department opposed the \$1/one-year lease the City offered to Hunger Task Force, but after seeing how it benefited the neighborhood, they eventually became supporters. The Kane Street Garden was initially supported through community donations. The first year of the garden we worked with the media to get the word out about the garden and were able to raise between \$4500 and \$5000 to pay for seeds, a part time coordinator, water and tools. After that, we approached the Community Development Block Grant Committee who now provides \$7500/year the Kane Street Garden and \$2000 for the Rotary Garden. The La Crosse Community Foundation has also provided 3 years of funding from 2000-2003 (\$10,000 each year) for the garden coordinator. Grant funding has also been received from the United Way for tools and other garden expenses.

The Kane Street Garden produced 40,000 pounds of fruits and vegetables in 2003 and nearly 20,000 pounds in 2004. The 2004 growing season was too wet so yield was down. A survey conducted with garden recipients in 2003 found people were receiving produce regularly from the garden, with an average of 5 to 10 pounds per week, and saved \$8.90 on their weekly food bill. They also ate more fruits and vegetables as a result of their participation in the garden.

The Rotary South Garden was started in 2002 in a low income south side La Crosse neighborhood to distribute healthy, fresh food to neighborhood residents. The Rotary approached the Hunger Task Force and Hamilton Elementary School (a school with more than 80% of its students on free/reduced lunch) as partners. The garden focuses on education and the surrounding neighborhood. Each Hamilton child has been to the garden several times each summer helping to plant, maintain and harvest produce. In 2003, the Rotary South Garden produced around 1,500 pounds of food; 4,000 pounds in 2004.

Children are involved at both gardens but primarily at the Rotary South Garden. They help plant, maintain and harvest produce. The children seem to enjoy coming to the garden and a number of the older children come back on their own or with their parents, not as part of an organized class. Hamilton Elementary School children came to the garden, as part of summer

school enrichment programming. The gardens could be used to teach math, language, science as well as teamwork and how to get along with others. Each year pumpkins from another La Crosse garden are donated to a teacher of 2nd grade children at Hamilton. He uses the pumpkins to teach math (counting seeds, pumpkins, etc), language (the children write about the pumpkins) and science (how the pumpkin grows). If children actually work in the garden together they can learn teamwork skills, as many tasks require people to work together rather than alone.

Each spring, volunteers are recruited from the general community and through volunteer events such as the University of Wisconsin-La Crosse involvement fair. The Hunger Task Force has a booth there to recruit volunteers. Hunger Task Force works with the media to publicize the need for volunteers. Furthermore, they try and keep volunteer work days at the garden consistent (i.e. Every Saturday from 9 to noon in April & May and every Monday & Thursday from 3:30-6:30 pm in July, August and September). Master Gardeners sometimes volunteer but have not been greatly interested. For several years now, AmeriCorps volunteers have come regularly to the garden as part of their service.

All in all, volunteers enjoy working at the gardens as evidenced by their returning a number of times over the course of the summer. Recipients of the garden produce are very grateful. This can all be attributed to the hard work of the Hunger Task Force staff and volunteers working at the garden.

## Challenges

Challenges to creating a community garden include helping everyone to get along. People may have strong opinions about how to garden and this can often lead to disagreements (i.e. organic gardening versus using chemicals to reduce pests in the garden). Planning meetings are essential to ironing these issues out and reducing tempers.

Fundraising is also a challenge. La Crosse is a generous community, but it is always difficult to get your activity in the public eye and to get people to financially support it. Recruiting volunteers is not always easy. People are busy and it can be difficult to keep volunteers coming back regularly. Take advantage of organized groups such as church or civic youth groups, garden clubs, etc. Lastly, have a strong, committed steering committee to help plan and oversee garden activities. If possible, **hire a part or full time garden coordinator** for the day to day work-it is too much to ask a volunteer to do this unless the garden is quite small!

*"One night when I volunteered there an older woman came up & took my hand & kept thanking me for the garden. She shared with me that her husband was gravely ill & she had just been diagnosed with health problems. They were living on a very limited income & money was tight. The garden gave them access to free fresh produce that they normally couldn't afford."*

— Linda Lee

## Ho-Chunk Youth Fitness Program

**By Charmaine Garry, Pam Lathrop-Roets, and Richard Broerman, Baraboo, WI**

The Ho-Chunk Youth Fitness Program (HYFP), as part of our mission to help youth and their families eat more healthfully and be more active, began planting a garden in Baraboo in 2002. It was such a success that after two years we re-located the garden so that it could be expanded.

All of the Ho-Chunk Youth Fitness Program youth and parents, with the help of Master Gardeners from UW-Extension, planted a garden as part of their summer class. During the summer session, the families had opportunities to attend weekly "Garden Nights" to plant, water, weed, and harvest fruits and vegetables. In addition, the youth and their families, with the help of Master Canners from UW-Extension, learned how to make freezer jams and can tomatoes. The program's garden had such abundance that they shared the excess with Ho-Chunk community members and a local food pantry.

Children and adults alike enjoyed the experience. With the variety of fruits and vegetables planted, some community members were able to taste fruits and vegetables that they had never tried before. Everyone agreed that fruits and vegetables that you grow yourself taste better than those purchased in a grocery store.



The Ho-Chunk Youth Fitness Program and garden, is funded by an Indian Health Service grant that aims to prevent the spread of type-2 diabetes in Native-Americans.

We encourage you to plant a garden as part of your classroom or program to help you reach your fruit and vegetable goal!

# Troy Gardens Kids' Gardening Program

By Megan Cain, Madison, WI

Troy Gardens is a 26-acre land trust on the Northside of Madison. The land was rescued from development by neighbors who then facilitated a community process to create a plan for the land. Troy Gardens features a large community garden, youth gardens, handicapped accessible gardens, a community farm, woodland and prairie restoration, nature trails, and edible landscaping. On five additional acres adjacent to the open space area, the Madison Area Community Land Trust is building 30 units of affordable co-housing at Troy Gardens.

The Kids' Garden is currently a 4,000 sq. ft. garden that is tended by kids in the neighborhood. Elementary and middle school aged youth from local low income housing complexes visit the garden once a week in spring, summer and fall to learn how to plant, tend, harvest and prepare the food that is grown. At the beginning of the season the youth pick out small 4'x4' garden plots to share with one or two others and decide together what to plant in their gardens. Each time they visit the Kids' Garden they tend to their plots and their plants and experience the process of growing food. The rest of the garden is a shared space where youth plant theme gardens, such as a Rainbow Garden and a Pizza Garden, construct bean tunnels and sunflower houses, and plant watermelon, tomato, pumpkin and raspberry patches. Some of the most popular activities during the gardening season have been:

- a visit from local chickens to learn their role in the garden and then holding and feeding them
- a visit from a UW entomology student to learn about insects and hold a tomato hornworm
- making pickles from the cucumbers in the garden to take home to share
- preparing a meal of pizza and pasta with lots of vegetables from the garden and then inviting families for a special dinner
- looking for the resident garden snake
- shoveling big mounds of compost into wheelbarrows to spread around the garden
- WATERING!!!
- learning about worms and worm composting
- painting beautiful signs for the garden
- TASTING!!!

In addition, in partnership with the WI Nutrition Education Project, the Kids' Gardening Program is working with teachers and students at Mendota Elementary to assist in integrating more gardening, nutrition and food into the curriculum and to put their school garden into more regular use.

For more information please contact Nathan Larson, Education Program Director, 608.240.0409, [education@troygardens.org](mailto:education@troygardens.org)



## community garden resources

### Locating an Expert

You can locate a Master Gardener in your area by visiting your local UW-Extension office or via one of the 50 local Master Gardener Associations around the state.

To find your county UW-Extension Office visit:  
[www.uwex.edu/ces/cty/](http://www.uwex.edu/ces/cty/)

To find a local Master Gardener Association visit:  
[www.hort.wisc.edu/mastergardener/](http://www.hort.wisc.edu/mastergardener/)

### Other Valuable Community Garden Resources

**1. American Community Gardening Association: [www.communitygarden.org](http://www.communitygarden.org)**

All about bringing neighbors and gardeners together on community land to share ideas, grow food and flowers. How to start, organize, maintain, insure, manage-and enjoy-community gardening. Need background research on the social and health benefits of gardening? Find it here.

**2. Wisconsin Master Gardener Program: [www.hort.wisc.edu/mastergardener](http://www.hort.wisc.edu/mastergardener)**

Need seeds? Expertise on bugs, special kinds of plants, local nurseries and garden supply outlets? Volunteer advisors or mentors? Training? "The Wisconsin Gardener" on public television, urban horticulture and UW Extension InfoSource are all linked here. This is the Wisconsin "mother lode" of web sites. If you cannot find here, chances are you won't find it anywhere!

**3. Growing Power: [www.growingpower.org](http://www.growingpower.org)**

Especially emphasizing community projects, Growing Power has a track record of creativity and outreach with Boys and Girls Clubs, churches, community centers, youth and jobs programs, public housing and neighborhood groups. Training in "Growing Your Community Food System from the Ground Up." Hands-on, experiential education in working greenhouses, fields and urban lots.

4. **National Gardening Association:** [www.kidsgardening.com](http://www.kidsgardening.com)

KidsGardening, from the National Gardening Association, is like an encyclopedia of easy-to-use resources for beginning school and children's gardeners as well as those who have experience. Be sure to see the Thematic Library, curriculum connections, "how-to" instructions, stories and directory funding and award.

5. **FEEDs Program:** <http://feeds.uwex.edu/>

Project FEEDs, Food and Ecosystem Educational Demonstration sites, is a program of the University of Wisconsin Extension Horticulture/Urban Agriculture group. FEEDs is designed to link community gardens in Wisconsin (particularly in the southeast part of the state), create diverse community demonstration gardens, assist with garden design and technical advice, and provide gardeners with research-based information. To become a part of the FEEDs Garden Network, register your community garden at <http://feeds.uwex.edu/submit/gardenaddaction.cfm> and take the FEEDs Garden Survey.

6. **Accessible Gardening:** [www.uwex.edu/ces/cty](http://www.uwex.edu/ces/cty)

Accessible gardening helps people with physical and developmental limitations enjoy barrier-free gardening. UW-Extension Urban Agriculture Program Staff have helped create several accessible gardens in Wisconsin. Contact your local county Extension office's Urban Agriculture Program for more information.

## *Who are the key people to get involved when starting a community garden?*

The local gardeners who will use the garden are the most important. In addition to the gardeners, a local garden center store employee, a Master Gardener and I would make sure at least one local politician is included, at the very least, on the advisory board. It is also a good idea to involve the neighbors — as hard as it to believe, sometimes they do not want a community garden in their neighborhood.

— Dennis Lukaszewski, RLA  
UW Extension Service, Milwaukee County



# child & adult care center garden examples

## Heart & Home Family Daycare

By Billie Ognenoff, Owner, Milwaukee, WI

After attempting traditional gardens way in the backyard in past years with only minimal success, I decided to try what I call "front door gardening". My thought was that if I had to walk by my "garden" several times a day, it would be harder to forget about weeding, etc. I also liked the idea of the children being able to notice the changes in their garden every day whereas when it was way in back, it was often out of sight, out of mind and they lost interest after awhile (as did I)! The space wasn't very big (just either side of my front door) but it's biggest advantage was that it was right there where I couldn't help but see it! It all started back in early May when the children planted a variety of seeds in paper cups. We started out with carrots, tomatoes (two kinds), zucchini, green peppers, and broccoli, as these were some of their favorite vegetables. After brainstorming about what they thought the seeds would need to grow into plants, (sun, water, dirt, etc), they took their seeds home with instructions to watch closely and come back and tell us which seed sprouted first. We made a big wall chart and recorded their findings and they were very excited to come in after a few weeks and report that their zucchini or carrots had "popped up"! We had some interesting conversations about why they thought one person's carrots sprouted first while another one's hadn't sprouted at all and they figured out that differences in sunlight, watering, etc. could be responsible for the variations.



They helped me prepare the soil all around our front door so we could put the seeds that I had first planted in cups in the ground. By now, we were at the end of May and they had also planted their seeds at home if they had the space to do so. For the next month or so, things were kind of quiet with most of the garden related activity being weeding (which even the three year olds learned to do!) and measuring the growing height of the plants as this was the most tangible change they could see at this point. Then they began to notice other changes (usually while coming in the door with their parents in the morning when the sun was brightest on the plants) like tiny green tomatoes or small clusters of broccoli heads and this was really exciting for them to compare the plants they were seeing now with the tiny seeds they had planted!



I thought our little garden was thriving (and it was) but I'll admit to a little envy when one family brought in an 18 inch long zucchini that had come from those seeds in a cup a few months before! (Especially because my zucchini hadn't done anything but flower yet!) We enjoyed this zucchini for lunch that day with a little butter and Parmesan cheese and it was so fun to watch their pride in sharing food that they had grown themselves!

This inspired a special snack a few days later when I declared it "Obscure Vegetable Day"! We went to the market and bought 10 "obscure vegetables" that I thought might be new to most of the children. This included eggplant, turnip, snow peas, pickled beets, asparagus, Brussels sprouts, parsnips, collard greens, etc. (To their credit, some of these were familiar to some of the children already and with positive connotations!) I cooked some of them and some we ate raw but it was a sampling snack where they tried pretty much everything and gave me their feedback (liked, didn't like, or they weren't sure). We charted this and then voted on their personal favorites with pickled beets and sugar snap peas tying for most liked! It was very enlightening to hear parent's responses when they saw the chart that night ("My son tried Brussels sprouts? I won't even try those!!!") Since that day, I have incorporated some of those obscure vegetables into our everyday menus and they are now familiar to the children.

As the summer went on, it became obvious that the rewards of gardening were especially sweet when you could step outside the front door, and pick a fresh pepper for a salad or a few children could take a small basket and collect only the ripest cherry tomatoes for lunch. Many of the children have worked the garden into their goodbye ritual at the end of the day by asking if they can pick a tomato or piece of broccoli "for the road"! Who would have thought that preschoolers would see vegetables as a reward?

Having a hand in every aspect of raising these vegetables has made them proud and invested in this garden. Many of the parents don't have the time or space for a garden of their own so they are very glad that their children get to have the experience here. We're already poring over the seed catalogs to get ideas for next year's garden and they want to include some of those "obscure vegetables" in that one! Lately, we've been reading the weather reports together to see if they are predicting a frost so they know if we need to cover up our precious plants so they don't freeze. To have a four-year old ask if we should "tuck in the tomatoes tonight" is its own reward!

## Bad River Head Start Program

By Janelle Cole & Becky Le Meux, Odanah, WI

The Gitiganing Garden Project is a grassroots organization run by members of the Bad River Band of Lake Superior Chippewa who are dedicated to re-establishing the Bad River community's relationship with food and health. The members of Gitiganing believe that "Food is Medicine," and they strive to combat diabetes by re-introducing whole and high-quality traditional foods into the diet of their community.

### childcare garden resource

Team Nutrition's Nibbles for Health:  
Grow a Family Garden

This site includes great tips on gardening with young children, including a list of gardening tasks that are easier for children.

[www.fns.usda.gov/tn/Resources/Nibbles/grow\\_garden.pdf](http://www.fns.usda.gov/tn/Resources/Nibbles/grow_garden.pdf)

Two years ago, The Gitiganing Garden Project joined together with Bad River Head Start to create a pumpkin garden for Head Start children and families. The garden of heirloom Omaha Pumpkins emphasized hands-on learning by involving the children in gardening activities such as planting, weeding, and harvesting. The projects also included educational activities to enhance the awareness of traditional American Indian food crops and their cultural significance.

Many hands from the community helped tend the garden over the summer months, and when fall rolled around there were over 70 pumpkins to harvest. Every child was delighted to be able to take home a bright orange pumpkin they had helped plant. Head Start took the remaining pumpkins and sponsored a cooking class for Head Start parents on making pumpkin pies and sweets. The parents then cooked and donated 25 pumpkin pies to Bad River's annual Intergenerational Feast. During the feast one child exclaimed proudly, "That's my pumpkin in the pie!"



This year over 55 pumpkins were harvested from the garden, and more children are discovering the joy of gardening. The Head Start Pumpkin Garden is just one example of Gitiganing's efforts to promote healthy eating and activity through gardening. The Gitiganing Garden Project will continue to garden with our children, to help them grow in a healthy way.

For more information, contact:  
Gitiganing Garden Project  
P.O. Box 275  
Odanah, WI 54861  
badrivervistas@yahoo.com  
phone 715.685.2784 fax 715.685.2601



## St. Mary's Continuing Care Center

### Take It Slow...and Remember the Taste! St. Mary's Continuing Care Center Grows Its Own By Sarah Brooks, Madison, WI

Just because you don't live in the house you grew up in doesn't mean you can't enjoy the benefits of a garden. In fact, the residents of the St. Mary's Continuing Care Center just across the road from Chavez Elementary School in Dane County are finding that gardening brings back fond memories.

Former restaurant owner, gardener and community builder Nancy Christie wanted to add an outdoor dimension to the nutrition and recreation services at St. Mary's. So she invited "Slow Food" advocate Susan Boldt and Master Gardener Sarah Brooks to help.

They listened to residents and staff to hear about the vegetables and flowers remembered from their childhoods and...voila! Heritage seeds and heirloom tomatoes started showing up in the courtyards. Peppers, herbs and spices for Italian dishes were planted in raised beds, and by mid-summer the suppers at St. Mary's were seasoned with flavors that residents favored.

Each year St. Mary's hopes to add a few more plants and activities to attract folks who spend most of their time indoors to get out in the sunshine. Coming soon: wheelchair strolls on the path through the neighborhood to the school garden across the way, plantings by the parking lots and street side.

*"What a difference it makes to have our own tomatoes! These are so delicious they remind me of our summer suppers in the old neighborhood 50 years ago. And it's wonderful to see some new faces in the garden."*

*— St. Mary's volunteer*

## school garden examples

### Middleton High School Garden

By Mark Voss, Teacher, Middleton High School, Middleton, WI

The Middleton High School garden was established in the spring of 2000 by a core group of motivated staff called the Green Team who are devoted to environmentally progressive projects at school. The project drew inspiration, as so many school garden projects do, from the Edible Schoolyard in Berkeley, CA. The goal of the project was to establish a school garden that teachers of any discipline could use in whatever manifestation they deemed useful. Students and staff avail themselves of the school garden in both formal and informal ways including everything from direct observation in science to harvesting and preparing produce in at-risk classes, to using produce for recipes in family and consumer education classes and French gastronomy units, to students simply hanging out and eating lunch in a beautiful space on a warm afternoon. Related goals included effecting the school nutrition "environment", providing an avenue for school service, and educating students and staff about gardening.



The garden at Middleton High School has been well funded through grants from the Wisconsin Environmental Education Board, Madison Area Master Gardeners, private donations, and school project funds. Our ultimate goal with regard to funding is for the school board to acknowledge the value of the garden project and fully fund its maintenance and integration into the curriculum.

Two encouraging developments have evolved spontaneously out of our school community as a result of the school garden. The first is the "germination" of a garden club that meets monthly and plans or works in the garden. The second is the "sprouting" of an independent study project by two students who are running a second production garden apart from the teaching garden. These students are selling the organically grown produce to students and staff at a "farmers market" held at school several times a week.

One of the most challenging times of the year for school gardens is during the summer vacation period. Those confronting this problem may consider organizing a **Plant a Row for the Hungry** campaign. Garner support from community members to maintain the garden and contribute summer harvests to local food pantries. For more information, visit: [www.gardenwriters.org/par/](http://www.gardenwriters.org/par/).

**The Edible Schoolyard** at Martin Luther King, Jr. Middle School in Berkeley, CA offers the "Rolls Royce" of websites and resources. Includes the philosophy, practices, and value of gardening in and around schools. Curriculum and activity ideas in the garden, classroom and kitchen are available. Particularly useful: "Lessons We Learned the Hard Way" teacher liaison and links to other sites. For more information, please visit: [www.edibleschoolyard.org](http://www.edibleschoolyard.org)



# Kids Get Down to Earth with HUG

By Tammy Hansen, Wisconsin Nutrition Education Program Coordinator,  
UW-Extension Marathon County

"Help Us Grow" or HUG is a cooperative project of the Marathon County Nutrition Education Program, the Wausau School District, Lincoln Elementary School and the Marathon County 4-H Program. During the year-long project, now starting its ninth year, kids learn about making healthy food choices, how to prepare their own healthy snacks, how to be physically active each day, how to plant and maintain a garden, and how to harvest and use what they plant.



The HUG project was initiated in January 1997 as a response to the many research studies that reflected poorly on the nutritional status of today's youth. Findings of particular concern were the relatively low intake of fruits and vegetables and the growing problem of childhood obesity. Based on these findings, three main goals were established for the HUG project: to increase youth consumption of fruits and vegetables, to teach youth how to prepare their own healthy snacks, and to help youth understand the importance of daily fitness activity. A wide variety of activities are conducted throughout the school year in an effort to meet these goals. Skits, storytelling, puppet plays, games, and many other creative nutrition/fitness activities are used to make nutrition topics fun and interesting for kids during the school year. Then at the beginning of the growing season, the current fourth grade students plant a variety of different foods that they might not otherwise get at home in a large outdoor school garden. Over the summer, the Wausau School District offers a six-week summer school class called the "Magic Bean". One of the main focuses of this nutrition/fitness class is to maintain the garden. Approximately 65 summer school students work in the school garden each week. After the "Magic Bean" class ends, a summer, "at-risk" 4-H club takes over the maintenance of the garden until school starts again. Then when school resumes in the fall, the new fourth graders work the garden and harvest the produce. Using some of this produce, they prepare the food for a harvest party where last year's fourth graders are invited as special guests to enjoy the fruits of their labor. In this way, the students get to complete the cycle from garden to table. The interrelationship between



nutrition and gardening enables children to make food choices based on new tasting experiences and an increased appreciation and understanding of where our food comes from. The knowledge they gain has a direct correlation to the resulting overall quality of their diet.

Program success has been measured in a variety of ways. Food recalls taken at the beginning of the year and again at its conclusion reflected an increased consumption of vegetables. Pre and post verbal interviews taken during the six-week summer school class found a 54% improvement in students reporting eating five servings of fruit and vegetables a day, a 29% improvement in those willing to try a new food, and a 48% increase in students reporting they helped work in some other garden other than the school garden. One of our cooperating teachers in the HUG project wrote, "It was nice to see the kids try new fruits, vegetables, and snacks made from items that are healthy choices. The kids couldn't help but learn to make better food choices. Many kids said they helped parents shop and were more aware of food labels, the food pyramid, and basic cooking skills now than they were before. They even made me eat vegetables...and I don't like vegetables...but I eat more now than I have in many, many years. Even adults can change!"

## Howe Elementary School

By Bill Wright, Green Bay, WI

The school garden located at Howe Elementary School in downtown Green Bay, WI is a joint effort between the school and the 4-H After School Program of Brown County UW-Extension. The garden was first started as an extension of the 4-H summer program but has evolved into a program which engages both the summer program students and Mrs. Emily DeViller's 5th grade students in the spring and fall. A theme is selected for the garden each year (salad garden, pizza garden, Three Sisters garden, etc.). The



students then start seeds in the classroom in the early spring so that the transplants can be moved to the garden before the end of the school year. The students will also direct seed some seeds when the time is appropriate. Most of the weeding and care of the garden is the responsibility of the summer 4-H program students. The students then harvest the produce and assist in the preparation of a lunch or baking of pies, depending on the type of produce grown that particular year. This program provides a wealth of learning opportunities for the students including the areas of science, math, where their food comes from, and learning to work together to make the garden a success.

For more info about this project, contact:  
Kathy Kauth or Bill Wright  
Brown County UW-Extension  
Green Bay, WI 54302  
(920) 391-4610

Dear Mr. Bill,  
Thank you for letting us learn neat things about gardens. If you never would have been here to teach us, I wouldn't know anything about gardening. Also thank you for being patient with us. You are a great teacher.

Sincerely,

Labeisha Stufleen-Charney



# School Garden Resources

Want more information on school garden projects? Check out these great resources:

1. **Gardening With Kids:** [www.gardening-with-kids.com](http://www.gardening-with-kids.com)  
This site includes tips for how to successfully garden with kids. Additionally, tips on how to encourage children to get involved with watering and weeding the garden are offered.
2. **KinderGarden:** <http://aggie-horticulture.tamu.edu/kindergarden/kinder.htm>  
KinderGarden provides an introduction to the many ways children can interact with plants and the outdoors. The site includes a direct link to multiple school garden resources, including a step-by-step guide to building a school garden.
3. **Grant Resource Directory:** [www.kidsgardening.com/resources/resource.asp](http://www.kidsgardening.com/resources/resource.asp)  
This one-stop shop website will provide you with valuable information on how you can connect with other school gardening projects around the nation, access to possible funding opportunities, a school greenhouse guide, wonderful and classroom gardening stories.
4. **Kids World Plant Nutrition:** [www.agr.state.nc.us/cyber/kidsworld/plant/index.htm](http://www.agr.state.nc.us/cyber/kidsworld/plant/index.htm)  
Sponsored by the North Carolina Department of Agriculture, this site offers kid-friendly explanations of plants and their essential nutrients, puzzles, and games.
5. **Junior Master Gardener:** [www.jmgkids.us](http://www.jmgkids.us)  
Growing plants and gardens is good for kids! This site includes information on Junior Master Gardener Curricula, an inter-active kid's section, and wonderful resources for teachers and leaders.
6. **My First Garden:** [www.urbanext.uius.edu/firstgarden/](http://www.urbanext.uius.edu/firstgarden/)  
This wonderful website provides a great overview of the basics of gardening, including tips on starting a garden and how to plant fruits and vegetables. Additionally, the site includes a **Just for Kids** section that includes interactive on-line games including **The Great Plant Escape**.
7. **National Junior Horticultural Association:** [www.njha.org](http://www.njha.org)  
The National Junior Horticultural Association is designed to help youth obtain and develop skills expanding art and science of horticulture. This site contains information about ongoing projects and programs involving horticulture.
8. **Science NetLinks:** [www.sciencenetlinks.com](http://www.sciencenetlinks.com)  
This website provides a wealth of resources for K-12 science educators, including lesson plan ideas on where food comes from and what plants need to grow.

## Need Funding to Start a School Garden?

1. **School Garden Grants:** [www.kidsgardening.com/teachers2.asp](http://www.kidsgardening.com/teachers2.asp)
2. **Youth Garden Grants:** [www.kidsgardening.com/grants.asp](http://www.kidsgardening.com/grants.asp)
3. **Grant Resource Directory:** [www.kidsgardening.com/resources/resources.asp](http://www.kidsgardening.com/resources/resources.asp)

# service learning

## Top Six Reasons to have a Garden at Your School

1. Garden experiences reinforce classroom curriculum, which can be integrated across several subject areas.
2. Students understand the role of food in life by allowing education on healthy eating and nutrition.
3. A school garden creates an opportunity to work cooperatively on real tasks.
4. Gardens at schools provide opportunities for community involvement, a link to neighbors, volunteers, parents and community businesses.
5. Students learn to value the garden by developing a sense of pride.
6. Gardens, both school and community, provide excellent prospects for student service-learning projects

Adapted from the Edible Schoolyard. [www.edibleschoolyard.org](http://www.edibleschoolyard.org)

## Tips for Starting a School Garden

- Include administration, teachers, parents, and students in the planning process; form a garden committee.
- Get permission before planning to plant a garden on either public or private property.
- Define specific talents and expertise of each member in your garden committee. List specific needs and wants and have individuals commit to those areas.
- Establish project lists, including realistic timelines for completion of tasks and specific objectives for students in the garden.
- Enlist the help of community volunteers who may have gardening experience or are just interested in helping. Older adults in the community may be willing to tend the school garden during the summer months when school is not in session.
- Enlist the help of garden experts from UW Extension Family Living Program and the Wisconsin Master Gardener Program.

## Tips for Gardeners Working With Young Kids

- Young children have very short attention spans. Make sure that you have lots of options available so they can work in the garden immediately. Digging holes seems to hold endless fascination.
- Kids need instant gratification. This can be met by planting radishes, as they come up in 3 to 4 days.
- A picture is worth a thousand words. Never tell kids something that you could show them instead.
- When giving out supplies to kids, try to keep seeds, tools, and watering cans as similar as possible to avoid squabbles (i.e. purchase all green watering cans, not pink and blue ones.)
- When working with older kids, try to add responsibility and ownership to projects, as gardening may be perceived as "uncool."
- Pair older and younger kids together.
- Remember many kids won't talk in a large group. Try to create smaller work groups.



## Gardening and Service-learning

School and community gardens provide excellent prospects for student service-learning projects, with opportunities for numerous connections to classroom curriculum. Service-learning is a teaching and learning method which fosters civic responsibility and links classroom learning and applied learning in communities. Often, community service or volunteerism is mistaken for service-learning. Community service offers students a chance to contribute to the community without necessarily connecting to the curriculum or providing reflection opportunities. Projects must include four main components to be considered "service-learning".

## Four Point Test for Service-learning

Wisconsin has come up with a Four Point Test to determine whether the project is service-learning.

1. **Student Engagement:** Do students identify community needs and the issue to be addressed? Is the service project student-planned and student-led?
2. **Meaningful Service:** Does the service meet a real community need? How is the need identified? Who benefits from the service project? Will the community be a better place because of the project? Are local agencies, organizations, or community groups partners in the project?
3. **Link to Learning and/or Curriculum:** Is the service activity connected to classroom learning? How are learning outcomes determined and measured?
4. **Reflection and Evaluation:** Is there an opportunity for students to talk or write about the project before, during, and after it happens? Are students involved in evaluating the project's success? How will the knowledge gained from this project be used in future planning?



## Why Service-learning?

Service-learning is not intended to create more work for teachers or to be an “add-on” to regular schoolwork; instead, it is a teaching method to enhance classroom learning and curriculum with meaningful service, student leadership, and positive skill development. Projects can involve one classroom, a grade level, or an entire school.

Learn and Serve America, a grant program of the Corporation for National and Community Service, found that effective service-learning programs can improve grades, increase school attendance, and develop personal and social responsibility among students. Additionally, students who participate in service-learning often report feeling that they have made a positive contribution to the community, improving their citizenship skills. They also gain career and communication skills and develop positive work attitudes.

### Service-learning through school & community gardens

In Wisconsin, schools ranging from the elementary through the high school level are experimenting with the gardening concepts and service learning. Below are some projects they have implemented and reported.

## Examples from around Wisconsin:

### Tiffany Creek Garden

#### Tiffany Creek Elementary in Boyceville, Wisconsin

After a unit on plants in science, a class of second grade students went outside on a walking tour with their teacher to identify plants used to beautify their community. Those same students read Linna in Monet’s Garden with the visual arts teacher and recreated their own versions of the artwork in the book.



As a result of these experiences and a short discussion and brainstorming session, the students composed short paragraphs explaining project ideas and how they would contribute to the project. The class wrote about the importance of changing the look of school grounds to make it a more welcoming environment. They decided with the teacher to create a raised garden on the school grounds.

Working with their teacher, the students planned, designed, and planted a raised garden of flowering perennials and annuals. Partners for the project included the University of Wisconsin-Stout, teachers, staff, parent volunteers, and the Boyceville High School agriculture class, which constructed the raised garden bed. The project was funded by a service-learning grant of \$1000 from the National and Community Services Act and matching funds from the school district.

This project made classroom connections in Language Arts, Science, Math, and Social Studies. Students composed summaries, evaluations, lists, letters, and a photo essay for the project. They also kept a journal throughout the process and talked about their experiences and challenges, and they wrote thank-you notes to the volunteers and donors who supported the project. To incorporate Science, the teacher taught about plants and how they grow, thrive, and reproduce under a variety of conditions; she also described how to plan, prepare, and plant a garden. To connect the project to the Math curriculum, students measured and diagramed plots for the garden, applying what they were learning in the classroom. The second-graders learned about citizenship and communities as part of their Social Studies learning in the project.

To reflect upon the project, the students engaged in classroom discussions; wrote in their journals about their likes, dislikes, and contributions; and created a photo scrapbook with student-coined captions. The class also created a video capturing the whole process of designing and planting a school flower garden.

## **Kids for Composting**

### **The Oneida Nation Reservation at Oneida Elementary**

The Oneida Elementary garden plot was faltering. It is now a place of activity year round at the school. The elementary school secured grants from the Solid Waste Management Assistance Program of the U.S. Environmental Protection Agency and from Learn and Serve America to implement a "Kids for Composting" project on the Oneida Nation Reservation.

The project serves as a model for cooperative projects and promotes composting in other food service establishments in the community. Their vision is to create sustainable composting and gardening at the Oneida Nation Turtle Elementary School, which will promote civic and personal responsibility among the youth, foster intergenerational communications, and provide enhanced educational opportunities.

Most of the cafeteria food waste is used for a large scale outdoor composting project. Some of the waste is used for classroom worm vermicomposting. The cafeteria waste is source separated by the elementary school students in the cafeteria immediately following food service. During winter, the students weigh the compostable waste and put it in plastic drums, covering them with soil. They are placed by the compost pile until spring thaw. Children in grades K-8 are in charge of the daily operation of the program, including weighing food scraps, recording the amount of waste, hauling compost, applying compost, and gardening activities. Students utilize sampling techniques and take averages to assess trends in enhanced plant performance due to soil enhancements. Photos are used for comparative purposes.

The goal is to have more facilities on the Oneida reservation fully "source separating" in the next few years. Currently there are 27 such food service facilities on the reservation.

Students are learning hands-on about waste cycles and food cycles through their participation. Curriculum is being incorporated to use this first hand experience as a medium to learn concepts from biology, chemistry, environmental science, and more. Even families are participating with their children over the summer months.

The volunteer labor will produce foods used in community feasts during the end of the school year. The students contribute to this community fellowship and environmental awareness, while gaining responsibility themselves. They reflect upon their work by comparing before and after photographs.

### The Giving Garden at West Salem Elementary School

Three multi-age classes from grades one through three designed, constructed, planted, maintained, and harvested a garden on West Salem School District Grounds. The garden was designed to produce vegetables for the fifty families per month that utilize the West Salem Care and Share Food Pantry. Students from the junior high school constructed benches for the garden, and high school students helped with the planting. The project was designed to teach students what a good community member is by providing opportunities to work with teachers, parents and other community members. In addition to learning gardening skills, students learned about the relationships between people, plants and wildlife, and practiced leadership skills in their work crews.

The students came up with the idea of planting a garden to help serve their community. They invited a speaker from the food pantry to come and talk to them about the pantry and about community needs. After the garden was planted, the students created a weekly schedule for their families to work the garden on a rotating basis during the summer.

This project connected to science (plant study) and math (measurement and budgeting). Now that the garden is in place, the teachers plan to expand curricular connections to include study of composting, economics (supply and demand) and more math (calculating the output of the garden, etc.).

Classroom reflection included discussion of the concept of "community," and the reasons a food pantry would be needed in a community, such as job and wage loss and poverty. Students wrote journals throughout the project.

### Youth Service-Learning Garden Project at Hurley K-12 School

Nearly 100 students in six elementary schools took part in this project, creating new flower and vegetable gardens around the signs at the Iron County Farmer's Market and the Hurley School.

In order to complete their projects, some of the students appeared before the school board, the farmer's market board and the University of Wisconsin Extension Board to obtain permission. Then they solicited the help of the Iron County Extension Youth Agent to help plan the garden. Students took a trip to a local greenhouse where they purchased plants and learned how to keep them healthy. They then transplanted the seedlings after starting them in their classrooms.

Through this project, students learned to identify the parts of a flower, and they learned how plants metabolize water and other nutrients. Each classroom planted seeds, watered, provided lighting, and transplanted plants to the two gardens. They were helped on planting day by six members of the Hurley High School Ecology Club, a master gardener, and the assistant manager of the market.

The students received help and donations from a number of sources, including a local plywood manufacturer, which donated lumber for the flower bed frames, and the county forestry department and the Wisconsin Conservation Corps, which donated two days' labor to help build the frames.

All six classes reflected on the experience through journal writing, and some completed the Department of Public Instruction student survey. The surveys indicated that students wished to continue gardening, both at home and at school. Students participated in group writing projects, created stories, and wrote thank-you notes to businesses and individuals who donated time or materials.

## Pilgrim Park Middle School Landscaping Project

Sixth Grade Gold House students at PPMS in Elm Grove, Wisconsin established a goal at the beginning of the 2000 school year to improve the landscape surrounding their school. This goal developed as a result of preparing for the new millennium, and asking, "What kind of legacy could they leave behind for future sixth graders?" The students decided that they wanted to develop a prairie, improve the cross-country trails/create and observational walk through the forest areas surrounding the school, and create an outdoor learning classroom area.

A survey was created by the students to gain insight into what the rest of the school community would like. Goals were established, and steps to reach the students' goals were developed. We enlisted the help of

several community members and parents to provide information and guide the students in their planning. Classroom teachers, Master gardeners, landscape architects, a botanist, a prairie restoration specialist, and our buildings and grounds supervisor made up the team. The existing landscape was analyzed, needs were identified, and the students developed an action plan. Through the donation of hard work, contacts with the city for free mulch and compost, donation of plant materials, discounts obtained at a local nursery, donated funds through the student

senate and other donors, our plans started to bear fruit. We created three specialty gardens, planted four trees, cut the forest trail and spread over 80 yards of mulch for the path.

Bird life has increased, evidence of deer and other wildlife has increased. Finding compass plants thriving on our prairie was very exciting for the students due to the story behind how the early settlers used them as navigation tools. We are in the process of developing a gardening club.

The project has helped to promote environmental education and foster the awareness of the school's natural environment. It has challenged the students to use and improve their critical thinking skills, and gain basic skills needed to participate in resolving the issues that arise. Group cooperation and team building activities have created an atmosphere that promoted civic responsibility by encouraging students to use their knowledge, personal skills, and assessment of environmental problem-solving and action.



## Implementing Your Own Service-learning Project

If these stories inspire you to plan a gardening service-learning project in your classroom or school, remember several key points. Be sure to facilitate student-generated project ideas that meet real community needs, so that those in your class will have ownership and responsibility of the project. Incorporate reflection activities throughout the project. These can be visual arts, journaling, discussions, group activities, or musical projects; students learn and process experiences in different ways, so various reflection activities will maximize responses. Finally, tie classroom learning and curriculum into the service-learning project. Make the subjects students study in school applicable to the community around them.

# cultivating the future

## Veggin' Out

by Tony Zech

The Veggin' Out Program in Wisconsin features food and cooking demonstrations at farmers' markets of delicious and easy to prepare recipes utilizing fruits and vegetables currently available at those markets. The program targets WIC and Senior Farmers' Market Nutrition Program (FMNP) participants to increase their use of vouchers for fresh produce at the market, but is open to everyone. The program helps participants eat more fruits and vegetables and promotes the Fruits and Veggies—More Matters® message. The program was adapted from a program in Rhode Island created by Johnson and Wales University.

Veggin' Out Program materials include a training manual, sample flyers, and equipment. Participants and staff enjoy the program and find it beneficial. Chefs, nutritionists, Extension staff, or other trained staff provide the interactive demonstrations and nutritionists or other trained staff provide nutrition education at the market. Activities for children may be provided.

Participants can participate in these demonstrations, sample the foods prepared, receive copies of the recipes demonstrated, and be eligible for prizes (if offered). Farmers' markets that host these demonstrations benefit through increased attendance and publicity. Farmers at the market benefit by developing relationships with chefs that need sources of fresh produce in their practice. Chefs benefit by receiving recognition and publicity and chefs-in-training benefit by receiving practical experience and the opportunity to build relationships that will benefit their future practice. Nutritionists and other program staff benefit by connecting and outreaching their programs to the community.



The Veggin' Out Program helps prevent hunger and food insecurity since participants learn how to prepare and use fruits and vegetables. Participants receive information that helps them save money on fruits and vegetables and use community food resources. The program also helps prevent overweight and obesity in children and adults by promoting strategies for developing healthy eating and physical activity habits. Participants learn how easy it is to eat 5 servings of fruits and vegetables each day and the benefits of eating healthy and being physically active.

Veggin' Out is a program that helps achieve win-win partnerships that benefit everyone involved! If you are interested in being a Veggin' Out partner or would like more information, please contact Tony Zech, State WIC FMNP Nutrition Coordinator at 608.266.3742 or email:Anthony.Zech@Wisconsin.gov.



# What is Community Supported Agriculture (CSA)?

by **Bill Wright**

CSA is a model for local agriculture which dates back about 35 years. The movement was started in Japan by a group of women who were concerned about the increase in food imports and the decrease in local farms. They set out to establish a growing and purchasing relationship between their group and the local farms. This arrangement, called "teikei" in Japanese, translates to "putting the farmer's face on food." The concept later reached Europe and then the United States where it became known as "Community Supported Agriculture."

A CSA becomes a partnership between a farmer and a community of supporters. At the beginning of the year, supporters purchase a "share" of the farm's production. The farmer uses this money to cover the cost of seeds, fertilizer, equipment maintenance, labor, etc., and produces a healthy supply of fresh produce throughout the season (usually May through October). When CSA members make this commitment, they are supporting the farm through the season and are sharing the costs, risks, and bounty of growing food along with the farmer. This mutually supportive relationship between local farmers and community members helps to create economically stable farm operations in which members are assured the highest quality produce. In return, farmers are assured a reliable market for a variety of crops.

## How does a CSA work?

When community members purchase a "share," they then receive a bag/box of locally-grown, fresh produce once per week from approximately May through October. The type of produce received varies from farm to farm and, in some cases, may also include such things as honey, eggs, or herbs. The method of distribution also varies from farm to farm. Some farms will deliver all boxes to a central location for pick-up by members while some farms require members to pick up their boxes at the farm on a designated day and time. It is important to understand the operating procedures of the CSA share you are purchasing in order to get the most benefit from your purchase.

In addition to healthy produce, CSA farms also provide a focal point for education and community building. CSA farms sponsor a variety of events throughout the year which can include field days, work days, harvest festivals, and celebrations. These events provide an opportunity for families to share and learn together in a rural setting.

## Why are CSA's important?

- Through direct marketing, CSA's give farmers the fairest return on their products.
- A CSA helps to create dialogue between farmers and consumers and increases our understanding of how, where, and by whom our food is grown.
- A CSA creates a sense of social responsibility and stewardship of local land.
- By purchasing shares in a CSA, members help to keep food dollars in the local community and help to maintain local food production.

## Visit one of these sites to find a CSA in your area:

[www.biodynamics.com/](http://www.biodynamics.com/)

[www.sare.org/csa/](http://www.sare.org/csa/)

[www.foodroutes.org](http://www.foodroutes.org)

[www.localharvest.org](http://www.localharvest.org)

[www.macsac.org](http://www.macsac.org) (southern Wisconsin only)

[www.farmfreshatlas.org](http://www.farmfreshatlas.org) (Wisconsin Farm Fresh Atlases)

## Wisconsin Young Greens: Kids Grow Project

by Carla Wuennenberg

UW-Extension Division of Outreach and E-Learning, working with the Divisions of Broadcasting and Media Innovations and Cooperative Extension, is creating a digital youth gardening service-learning curriculum. The project was inspired by a Milwaukee County Cooperative Extension 4-H youth urban horticulture program, and will be available in spring, 2005. Young Greens: Kids Grow is composed of video clips from Wisconsin Public Television's Wisconsin Gardener series that will be supplemented with classroom materials for teachers and students. The classroom materials will be paper-based in PDF format and online, through interactive websites. The project will be compiled by UW-Extension Outreach and E-Learning with support from a Wisconsin Campus Compact AmeriCorps VISTA, and will be aligned to state standards by educational consultants.

AmeriCorps VISTA is a national program that places full-time volunteers with organizations to help them develop and strengthen programs designed to bring individuals and communities out of poverty. Wisconsin Campus Compact (WiCC), part of the national Campus Compact organization, is a coalition of leaders from more than 30 Wisconsin public and private colleges and universities, including UW-Extension. Member campuses of WiCC are dedicated to strengthening civic engagement in the state's postsecondary institutions. The goal of the cooperation between AmeriCorps VISTA and WiCC is to help develop service-learning initiatives that address poverty by engaging high school and college students in efforts to improve academic achievement and aspirations of low-income youth. Young Greens: Kids Grow will give youth around the state an opportunity to learn outside of the classroom and increase their connection to their academics. It will also expose them to older students who can share their enthusiasm for learning.

**Young Greens: Kids Grow**, funded by UW-Extension's Cross-Divisional Grant program, will be made accessible to teachers across Wisconsin through the IDEAS portal website. IDEAS ([www.IDEAS.wisconsin.edu](http://www.IDEAS.wisconsin.edu)), funded by UW-Extension and the UW System, connects resources, including lesson plans and videos, from across the internet to the classroom. Educators from around the state find and evaluate the resources on IDEAS, meaning they have all been filtered through the eyes of a teacher. Most of the resources, including all lesson plans are aligned to the Wisconsin Model Academic Standards. Ultimately, Young Greens: Kids Grow will give teachers access to innovative, interdisciplinary ways to connect their students to hands-on learning opportunities integrating the garden into the classroom and into the community.

**Online resource: The IDEAS Portal website [www.IDEAS.wisconsin.edu](http://www.IDEAS.wisconsin.edu)**

Selected PK-16 educators from Wisconsin work in teams to identify, evaluate, catalog, and align to the state education standards resources that are already on the internet such as lesson plans and reference materials. These resources are then made available from the IDEAS search engine, funded by UW-Extension and UW-System.

Kids Grow: Digital Gardening Resources gives teachers access to innovative, interdisciplinary ways to connect students to hands-on garden-based projects that tie into the curriculum and link to the community. The IDEAS website can be viewed at <http://ideas.wisconsin.edu/kidsgrow/dirtv9.0.swf>.

# The Wisconsin Homegrown Lunch Project

## Linking the Land and the Lunchroom by Doug Wubben

The Wisconsin Homegrown Lunch project is an exciting initiative in Madison, WI intended to increase the amount of locally and sustainably grown produce used in schools, and develop a farm-to-school model for the Midwest. Funded by the USDA Sustainable Agriculture Research and Education Program since October 2002, Wisconsin Homegrown Lunch (WHL) is a joint effort of the University of Wisconsin Center for Integrated Agricultural Systems ([www.wisc.edu/cias](http://www.wisc.edu/cias)) and the non-profit REAP Food Group ([www.reapfoodgroup.org](http://www.reapfoodgroup.org)). With one full-time Project Coordinator

and the oversight of a professor heavily involved in the project, WHL relies on partnerships with school foodservice staff, principals and teachers in three pilot elementary schools, volunteers, and local organic vegetable growers to work toward the following general goals:

- Increase access to fresh, local produce for Madison school children, beginning in public elementary schools
- Build stable markets for area farms and food producers who prioritize ecologically sound growing methods
- Create meaningful educational links between classrooms, lunchrooms, and local food and agriculture

The Madison Metropolitan School District's Food Service are constrained in many ways from using more fresh produce, not the least of which is having to serve 18,000 meals daily to 45 schools from their centralized kitchen facility. Another constraint is how willing the kids are to trying new lunch items such as veggie wraps. It's not that helpful to figure out ways to serve up healthier foods if the kids won't eat it.

Our project has been fortunate to have the cooperation of the Madison Metropolitan School District and other community partners in overcoming the barriers to serving more fresh produce. As for the "Will the kids eat it?" question, our approach has always been the more you expose and engage young people with new foods, the more interested and willing they will be to eat them. Through our "Classroom Tastings," "Farmer-in-the-Classroom," activities,

and farm tours, kids learn about where their food comes from, get to know real people who are growing food, and get to taste all kinds of fresh foods. Time and again, given a supportive atmosphere, we find young people not only willing but excited to try new and fresh foods. Carrot and daikon radish sticks, heirloom tomato and apple slices, and shredded cabbage, turnip, spinach, and carrots wrapped in tortillas are just some examples of what children in our three pilot schools have gobbled up. Integrating what happens in the classroom and the lunchroom is crucial as we work to improve how our children eat.



Farm-to-school initiatives are complex puzzles, and will be pieced together differently in each community. Across the board, they require cooperation, flexibility, and a willingness to think and work both inside and outside of the box. Certainly, if meaningful and lasting connections between farms and schools can occur, they can work within other institutions as well, for the benefit of farmers, communities, and a broad constituency of eaters.

For more information on the Wisconsin Homegrown Lunch project, please visit our web-site: [www.reapfoodgroup.org/farmtoschool](http://www.reapfoodgroup.org/farmtoschool) or contact Doug Wubben, Project Coordinator at 608.263.6064, [dwubben@wisc.edu](mailto:dwubben@wisc.edu).

# resources and educational opportunities

## Extra Gardening Resources

For additional information on gardening check with your local county Extension office or local garden shops. They can help with all sorts of gardening questions you may have including pests and diseases that you may experience in your garden.

The following websites have useful information on basic gardening tips:

- University of Wisconsin-Extension Urban Horticulture Website: [www.uwex.edu/ces/wihort/fruitveggies/index.htm](http://www.uwex.edu/ces/wihort/fruitveggies/index.htm)
- University of Wisconsin-Extension Urban Horticulture: The Vegetable Garden (publication) <http://learningstore.uwex.edu/pdf/A1989.PDF>
- University of Wisconsin Urban Horticulture: Growing Vegetables at Home: Questions & Answers: <http://learningstore.uwex.edu/pdf/A2801.PDF>
- University of Minnesota Extension Services: Gardening and Commercial Horticulture: [www.extension.umn.edu/topics.html?topic=5](http://www.extension.umn.edu/topics.html?topic=5)
- Iowa State University Extension: Gardening Publications [www.extension.iastate.edu/pubs/ga.htm](http://www.extension.iastate.edu/pubs/ga.htm)

### Wisconsin Resources:

**Wisconsin Master Gardeners:** Need seeds? Expertise on bugs, special kinds of plants, local nurseries and garden supply outlets? Volunteer advisors or mentors? Training? "The Wisconsin Gardener" on public television, urban horticulture and UW Extension InfoSource are all linked here. This is the Wisconsin "mother lode" of web sites. If you cannot find here, chances are you won't find it anywhere! For more information on the Wisconsin Master Gardener Program visit: [www.hort.wisc.edu/mastergardener/](http://www.hort.wisc.edu/mastergardener/)

**UW-Extension County Agriculture Offices:** To find volunteer master gardeners or for questions related to gardening, contact your county UW-Extension Office. For a listing of UW-Extension offices around the state visit: [www.uwex.edu/ces/cty/](http://www.uwex.edu/ces/cty/)

**Food Preservation/Master Canners:** For information on preserving your garden produce, contact your county UW-Extension Family Living Agent. For a listing of UW-Extension offices around the state visit: [www.uwex.edu/ces/cty/](http://www.uwex.edu/ces/cty/)

**Wisconsin Garden Club Federation (WGCF):**  
[www.wisconsinclub.org/](http://www.wisconsinclub.org/)

**Wisconsin Public Television: The Wisconsin Gardener:** [www.wpt.org/garden/](http://www.wpt.org/garden/)

### National Resources:

**KidsGardening.org**  
[www.kidsgardening.org](http://www.kidsgardening.org)

**National Junior Horticulture Association**  
5885 104th Street  
Freemont, MI 49412  
[www.njha.org/](http://www.njha.org/)

**American Horticultural Society**  
7931 E. Boulevard Drive  
Alexandria, VA 22308  
[www.ahs.org](http://www.ahs.org)

## Educational Opportunities

### Wisconsin Master Gardener Program:

If you are interested in becoming a master gardener, contact your county UW-Extension office for more information on classes or visit [www.hort.wisc.edu/mastergardener/](http://www.hort.wisc.edu/mastergardener/) for more information on becoming a Master Gardener.

#### Contact Information:

Master Gardener Program Coordinator  
Dr. Susan Rice-Mahr  
Department of Horticulture  
1575 Linden Drive  
University of Wisconsin-Madison  
Madison, WI 53706  
(608) 265-4504

To find a Master Gardener program in your county or region, visit [www.uwex.edu/ces/cty/](http://www.uwex.edu/ces/cty/) for more information

### Junior Master Gardener Program:

If you are interested in how kids can become Junior Master Gardeners, please visit [www.jmgkids.us](http://www.jmgkids.us) for more information.

### Continuing Education for Teachers:

Contact the Wisconsin Teacher Enhancement program for current course listings at [www.wisc.edu/wistep](http://www.wisc.edu/wistep)

## Got Dirt? Garden Initiative

The following additional resources are available:

- **Got Dirt? Cold Frame Manual**  
contains information about ways for extending the growing season
- **Got Dirt? Microfarm Manual**  
contains information about bringing the garden indoors
- **Got Dirt? Container Garden Manual**  
contains information about alternatives to in-ground gardens
- **Got Veggies? A Garden-Based Nutrition Education Curriculum**  
contains lesson plans and related activities for use with a youth garden

These resources can be accessed and downloaded at: [www.gotdirtwisconsin.org](http://www.gotdirtwisconsin.org)

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University of Wisconsin-Extension-Cooperative Extension. **Compost: An Overview.** <http://infosource.uwex.edu>

University of Wisconsin Extension-Cooperative Extension. **Container Gardening.**

University of Wisconsin-Extension-Cooperative Extension. **Frost Protection.** <http://infosource.uwex.edu>

University of Wisconsin-Extension-Cooperative Extension. **Insects: Beneficial Types.** <http://infosource.uwex.edu>

University of Wisconsin Extension-Cooperative Extension. **Planting: When to Plant.**

University of Wisconsin Extension-Cooperative Extension. **Preparing Soil for Planting.**

University of Wisconsin Extension-Cooperative Extension. **Weeds: Control.**

KinderGarden. **Starting a School Garden.** <http://aggiehorticulture.tamu.edu/kindergarden/Child/school/step.htm>

KinderGarden. **Tips for Gardening with Kids.** <http://aggiehorticulture.tamu.edu/kindergarden/pnote.htm>



# acknowledgements

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**Bill Wright** (also a contributor)



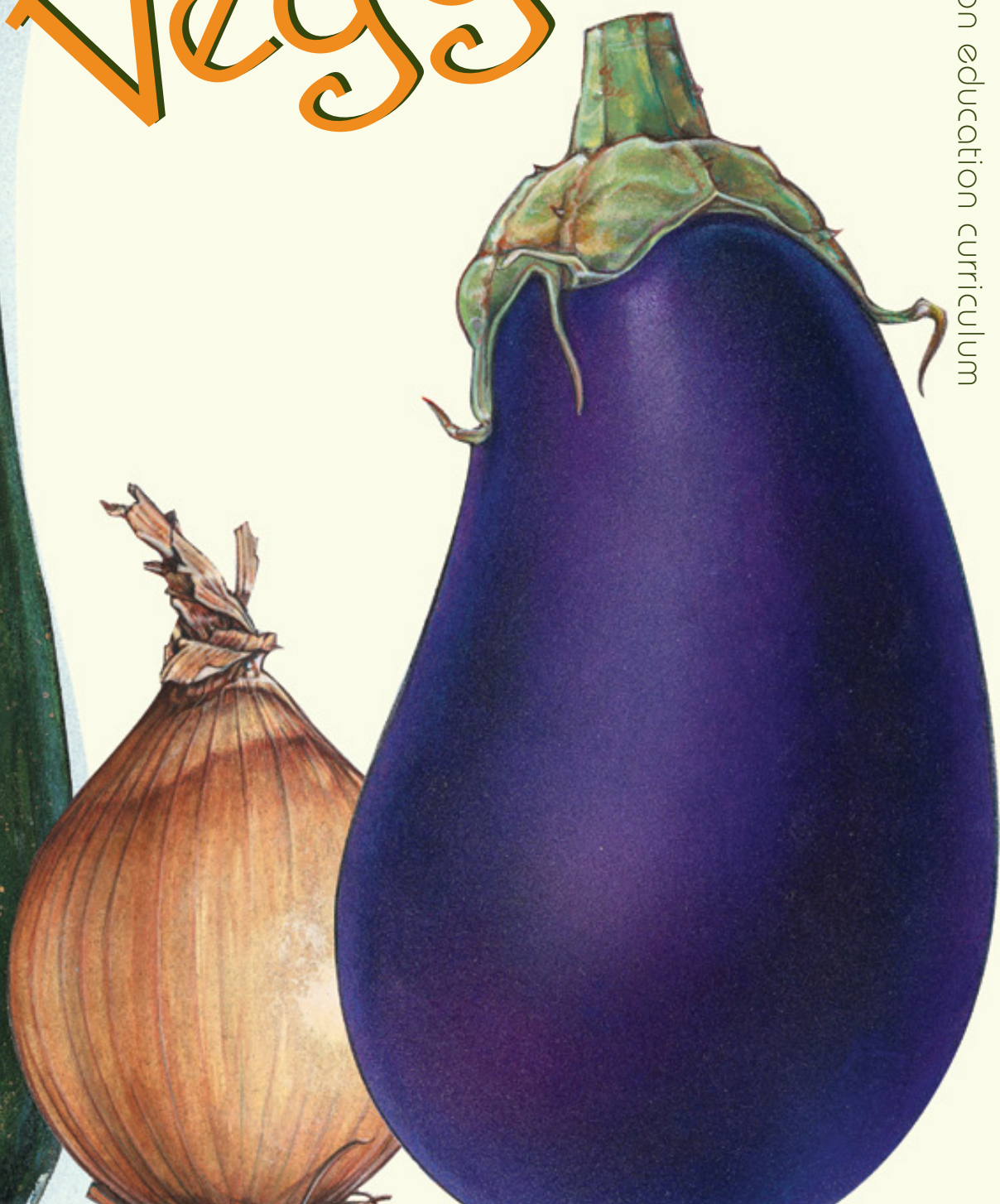


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# Got Veggies?

a youth garden-based nutrition education curriculum



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## Foreword

I am thrilled to present *Got Veggies?*, a curriculum that combines the fun of gardening with nutrition education. Along with my partners at Community GroundWorks at Troy Gardens, Wisconsin Home Grown Lunch, University of Wisconsin-Cooperative Extension, and the Wisconsin Departments of Health Services and Public Instruction, I hope this inspires students, early childhood providers, and teachers.

*Got Veggies?* is a wonderful way to engage children (and adults) in actively taking control of their own health. As a pediatrician specializing in childhood obesity, I am confronted every day with the challenge of helping children keep their bodies strong and healthy. Consistent eating of vegetables and fruits has been shown to decrease obesity, heart disease and some cancers. Healthy eating habits need to start young, and be reinforced through peers, mentors, teachers, and parents. This resource is part of the *Got Dirt?* Garden Initiative which seeks to provide practical resources for starting youth gardens—which can be used as a place to educate, provide opportunities for physical activity, acquire a useful skill, and have lots of fun! Nutrition education combined with gardening is an effective way to increase knowledge of fruits and vegetables, as well as reinforce teachers' and students' exposure to gardens as part of the academic curriculum. I hope *Got Veggies?* will further inspire the creation and use of youth gardens, and nurture a love for fresh fruits and vegetables.

*Got Veggies?* has been a collaborative effort, and the hard work of many partners has been essential to this project. Just as in the tilling, planting, weeding and harvesting of an actual garden, a group effort brings the best results.

Happy growing!

Aaron Carrel, M.D.  
Medical Director,  
University of Wisconsin Pediatric Fitness Clinic

# Introduction

## What is Got Veggies?

Got Veggies? is a garden-based nutrition education curriculum. The primary goal of garden-based nutrition education is to get children to eat more fresh fruits and vegetables. Gardens have long provided an excellent learning environment for teaching children about scientific concepts such as photosynthesis and decomposition. What we have discovered in the past decade, however, is that the garden is also the perfect learning environment for nutrition education. Students learn about nutrition in the garden through direct experience. When provided an opportunity to grow and prepare food in the garden, youth forge a deeply personal relationship with the food that sustains them. For example, a broccoli floret becomes more than a commodity when it is linked to the plant that bore it; the rain, soil, air, and sunlight that fed it; and the children and adults who nurtured it from seed to harvest.

## Why Got Veggies?

In 2005, the Wisconsin Department of Health Services and collaborating partners launched the Got Dirt? Garden Initiative with the goal of increasing the number of youth gardens in Wisconsin as a means for increasing access to, and consumption of, fruits and vegetables. A main part of the Initiative included the creation of the Got Dirt? Toolkit, which was developed to provide a step-by-step guide for starting a youth garden. Feedback gathered from educators across Wisconsin revealed the need for curriculum and activities that connect the classroom to the youth garden. Thus, Got Veggies? Garden-Based Nutrition Education Curriculum was developed for school, after school, and early childhood teachers to make that connection.

Growing evidence demonstrates that nutrition education used in conjunction with a youth garden positively impacts child and adolescent nutrition. In the midst of a national obesity epidemic, it has never been so important to support children in improving their eating and physical activity habits. The Centers for Disease Control and Prevention has identified both daily physical activity and increased fruit and vegetable consumption as two of the six most important strategies for preventing obesity. Thus, growing and eating food in the garden is a good place to start cultivating healthy eating and physical activity habits.

## What is in Got Veggies?

Got Veggies? features seven full lesson plans in the Main Menu section. Each lesson plan includes an overview, list of objectives (correlated to Wisconsin Model Academic Standards for Nutrition, Health, Science, and other related subjects), materials list, and directions for lesson activities including tasting.

The À la Carte section offers a variety of garden-based activities including Keeping a Garden Journal, Theme Gardens, and Garden Art. The Cooking & Eating in the Garden section provides a collection of fun recipes and helpful tips from the Troy Kids' Garden. These garden-based lessons and activities can stand alone or be used in conjunction with each other. Whether you have just a few minutes to spend with students in the garden or an entire lesson period, this curriculum is a great way to nurture students' interest in growing and eating fresh fruits and vegetables. Got Veggies? also includes an annotated list of garden-based and nutrition education resources.

## Stealth Health

As poor nutrition and lack of physical activity are central causes of childhood obesity, we need to find ways to make the healthy choice the easy choice for kids. How do we do this? We begin by finding ways to improve kids' environments, which includes where they live, learn, and play. Putting in a garden at a school, afterschool, or early childhood site is certainly changing their environment! Offering more fruits and vegetables with meals or adding healthier options to a vending machine are also good examples of things that can be done ... all the while kids are unsuspecting of these changes you are making! When we change environments to support healthier eating and physical activity, we increase the likelihood that better choices can be made.



— Amy Meinen, Nutrition Coordinator  
Wisconsin Department of Health Services

## Youth Grow Local

When youth tend their food from seed to harvest, they are more adventurous about eating fresh fruits and vegetables. In the garden, children eagerly snack on a wide range of homegrown treats—such as spring garlic, broccoli, cucumbers, cherry tomatoes, and kohlrabi. By teaching young people how to grow their own food, they are introduced to the ultimate local food system. Young gardeners take on the dual role of grower and consumer. When presented in the proper way, growing and eating food in the garden is a particularly powerful way for youth to connect to nature. It allows them to witness first-hand the life-giving energy that flows from the Sun to a plant to one's own body. These types of garden learning opportunities have the power to change the way that youth commonly experience food. In the children's garden, the interpretation of food moves beyond that of a resource or commodity—it becomes a delicious symbol of life itself.



— Nathan Larson, Education Director  
Community GroundWorks at Troy Gardens

## What should I know about this curriculum?

Got Veggies? was developed for 2nd and 3rd grade students with attention to current Wisconsin Model Academic Standards, including those for nutrition education. These lessons and activities can be easily adapted for younger and older children. We encourage school, after school, and early childhood teachers to modify lessons and activities based on what is developmentally appropriate for different age groups.

This curriculum was developed for use in a garden learning environment. We understand that not every teacher has access to a garden, so many of these lessons can easily be adapted for use in the classroom. If your school, after school, or early childhood learning environment does not currently have a garden and you are interested in developing one, please visit [www.dhs.wi.gov/health/physicalactivity/gotdirt.htm](http://www.dhs.wi.gov/health/physicalactivity/gotdirt.htm) for more information and resources for starting a youth garden.



## Can I evaluate the effectiveness of this curriculum?

If you wish to evaluate your students' progress based on the seven core lessons and short activities contained in this curriculum, we suggest the following:

- Consider collecting pre or baseline evaluation measures before beginning to use the curriculum and post measures after using the curriculum.
  - A pre/post measure might include documenting the change in knowledge about fruits and vegetables. Students could be asked questions about how many fruits and vegetables they should be eating each day or why dark orange and dark green vegetables are extra special.
  - Evaluation measures may include—but are not limited to—measuring change in students' knowledge of fruits and vegetables, willingness to try fruits and vegetables, and attitude toward or likeability of fruits and vegetables.

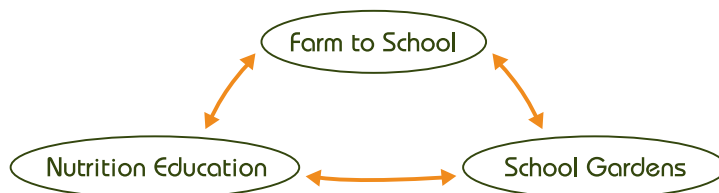
There are other ways to evaluate the success of your garden program, including use of the following techniques:

- Photo journaling—taking pictures of the students gardening and of the garden as it grows.
- Journaling—keeping a log of student observations of the gardening experience including their feedback on trying new fruits and vegetables.

## Gardening & Farm to School

As the farm to school movement grows, schools are beginning to procure more foods (including fruits and vegetables) locally for use in school meals and snacks. Gardening is a great addition to farm to school efforts! As new varieties of local fruits and vegetables begin to appear in school lunches across the country, children may be reluctant to try these new items. However, if children learn about how their food grows or where it comes from through gardening and nutrition education, they may be more accepting of and willing to try new foods. Thus, when creating a comprehensive farm to school program within your school, after school program, or early childhood learning environment, consider using the Got Dirt? Garden Toolkit and Got Veggies?.

A Comprehensive Farm-to-School Program:



# The Main Menu

Lesson Plans





# The Color Harvest

A Comparative Tasting Lesson

## Lesson Overview

This comparative harvesting, cooking, and eating activity is a fun way to familiarize students with a variety of fruits and vegetables using color as the distinguishing characteristic. Eating a variety of colors is important as this gives our bodies a wide range of valuable nutrients—like fiber, folate, potassium, and vitamins A and C. For this lesson, you will want to harvest an assortment of seasonal foods from your garden and compare their colors and other characteristics. The lesson is suited for the garden or the classroom and if you don't have enough food in the garden you can get a colorful variety of fruits and vegetables at a local farmers' market, farm stand, or grocery store. Students will learn how eating different colors of foods makes us healthy in different ways. They are encouraged to use specific vocabulary to describe color variations between vegetables and fruits. This lesson can be adapted for students of all ages. See some suggestions for different age groups on page 12.

## Objectives

Students will:

1. Taste and identify a variety of fruits and vegetables (Nutrition Ed C.4.2, F.4.2)
2. Understand that some plants are sources of food (Ag Ed D.4.1; Nutrition Ed F.4.3)
3. Develop descriptive vocabulary for specific characteristics of food (Lang Arts D.4.1, D.4.2; Nutrition Ed F.4.2)
4. Collect and analyze data – see Review and Vote (Math E.4.1, E.4.3)



## Materials

### Food:

- Different varieties of vegetables and fruits that represent a spectrum of colors from your garden or local market (e.g., *orange*: carrots, sweet potatoes, butternut squash, pumpkin; *purple*: grapes, eggplant, kohlrabi; *red*: radishes, tomatoes, red peppers, strawberries, raspberries, apples, watermelon; *yellow*: carrots, corn, potatoes, summer squash; *green*: collard greens, asparagus, kale, broccoli, peas, zucchini, celery, spinach, cucumbers; *white*: cauliflower, white potatoes; *blue*: blueberries).

### Supplies:

- Book: *Growing Vegetable Soup* by Lois Ehlert or other book to stimulate discussion about growing and eating a variety of vegetables and fruits from your garden. For more book suggestions, consult the Booklists on page 58 in the Resources section.
- Knife
- Cutting board
- Plates
- Word Bank (included at end of lesson)
- Tasting Chart (included at end of lesson)

## Preparation

1. Prior to lesson, determine which vegetables and fruits you will need to harvest or purchase to demonstrate the variety of colors we eat. Consult the list of suggested vegetables and fruits under the Food heading in the Materials section above. For more ideas, visit Harvest of the Month at [www.harvestofthemonth.com](http://www.harvestofthemonth.com) or MyPyramid.gov for lists of different fruits and vegetables. For vegetables, visit: [www.mypyramid.gov/pyramid/vegetables.html](http://www.mypyramid.gov/pyramid/vegetables.html). For fruits, visit: [www.mypyramid.gov/pyramid/fruits.html](http://www.mypyramid.gov/pyramid/fruits.html).
2. Get *Growing Vegetable Soup* by Lois Ehlert or similar book to stimulate discussion about growing and eating a variety of vegetables and fruits from your garden. For more book suggestions, consult the Booklists on page 58 in the Resources section.



## the garden classroom

A healthy school garden is a critical component of a vibrant nutrition education. Bringing nutrition education from the classroom into the garden setting has a powerful effect on children's eating habits now and into their future. The Kids' Garden has provided us at Mendota Elementary School the opportunity to develop our nutritional senses and flourish in the benefits of healthy lifestyle choices. The kids love to eat the vegetables they learn about and are delighted to work hard harvesting, washing and hauling the newly grown treasures.



— Christine Pietruszka,  
Teacher at Mendota  
Elementary School,  
Madison Metropolitan  
School District



3. Rinse vegetables and fruits before slicing. If possible, slice immediately before tasting to preserve freshness. Avoid putting food in the refrigerator, as it dulls the flavor and changes the texture.
4. Write the name of each vegetable or fruit on a display board or poster to record student descriptions (refer to Tasting Chart at end of lesson).
5. Post Word Bank with adjectives to guide students' sensory observations (included at end of lesson).

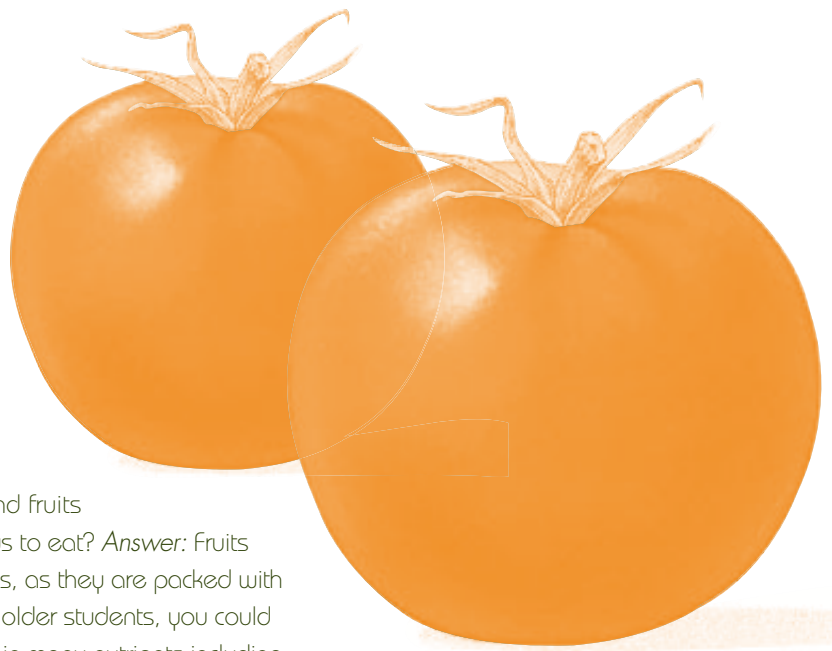
### Procedure

**Introduction:** Gather students for a discussion or a read-aloud. Use *Growing Vegetable Soup* by Lois Ehlert or similar book to stimulate discussion about growing and eating a variety of vegetables and fruits from your garden.

You may choose to use some of the following questions to guide your discussion:

1. Where does food come from?
2. Who has a garden or knows someone with a garden? What do you grow?
3. Who has been to a farm? What did you see there?
4. Can you think of some vegetables that are grown in a garden or on a farm?
5. Can you think of some fruits that are grown in a garden or on a farm?
6. Who has tasted any of these fruits or vegetables before?
7. Which fruits do you like to eat as a snack?
8. Which vegetables do you like to eat as a snack?
9. Do you grow any of these vegetables or fruits with your family?
10. Can you think of a fruit or vegetable that comes in more than one color? For example, tomatoes come in almost every color as well as in many shapes and sizes.
11. What colors and shapes of tomatoes have you seen?





12. How do these different vegetables and fruits help us grow? Why are they good for us to eat? *Answer:* Fruits and vegetables are good for our bodies, as they are packed with nutrients like vitamins and minerals! For older students, you could explain that fruits and vegetables contain many nutrients including vitamin A and C, potassium, and dietary fiber. There are also some special fruits and vegetables, called the "super green and super orange." These dark green and orange vegetables are important to eat often because they contain extra amounts of vitamins and minerals. Can you guess which fruits and vegetables growing in your garden are green or orange superheroes? *Answer:* Super green: bok choy, broccoli, collard greens, mustard greens, romaine lettuce, spinach, kale, watercress, turnip greens, mesclun, and dark green leafy lettuce. Super orange: acorn squash, pumpkin, carrots, sweet potatoes, butternut squash, and hubbard squash.
13. Do you know how many fruits and vegetables you should be eating each day? *Answer:* The amount we should eat depends on if we are a boy or a girl, how much activity we get each day, and how old we are. Have children try the Fruit and Veggie Calculator at [www.fruitsandveggiesmorematters.gov](http://www.fruitsandveggiesmorematters.gov) or visit [www.fruitsandveggiesmorematters.gov/downloads/Low\\_Literacy\\_Brochure.pdf](http://www.fruitsandveggiesmorematters.gov/downloads/Low_Literacy_Brochure.pdf) for information on how many fruits and vegetables kids should be eating daily. As their teacher, how many fruits and vegetables should you be eating? Compare the recommended amounts for adults and kids.

Following the introduction, review proper hand washing procedures and discuss why they are important. Have students wash their hands. Prepare selected fruits and vegetables for tasting.

**Observation:** Write names of selected fruits and vegetables on the display board or poster paper, or for older students, hand out Tasting Charts (see example on page 13). Explain to students that they will be acting as "investigators" and will be using their senses to observe, describe, and compare different fruits and vegetables. Before tasting, pass around each vegetable or fruit so students can observe the appearance, texture, scent, etc.



### voices from the Kids' garden

"How many types of these are there in the world?" a girl asked while planting two varieties of kale in the Kids' Garden.

After harvesting a broccoli floret and taking a bite, a child exclaimed, "Yum! Wait, I thought broccoli was gross!"

"It's interesting, salsa has everything in it that I didn't like, but I like it. I mean, it has onion, tomatoes, peppers ... but it tastes good!"

**Tasting:** Give each student a slice of vegetable or fruit. Encourage them to taste it. Tell students that you don't expect everyone to like it, but it is important to try new vegetables and fruits because they may develop a taste for them over time. Have them observe and describe it using words from the Word Bank. Encourage students to use their own words, which can be added to the Word Bank for future sensory observation activities. Record student descriptions on the display board or have them write them on their Tasting Chart. Repeat these steps with each different vegetable or fruit. Encourage your students to use specific and descriptive vocabulary.

**Review and Vote:** Briefly review and compare vegetable and fruit descriptions. Have students vote for their favorite variety. This could be an opportunity for a math connection. Count the votes and create a graph or chart to represent the results. Discuss voting results and reasons why students chose one fruit or vegetable over others.

**Clean-up:** Have students help with clean-up and wash their hands. If possible, vegetable and fruit scraps can go to a compost pile or worm bin.

### Individualized to Age Groups

**For Younger Children (K to 2nd grade):** During observations have students draw a picture of one of the vegetable or fruit varieties. Or cut vegetable shapes out of paper and write their descriptive words on the vegetable. Another fun activity is to have each student offer one descriptive word and combine them to make a collective poem about a selected vegetable or fruit.

**For Older Children (3rd to 5th grade):** Use the attached Tasting Chart for students to record their own observations. Students may choose adjectives from the Word Bank or use their own describing words. You may also have students write a paragraph or poem describing their favorite vegetable or fruit. Cut fruit or vegetable shapes out of paper and have students write their poems on them. Glue all the poems to one large piece of paper or poster board.

**Lesson Variation: Comparative Heirloom Vegetable or Fruit Tasting:** Hone your students' taste buds and observation skills by repeating this lesson with heirloom varieties of just one vegetable or fruit. For example, harvest or purchase four different heirloom varieties of tomatoes or apples. Heirloom varieties of certain vegetables and fruits—such as tomatoes and apples—vary greatly in appearance, texture, and flavor, making them well suited for comparison.

## Additional Activities

Give students a list of foods being grown in the garden or found at their local market. Have them work with a parent/caregiver to find a word describing a characteristic of each food on the list. Encourage the parent/caregiver to offer one or more of these foods at meals or snacks.

**Fruit and Vegetable Challenge:** Keep track of how many fruits and vegetables you eat for a week.

**Compare food in different forms.** Make some garden salsa and compare it to raw tomatoes, tomato soup, ketchup, or sun-dried tomatoes. Compare raw apples with unsweetened applesauce and dried apples. Ask students how they think apples are turned into applesauce or dried apples.

## Word Bank

sweet	sour	flavorful	earthy
yummy	sharp	squishy	zesty
grand	healthy	zippy	mealy
delicious	ripe	tasty	firm
fragrant	tangy	acidic	crunchy
bitter	juicy	delectable	tough

TASTING CHART				
NAME OF FRUIT OR VEGETABLE				
LOOK				
SMELL				
FEEL				
TASTE				
SOUND				



## garden observations

It's so inspiring to watch the garden transform so many kids over the course of a season! Kids who arrive to the garden saying they "don't like vegetables" will be begging for seconds of freshly picked carrots just a few weeks later. They start to love the adventure of trying new things, and they start teaching each other about how crunchy kohlrabi is or how to wrap a cherry tomato in a cabbage leaf. The garden is the first place where a lot of the kids have the chance to develop a positive, respectful relationship with both food and nature, and I've seen the pride in their faces when they show off what they've grown to their teachers and peers.



— V. Ione Machen,  
Garden Educator,  
Community GroundWorks  
at Troy Gardens





# Dirt Made Our Lunch\*

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## Lesson Overview

This lesson is designed to teach students about the connection between soil and food. The central activity, Deconstructing a Cheeseburger, asks students to help trace ingredients back to the soil, showing how we depend on healthy soil in order to eat. Many of the nutrients in soil come from decomposition of dead plants and other organic matter. Plants absorb these nutrients, and in turn, our bodies absorb them when we eat plants. We refer to this as the nutrient cycle. The Lunch Makes Our Dirt activity helps students understand how food scraps and plant matter break down into rich soil.

## Objectives

Students will:

1. Trace foods from origin to table  
(Ag Ed D.4.1; Nutrition Ed B.4.4; Science F.4.4)
2. Describe the connection between healthy soil and healthy food  
(Ag Ed D.4.1; Science F.4.2, F.4.4)
3. Understand that people need food in order to be healthy, have energy, and grow (Nutrition Ed A.4.3)
4. Determine the difference between plant and animal food sources  
(Nutrition Ed F.4.3)
5. Identify the basic food groups and give examples from each  
(Nutrition Ed F.4.4)

## Materials

Food:

- Dill, cucumbers, mustard seed, peppercorns, vinegar, water and salt.  
See Kids' Garden Refrigerator Pickles recipe listed in the Tasting activity on page 17.

\* Lesson inspired by "Dirt Made My Lunch," a song by "Solar" Steve Van Zandt of the Banana Slug String Band.



### Supplies:

- Photos or drawings that illustrate how common cheeseburger ingredients can be traced back to the soil (e.g., bun, wheat, soil. See Deconstructing a Cheeseburger activity on page 16 for full list of images needed).
- Garden journals or paper
- Pens/pencils
- Display board
- Plates
- Napkins
- Cutting boards
- Bowl
- Knives
- 2 quart-sized Mason jars or similar sized plastic containers with lids

### Preparation

1. Familiarize yourself with "Dirt Made My Lunch," a fun and educational song by "Solar" Steve Van Zandt of the Banana Slug String Band. To watch a video of the Banana Slug String Band singing "Dirt Made My Lunch," go to [www.youtube.com/watch?v=SCeyXW64cns](http://www.youtube.com/watch?v=SCeyXW64cns). To watch youth gardeners from Troy Gardens in Madison, Wisconsin singing this song, go to [www.youtube.com/watch?v=ZrieCG8D2Wl&feature=youtupe\\_gdata](http://www.youtube.com/watch?v=ZrieCG8D2Wl&feature=youtupe_gdata). You can order songbooks and CDs of many great educational garden and nature songs, including "Dirt Made My Lunch," from the Banana Slug String Band at [www.bananaslugstringband.com](http://www.bananaslugstringband.com).
2. Get photos or drawings that illustrate how common cheeseburger ingredients can be traced back to the soil (e.g., bun, wheat, soil. See Deconstructing a Cheeseburger activity for full list of images needed).
3. Collect pens or pencils and make or purchase garden journals for the Lunch Makes Our Dirt activity. See Keeping a Garden Journal on page 38 in the À La Carte section for garden journal ideas.
4. Harvest or purchase – and wash – food for Kids' Garden Refrigerator Pickles recipe listed in the Tasting activity.



### reciprocal nature of gardening

Gardening is a gateway to healthy eating. When children have the opportunity to experience how food connects us to the natural world they are much more willing to try and enjoy new fruits and vegetables. The reciprocal relationship of nurturing plants so that they in turn can nurture us with food is a marvelous and powerful thing to take part in.



— Brent Kramer,  
Education Coordinator,  
Wisconsin Homegrown Lunch  
REAP Food Group

### fun idea

Emphasize the concept of the nutrient cycle by feeding plants in your garden. Encourage students to use their hands to place compost or other nutrient-rich soil at the base of a plant and say "Bon Appétit!"





## Procedure

**Song – Dirt Made My Lunch.** Sing along with “Dirt Made My Lunch” by “Solar” Steve Van Zandt of the Banana Slug String Band.

**Introduction:** Briefly discuss the importance of soil with a series of questions: Could we have plants without dirt? Could we have food without plants? Could we have food without dirt? If doing this lesson in the garden, have students scoop up a handful of dirt and examine it during this discussion. Leave questions open-ended as a set-up for using the Deconstructing a Cheeseburger activity to prove that “dirt made our lunch!”

## Deconstructing a Cheeseburger

**Students help prove how “dirt made our lunch.”**

Draw columns on a display board for several cheeseburger ingredients and place the appropriate image at the top of the column (bun, burger, cheese, pickle, tomato, and avocado). Then, taking one cheeseburger ingredient at a time, challenge the class to trace each ingredient back to the soil. Hand out images for students to post on the display board as you connect each ingredient to the soil. For example, the cheese pictures would include cheese, milk, cow, grass, and soil. For a pickle, use a picture of a pickle at the top of the column and then a bottle of vinegar, cucumber, a cucumber plant, a dill plant, and soil. Here’s an example of the chart:

BUN	BURGER	CHEESE	PICKLE	TOMATO	AVOCADO
Flour	Beef	Milk	Vinegar	Tomato Plant	Avocado Tree
Wheat	Cow	Cow	Cucumber	Soil	Soil
Soil	Grass	Grass	Cucumber Plant		
	Soil	Soil	Dill Plant		
			Soil		

**Lunch Makes Our Dirt.** Look for stages of decomposition in your garden and/or compost pile. For example, follow the decomposition of overripe fruits and vegetables periodically (e.g., 3 days, 3 weeks, 3 months) throughout the season or of a carved pumpkin after Halloween. Have students document the stages using photos or garden journals. See *Keeping a Garden Journal* on page 38 in the À La Carte section for garden journal ideas.

If you are doing this in a classroom and don’t have a school compost pile, bring in some items in various stages of decomposition from your home compost pile. Use recycled clear plastic containers or paper plates to demonstrate several decomposition stages. Or start a school composting project! You can also compost in a bag. Put food scraps, dried leaves, small plant parts, etc. in a zip top bag, mist with water and watch the process of decomposition take place.



**Tasting.** Remember to have students wash or sanitize their hands. Make fresh pickles with cucumbers from your garden or local market following the Kids' Garden Refrigerator Pickles recipe below. See the Cooking & Eating in the Garden section on page 47 for additional tips for this and other recipes.

## Kids' Garden Refrigerator Pickles

Pickle recipe can also be found on page 50.

### Supplies:

- Two quart size jars with lids
- 1 cup dill (flowers, seeds, and stems all work)
- 5-6 medium cucumbers
- 4 pinches of mustard seed
- 6 black peppercorns
- ½ cup of vinegar
- 2 cups of water
- 8 teaspoons salt

Harvest, wash, and slice the cucumbers into wedges. Place them in a bowl with the dill and salt, and mix them by hand or with a mixing spoon. Using two mason jars, add to each 2 pinches of mustard seed, 3 peppercorns, ¼ cup of vinegar, and one cup of water. Add half of the dill/salt/cucumber mixture to each jar. Seal the lid and mix the pickles until you can't wait any longer to eat them (minimum 10 minutes). If you have leftovers, check with your local food safety specialist to see how long they keep.

**For Younger Children (Pre K):** Have students color in the MyPyramid to match the ingredients of the cheeseburger. Orange: Bun (Grains), Green: Tomato and Pickle (Vegetables), Red: Avocado (Fruit), Blue: Cheese (Milk/Dairy), Purple: Burger (Meat and Beans). You can find MyPyramid at [www.mypyramid.gov](http://www.mypyramid.gov).

**For Older Children (3rd to 5th grade):** Have students match the cheeseburger ingredients to the appropriate MyPyramid food groups. Of the foods we eat, ask students to identify which of them are plants or parts of a plant? You can find MyPyramid at [www.mypyramid.gov](http://www.mypyramid.gov).

## Take Home Activity

Give students another common food to deconstruct (e.g., peanut butter and jelly sandwich, spring roll, pizza, burrito, chips and salsa). Have them demonstrate how to do this activity for their parents/caregivers. Follow up the next day with a discussion about how to make healthy versions of foods like pizza. For example, make pizza with a whole-wheat crust, increase the amount of vegetables, and decrease the amount of meat. Or make burritos with less meat and cheese and more vegetables (e.g., zucchini, onions, garlic, shredded carrot, mashed sweet potato or butternut squash, lettuce, tomatoes, beans).



## cross curriculum benefits

There are so many ways that you can apply what we do in the garden in the classroom. There's integration all throughout the curriculum: mathematics, science, art, music. And to see them realize "Oh, this thing that I saw last week is now this much bigger or it moved from this flower and now it's creating, what? What it is creating? Oh it's creating a tomato, it's creating a zucchini, it's creating—whatever." That is thrilling to see happen; to see that realization come over kids. There's the stark contrast of seeds sitting on stalks in the middle of winter, as well as the compost that's out there decomposing and creating heat; you can measure the heat, you can see the snow melting from the top. It can be an all year process—it's just wonderful that way.



— Ken Swift, Teacher,  
Lopham Elementary School,  
Madison Metropolitan  
School District

# Composting with Worms



## Lesson Overview

This lesson is designed to explore the nutrient cycle concept that students were exposed to in the Dirt Made Our Lunch lesson and to reinforce the idea that our food comes from the soil. Use worm composting as an interactive way to demonstrate the importance of maintaining healthy soil—which keeps us healthy—and introduce students to the significance of worms in this process.

## Objectives

### Students will:

1. Understand the nutrient cycle and the connection between healthy soils, healthy food and healthy people (Nutrition Ed B.4.5; Science E.4.2, F.4.3, F.4.4, H.4.3; Ecology/Environment E.4.1; Ag Ed D.4.1)
2. Know the function of roots (Science C.4.2, F.4.1, F.4.4)
3. Understand how plants collect and create nutrients people need (Ecology/Environment E.4.1; Health A.4.3; Science C.4.2)
4. Trace foods from origin to table (Ag Ed D.4.1; Nutrition Ed B.4.4; Science F.4.4)

## Materials

### Food:

- Carrot sticks, apple slices, or some other healthy vegetable or fruit snack

### Supplies:

- Worm Bin (see Making Your Own Worm Composting Bin on page 44 in the À La Carte section for instructions)
- Vegetable peeler or apple slicer
- Books: *Wonderful Worms* by Linda Glaser (for K-2/3), *Diary of a Worm* by Doreen Cronin (for 3-5), *Compost* by Linda Glaser, *Worms Eat Our Garbage* by Mary Appelhof, Mary Frances Fenton, and Barbara Loss Harris

## Preparation

1. Make a garden or classroom worm bin. See Making Your Own Worm Composting Bin activity on page 44 in the À La Carte section for instructions on how to make a worm bin.
2. Get suggested book(s).
3. Harvest or purchase – and wash – carrots and/or apples (or some other healthy vegetable or fruit snack). Cut carrots into sticks and apples into slices.



## Procedure

**Introduction:** Begin the lesson by handing out a healthy snack such as apple slices and/or carrot sticks. Remember to have students wash or sanitize their hands before tasting. While students are snacking, begin a discussion about the nutrient cycle.

Let the students know that today's lesson is about worms. Ask why they might be eating a snack during a worm lesson? What do apples or carrots have to do with worms? To answer this question, start by imagining an apple tree growing in the ground. Have the class brainstorm everything they know about the apple tree. Lead the discussion with questions about the roots, getting the students to think about the roots drawing nutrients from the soil, and then the trunk "sucking" those nutrients up into the rest of the tree and into the apples themselves. If we eat an apple from that tree, then where do the nutrients go? *Answer:* Into our bodies. Where did the nutrients from the apple come from? *Answer:* The soil. But how did they get into the soil in the first place? *Answer:* Small animals like worms play a big role in breaking down organic material like apple cores and carrot tops and returning nutrients to the soil. Next, read one or more of the books about worms. You may want to introduce some fun facts (see sidebar) before or during the Worm Bin Exploration.

**Worm Bin Exploration.** Before students begin exploring, make sure to mention two worm handling tips: (1) Keep your hands open, so that the worms can breathe; (2) If they start wriggling a lot, they are probably too warm or dry and they need to go back into the cool, moist bin. Ask the students to make guesses about what they will see when the worm bin is opened. You may also want to share some photos of what they might discover in the worm bin (e.g., worm cocoons). See Life Lab's Worm Bin Bingo page for some good photos, [www.lifelab.org/wormbingo.php](http://www.lifelab.org/wormbingo.php). Smaller classes of about 15 students can successfully stand in a circle around the worm bin, and get a chance to see the bin all at the same time. With larger classes, the class may be divided into two groups: one to see the bin, and one to observe some individual worms, separated out from the worm bin. Extra adult help in the classroom is useful during this part of the lesson. Students may also choose to feed the worms with the scraps from their own snack. Apple cores and carrot peels are both good worm snacks. This reinforces the idea of the nutrient cycle. The worms will help put the nutrients from the food back into the soil, so that more apple trees or carrot plants can grow. Students have fun with the idea that worm poop is healthy soil that helps plants grow. Encourage the students to say something to the worms as they feed them, such as, "Thanks, worms, for turning this back into soil."



## fun worm facts

- Worms do not have eyes, ears, nose, or bones!
- Although they have no eyes, they are able to sense light and dark, and they prefer to be in the dark.
- Worms have five hearts!
- All worms are both male and female (hermaphroditic), and can mate with any other worm.
- Worms breathe through their skin!
- It is a myth that if you cut a worm in half both sides will survive; only the side with the five hearts will survive.
- Worms' tunnels loosen up the soil and bring air pockets into the soil, which are important for plant roots to grow.
- Worm poop is very rich soil!



# Seeds & Sprouts



## Lesson Overview

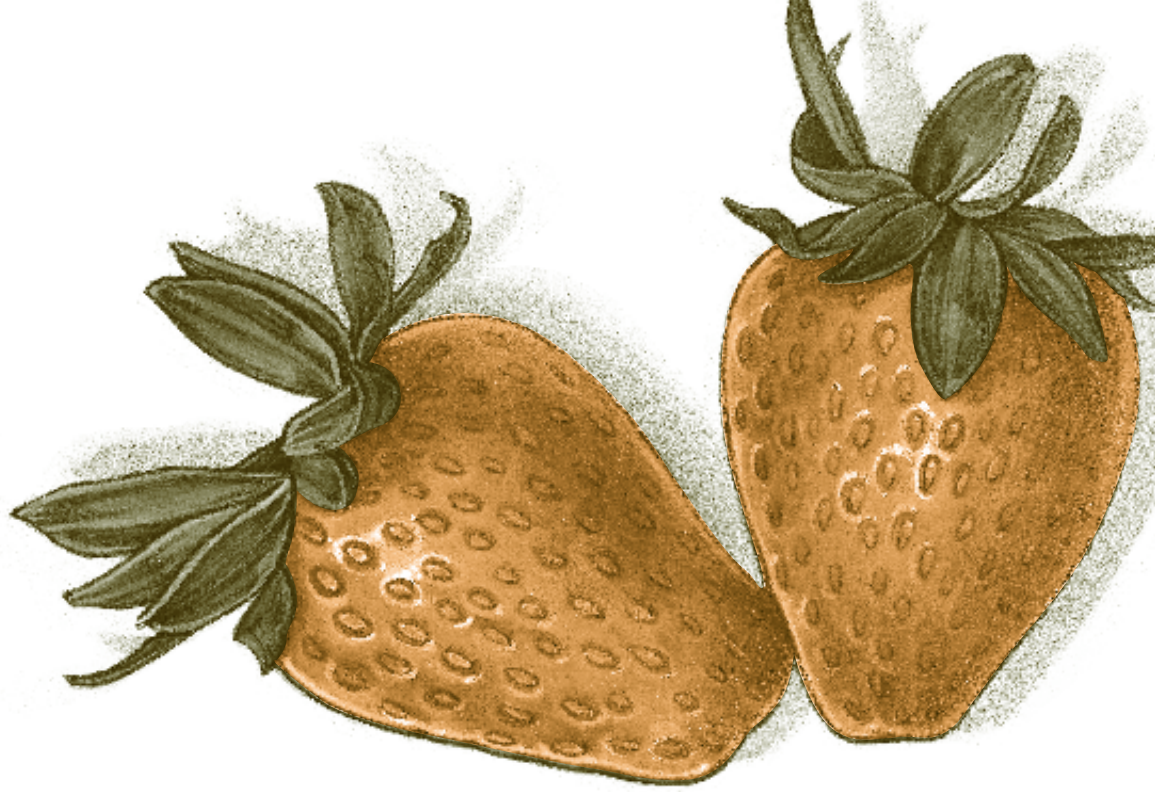
There are six main plant parts that people eat—seeds, roots, stems, leaves, flowers, and fruit. The following edible examples represent the six plant parts: bean (seed), carrot (root), asparagus (stem), spinach (leaf), broccoli (flower), and apple (fruit). This lesson is the first in a series of four Got Veggies? lessons that focus on the six main plant parts that we eat. It can be run in the garden or indoor classroom. This lesson also continues an ongoing investigation of the nutrient cycle that we began in *Dirt Made Our Lunch*. Guiding questions include: What do plants need to live and grow? How do plants help us live and grow? Where do nutrients come from and how do they get into our food? The answers to these questions can be found in explorations of plant development, the six plant parts we eat, and decomposition.

## Objectives

Students will:

1. Identify what plants and people need to live and grow (Environmental Ed B.4.6; Nutrition Ed A.4.3; Science F.4.2, F.4.4)
2. Describe basic plant anatomy (Agricultural Ed D.4.1; Science F.4.3)
3. Understand connections between plants, people, and our natural environment (Science F.4.4)
4. Participate in a discussion (Lang Arts C.4.3)
5. Trace food from origin to table (Nutrition Ed B.4.4)





## Materials

### Food:

- A fresh seed snack from the garden (e.g., green beans, peas. See Tasting activity on page 23 for more suggestions)

### Supplies:

- Spray bottle(s) with water
- A bucket filled with soil or brown paper towels (to represent soil)
- A paper fan, piece of cardboard, bellows, or something that can simulate wind

## Preparation

1. Prepare a spray bottle filled with water, a bucket filled with soil, and a fan for the Plant Role Play activity.
2. Harvest or purchase – and wash – foods for the Tasting activity (e.g., green beans, peas. See Tasting activity on page 23 for more suggestions).

## Procedure

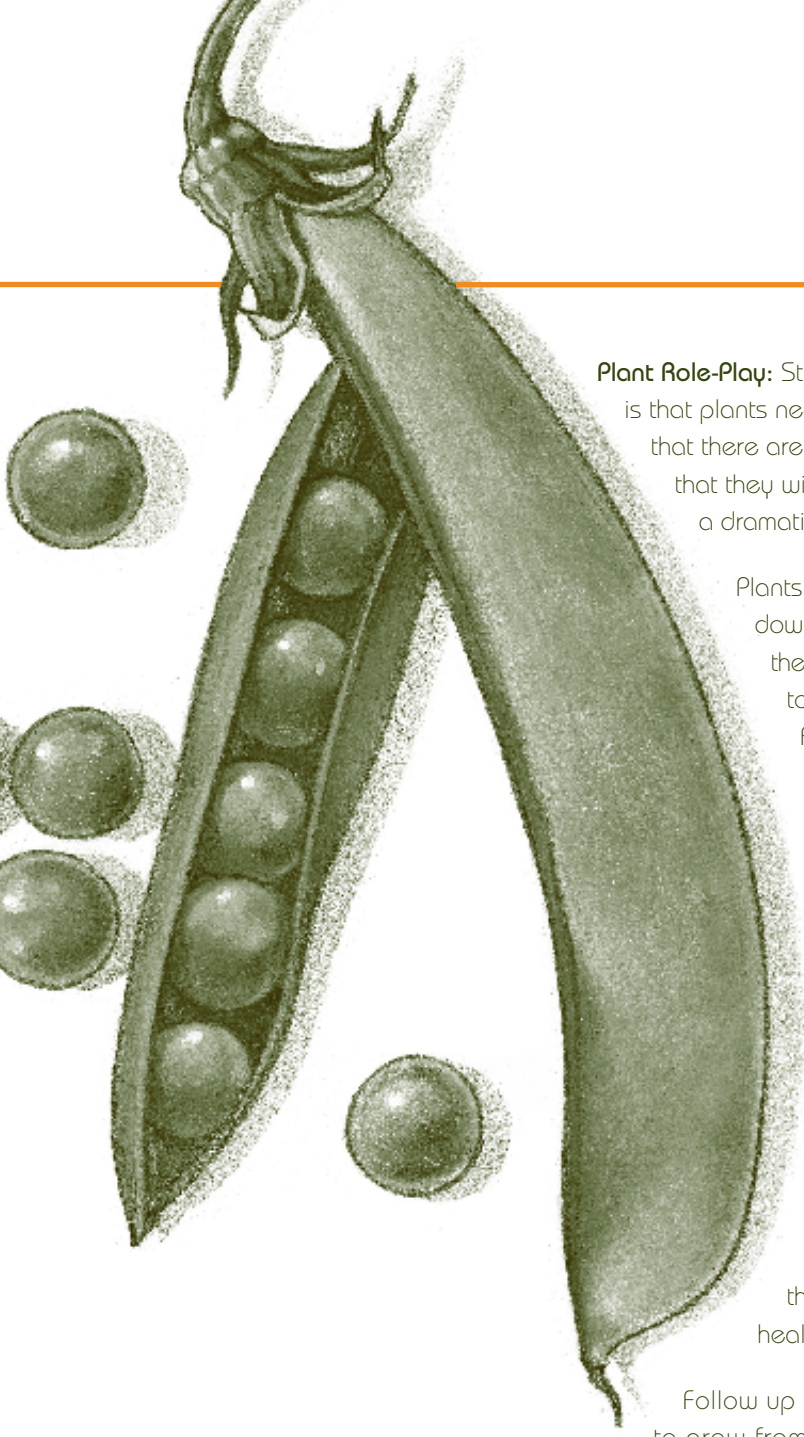
**Introduction:** In order to introduce students to the connection between plants, people, and the environment, briefly discuss how plants help people by providing something healthy for us to eat. Our bodies are healthy when we eat nutritious foods. Then discuss how people—through farming and gardening—help plants to grow and be healthy. What can we do to help plants grow and produce food? We often begin by planting a seed. We can help that seed sprout and grow by helping it get the things it needs (e.g., water, nutrient-rich soil). Nature provides the basic things plants need to grow, as students learn in the following activity.



## voices from the Kids' garden

After observing the pepper he planted the previous week, a child exclaimed: “Look! The plant I planted grew!”

“This is why I want to bring my mom here. You grow the food and then it tastes so good!”



**Plant Role-Play:** Students become plants in order to learn what it is that plants need to grow and be healthy. We tell students that there are elements of nature that help plants grow and that they will discover what those elements are through a dramatic play activity.

Plants start as seeds, so ask students to crouch down and become a seed. Ask students to close their eyes, or turn off the lights if in the classroom, to simulate a seed that is buried in the ground. First, give students a small handful of soil, a piece of brown paper towel, or something else to represent soil. They should hold the soil as they crouch. Next, go around with a spray bottle and give all "seeds" a light misting of water. After receiving the water, encourage students to raise a hand in the air to simulate a seed sprouting through the soil. Following the water, have students open their eyes (or turn on the lights in the classroom) to receive sunlight. Tell students to rise a bit from the ground to demonstrate that they are growing. Finally, use a small paper fan (or some other representation of wind) to blow air on students, after which they can stand up to represent a full-grown and healthy plant.

Follow up by asking students what they needed to grow from a seed to a mature, healthy plant.

*Answer:* Sun, Soil, Water, and Air.

**Chant:** To reinforce what students learned in the role-play, they chant together, "Sun, Soil, Water, and Air! Everything we eat, and everything we wear, comes from Sun, Soil, Water and Air!" Begin chanting slowly and gradually pick up the tempo. Finish by slowing down and lowering voices to a whisper.

**Tasting:** Remember to have students wash or sanitize their hands. Serve a seed snack harvested from the garden or purchased from your local market—fresh green beans or peas make a great healthy snack. Other delicious seed and seeded fruit snacks from the garden include corn, sunflower seeds, grapes, cherry tomatoes and many varieties of berries such as raspberries and strawberries. Roasted pumpkin seeds, homegrown popcorn, and fennel seeds are favorite fall treats!

## Additional Activities

**Document the growth of a tomato, squash, or bean plant by using garden journals or taking photos:** This is a fun way to follow the development of plants from seed to fruit. See *Keeping a Garden Journal* activity on page 38 in the *À La Carte* section.



## planting

We invite students to choose and plant from our seedling supply. Seedlings include basil, peppers, tomatoes, kale, cabbage, kohlrabi, onion, broccoli, fennel, flowers, parsley, and lavender. With a trowel in hand, kids plant their seedlings in garden beds. Many times kids help ready the garden beds for planting by pulling weeds, raking the soil, and adding compost by wheel barrow.

We teach students to gently pull the seedling from its tray and spread, or pull apart, the compacted roots. Often, kids will teach one another this process as new planters join the station. Digging a hole large enough to accommodate the plant's roots, and spaced far enough away from neighboring plants, kids give the seedlings new homes. They gently fill in the hole, adding a bit of compost and a loving wish for good growth.

We are not done yet! The next step is to mulch the area around the seedling with hay, creating a small nest. The hay provides cool shade for the soil, keeps soil moist longer, and prevents weed growth.



— Hannah Lavold,  
Garden Educator,  
Community GroundWorks  
at Troy Gardens



# Roots

## Lesson Overview

The root is the first plant part to emerge from the seed in order to draw up the water and nutrients that the plant needs to grow. People also depend on roots because our bodies absorb important nutrients when we eat plants (i.e., fruits and vegetables). The nutrients we consume are drawn from soil by roots and then transported throughout the plant. Other animals also get their nutrients from plants (e.g., a cow eating grass), so we absorb valuable nutrients when we eat meat as well. In this lesson, students participate in a discussion about the function of roots and become familiar with a variety of roots we eat through an exploration activity.

## Objectives

### Students will:

1. Identify the six plant parts and describe the life cycle of plants (Ag Ed D.4.1; Science F.4.3)
2. Understand the function of various types of roots (Science F.4.1, F.4.2)
3. Identify, describe, and taste different plant foods (Nutrition Ed B.4.4, C.4.2, D.4.1, E.4.1, F.4.1, F.4.2, F.4.3)

## Materials

### Food:

- A variety of root vegetables (e.g., carrots, sweet potatoes, radishes. See Exploration Activities on the next page and Tasting activity on page 26 for more suggestions)

### Supplies:

- Display Board
- Knife
- Plates
- Napkins
- Roots of weeds or other plants (see Exploration Activities)



## Preparation

1. Harvest or purchase – and wash – a variety of root vegetables, including orange root vegetables such as carrots or sweet potatoes. See Exploration Activities and Tasting activity for more suggestions.
2. You will need a knife for the Exploration Activities and Tasting activity.
3. You may also need some plates or napkins for the Tasting activity.

## Procedure

**Introduction:** On a display board in the garden or classroom, list the six main plant parts we eat: seeds, roots, stems, leaves, flowers, and fruit. Begin a discussion by asking students which of those parts is the first to grow out of a seed when it is planted. Or ask students what plant part they eat when they eat a carrot. *Answer:* The root. Have students list as many root vegetables as they can. Have them identify all the root vegetables you have growing in your garden, or make a list of those they'd like to grow.

Based on the list, students know that roots can be a delicious and healthy food for us, but what do the roots do for the plant? *Answer:* Absorb nutrients and water from the soil and provide support by anchoring the plant in the ground. Ask students how people get the water and nutrients they need since they don't have roots. *Answer:* The nutrients that the roots absorb end up in the food we eat. Roots do a big job in making sure both plants and people have the nutrients needed to live and grow. The large roots that we eat such as sweet potatoes and celeriac also store food for the plant.

**Exploration Activities:** Harvest some weeds or other plants that are ready to be pulled up and examine the roots. The primary root is the largest and usually central root. Sometimes this is a taproot—a large tapered root like a carrot. Other plants, such as lettuce, have fibrous root systems. The secondary roots are the smaller roots that grow horizontally off the primary root. A taproot stores food for the plant and the secondary roots both anchor the plant and absorb water and nutrients.

Collect – and wash – a variety of interesting root vegetables from the garden, farmers' market, or grocery store, such as golden or cylinder beets, turnips, ginger, celeriac, rutabaga, beauty-heart (watermelon) radish, black Spanish



## Wisconsin Nutrition Education Program

The UW Extension Youth Nutrition Education Program in Dane County provides hands-on interactive learning activities for children grades K-8 in school and afterschool programs. Educators also focus on the importance of food safety, especially the benefits of hand washing. The afterschool programs include fun with food clubs and gardening clubs, where the children explore healthy ways to prepare snacks and foods, and grow, harvest and enjoy eating tasty fruits and vegetables. The Wisconsin Nutrition Education Program provides nutrition education to adults and families in 68 counties across Wisconsin. Contact your local Extension office for more information.



— Tracy Smith,  
Wisconsin Nutrition Education  
Program Administrator,  
Dane County University of  
Wisconsin-Extension





radish, orange and purple carrots, blue potatoes (technically a tuber), and sweet potatoes. Organize students in groups of four and tell them they are root veggie explorers. Give each group one or two of the root vegetables. They will need to use their senses to look at, feel, smell, and taste these roots. Go around to each group and cut one sample of their root in half so they can see the inside. If possible, offer them a sample to taste (remember to have students wash or sanitize their hands before tasting). Based on their observations about various root characteristics, the group should come up with a new and unique name for these roots (see Name That Veggie activity on page 44 in the À La Carte Section). Have each group share the name of their root and explain how they arrived at that name. Afterwards, students can look for ways that all of the roots are similar to one another and how they are different.

**Tasting:** Follow up the exploratory activity with a tasting of a variety of root vegetables. Remember to have students wash or sanitize their hands before tasting. Offering a familiar choice, such as a carrot, makes it easier for students to try less familiar roots. Raw sweet potato, radishes, celeriac, and salad turnips also make great snacks. Note: The “super orange” vegetables that are roots (e.g., carrots and sweet potatoes) provide our bodies with extra power, so they are important to eat often. For older students, you could explain that the reason that orange vegetables are “super” is because they contain extra amounts of key nutrients like vitamins A and C and potassium. These nutrients are important for many reasons, including the following: Vitamin A is essential for keeping our eyes and skin healthy and for protecting our body against illnesses like the cold and flu; Vitamin C keeps our gums and teeth healthy; and potassium helps our hearts stay healthy. During or after the tasting, encourage students to create a superhero type name for each of the orange root vegetables they have explored.

### For Older Children (3rd to 5th grade)

Explain that many people don’t eat enough orange vegetables like carrots and sweet potatoes. Ask students what they could do to eat more “super orange” vegetables in their meals and snacks. Write their suggestions on the board. Encourage them to pick one of these suggestions and try it at home. Have them report back on how they liked it. Here are a couple suggestions for your list:

- Just like carrots, sweet potatoes make a great raw snack. Really!
- Make sweet potato french fries. Scrub or peel them, cut them into french fry size, and toss with a small amount of Olive or Canola oil and salt. Spread them in a single layer on a sheet pan and bake at 400 degrees for 30 to 40 minutes, or until done to your liking. Turn the fries a few times as they bake to ensure even browning.



- Add grated carrots to your pasta sauce or salads.
- Make a fun snack—broccoli and carrot trees. Take a carrot stick (tree's trunk) and add 1-2 broccoli florets (tree's leaves and branches) to one end of the stick. Add a dollop of yogurt-based veggie dip to the broccoli florets to make a snow-covered tree.

## Take Home Activity

Develop or find a recipe based on one of the suggestions for eating more carrots and sweet potatoes. Perhaps a parent or caregiver could provide a favorite recipe. Send the recipe home with students to make with their family.

## Additional Activities

### Sprouting plants:

**Sweet potato:** Stick three toothpicks around the middle of the potato and support them on the rim of a clear glass or plastic cup with the plumper or rounded side of the potato facing up. Fill the glass with water so that the bottom of the potato is in water. Change the water weekly and replenish what evaporates. The roots will develop on the tapered bottom end of the potato while the stem and leaf buds develop at the top.

**Carrot:** Select fresh, large-sized carrots (not "baby" carrots) from the garden or market for this activity. Do not use those that are sold with the tops still on them. Remove the top two inches of the root (carrot) for the experiment and enjoy eating the rest. Put a one-inch layer of pebbles or pea gravel in a saucer. Place the carrots on top of the gravel, cut-side down, and add more pebbles to hold them in place, leaving about an inch or two of the carrot root exposed above the pebbles. Space the carrots about two inches apart in the saucer. Add water to the top of the pebbles and maintain that water level at all times. Feathery green leaves will grow out of the carrot tops.



## it takes a community

Getting community members and organizations involved in youth gardening is an invaluable resource. UW-Extension Master Gardeners can offer technical support on how and when to plant your garden as well as maintenance and troubleshooting; local non-profit organizations may assist with finding funding opportunities; Parent Teacher Organizations can provide ideas and volunteers; School district officials can ensure that you have the support and supplies needed to make the garden more sustainable. In turn, community members see that investing in the health and education of youth is a powerful way to ensure a healthy community into the future.



— Elizabeth Gering,  
Youth Grow Local Coordinator,  
Community GroundWorks  
at Troy Gardens





# Stems & Leaves

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## Lesson Overview

All of the six main plant parts that we eat perform an essential function in the life cycle of plants. Stems provide structural support while transporting water and nutrients throughout the plant. Photosynthesis—a process which we depend on to live—happens in the leaves of the plant. This lesson teaches students about the important work done by stems and leaves, and provides an opportunity to taste some of the many delicious stems and leaves we eat. It also encourages students to eat more highly nutritious dark green, leafy vegetables.

## Objectives

Students will:

1. Describe the function of stems and leaves (Ag Ed D.4.1; Science C.4.2, F.4.1, F.4.4)
2. Identify what plants need to live and grow (Environmental Ed E.4.1; Science F.4.4)
3. Identify, taste, and describe a variety of vegetables that are stems and leaves (Nutrition Ed B.4.4, C.4.2, E.4.1, F.4.1, F.4.2, F.4.3)

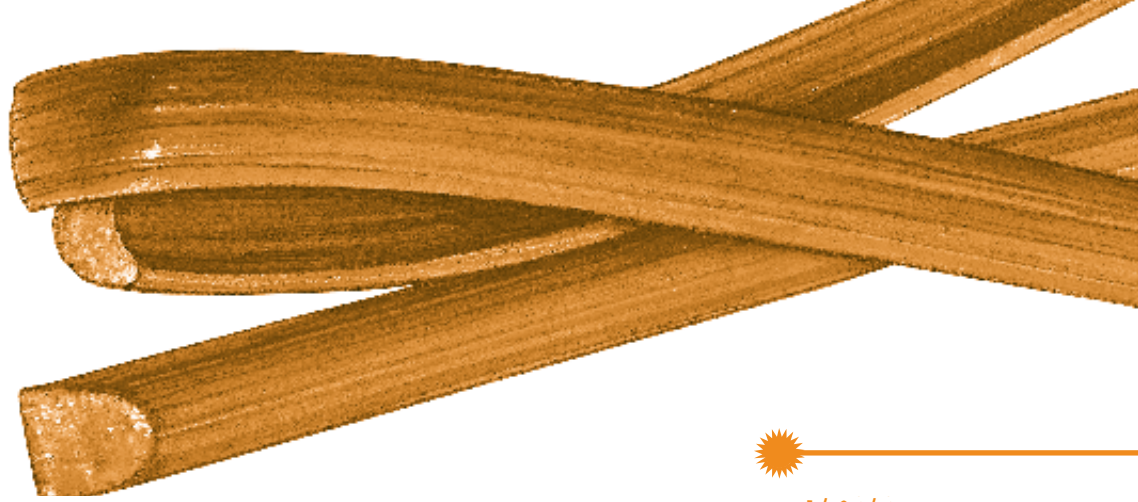
## Materials

Food:

- Vegetables that are stems and leaves (e.g., celery and kohlrabi for stems and spinach and cilantro for leaves. See Tasting activity on page 30-31 for more suggestions).

Supplies:

- Plates
- Napkins
- Cups for water
- Vegetable peeler
- Crackers
- Word Bank and Tasting Chart (included in The Color Harvest lesson on page 13)
- Props for Chef Chlorophyll Theater—large pot, big mixing spoon, chef hat and photos or illustrations that represent the elements plants need for photosynthesis: sunlight, water, and air.
- Blue batons, cups of water, or something else that represents water. Green batons or something else that represents nutrient-rich food (see Great Stem Relay on page 30 for more information).



## Preparation

1. Harvest or purchase – and wash – a variety of edible stems and leaves (e.g., celery and kohlrabi for stems and spinach and cilantro for leaves). See Tasting activity on page 30-31 for more suggestions).
2. Write the name of each edible stem and leaf on a display board or poster to record student descriptions. Post Word Bank with adjectives to guide students' sensory observations (refer to Tasting Chart and Word Bank in the Color Harvest lesson on page 13).
3. Print or create images representing sunlight, water, and air for Chef Chlorophyll Theater. You'll also need a soup pot and a large spoon. A chef hat is also a nice touch.
4. Create blue and green batons using paper towel rolls and paint or markers (see Great Stem Relay on the next page for more information).

## Procedure

### Chef Chlorophyll Theater

This short skit is intended to introduce students to photosynthesis. The primary objective is to teach students that plants make food for themselves, which helps make plants healthy for us to eat. Introduce this activity by reminding students that roots and stems pull nutrients and water up from the soil, but leaves also do something very special by making food through a process called photosynthesis. Have one teacher play "Chef Chlorophyll" and another adult help ask questions and hand out ingredients. You can also help students perform the roles of Chef Chlorophyll and the skit facilitator. For older students, you can explain that Chef Chlorophyll takes his name from the green pigment in plants that enables them to perform photosynthesis. Chlorophyll is also what makes plants green.

This short skit takes place inside a leaf, where Chef Chlorophyll sits with his pot and spoon, mixing up food for the plant. Chef Chlorophyll introduces himself and tells students that he is working inside his leaf kitchen to make a delicious dish for the plant. He takes a taste from his pot and says, "It tastes okay, but it needs a few ingredients." Chef Chlorophyll's helper asks students what ingredients the chef needs. The helper can explain that the missing ingredients are things that plants need to live and grow. Answer: sunlight, water, and air (carbon dioxide).



## nutrition standards

What a student eats can have a significant impact on a student's ability to learn and to live a healthy life. Nutrition education can positively influence students' eating behaviors and assist them to develop healthy eating habits. The Wisconsin Model Academic Standards for Nutrition are a tool for educators to use to expand the nutrition curricula for their students. The nutrition standards support nutrition education so it will occur sequentially from preschool through secondary school, and provide children with the knowledge and skills needed to lead healthy lives.

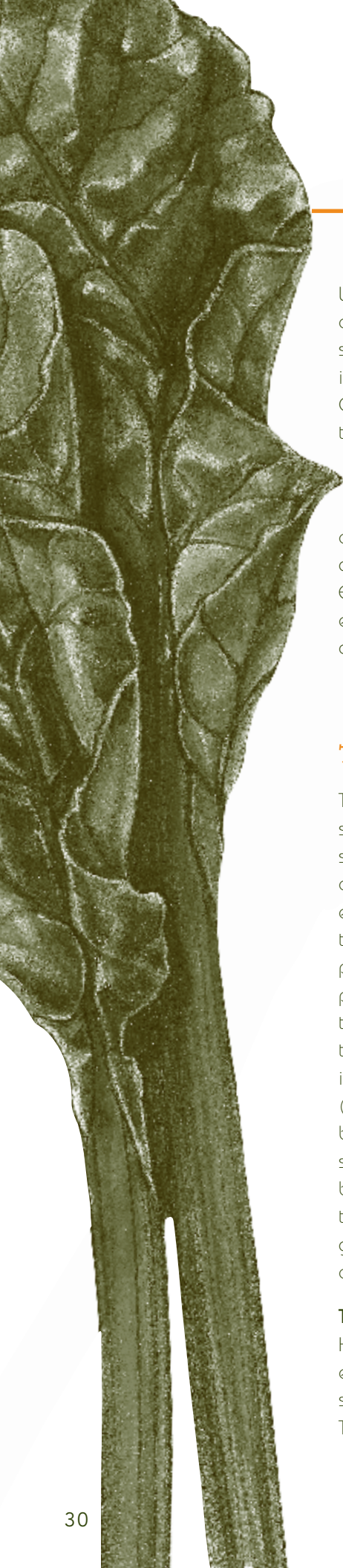
### Wisconsin Model Academic Standards for Nutrition

<http://dpi.wi.gov/fscp/pdf/nestandards.pdf>



— Jill Camber Davidson,  
Nutrition Education Consultant,  
Wisconsin Department of  
Public Instruction





When a student answers with one of the correct ingredients give them a picture of that ingredient and have them drop it in the chef's pot. Chef Chlorophyll stirs it in and tastes again. "Mmmm, that tastes better, but a couple more ingredients are needed!" Repeat until all three ingredients are in the pot. Conclude with Chef Chlorophyll stating that the mixture tastes delicious and that the food is ready.

Follow up with a brief discussion about photosynthesis. Ask students if people make food like plants do. Explain that only plants are truly able to make their own food. Ask them to imagine what it would be like if people could just make a sandwich or spaghetti inside their hand. That's a bit what it's like for plants. Explain that people (and other animals) depend on plants for food and that eating plants helps make us healthy! Plants also help make us healthy by creating oxygen for us to breathe through the process of photosynthesis.

### The Great Stem Relay

This running game is designed to help students understand the important role stems play in transporting water and nutrients throughout plants. Now that students understand that Chef Chlorophyll needs sunlight, water, and air in order to make food, ask students to explain how Chef Chlorophyll gets these essential ingredients into his leaf kitchen. *Answer:* Plants absorb sunlight from the Sun, they use carbon dioxide from the air that surrounds them, and they pull water from the ground using their roots. What role do stems play in this process? *Answer:* They provide the transit corridors. Not only does water travel to the leaves in these corridors, but the newly manufactured food travels from the leaves to where it needs to go to feed the plant and keep it healthy. Create a stem relay race course with blue batons to indicate water (or to add a fun extra challenge, use buckets or cups full of water) and green batons to indicate nutrient-rich food from Chef Chlorophyll's kitchen. The starting point is at the roots where runners must carry the blue "water" batons through the stem corridor to the other side where they hand the batons to Chef Chlorophyll in his leaf kitchen. Once the hand-off has occurred, the green "food" baton runners who have been waiting in the kitchen can speed off to deliver the newly manufactured food to the roots at the starting point.

**Tasting:** Have students taste and compare a variety of stems and leaves. Kohlrabi is a very tasty stem. Although it may not look like one, it is actually an enlarged stem used for storing water and nutrients for the plant. Other tasty stems include celery (technically a leaf stalk), asparagus, and broccoli stems. There are many choices of edible leaves—any herbs or leafy greens will do for





this tasting. Choose some of your favorites and some new ones (e.g., spinach, arugula, cilantro, basil, parsley, chard, bok choy, and beet greens). Plan ahead by planting a variety of edible stems and leaves in your garden. Encourage students to use their senses and describe each leaf or stem as they taste it. Remember to have students wash or sanitize their hands before tasting. Similar to the Tasting activity in The Color Harvest lesson on page 12, use a display board or Tasting Chart to write down student observations. Post a Word Bank with adjectives to guide students' sensory observations. Students will likely generate fun new describing words, which you can add to your Word Bank for future sensory observation activities. Provide water for the students to drink or crackers as palate cleansers since some of the leaves have strong or bitter flavors.

## Additional Activities

**Super Green Veggies:** People use the nutrients we get from food to grow and stay healthy. Nutrients help us build muscles, bone, skin, teeth, and all the other parts of our bodies. Have students identify "super green" leafy vegetables that are growing in their garden (e.g., kale, collard greens, romaine lettuce, spinach, watercress, and mustard greens). Have students also identify "super green" stem vegetables (e.g., broccoli and spinach). Note: For older students, you could explain that fruits and vegetables contain many nutrients including vitamin A and C, potassium, and dietary fiber. There are also some special fruits and vegetables, called the "Super Green". These dark green vegetables are important to eat often because they contain extra amounts of key nutrients like vitamins A and C and potassium. These nutrients are important for many reasons, including the following: Vitamin A is essential for keeping our eyes and skin healthy and for protecting our body against illnesses like the cold and flu; Vitamin C keeps our gums and teeth healthy; and potassium helps our hearts stay healthy.

**Chlorophyll Rub:** After the Tasting activity, do a leaf pressing using watercolor paper. Fold a piece of paper in half. Place leaves to be pressed between the halves and rub over the top with the back of a large spoon. The chlorophyll in the leaves will print to the paper. Have students write the name of each leaf and some words describing the flavor next to each print. Cut the paper in book-mark size, or have each student do a different leaf and glue them to a poster.



## garden fit

The garden provides young people with an excellent place to engage in meaningful fitness. That is to say, it provides them a place to be active outdoors — shoveling compost, wrangling chickens, preparing garden beds, carting hay around in wheelbarrows — all in the pursuit of healthful food production. Youth gain fitness as well as sense of purpose and accomplishment as they grow food for themselves, their families, and their communities.

— Nathan Larson,  
Education Director,  
Community GroundWorks  
at Troy Gardens

## voices from the Kids' garden

“When I shovel real good I get really strong muscles.”

“Did you see me? I was walking the wheelbarrow back and forth and now my muscles are sore!”



# Flowers & Fruit

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## Lesson Overview

In this lesson students learn that flowers produce the fruits we eat, and that some flowers themselves are edible. A short story is used to illustrate the process of flower, fruit, and seed growth. Follow the story with an activity in which students correctly arrange photos of flower and fruit growth. You may also have students document the growth and development of flowers and fruit in their garden journals with drawings or with photos.

## Objectives

### Students will:

1. Identify edible flowers and fruit as healthy food choices (Health A.4.3, B.4.1; Nutrition Ed C.4.2, F.4.1)
2. Explain how plants grow and develop (Science C.4.2, F.4.3)
3. Describe the function of flowers (Science C.4.2, F.4.3)
4. Identify and taste fruits and vegetables that come from flowering plants (Nutrition Ed F.4.2)

## Materials

### Food:

- Variety of edible flowers and fruits (e.g., broccoli, cauliflower, cucumbers, apples, nasturtiums. See Tasting activity for more suggestions)
- Vegetable and fruit dip (e.g., yogurt or low-fat sour cream and dill, ranch dressing)



### Supplies:

- Books: *How Do Apples Grow?* by Betsy Maestro, *The Reason for a Flower* by Ruth Heller, or other books that illustrate how fruit grows from flowers
- Photos or drawings that represent the stages of flower and fruit development (Michigan State University Extension has a series of photos depicting the stages of apple growth: <http://web1.msue.msu.edu/fruit/applgrw.htm>)
- Plates
- Napkins
- Cutting Boards
- Knives

### Preparation

1. Collect photos or drawings that represent different stages in the development of flowers and fruit for Flower to Fruit Theater activity.
2. Harvest or purchase – and wash – a variety of edible flowers and fruits (e.g. broccoli, cauliflower, cucumbers, apples, nasturtiums. See Tasting activity for more suggestions). Plan ahead by planting some edible flowers and fruits in your garden.
3. Get *How Do Apples Grow?* by Betsy Maestro, *The Reason for a Flower* by Ruth Heller, or another book that illustrates how fruit grows from flowers.



### voices from the Kids' Garden

“I wish I could grow a big giant strawberry so that we could ALL eat it!”

“So this is where the supermarket gets all its food?”

During a harvesting and snacking activity at a mulberry tree in the Kids' Garden, a child exclaimed, “I can't believe nature can taste so good! That's why I like to learn about nature.”





## Procedure

### Introduction:

Start the lesson with a discussion. What do you think of when I mention flowers? Flowers are definitely beautiful and smell nice.

Did you know some flowers are also nutritious? Can you think of some flowers that we eat? *Answer:* Broccoli, Cauliflower, Violets, Squash Blossoms.

*Note:* You may want to remind students that not all flowers are edible, and they shouldn't eat flowers unless a trusted adult says it's okay.

### Story Time:

Some flowers are good for us to eat, but they also produce something else we eat: fruit. Use the book, *How Do Apples Grow?* by Betsy Maestro, to structure the story of a plant producing a flower and a fruit.

Apple buds survive the winter and blossom in the spring. Then a bee comes for nectar and carries pollen from another flower. The pollinated flower produces a fruit. Consider using leading questions before turning to the next page of the book so students can participate in telling this story.

### Flower to Fruit Theater:

This activity can be run in the garden or classroom. You will need photos or drawings that represent different stages in the development of flowers and fruit. Student volunteers then come to the front of the class and hold a photo or drawing. These are the actors. The rest of the students are directors. They help put the actors in the correct order to represent the development of the flower and growth of the fruit. Ask the actors to hold their photo or drawing nice and still so it can be easily seen. They also need to take direction even if they disagree with where they are being placed. The directors should take turns offering suggestions. Use clues and leading questions, if needed, to help students put the photos in the right order.

Run this activity with a fruit and a vegetable. First, use a set of photos or drawings depicting apple development (e.g., an apple blossom, a bee on the blossom, fruit starting to form, a small apple, and a mature apple). Second, use photos or drawings of a developing squash (e.g., a small flower, a fully developed squash blossom, a small squash, and a fully-grown squash). If you run this activity in the garden, you can provide students with time afterwards to explore the garden looking for flowers and fruits in different stages of development. Have students document what they find by taking photos or drawing pictures and use these for the next time you run this activity.

## Tasting:

Offer a garden medley of edible flowers and fruits—including broccoli, cauliflower, cucumbers, apples, and nasturtiums. Serve the medley with a yogurt-based dip for a tasty garden snack. Johnny Jump-ups, nasturtiums, broccoli, cauliflower, asparagus tips, squash blossoms, and violets are all edible flowers that can be grown in your garden or found at your local farmers' market. Consider holding a flower tasting in the garden! Many fruits can be grown in the garden including blueberries, raspberries, grapes, cherries, pears, apples, cantaloupes, and watermelons. You can also grow many delicious and nutritious vegetables (also considered "botanical fruits" because they contain seeds) such as zucchini, cucumber, winter and summer squashes, eggplant, peppers, tomatoes, okra, green beans, and pea pods. Note: Winter squashes like butternut squash and pumpkins are "super orange" vegetables that are packed full of extra nutrients and make up a regular part of a healthy diet. For older students, you could explain that the "super orange" vegetables are particularly important to eat often because they contain extra amounts of key nutrients like vitamins A and C and potassium. These nutrients are important for many reasons, including the following: Vitamin A is essential for keeping our eyes and skin healthy and for protecting our body against illnesses like the cold and flu; Vitamin C keeps our gums and teeth healthy; and potassium helps our hearts stay healthy.

## Additional Activities

- **In the garden**, have students document, over time, the growth and development of flowers and fruit using garden journals or by taking photos. Strawberry plants and squash plants work well because it is easy to see the developing flowers and fruit. Plan ahead to grow squash and strawberries in the garden.
- **How many flowers and fruits can be found in the garden?** Encourage students to find them and make a map. Or make a collage of photos or drawings. Also see Nettle Rope and Flower Braiding activity on page 42 in the À La Carte section.
- **Flower Anatomy in the Garden:** Provide students with a simple diagram depicting different flower parts. Dissect squash or other garden flowers to examine parts in greater detail.



## vegetable or fruit?

Vegetable and fruit are culinary terms describing different types of food from plants. Essentially, fruits are the sweeter of the two. Fruit, however, also happens to be a botanical term for one of the six plant parts. Botanically speaking, the fruit is the part of the plant that carries the seeds. A vegetable can be any part of a plant. There are, for example, root vegetables and leaf vegetables, etc. And so, there can in fact be fruit vegetables, which are culinary vegetables that are made of the fruiting body of the plant. Examples include tomatoes, cucumbers, and eggplants.



— Whitney Cohen,  
Education Director,  
Life Lab Science Program





*"I like gardening because you can try things, taste them, eat them and watch them grow."*

— Dorra, age 9

# À La Carte

Additional Garden-Based Activities



# Additional Garden-Based Activities



## Keeping a Garden Journal

Keeping a garden journal is a great way for students to reflect on their experiences in the garden. Students will use their observation and creative writing skills to create a daily account of changes in the garden throughout the growing season.

**Supplies:** Students can purchase a journal or notebook to record their observations, or they can create a journal using loose paper and twine. To construct a journal you will need loose leaf paper, printer paper, or colorful construction paper as well as a hole-punch, twine, pen/pencil, and scissors.

**Directions:** Gather together the desired number of loose sheets of paper. If the paper does not already have holes, use the hole-punch to create 2-3 holes on one edge. Cut 2-3 small pieces of twine and use them to bind the paper together through each of the holes. Have students decorate the front cover of their garden journal however they choose. Students can separate their garden journal into sections either by date or by topic such as weather (Science), phenology (Science), how much produce they have harvested (Math), and notes about how the garden is growing (English/Language Arts). Students will need a pen or a pencil for recording their observations.



### Weather

Have students record the weather on a daily basis so that they gain an understanding of how it affects the growth and health of plants in your garden. Weather station tools such as a rain gauge, thermometer, and wind vane provide a fun way for students to observe and measure weather-related changes in the garden.

### Phenology

Have students observe and record the life cycle of both plants and animals in the garden and how they relate to the changing seasons. For example, record the day you first see a robin, seed sprout, squash blossom, ripe tomato, and frost damage on garden plants. Then have students compare these events with weather patterns to gain a better understanding of the changing seasons.

### Garden Notes

Have students record general observations from the garden in a variety of creative formats. They may write poems about the spicy flavor of a radish, short fiction stories about animals in the garden, or simply how they feel in that moment sitting in the garden. Students will form a stronger connection with the garden by looking deeper into the many changes and experiences they have while they are there.

## Digging and Wheel Barrowing in the Garden

Sometimes the most fun way to engage children in the garden is with simple tasks like digging and wheel barrowing. These common work activities become a form of play in the children's garden. After a day of sitting at desks, many students savor the chance to lose themselves in a digging project.

**Supplies:** Digging tools such as shovels or trowels, wheel barrows.

**Directions:** You can designate an area of your garden as the Digging Garden. Since most gardens always have new beds to be prepped for planting, the digging area can move around the garden so that students feel that they are improving their garden while having fun. Other fun activities that involve digging and wheel barrowing are moving compost from a pile outside the garden to add to garden beds or bringing woodchips to define garden paths. Kids enjoy the challenge of maneuvering a wheelbarrow loaded with compost through the twists and turns of the garden.



## Chickens

Chickens are a great addition to any youth garden (providing you can gain municipal/site approval for keeping chickens and you have the capacity to care for them throughout the year). Students love feeding, holding, and generally interacting with chickens in the garden.

**Supplies:** Chicken coop, fencing for a chicken run, chickens, food, water, oyster shells, grit, wood shavings or other bedding material. See [www.madcitychickens.com](http://www.madcitychickens.com) and [www.backyardchickens.com/](http://www.backyardchickens.com/) for more information about keeping chickens.



**Directions:** Build, purchase, or find a local volunteer to construct your chicken coop (many great designs can be found at the websites listed above). Get chickens and let the fun begin! Students will enjoy learning to hold and feed the chickens, as well as how they contribute to a healthful food system. You can use chicken manure to add nutrients to your garden compost. Hens will typically lay one egg per day during the growing season, so consider holding an egg lottery where one or more lucky students win an egg to take home.



## Theme Gardens

Organizing some of your garden beds around a particular theme is a fun way to get students excited about the garden. Garden themes can also emphasize lessons in a variety of academic subjects including geography, social studies, history, and literature. Some examples of common themes used in gardens include popular foods and cultural heritage. Gardens can also be modeled after a popular book — such as *Tops and Bottoms* by Janet Stevens—that can help make the story come alive for students.

### Pizza Garden

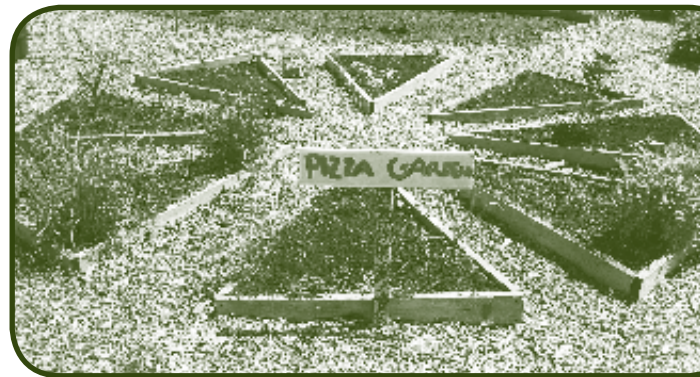
The ingredients of popular foods can be grown in your garden. A classic example of this is the pizza garden!

**Supplies:** Plants that are found on a pizza (e.g., tomatoes, peppers, oregano, onions, and basil). Materials for building raised bed frames shaped like pizza slices (e.g., rocks, lumber, or logs).

**Directions:** Design your pizza garden by building raised frames shaped like pizza slices out of lumber, logs, or rocks. Place your raised bed slices in a circle so they form the shape of a pizza pie (with walking paths in between). If you have limited space, you can plant one pizza slice. Help students plant a variety of pizza toppings such as tomatoes, oregano, onions, basil, or peppers in the pizza slice beds.

Try out a variety of other popular food theme gardens such as:

- Salsa Garden: Grow tomatoes, tomatillos, peppers (sweet and hot), onions, garlic, and cilantro.
- Pickle Garden: Grow cucumbers and dill.
- Cereal Bowl Garden: Grow different grains that are used to make cereal such as oats, rye, and corn.



### Three Sisters Garden

The United States has a rich cultural history and the garden is an excellent place to showcase different gardening practices as well as fruits and vegetables that have originated from many corners of the Earth. One example is the Three Sisters Garden, which celebrates the gardening heritage of Native Americans. The Three Sisters are represented by beans, corns, and squash.

**Supplies:** A plot set aside in your garden, squash seeds, corn seeds, and bean seeds.

**Note:** There are many different varieties of all of these three crops that can be grown in your garden.

**Directions:** Plant the Three Sisters seeds in the designated garden plot. Plant the corn first. Once the corn has sprouted, plant the beans next to the corn—the corn stalks act as a trellis while the beans fix nitrogen into the soil to help feed the corn and the squash. Plant the squash in hills around the corn and beans—the thorny vines and broad leaves of the squash will help protect its sisters from predators and provide shade to deter weeds and keep the soil moist. Consult the National Gardening Associations' website ([www.kidsgardening.com/growingideas/projects/march02/mar02-pg1.htm](http://www.kidsgardening.com/growingideas/projects/march02/mar02-pg1.htm)) and *In The Three Sisters Garden* by JoAnne Dennee for more about incorporating a Three Sisters theme in your garden.



There are a variety of other cultural gardens that can be incorporated into your garden. Consider consulting the experts in your community for advice about different gardening traditions. For example, if there are Hmong or Latino gardeners in your community, consult with them about specific plants and growing techniques that celebrate their respective growing traditions.

## Color Scavenger Hunt

Create a scavenger hunt that involves searching for a variety of different colors of fruits and vegetables in the garden. This is a good opportunity to introduce students to some foods with which they may be less familiar.

**Supplies:** Creative descriptions for a variety of fruits and vegetables, colored paper, pens/pencils, and your garden.

**Directions:** Create color clue cards with descriptions for different fruits and vegetables from your garden. Each description should not include the name of the fruit or vegetable, but gives students hints about what it might be. For example, a description for a tomato might be, "A red, round vegetable that helps make pizza sauce and salsa colorful and delicious." To create a card, paste or tape the description on colored paper to help remind the students what color fruit or vegetable they are looking for. Ideas for a scavenger hunt could include the following:

- Red – strawberry, pepper, raspberry
- Orange – nasturtium flower, cherry tomato, pie pumpkin
- Yellow – summer squash (e.g., pattypan, yellow crookneck), watermelon
- Green – collard greens, asparagus, broccoli
- Purple – eggplant, mulberry
- White – cauliflower, onion, garlic

Separate students into small groups and give each group their first color clue card. Once a group has found a fruit or vegetable in the garden to match their card, have a designated student from the group write or draw a picture of what they found on the blank side of the card. Then, the group will turn in the card to the teacher to obtain a new clue and start looking for a match for the next color. Repeat this process until each group has found all the matches to their color clue cards. You could also do this activity with the purpose of making a snack. For example, create cards that have descriptions of all of the vegetables needed to make salsa (e.g., tomatoes, tomatillos, peppers (sweet and hot), onions, garlic, and cilantro). Have students harvest as they find the vegetables and make the snack in the garden.

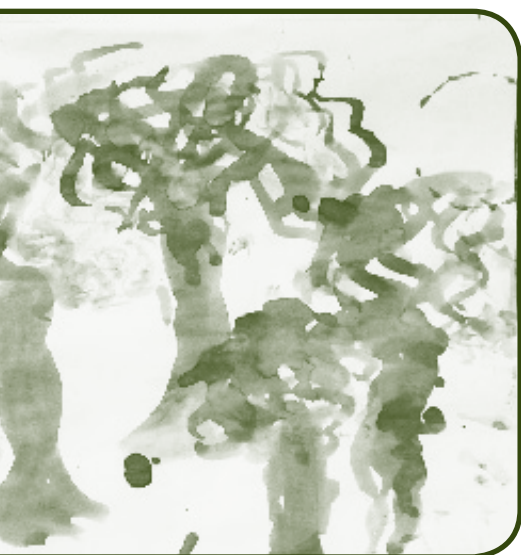




## Garden Art

The garden is a great place for students to engage in artistic expression using natural materials.

**Supplies:** An area inside or outside of the garden. A range of plant and other materials from the garden (e.g., leaves, rocks, sticks, flowers). Ripe berries, paper, cups, brush (optional) for paintings.



**Directions:** In preparation for this activity, lay out borders using branches, long sticks, and/or rocks to create large frames on the ground. Explain that we're opening an earth art gallery and students can work in small groups or alone to create masterpieces. You could also do a big group piece with all students working together. Show students several photos of earth art to provide them with some inspiration and direction. For some truly remarkable examples, see *Andy Goldsworthy: A Collaboration with Nature* by Andy Goldsworthy. In addition, take photos of student's finished earth art to use as inspirational examples in the future. Give students a certain amount of time and space to create their design. At the end, do a gallery tour and have each group show off their creation. Another great garden art activity is berry painting—simply mash ripe berries (e.g., mulberries, raspberries, strawberries) in cups and use the mixture for finger or brush painting!

## Nettle Rope & Flower Braiding

Stinging nettle is often considered an unwelcome weed in the garden, however, the stem can be used to make a very strong rope that is perfect for braiding! In addition, the leaves are delicious and nutritious (just make sure you deactivate the tiny stinging needles by steaming or drying them first).

**Supplies:** Stinging nettle plants from the garden, leather gloves, knife, scissors, and flowers.

**Directions:** To prepare for this activity, you will want to harvest some stinging nettle. Make sure that you are wearing long sleeves and leather gloves, and then pull the nettle plant out of the ground. Harvest all of the leaves with the scissors or a knife (the underside of the leaves have the long hairs that sting), so all that you are left with is the stalk. Hold a knife perpendicular to the stem and scrape off all of the hairy spines. Now that the stinging needles have been removed, the nettle plant is safe for students to handle. Have students pull long strips off of the outer layer of the stalk for braiding. Next, harvest a variety of flowers from your garden (Queen Anne's lace, clover, or other flowers with long, thin stems work well). Then students can weave flowers into the nettle rope braid, and tie the ends to make a bracelet, anklet, or necklace.



## Hawks & Rabbits

This is a fun running activity designed to help students understand predator-prey relationships and food chains that exist in nature. You can make it relevant to the garden classroom by explaining to students that garden plants provide an important food source for rabbits and that hawks help garden plants grow by controlling rabbit populations around the garden. As a follow-up activity, you may choose to install raptor poles or bat houses in or near your garden to encourage regular visits from beneficial predators—just make sure to protect your chickens!



**Supplies:** Cones or lines on a field adjacent to the garden.

**Directions:** Use cones or lines to create safe zones on either side of an open field as well as side boundaries to limit the size of the running area. Explain to students that prey often need to travel through dangerous open areas where they are at risk of being hunted by predators in order to get to safer places—like a hidden feeding area or a rabbit warren. Explain that behind one line of cones is a safe rabbit warren and that behind the other line of cones is a safe feeding area but in between the two lines is an open field. Ask students to pretend they're hungry rabbits. In order to get to their safe feeding area from their warren, they will need to run through the field where the hawk is circling. Pick one student to be the hawk—he or she stands in the middle of the field. The rest of the students are rabbits and they all line up on the line that designates the safe rabbit warren. When the hawk sounds, the rabbits run across the field to their feeding area. The hawk tries to tag the rabbits. If they get tagged, they become a

hawk for the next round. So it gets harder each time for the rabbits. When the hawk sounds again, the rabbits will need to run back from the feeding area to the safety of their warren. The hawk tries to tag the rabbits again. The rabbits will run back and forth between the feeding area and warren until the last rabbit is tagged. The last rabbit to get tagged becomes the new hawk to start the next game.

## Garden Camera

This activity was adapted from *Sharing Nature with Children Vol. 2* by Joseph Cornell. It is a wonderful way for students to hone their observation skills and provides a structure for them to view the garden with fresh eyes. It also utilizes suspense and cultivates an appreciation of the beauty of the world around us!

**Supplies:** Cameras, display board or photo book.

**Directions:** Pair students up. One student is the photographer; one is the camera. The camera closes their eyes and keeps them closed until the photographer pulls their left earlobe. The photographer picks a scene they want to capture. This could be a close-up of a flower, a vegetable or some other garden scene. The photographer gently maneuvers the camera's frame of vision to capture that image. When the camera is in place, the photographer



## Additional Garden-Based Activities

gently pulls the left earlobe of the camera and the shutter snaps open (i.e., the person opens their eyes to view the garden scene). Next, the camera and photographer discuss the scene. Then they switch! Afterwards, provide each pair with a real camera to capture some of their favorite scenes in the garden. Create a photo display board or book with their photos so they can see the garden from each other's vantage points.



### Name That Veggie

Instead of giving a name to vegetables every time a student asks, let them come up with a name on their own. By giving students the opportunity to discover their own vegetable, they develop a deeper appreciation for the plant, making it more likely that they will want to care for and eat that plant.

#### Supplies:

Variety of fruits and vegetables from the garden, a chalkboard or large piece of paper to make a list.

#### Directions:

Allow students to look at, feel, smell and taste the vegetables and then encourage them to come up with 3-4 words that they would use to describe it. From those words, have them come up with a new name (e.g., green spiracrunchtasticus).

### Making Your Own Composting Worm Bin

Worm bins are a fantastic way for students to observe the nutrient cycle in action. Watch worms transform vegetable scraps into nutrient-rich compost that can be fed to growing plants in the garden. Worm bins come in all shapes and sizes—you can create a permanent bin outside in your garden or a smaller, portable bin in your classroom.

#### Supplies:

- ½ - 1 pound of red worms, available at a bait shop or online
- Two, 10-gallon opaque plastic bins with lids
- Mesh window screen
- Duct Tape
- Drill with ⅛ inch and ¼ inch settings
- Newspaper
- Dry Leaves
- Sprinkle of dirt
- Cardboard
- Food scraps





**Instructions:**

1. Drill 1/8 inch holes around the top 2 inches of Bin 1.
2. Drill about 30 1/4 inch holes in the bottom of the bin.
3. Drill about 8 2-inch holes, or 20 1/2 inch holes around the bottom 2 inches of the sides of Bin 2 to give the worms air.
4. Measure and cut the screen to fit into bottom of Bin 1; install with duct tape to cover sharp edges.
5. Tear newspaper into 1/2 inch strips.
6. Soak newspaper strips in water; wring out excess water.
7. Layer about 4 inches of fluffed, wet newspaper mixed with dry leaves into Bin 1. This is the worms' bedding.
8. Sprinkle in a small handful of dirt as grit for the worms to grind food in their gizzard.
9. Add 1/2 to 1 pound of red worms. There are about 1000 worms in a pound, and they will reproduce fairly quickly.
10. Measure and cut cardboard to fit on top of newspaper bedding.
11. Soak cardboard in water, lay on top. Keep cardboard wet as it dries out over the weeks.
12. Stack Bin 1 into Bin 2, and Bin 2 will catch the drips from Bin 1.
13. Start introducing food scraps very slowly, and eventually the worms will be able to handle half their weight in food scraps every day. Feed the worms a handful of food scraps every 4-5 days, and bury them under the newspaper to avoid smells. Keep the lid on the worm bin to keep moisture in the bin. Use spray bottle if bedding materials start to dry out, but wetter food scraps should keep the bin moist on their own.

**Worm Care:**

Things to Remember:

- Worms need moisture to breathe
- They are vegetarians
- Bury the food scraps in a new place every day



PROBLEM	CAUSE	SOLUTION
Worms are dying	<ul style="list-style-type: none"> <li>• Too wet</li> <li>• Too dry</li> <li>• Not enough air</li> </ul>	<ul style="list-style-type: none"> <li>• Add more bedding</li> <li>• Moisten bedding</li> <li>• Drill more holes</li> </ul>
Bin Stinks!	<ul style="list-style-type: none"> <li>• Too much food</li> <li>• Too wet</li> </ul>	<ul style="list-style-type: none"> <li>• Do not feed for a couple weeks</li> <li>• Add more bedding</li> </ul>
Fruit Flies	Exposed food	Bury food in bedding



"Coming up with recipes for cooking in the garden is really a matter of *not cooking*. Just putting the vegetables together in as much of a fresh form as you can and really just putting a little bit of flavor onto them, and letting them see all the colors naturally because obviously when you cook it, things change. But it's also about getting together, having a little harvest party, and every day *we sit together and we eat something from the garden* ... and that's what really gets you because everybody loves to eat."



— Tory Miller  
Executive Chef & Co-Proprietor  
L'Étoile Restaurant

Cooking &  
Eating in  
the Garden





## Eating Fruits & Vegetables in the Garden

Growing, cooking and tasting activities are proven ways to get students to try new fruits and vegetables! When they take part in the entire process—from starting seeds to harvesting food to preparing meals—students enthusiastically incorporate more vegetables and fruit into their diets. Encourage everyone to try a small bite—it may take several times before a student develops a taste for a specific fruit, vegetable, or prepared dish in the garden.

## Cooking in the Garden

Cooking is a favorite activity for students—many recipes can be prepared right in the garden, allowing young people to taste the fruits of their labor! This adds to the full experience of growing food. By cooking in the garden, students are not only introduced to the raw ingredients that make up some of their favorite foods, they can see first-hand how they are prepared in a healthy way. Even young children can be involved in preparing snacks and meals in the garden. Children as young as two can help with washing and scrubbing the fruits and vegetables harvested from the garden. They can also help by tearing lettuce leaves to prepare salad greens or snapping peas. Four and five-year olds can help mash soft fruits and vegetables, measure dry and liquid ingredients, and mix ingredients. Students older than five have many, many ways to get involved in cooking—they can chop, mix, mash and roll a wide variety of different ingredients. As students get older, they can further develop their culinary skills with a broader array of recipes and techniques. To make the cooking experience fun, safe and productive, it is important to have the right tools. Here are some suggestions:

- Stainless steel tables for preparing garden dishes.
- Colorful plates, bowls, and cutting boards are fun for students to use.
- Knives: Due to the sometimes chaotic nature of the outdoor kitchen, using stainless steel serrated dinner knives will eliminate the worry of students cutting themselves with sharper knives. They are usually heavy and sharp enough to cut most vegetables and fruits from the garden. If you are able to provide good training and supervision, students are also perfectly capable of using sharp knives. Make sure students are using the proper cutting techniques. Students should hold knife in one hand and object with a closed fist in the other hand.
- Stainless steel bowls of various sizes are great for mixing and collecting ingredients from the garden.
- Stainless steel or plastic strainers are great for washing garden produce.
- Big wooden or stainless steel spoons for mixing and mashing.
- Peeler for vegetables with tough outer skins like kohlrabi.
- Hand crank cheese grater for processing cheeses like parmesan for pesto.
- Scissors for cutting herbs like rosemary.

**Sun Oven**



**Garden Kitchen**



## Earth Oven



Outdoor cooking appliances add a degree of fun to the garden kitchen while allowing you to make a wider variety of meals and snacks:

- **Solar oven:** A fun and educational way to bake garden treats using the power of the sun. These can be made either from inexpensive materials or purchased.
  - **Earth oven:** A great place for baking garden pizzas and this can be constructed out of clay, sand, and straw by students right in the garden!
  - **Hand-crank blender:** A must-have in the garden kitchen. Students will enjoy blending everything from basil pesto to tomatillo salsa!
- **Bike-powered grain mill/blender:** Another great way to add fun and fitness to the outdoor kitchen while teaching students about food. For example, students can learn first-hand how wheat berries are transformed into flour and then how flour is turned into pizza dough.

## Farm Stand: Bringing the Food Home

Food that is not eaten fresh off the vine in the garden can be sent home with the students so that their families receive the benefits of fresh garden vegetables and fruits as well. During the harvest season, create a student-run farm stand where students and parents can select garden fresh food for use in meals and snacks at home. Students can harvest and prep garden produce to stock the stand during their daily time in the garden. Consider adding recipe cards or a parent newsletter that features daily offerings with recipes and information about storage and other tips for specific fruits and vegetables.

## Safety Tips for Teachers

There are a few simple things to remember when cooking and preparing food in the garden, including the following:

- Raw fruits and vegetables may be a choking hazard for very young children. Cut fruits and vegetables into quarters or very small pieces or cook to soften before serving.
- Make sure students wash their hands or hand sanitize prior to any cooking and eating activities to ensure proper sanitation.
- Ensure students are properly supervised during food preparation and cooking activities.
- Rinse fresh fruits and vegetables before eating under clean running water. For more information on food safety for fruits and vegetables, visit [www.fruitsandveggiesmatter.gov/health\\_professionals/food\\_safety.html](http://www.fruitsandveggiesmatter.gov/health_professionals/food_safety.html).
- Practice good food safety—keep hot foods hot and cold foods cold. For more information and resources for talking about food safety with kids, visit [www.fsis.usda.gov/Food\\_Safety\\_Education/For\\_Kids\\_&\\_Teens/index.asp](http://www.fsis.usda.gov/Food_Safety_Education/For_Kids_&_Teens/index.asp).



# Favorite recipes from the Kids' Garden at Troy Gardens

## KIDS' GARDEN REFRIGERATOR PICKLES

### Ingredients:

- 1/2 cup of vinegar
- 2 cups of water
- 8 teaspoons salt
- 1 cup dill (flowers, seeds, and stems all work)
- 5-6 medium cucumbers
- 4 pinches of mustard seed
- 6 black peppercorns

Harvest, wash, and slice the cucumbers into wedges. Place them in a bowl with the dill and salt, and mix them by hand or with a mixing spoon. Using two mason jars, add to each 2 pinches of mustard seed, 3 peppercorns, 1/4 cup of vinegar, and one cup of water. Add half of the dill/salt/cucumber mixture to each jar. Seal the lid and mix the pickles until you can't wait any longer to eat them!



### Kids' Garden Tips:

- The longer the pickles sit in the vinegar mixture, the more sour and better they taste.
- Don't be afraid to add more or less salt depending on your taste preferences.
- Our pickles are so popular they rarely reach the refrigerator. If you do have leftovers, check with your local food safety specialist to see how long they keep.
- Add more vegetables to the mix, such as onion, radishes and garlic for new exciting flavors.



## GARDEN SPRING ROLLS

### Ingredients:

Rice noodles

Rice Paper

Chef Tory's Dipping Sauce (see below)

Any veggies fresh from the garden – try onion, garlic, broccoli, radishes, kale, green or red tomatoes, basil, carrots or anything else that might be in season.

Olive oil

Salt

Harvest the vegetables from your garden and cut them into small pieces. Option One is to mix all of the vegetables in a bowl, sprinkle some salt and olive oil on top, and either sauté or bake them until they are warm and soft. Option Two is to keep all of the vegetables fresh and separate in different bowls. Both ways work great. In the meantime, cut the rice paper sheets in half, and soak them in a shallow dish or plate of water until soft (about 2 minutes). When the vegetables are ready, lay out the rice paper on plates or cutting boards, fill them with any of the fillings, roll them up, and they are ready to go!

### Kids' Garden Tips:

- When we run out of Chef Tory's Dipping Sauce, we switch to balsamic vinegar and it tastes great.
- On days that we make pesto, we also put it in the spring rolls for extra flavor.
- Cooking the noodles early in the morning or the night before makes set up very easy. It is also easier when the noodles are cut up.
- Cutting the rolls in half makes for less waste.



## CHEF TORY'S DIPPING SAUCE

### Ingredients:

1 tablespoon soy sauce

1 tablespoon water

1 teaspoon rice wine vinegar

1 teaspoon sesame seed oil

Fresh grated ginger

Chopped scallions

Honey and hot sauce to taste

Peanuts or peanut butter (optional)

Mix all ingredients and taste for balance. Should taste deliciously sweet, spicy and tangy.

## What's-That-Green-Stuff Can-We-Make-it-Again Pesto



### Ingredients:

Large bowl of basil, about 3 cups  
(or use 1/2 basil and 1/2 Red Russian Kale)

1/4 cup parmesan cheese

1/4 cup pine nuts (optional)

1/4 cup olive oil

Crackers or baguette

Chop or rip the basil and put in a blender.  
Add parmesan cheese, pine nuts, and olive  
oil. Blend until mixture is creamy. Serve over  
crackers or baguette.



### Kids' Garden Tips:

- Pine nuts can get expensive, and the pesto still tastes great without them.
- Add flavor to your pesto by including such vegetables and herbs as broccoli, radishes, mint and chives.
- Using a hand-crank blender works perfectly to blend the mixture, and the kids love blending!
- Serve pesto on crackers, slices of bread, radishes or cucumbers.



## HOMEMADE FATTOUSH

(a Lebanese salad introduced to us by two of our youth gardeners)

### Salad:

- 2 cups shredded lettuce
- 1 large or 2 small cucumbers, diced
- 2 medium tomatoes, chopped
- 1/2 cup chopped parsley
- 1/4 cup chopped mint leaves
- 1/2 to 1 green pepper, diced
- 1 bunch green onions, finely sliced
- 1/2 teaspoon sumac
- 2 pieces of pita bread toasted until golden brown, broken into pieces the size of a quarter

### Dressing:

- 1/2 cup lemon juice
- 1/2 cup olive oil
- 2 to 4 cloves garlic, minced
- 1 teaspoon salt
- Pinch of pepper

In a small bowl, mix all dressing ingredients together. In a large bowl, mix all salad ingredients together. Toss salad with the dressing and serve immediately.



### Troy Kids' Garden Tips:

- Break the pita bread into small 1" pieces and toast in a sun oven until the bread is warm to the touch.
- If ground sumac is not available, fresh red sumac berries can also be used. Soak the sumac in the lemon juice and mix it in with the dressing, instead of the salad.
- A small amount of balsamic vinegar can be added to the dressing to increase volume.

## KIDS' GARDEN VEGETABLE PIZZA

### Ingredients:

Marinara sauce (garden-fresh or store bought)

Pizza crust

Crackers

Whole wheat tortillas (or pita bread)

Mozzarella, Parmesan, or cheddar cheese

Any veggies fresh from the garden – try onion, garlic, broccoli, radishes, kale, green or red tomatoes, basil, or anything else that might be in season.

Harvest the vegetables from your garden and cut into small pieces. Spread pizza sauce on crust, crackers, tortillas, or pita bread and top with cheese (or you can make it without cheese for a vegan twist!). Add a variety of vegetables on each pizza and cook until the cheese is melted and sauce is warm.

### Kids' Garden Tips:

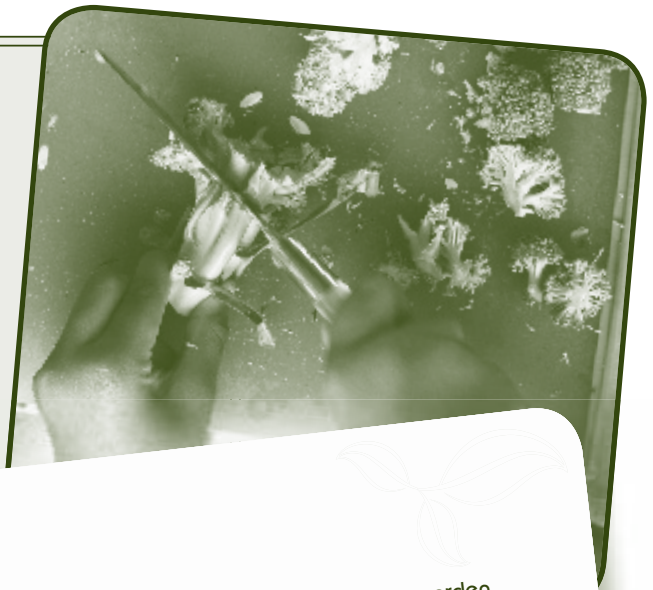
- Use sun oven, earth oven, or wood burning grill to make the pizzas outside. The grill adds a strong smoky flavor.
- These can be made all summer long with any vegetables!
- Garden Pesto makes a great substitute for tomato sauce.





## Kids' Garden Tips:

- If crackers aren't available to use, dip large pieces of vegetables into it (try broccoli, radish chips, carrots, kohlrabi, etc).
- Tortillas can be used in place of the crackers, or try the dip with spring rolls!



## GARDEN YOGURT DIP

### Ingredients:

2 cups plain yogurt

Dill

Crackers

Any veggies fresh from the garden – try onion, garlic, broccoli, radishes, kale, green or red tomatoes, cucumbers, basil, or anything else that might be in season.

Harvest the vegetables from your garden and cut into small pieces. Put yogurt in a small bowl and add vegetables. The more vegetables you add, the healthier it will be! You can blend the vegetables in a blender if desired, however whole pieces of vegetables work great (the yogurt also gets runnier the more it is mixed). Scoop the dip onto crackers and serve!

## CUCUMBER SALSA

### Ingredients:

3-4 large cucumbers

8 tomatillos

1 medium onion

2 garlic cloves

1 medium hot pepper

2 medium green (or red) tomatoes

Harvest and chop all of the vegetables in small chunks (the garlic can be minced or sent through a garlic press). Mix in a bowl until juices start to extract from the vegetables. Salsa can be served on crackers, chips, or with vegetable chips.



## Kids' Garden Tips:

- Mashing the tomatillos with a spoon or fork makes the salsa juicier. It can also be blended in the hand-crank blender.
- If chips or crackers aren't available, the salsa can be served with large cucumber chips. It tasted just as good and was much healthier!
- You could also put the salsa in spring rolls for a new taste sensation.



# Resources & Acknowledgements

# Resources

## **Youth Grow Local, Community GroundWorks at Troy Gardens**

Youth Grow Local provides educators with a variety of useful garden-based education resources including curricula and professional development opportunities including conferences, courses and workshops. Young visitors will appreciate Veggipedia, a kid-friendly online encyclopedia of fruits and vegetables. Youth Grow Local also features the Youth Garden Portal, a site devoted to connecting educators to a broad array of resources for youth gardens. [www.communitygroundworks.org/what-we-do/youth-grow-local](http://www.communitygroundworks.org/what-we-do/youth-grow-local)

## **Nutrition, Physical Activity, & Obesity Program, Wisconsin Department of Health Services**

Extensive resources related to obesity prevention strategies for multiple settings including community, school, and early childhood. Information and resources for promoting consumption of fruits and veggies are also available. <http://dhs.wi.gov/health/physicalactivity>

## **Wisconsin Nutrition Education Program, University of Wisconsin-Extension**

A federally funded nutrition education program that helps limited resource families and individuals choose healthful diets, purchase and prepare healthful food and handle it safely, and become more food secure by spending their food dollars wisely. The program operates in most counties in Wisconsin, contact your county UW-Extension Office for more information. [www.uwex.edu/ces/wnep/overview/index.cfm](http://www.uwex.edu/ces/wnep/overview/index.cfm)

## **Farm to School Program, REAP Food Group**

A grassroots initiative whose goal is to enhance Wisconsin schools' existing meal programs by introducing fresh, nutritious, local and sustainably grown food to children. The program's website contains curriculum resources and also highlights unique ways of getting students interested in fruits and vegetables through the Snack and Chef in the Classroom Programs. [www.reapfoodgroup.org/Programs-Events/farm-to-school.html](http://www.reapfoodgroup.org/Programs-Events/farm-to-school.html)

## **Life Lab**

Life Lab is a non-profit organization and national leader in land-based education located in Santa Cruz, California. [www.lifelab.org](http://www.lifelab.org)

## **Wisconsin Model Academic Standards for Nutrition Education**

Provides excellent examples of age appropriate nutrition concepts and standards for grades 4, 8, and 12. <http://dpi.wi.gov/fscp/pdf/nestandards.pdf>

## **Wisconsin Model Academic Standards**

Find additional ways to use your garden to meet other academic standards. <http://dpi.state.wi.us/standards>

## **The Nutritious Delicious Wisconsin Curriculum**

Nutrition lessons for 4th grade students that can be used as part of their Wisconsin curriculum. These lessons are also a great complement to elementary farm to school programs. <http://dpi.wi.gov/ne/index.html>

## **Wisconsin Fresh Fruit & Vegetable Program**

A USDA funded program that provides free fresh fruits and vegetables to children at participating elementary schools. The purpose of the program is to expand and increase the variety and amount of fruits and vegetables children experience and consume. <http://dpi.state.wi.us/fns/ffvp.html>

## **Wisconsin AmeriCorps Farm to School Program**

The goal of the AmeriCorps Farm to School program is to provide an innovative approach to decreasing childhood obesity by promoting healthy eating habits in students and increasing access to local foods in schools. The program provides two half-time AmeriCorps members per site; a local food procurement member and a nutrition education member. [www.datcp.state.wi.us/mktg/business/marketing/val-add/farm\\_to\\_school/index.jsp](http://www.datcp.state.wi.us/mktg/business/marketing/val-add/farm_to_school/index.jsp)

# Resources (cont'd)

## **National Fruit & Vegetable Program, Centers for Disease Control and Prevention**

Several resources are available including a searchable recipe database for using garden produce; kid-tested fruit and vegetable recipe ideas; downloadable and free educational brochures for use with parent and school newsletters, and interactive bulletin boards; and fun facts that will capture students' interest in different kinds of fruits and vegetables found in the garden and beyond.

[www.fruitsandveggiesmatter.gov](http://www.fruitsandveggiesmatter.gov)

## **Harvest of the Month Toolkit-Growing Healthy Students**

A great addition to any curriculum, the Harvest of the Month tool kit is comprised of four key elements designed to empower and motivate students to consume fruits and vegetables: educator newsletters, family newsletters, menu slicks and press releases. [www.harvestofthemonth.com](http://www.harvestofthemonth.com)

## **Fruit & Vegetable Games for Kids**

Find interactive games, artwork, and coloring and activity pages to get students interested in eating fruits and vegetables. [www.foodchamps.org](http://www.foodchamps.org)

## **MyPyramid for Kids Classroom Materials**

Nutrition education materials for elementary-aged students that explore the food groups in MyPyramid (includes lesson plans, reproducible worksheets, and posters).

[www.teamnutrition.usda.gov/resources/mypyramidclassroom.html](http://www.teamnutrition.usda.gov/resources/mypyramidclassroom.html)

## **Got Dirt? Garden Initiative**

Want to start a youth garden but have little or no gardening experience? Extensive resources including a toolkit for starting a garden can be found at:

[www.dhs.wi.gov/health/physicalactivity/gotdirt.htm](http://www.dhs.wi.gov/health/physicalactivity/gotdirt.htm)

## Booklists

Books are a great addition to any lesson plan or activity! The following lists provide common garden and nutrition-related books for preschool to elementary-aged students.

- Blooming with Books (for Preschoolers & Kindergartener):  
[www.rif.org/assets/Documents/StorySamplers/Gardening.pdf](http://www.rif.org/assets/Documents/StorySamplers/Gardening.pdf)
- Michigan Team Nutrition—Grades K-2 Booklist:  
[www.michigan.gov/documents/mde/UpdatedMichiganTeamNutritionBooklist\\_290287\\_7.pdf](http://www.michigan.gov/documents/mde/UpdatedMichiganTeamNutritionBooklist_290287_7.pdf)
- Michigan Team Nutrition—Preschool Booklist:  
[www.michigan.gov/documents/mde/PreschoolBooklist\\_290284\\_7.pdf](http://www.michigan.gov/documents/mde/PreschoolBooklist_290284_7.pdf)

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Madison, WI 53701-2659  
[www.dhs.wisconsin.gov/health/physicalactivity/index.htm](http://www.dhs.wisconsin.gov/health/physicalactivity/index.htm)



## Wisconsin Farm to School success stories

# Wausau: Thomas Jefferson Elementary School Garden



June, 2015

In the fall of 2013, Wausau crossing guards went home with fresh-made pickles, and local residents opened their doors to bags full of vegetables following a resounding “ding-dong!” and a scampering of feet. The vegetables came with a note: “Compliments of Thomas Jefferson Elementary Garden.” The Ding-Dong-Ditch act was a Pay-it-Forward practice of the Thomas Jefferson Elementary (TJE) After-School Garden Club to show gratitude to the community that helped bring farm to school to life for students in the garden program.

The TJE garden sprouted in the spring of 2013, and achieved wild success in the first growing season. Renee Heinrich, TJE’s science teacher and an original champion of the garden, utilized the school’s 13 raised beds in both her school-day and after-school curriculum. Farm to school is woven into the very fabric of these lessons and activities. Students are introduced to new vegetables as they grow them, and their role as gardeners fosters a sense of pride and ownership. This culminates in more students tasting vegetables without skepticism. “Once the kale started sprouting, the kids would shout ‘Our kale is growing! Our kale is growing!’ They didn’t even know what it tasted like, they just knew the name and that it was theirs,” Heinrich said.

TJE’s garden is located in a previously underutilized courtyard – quite literally in the center of the school. Heinrich was determined to make the garden a central part of the curriculum, as well. All of the school’s 385 students take science from Heinrich, and all visit the garden. “I take them to the garden every single opportunity I get,” Heinrich said. “The door to my classroom goes to the garden. I’ve got a great opportunity to literally walk out my door into my bigger classroom.” Kindergartners discover senses in the Kinder-“Garden”, second graders study worms and composting, and fourth graders complete a unit on solar energy. Heinrich uses hands-on farm to school lessons such as those featured in the “Got Dirt?” and “Got Veggies?” garden curriculum guides, or she makes up her own. The gardening activities fit well with Heinrich’s current science curriculum, and prospects look good for integrating the garden with Next Generation Science Standards.

Students in after-school classes are at the very heart of TJE’s Homegrown Farm to School program. For six weeks every spring and six weeks every fall, Heinrich leads hour-long after-school sessions for second through fourth graders. These students have become the school’s Garden Club, and are proud of their role as “ambassadors to the garden.” In talking about the after-school gardening, Heinrich remarks that the kids are “trying new things all the time because they know it’s a safe environment... it’s something they can’t fail at, and they are all of a sudden engaged and excited. It gives them ownership and pride in their school and in themselves.”



***“The door to my classroom goes to the garden. I’ve got a great opportunity to literally walk out my door into my bigger classroom.”***

**– Renee Heinrich,  
science teacher at  
Thomas Jefferson  
Elementary School  
in Wausau**





It's no wonder Garden Club students feel a connection to the space. Not only do they have extended opportunities to plant, harvest, and cook with the produce (last year's creations ranged from pizza sauce to tea sandwiches with homemade herbal tea) they also use their new knowledge and experiences to educate others. Garden Club students will create the school's "Wisconsin Wednesday" video announcements this spring, featuring the school's Harvest of the Month fruit or vegetable.

Students wear their Garden Club t-shirts to school, and last year's experiences are not soon forgotten. "Our kids who were in the program last fall have already come up to me, saying 'Mrs. H., are we going to have Garden Club again?' They remember that excitement," Heinrich said, "and my goal is to get even more students involved this year."

Heinrich and her students have not been alone in bringing the garden to life, or in celebrating its success. The project seems to be a sort of magnet, drawing in farm to school grant funds, local business, and parent and community member involvement. For example, around the time that TJE was thinking of installing a garden, the Marathon County Health Department was awarded a Transform Wisconsin Grant to bolster farm to school efforts in local school districts. "Within one year, the grant helped the school (TJE) create a garden, integrate its use into curriculum and after-school programs, and become a major part of farm to school efforts," said Ashley Kienitz, the Public Health Educator brought on by the grant. Kienitz, who helps connect schools with farm to school resources, is currently focused on

making sure the program at TJE is sustainable once the two-year grant cycle is complete.

The garden grows creative energy and leadership development among students and community, and helps build a strong base of community support for future years. At the school's May "Plantapalooza", Garden Club students act as garden tour guides for visiting adults. Students also create their own business plans for selling specific vegetables at a Plantapalooza student farmers' market. The event will soon involve Master Gardener Volunteers, who will assist participants in building small container gardens from up-cycled cafeteria cans.

"Other schools want to get on board," Kienitz said. "They see that it is something positive to rally the school around. It is easier for them to implement now that they see the excitement coming out of Thomas Jefferson."

In deciding the future of the Thomas Jefferson garden, students will largely determine the path. "We have a plan as to where we want to go in the garden, and that has changed based on the kids' interest and creativity," Heinrich said. "Their eyes just brighten up when they walk outside and see something popping out of the ground. We always remind our students that a seed is magic, because it truly is."



Renee Heinrich's Science Blog: <http://scienceschoolyard.blogspot.com/search/label/garden>

This article was written by the Wisconsin School Garden Initiative, which supports and connects school gardens throughout Wisconsin. Visit [www.WISchoolgardens.org](http://www.WISchoolgardens.org) to learn more about WSGI, find school garden resources, and connect with other garden educators!

Nutritious, Delicious,  
WISCONSIN  
CONNECTING  
NUTRITION EDUCATION  
AND LOCAL FOODS

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# Foreword

Using locally grown foods in the classroom is a tasty way to inspire learning about Wisconsin's history, culture, and people. Imagine how the rich diversity of flavors, colors, and textures of Wisconsin foods will enhance the study of our state's history. *Nutritious, Delicious, Wisconsin* is a thematic curriculum unit that brings a new dimension to Wisconsin studies.

The goal of this curriculum unit is to have children eat more healthful foods, particularly the delicious varieties of fruits and vegetables grown in Wisconsin. One strategy to help meet this goal is to increase the exposure to healthy Wisconsin foods through gardening, food explorations, and other classroom activities. This curriculum, focused mostly on the fourth grade study of Wisconsin, will explore many delicious and healthy local foods. The use of these foods will help students, parents, and other adults make connections to certain aspects of Wisconsin's history and culture, and engage them in social studies and nutrition topics.

Wisconsin school districts are encouraged to use *Nutritious, Delicious, Wisconsin* in their elementary classrooms, school cafeterias, and in the community. Here's to good learning and good health while exploring the foods and history of Wisconsin.





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# Nutritious, Delicious, WISCONSIN

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# Introduction

## What is Nutritious, Delicious, WISCONSIN?

The **Nutritious, Delicious, Wisconsin (NDW)** curriculum is a thematic unit of instruction that uses local foods to teach nutrition concepts to elementary students. *Nutritious, Delicious, Wisconsin* focuses on Wisconsin foods with a connection to Wisconsin's history, culture, and people. The primary goal of this curriculum is to broaden the food experiences of Wisconsin students and provide another aspect to the study of nutrition as part of the study of our great state.

## Connecting Nutrition Education and Local Foods

Teaching nutrition to children early and often is the key to developing healthy eating habits. Nutrition education in school promotes healthier eating in students. Students can learn about food and nutrition through multiple disciplines, including math, science, social studies, physical education, health, and other subject areas.

Gardening and bringing local foods into the classroom is an exciting way to engage students in learning. The NDW curriculum connects the cafeteria to the classroom and links nutrition to the core academic subjects of science, mathematics, social studies, and language arts, as well as health, family and consumer education, and physical education. This unit is designed to meet the Wisconsin Model Academic Standards for Nutrition and the overall goals for nutrition education: *Students will gain the knowledge and skills to select a diet that supports health and reduces the risk of illness and future chronic diseases.*

The anticipated outcomes of implementing this *Nutritious, Delicious, Wisconsin Curriculum* include:

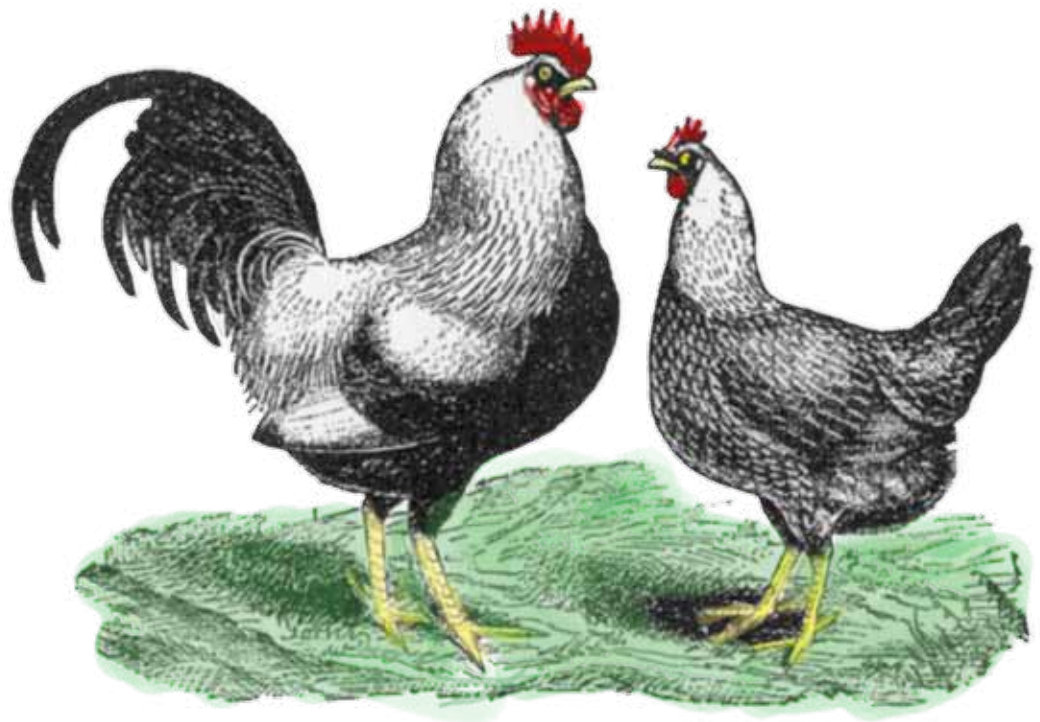
- Increased willingness to taste new foods.
- Increased nutrition knowledge.
- Increased intake of fruits and vegetables.
- Increased intake of vitamins A, C, and fiber.
- Increased appreciation for other cultures.
- Increased likelihood to garden and cook.
- Ability to identify food groups.
- Ability to identify fruits and vegetables, in particular those grown in Wisconsin.



## How to Use Nutritious, Delicious, Wisconsin

One of the main objectives of *Nutritious, Delicious, Wisconsin* is to get children excited about healthy eating. These lessons will help in planning nutrition lessons for children that are fun, creative, and challenging in different ways. Children love to contribute to discussions, enjoy activities more than lectures, and are especially fond of lessons that involve food preparation and tasting.

The *Nutritious, Delicious, Wisconsin* lessons are primarily for third through fifth grade students, with a direct correlation to fourth grade Wisconsin studies. Expanded lessons for second through middle school students are provided as supplemental lessons. This curriculum focuses on fresh, local foods. The lessons can be correlated with farm-to-school produce and farmers' market offerings to allow tasting and hands-on experiences. For schools with garden access, *Got Veggies?*, a garden-based nutrition education unit, provides lessons for younger children.





Nutritious, Delicious, WISCONSIN

Lesson plans

# Vegetables: parts of a plant

Grades Three to Five

Topic	Six Plant Parts We Eat
<b>Wisconsin Nutrition Performance Standards</b>	C.4.2 Identify a healthy eating habit. E.4.1 Understand that people eat many different foods as part of a healthy diet. F.4.1 Recognize foods by name. F.4.3 Categorize foods by source (plant, animal), including processed foods.
<b>Summary and Key Concepts</b>	Students will learn the six plant parts, and nutritional contributions from plant part foods.

This lesson provides an overview of the six plant parts we eat. It sets the stage for more detailed lessons on Wisconsin plant foods. Additional lessons focusing on each of the six plant parts can be found in the *Got Veggies?* lessons.

## Goals and Objectives

Students will be able to:

Identify the six plant parts we eat and give examples.

Identify the nutritional contributions of different plant parts.

## Supplies Needed

- Handout: *Six Plant Parts We Eat*.
- Assorted pictures, food models, or examples of fresh vegetables (can be salad items from below) that are roots, leaves, stems, seeds, fruits, and flowers; seed companies, such as Seed Savers (<http://www.seedsavers.org/>) and Johnny's Selected Seeds (<http://www.johnnyseeds.com/c-1-vegetables.aspx>), have some great pictures online to print and use.
- Tasting and salad supplies: (enough items to make six-plant part salad for all to have as a snack)
  - o Stems: asparagus, celery, kohlrabi
  - o Flowers: cauliflower, broccoli (*also stalks are stems*)
  - o Root: radish, beets, carrot, parsnip
  - o Seeds: peas or beans in pod, sunflower seeds
  - o Fruit: eggplant, squash, tomatoes, cucumber
  - o Leaves: lettuces, cabbage, beet tops.
- Bowls, forks, salad dressing of choice.

## Anticipatory Set

Review Got Veggies? six plant part lessons (taught in earlier grade levels). Explain how plants and animals need water and sunlight to live. Animals must eat plants and other animals for energy, while plants are able to make their own food (energy) through the process of photosynthesis.

**Additional background information for teacher review prior to class discussion of the six plant parts is included here. Wisconsin grown items are in bold typeface, and can be included in the salad ingredients as desired.**

## Leaves

Most plants' food is made in their leaves. The leaf is one of the green, usually flat parts that grow from a stem or twig of a plant. Leaves are designed to capture sunlight that the plant uses to make food through a process called photosynthesis. The leafy vegetables group includes **salad greens, spinach, collards, kale**, radicchio, and watercress. Leafy vegetables may grow in tight or loose heads, or individually on stems. A few leafy greens, such as **turnip greens** and **beet greens**, are actually the tops of root vegetables. Salad greens, such as lettuce, are usually served raw. Sturdier, more flavorful greens, such as kale and collard greens, also can be served raw, but they are usually served cooked. Most leafy vegetables are low in calories but rich in carotenoids (such as beta carotene), and vitamins C and K. They are good sources of fiber and folate. They provide varying amounts of chlorophyll, iron, and calcium.

Leafy vegetables may be stir-fried or steamed. Leafy vegetables stewed with pork are a traditional dish in Soul Food and southern United States cuisine. They also are commonly eaten in a variety of South Asian dishes such as Saag. Leafy greens can be used to wrap other ingredients like a tortilla. Most leaf vegetables can be eaten raw, for example, in sandwiches or salads.

## Flowers and Buds

Flowers produce the fruits we eat, and some flowers themselves are edible, such as the vegetables **broccoli, cauliflower**, and **artichokes**. Most vegetables in this category are great sources of vitamin C, calcium, and potassium. They provide a great supply of dietary fiber. Cauliflower and broccoli also provide cancer-fighting compounds. Flavors are mild to slightly sweet, but can be strong and bitter if grown too long in hot weather. These vegetables are usually eaten alone or served with a range of sauces or other accompaniments.

## Seeds and Pods

The vegetables in this category are the parts of plants that store energy. They include **corn** and fresh legumes (edible pod legumes and shell legumes) such as **snap beans, lima beans**, and **green peas**. Generally, seeds and pods contain more protein than other vegetables and contain

more complex carbohydrates than leafy, stalk, or flower vegetables. When these vegetables are immature and freshly picked, their carbohydrate content is in the form of sugars. In time, after harvesting, the sugars turn into starch. **Sunflower** and **pumpkin seeds** are obvious seed foods. Seeds and pods tend to be good sources of B vitamins and the minerals zinc, potassium, magnesium, calcium, and iron.

### Roots, Bulbs, and Tubers

The root is the leafless part of a plant usually found underground. Roots act like straws absorbing water and minerals from the soil. Tiny root hairs stick out of the root, helping in the absorption. Roots help to anchor the plant in the soil so it does not fall over. Root vegetables act as the nutrient storehouses of plants. This vegetable group includes taproots (beet, rutabaga, turnip, carrot, celeriac, daikon, jicama, parsnip, radish); tuberous roots (sweet potato, desert yam, cassava, yucca); corms (taro); rhizomes (turmeric, ginseng, arrowroot, ginger); tubers (yams, Jerusalem artichoke or sunchoke, potato); and bulbs (garlic, onion, shallot, fennel). Botany distinguishes true roots such as tuberous roots and taproots from non-roots such as tubers, rhizomes, corms, and bulbs. In ordinary, agricultural, and culinary use, however, "root vegetable" applies to all these types.

These vegetables are considered to be satisfying because they're sturdy and dense. In some cases, the tops of these vegetables (such as beet greens and scallions) contain more nutrients than their roots or bulbs. Root vegetables are generally storage organs, enlarged to store energy in the form of carbohydrates. They differ in the concentration and the balance between sugars, starches, and other types of carbohydrate. Of particular economic importance are those with a high carbohydrate concentration in the form of starch. Starchy root vegetables are important staple foods, particularly in tropical regions. Due to their high starch content, vegetables in this category tend to be higher in calories than most above ground vegetables. Also due to their high starch content, some of these vegetables can act more like simple sugars. This means that they can trigger rapid rises in blood sugar and insulin. When eaten in moderation, these vegetables provide a good source of nutrients. Potatoes are good sources of vitamin C and potassium. Sweet potatoes and carrots are great sources of beta carotene. Radishes and turnips are good sources of fiber and vitamin C. Several studies suggest that onions and garlic may lower blood pressure and cholesterol levels.

### Stems and Stalks

- The stem is the main stalk of a plant that transports food and water to the rest of the plant. It acts like the plant's plumbing system, conducting water and nutrients from the roots and food in the form of glucose from the leaves to other plant parts. Stems can be herbaceous like the bendable stem of a daisy or woody like the trunk of a tree.

This vegetable group includes celery, asparagus, kohlrabi, and rhubarb. Sugar maple xylem sap from tree trunks is made into maple sugar and maple syrup. Most vegetables in this category are great sources of vitamin C, calcium, and potassium. They also provide a great supply of dietary fiber. Their flavors are mild to slightly sweet. These vegetables are usually eaten alone or served with a range of sauces or other accompaniments.

### Edible stems and stalks

- **Asparagus:** The edible portion is the rapidly emerging stems that arise from the crowns in the early spring.
- **Bamboo:** The edible portion is the young shoot.
- **Broccoli:** The edible portion is stem tissue, flower buds, and some small leaves.
- **Cauliflower:** The edible portion is proliferated stem and flower tissue.
- **Celery:** The whole plant is edible including the crisp petiole (leaf stalk) and the fleshy taproot. It's easy to see the "pipes" that conduct water, nutrients, and glucose in a stalk of celery. The "pipes" can be dyed with food coloring to allow students to easily see them.
- **Cinnamon:** The bark is used as a spice.
- **Garlic:** The edible portion is predominantly swollen leaves with a bit of stem.
- **Ginger root:** The edible portion is a branched underground compressed stem also referred to as a rhizome.
- **Kohlrabi:** The edible portion is an enlarged (swollen) stem. It is a member of the cabbage family and is white, green, or purple in color.
- **Leek:** Similar to other members in the onion family, the edible portion is swollen leaves with a bit of stem.
- **Onion:** The edible portion is swollen leaves with a bit of stem. They are bulbs that, like garlic and leeks, are modified stems in which the primary storage tissue is expanded leaf bases. They come in white, yellow, and red varieties.
- **Potato:** The edible portion is an underground stem that is also a tuber. The "eyes" of the potato are lateral buds. Potatoes come in white, yellow, orange, or purple-colored varieties.
- **Rhubarb:** The red or green stalks are the edible portion; the leaves are toxic.
- **Shallot:** A member of the onion family, the edible portion is mainly swollen leaves with a bit of stem.
- **Sugar cane:** The edible portion is the inner stalk (stem) whose sap is a source of sugar. In its raw form chewing or extraction through a juicer extracts its juice.
- **Sugar maple:** Xylem sap from the tree trunks is made into maple sugar and maple syrup.
- **Taro:** The edible portion is the underground stem (*corm*).



## Fruit Vegetables

Fruit provides a covering for seeds. Fruit can be fleshy like an apple or hard like a nut. Eggplants, squash, peppers, pumpkins, and tomatoes are all part of this vegetable group. They are the pulpy, seed-bearing bodies of the plants on which they grow. Technically, in botanical classification, these vegetables are classified as fruits because they are the fleshy part of plants and contain seeds. But since they are commonly used as vegetables, they are categorized as such. Most fruit vegetables are higher in calories than leafy vegetables, stalks, or flowers and tend to be good sources of vitamin C. Since these vegetables offer a variety of flavors and textures that blend well with many dishes, they're useful as seasonings and accents. In many parts of the world, fruit vegetables are staple foods.

The fruit part of a vegetable can be confusing—is it a fruit or a vegetable? “Fruit” and “vegetable” are culinary terms describing different plant foods. Essentially, fruits are sweeter than vegetables. However, “fruit” is technically defined as the part that contains the seeds. Using this botanical definition, fruits include a wide variety from apricots, bananas, and grapes, to bean pods, corn grains, tomatoes, cucumbers, pumpkins, and zucchini. “Vegetables” are the other edible parts of a plant, such as the roots, stems, and leaves.

But at the grocery store and when cooking, less sweet “fruits” like beans, tomatoes, cucumbers, and zucchini are called vegetables. In this lesson, it is acceptable to use the culinary vegetable definition.

## Time Line

35 to 45 minutes.

## Set Up

- Wash and prepare salad ingredients.
- Print out the attached *Six Plant Parts We Eat* diagram and make copies for students.
- For younger students, or to make it a group activity, you can replicate the drawing on the board or smart board as students lead you through growth of a plant from seed.
- Have pictures or examples of the plant parts available for discussion.

## Activity

Bring students together for a group discussion on classifying vegetables.

1. Explain to students that there are many kinds of vegetables, and vegetables provide vitamins, minerals, fiber, and other nutrients. It can be helpful to group vegetables by color, flavor, shape, and taste to learn more about their nutrition and cooking. Nutrition and culinary experts, scientists, and botanists will classify vegetables in another way, too, according to their botanical families or what part of the plant is eaten (such as the root, stalk, or leaves).

2. Ask students to name (or guess if this is new to them) the six plant parts that we eat. Use the pictures or fresh vegetables to demonstrate each example. If they need help, ask: *What plant part is a carrot? (root); What plant part is celery? (stem); What plant part is spinach or lettuce? (leaf); What plant part is cauliflower? (flower); What plant part is an apple or a tomato? (fruit); What plant part is a pea or a corn kernel? (seed).*

Explain that we may eat more than one part of some plants. The root of the beet plant is what most people like to eat, but we also can eat the leaves. We eat the root of the onion plant but can also eat the stems, for a milder flavor.

Discuss how some plant parts are poisonous. The leaves of tomato plants are poisonous, but the fruit part (the tomato itself) is delicious and healthy.

Have students refer to the handout, or use the diagram on the smart board/white board. Write the six plant parts on the board (seeds, roots, stems, leaves, flowers, and fruit). Ask students to identify one or two foods for each of the six plant parts. If possible, have students identify a Wisconsin fruit or vegetable for each plant part. Have students share their answers.

## Closure

For a snack, have the group make a Wisconsin Six Plant Part Salad containing all the different parts of plants—tomato (fruit), lettuce or spinach (leaf), asparagus or kohlrabi (stem), broccoli (flower), carrot (root), and sunflower seeds (seed).

## Classroom-to-Cafeteria Connection

- Celebrate a vegetable plant part of the month. Have the students determine what plant part we eat with each selection.
- Highlight roots, seeds, stems, and so forth, on the cafeteria menu for the month.
- Have school staff plan activities with the librarian, art teacher, and classroom teachers to support the lessons in the classroom. Interconnections are made when classroom activities include the fruit or vegetable of the month in stories, art projects (stampings, still life drawings, collages), and tastings.
- Create a salad bar with an assortment of plant part samples. Students can make signs and labels for the salad bar items, and even design their own salad.

## Extension Activities

- Parent and student activity: Take your child grocery shopping or to a farmers market. Have the child find one fruit or vegetable at the grocery store or farmers market for each part of the plant (root, stems, leaves, and fruit). Where are the freshest Wisconsin foods found in the

grocery store? (Typically on the outside ring of the shopping area.) Is there any store signage to help identify fresh, Wisconsin products?

- Parent newsletter idea: Include information on how to find local farmers markets at the Wisconsin Department of Agriculture, Trade, and Consumer Protection's local foods webpage (Savorwisconsin.com) or Wisconsin's Farm Fresh Atlas (<http://www.farmfreshatlas.org>); share information about the Six Plant Part lesson and recipes.
- Share with students that in 1887, the debate on whether the tomato is a fruit or a vegetable reached the **United States Supreme Court**. The ruling: the tomato is a vegetable. So **legally**, it seems, the tomato is a vegetable, not a fruit. Ask students to express their opinion on this case. Then have students debate or write a persuasive paragraph on whether pumpkins, eggplants, or corn on the cob are fruits or vegetables, and give supporting reasons for their view.

### Connection to Other Core Subjects and Curricula

This activity is aligned with WI Model Academic Standards for science:

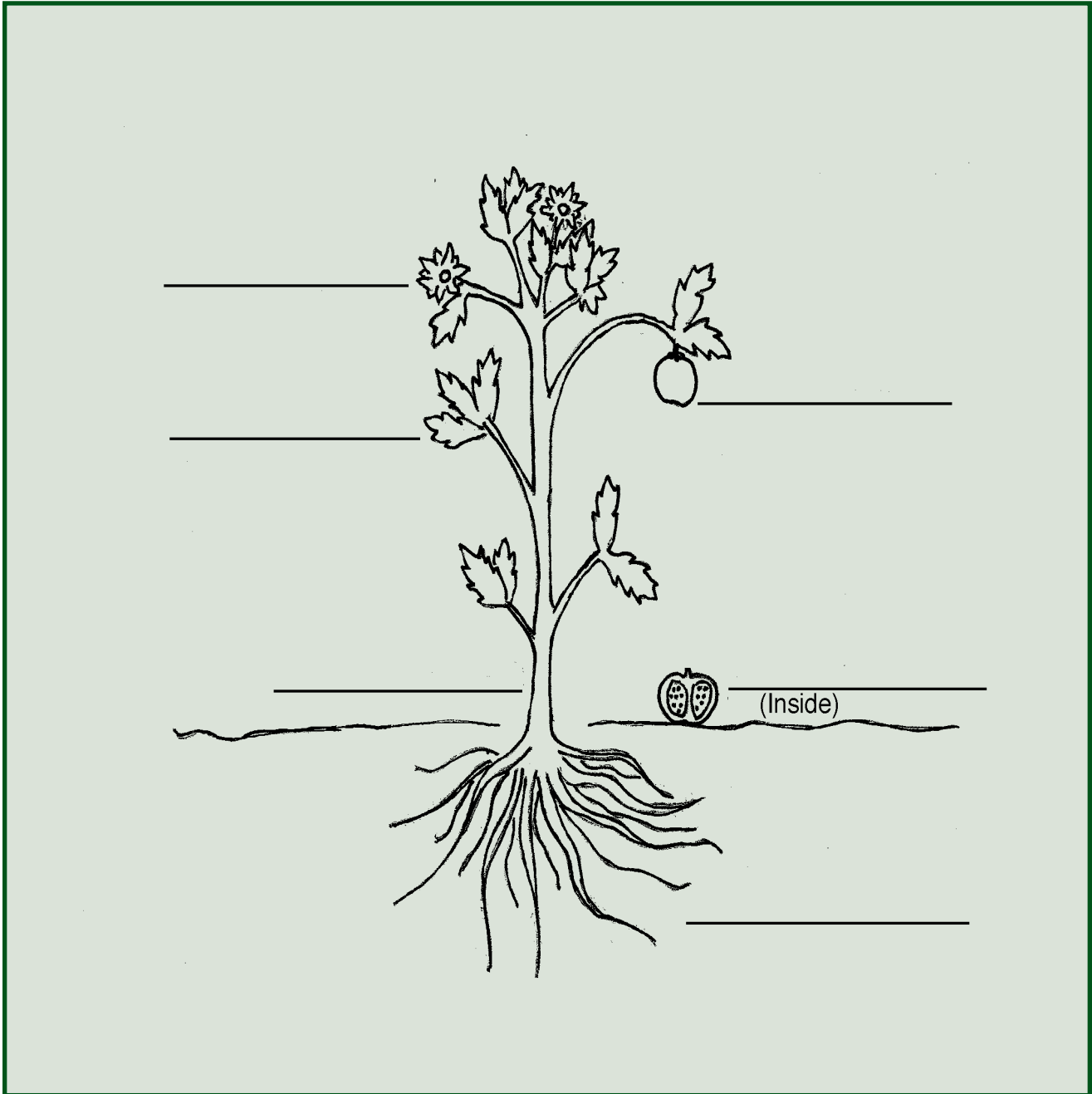
- A.4.5 When studying a science-related problem, decide what changes over time are occurring or have occurred.
- F.4.1 Discover how each organism meets its basic needs for water, nutrients, protection, and energy in order to survive.
- F.4.2 Investigate how organisms, especially plants, respond to both internal cues (the need for water) and external cues (changes in the environment).
- F.4.3 Illustrate the different ways that organisms grow through life stages and survive to produce new members of their type.
- F.4.4 Using the science themes, develop explanations for the connections among living and non-living things in various environments.

# Six plant parts We Eat

Label the diagram using the following choices

roots    flower    stem    seeds    leaf    fruit

Under each label, list a Wisconsin fruit or vegetable as an example to each plant part



# Six Plant Part Wraps

Grades Three to Five

Topic	Six Plant Parts We Eat
<b>Wisconsin Nutrition Performance Standards</b>	B.4.4 Trace a food from origin to table. C.4.2 Identify a healthy eating habit. E.4.1 Understand that people eat many different foods as part of a healthy diet. F.4.1 Recognize foods by name. F.4.3 Categorize foods by source (plant, animal), including processed foods.
<b>Summary and Key Concepts</b>	This is a hands-on review and celebration to wrap up the Six Plant Parts We Eat unit. Students make and eat a six plant part tortilla wrap.

This lesson acts as a review for all the previous plant part lessons. Students will prepare a snack that contains all six plant parts. Students will easily identify which food is which plant part after having been through all the previous lessons. Giving students and staff the opportunity to prepare and eat a fresh vegetable snack will allow them to role model and demonstrate healthy eating habits.

## Goals and Objectives

Students will be able to

1. Identify the six plant parts we eat.
2. Identify foods that represent the six plant parts we eat.
3. Make some healthy food choices.

## Supplies Needed

- Tortillas or pita bread.
- Hummus or cream cheese.
- A variety of colorful vegetables, such as carrots, kohlrabi or celery, spinach, broccoli or cauliflower, cucumber, and red bell pepper (enough for each student to make a wrap).
- Knives, sharp knives for adults, butter knives for students, and cutting boards, as appropriate and if items are not prepared ahead of class.
- Parent volunteers to chop vegetables.
- Plates, napkins, cups, serving dishes, and utensils.
- Six Plant Parts Worksheet (follows lesson), copy for each student.



## Anticipatory Set

Review the six plant parts and list them on the board. If you've taught the previous lesson in this unit, then students should be experts at naming these parts in order of development. In this case, you may choose to skip this step and let students start by making their wrap.

## Time Line

40 to 50 minutes.

## Set Up

- Have the above materials purchased and ready for students.
- If students will not be helping to chop the vegetables, have them washed and prepared ahead of class.
- Have students wash hands.
- Students can help wash items as appropriate, such as spinach, broccoli, and cucumber, and have parent volunteers chop the vegetables in class.

## Warm Up Activity

Fruit-Leaves-Stems-and-Roots Activity: Have students stand up and remind them of the active song, "Head, Shoulders, Knees, and Toes." Ask them to touch their heads when you say "fruit," touch their shoulders when you say "leaves," touch their knees when you say "stems," and touch their toes when you say "roots." Sing to the tune of "Head, Shoulders, Knees, and Toes" the following lyrics:

*Fruit, leaves, stems, and roots*

*Stems and roots*

*Fruit, leaves, stems, and roots*

*Stems and roots*

*And sun, and air, and soil, and water*

*Fruit, leaves, stems, and roots*

*Stems and roots*

## Activity

**Six Plant Part Tortilla Wrap:** Students may choose any ingredients to create a wrap that represents the six plant parts we eat. You'll want to use tortillas or pita bread to hold the veggies, as well as a spread like hummus or cream cheese. Tortillas, pita bread, and hummus are all made with seeds: wheat or corn for tortillas, wheat for pitas, and garbanzo beans for the hummus. Other ingredients may include carrots (root), kohlrabi or celery (stem), spinach (leaf), broccoli or cauliflower (flower), and cucumber or bell pepper (fruit).

Have students wash hands before beginning. Put the ingredients out buffet style and allow students to make their own wrap or pita sandwich. Younger students may need assistance. Give students cups and water as well.

## Closure

While students are eating, ask them to identify the plant parts they see on their plate. List them on the worksheet, and brainstorm any other Wisconsin fruits or vegetables that would be good ingredients for a wrap or sandwich. Place them in the proper plant part category on the worksheet.

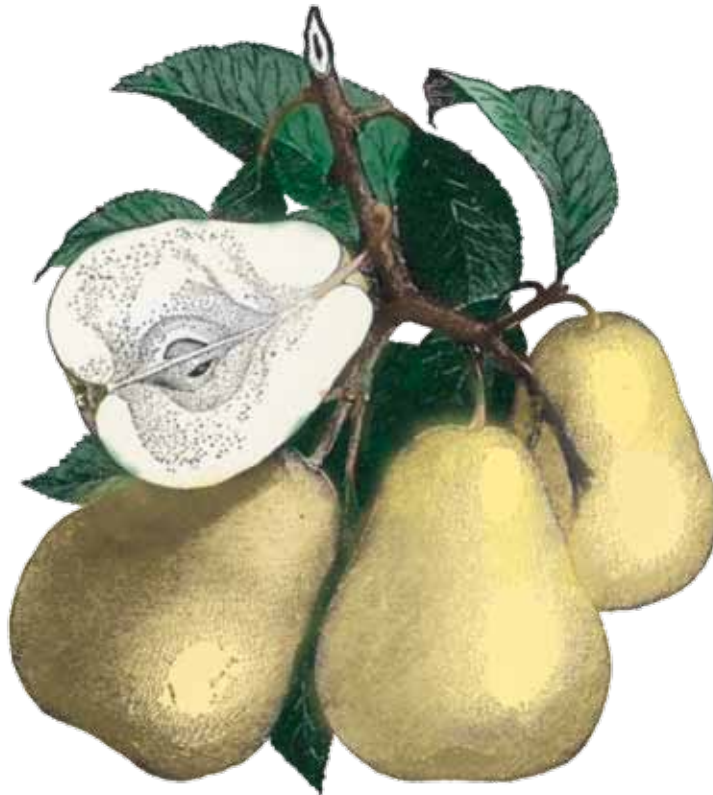
## Classroom-to-Cafeteria Connection

Using examples from the Fruits and Vegetables Galore *Tricks of the Trade: Preparing Fruits and Vegetables* manual, set up a six-plant part pasta, potato, salad, or sandwich bar. The Greater Tater n' Salad Bar (page 36 of the manual), Plenty o' Pasta Bar (Page 38), and Stuff a Submarine Salad Bar (page 39) provide ideas to get started. Make signs or have a class make signs for the toppings that identify the plant part for each topping.

## Connection to Other Core Subjects and Curricula

This activity is aligned with Wisconsin Standards for Health Education:

- 1:1:A2 Describe healthy behaviors that impact personal health.
- 5:2:A2 List healthy options to health-related issues or problems.
- 5:2:A3 Choose the healthiest option when making a decision.
- 7:1:B1 Describe healthy practices and behaviors that help maintain or improve personal health.
- 7:2:B1 Demonstrate healthy behaviors that will maintain or improve the health of self and others.



# Six plant parts Wrap Worksheet

<b>Plant Part</b>	<b>What was in my wrap</b>	<b>Wisconsin Grown Examples</b>	<b>Other ways it can be served, instead of a wrap</b>	<b>Nutrients it provides</b>
<b>Root</b>				
<b>Stem (or stalk)</b>				
<b>Leaves</b>				
<b>Flowers</b>				
<b>Fruit</b>				
<b>Seed</b>				

# Growing a Garden Game

Grades Two to Four

Topic	Nutrition for Energy and Growth
Wisconsin Nutrition Performance Standards	A.4.3 Identify the benefits of the relationship between physical activity (using energy) and the need for food and water; state that people need to eat food to have energy and grow.
Summary and Key Concepts	Plants get energy from the sun and need food and water to grow. Students will actively "grow" their garden.

## Goals and Objectives

Review with students that all living things need nutrients (energy, food) and water to grow.

## Supplies Needed

- Six toy hoops.
- Bean bags (one each of red, yellow, blue, and green make one set; several sets needed per group; additional black or patterned bean bags for optional activity).
- Space to run and move (consider recess, physical education, or an outdoor activity break before or after another outdoor activity, such as journaling, sketching, or gardening).

## Anticipatory Set

Talk about what a plant needs to grow (air, water, light, soil). Ask what happens if a plant gets too much or too little of any of these elements. Compare to people's needs and point out that we need to eat food, drink water, and get adequate sleep to grow.

## Time Line

This is a 10-minute energy-break activity to get students moving.

## Set Up

- Scatter toy hoops throughout the gym or other open area.
- Randomly divide bean bags into several piles. No need to sort by color or divide equally between piles.
- Divide the class into six groups, one group at each toy hoop.
- Inform the students that they will be "planting" a garden. The bean bags will represent what is needed to have a garden grow. The toy hoop represents the garden.

- Have students name what is needed and write the answers on the board. When one of the following is mentioned, circle it and assign the bean bag color:
  - o Yellow=sun (energy to make food)
  - o Blue=water
  - o Red=seed
  - o Green=plant food

## Activity

To make their garden “grow,” groups will need one seed, one sun, one water, and one plant food. (One each of red, yellow, blue, and green inside their toy hoops.) Every additional set of bean bags can be counted as an inch of growth.

Groups can send out one person at a time as a messenger to take a bean bag from a pile. The messenger can only carry one bean bag at a time and can take a bean bag from any pile. The team must communicate what color is needed to the messenger. At the end of 10 minutes, students will return to their group and count completed sets to see how much their garden has “grown.” For each red bean bag (seed), have students tell the name of a Wisconsin grown fruit or vegetable they are “growing” in their garden. For even more fun, allow students a free bean bag if they can tell the class a nutrient that their vegetable provides.

## Closure

Have students share what they need to grow. Do the vegetables “growing” in their hoop garden help the student’s grow? What do the vegetables provide? (Energy, water/fluid, nutrients.)

## Classroom-to-Cafeteria Connection

Provide information on “energy foods” and “energy zappers” in parent newsletters. Energy foods could be foods rich in nutrients, such as the list provided on page 43 of the *Meal Appeal Manual* of the Fruits and Vegetables Galore resource. Highlight food items that are excellent vitamin A, vitamin C, iron, and calcium sources, especially those from Wisconsin on the cafeteria menu.

## Optional Activities

For older students, make it more challenging by designating a black or patterned bean bag as a bug or energy zapper. The messenger can drop a black/patterned bean bag in someone else’s hoop and take a green bean bag away. At the end of the game, ask students if they can think of any “energy zappers” that can affect them. (Not enough sleep, poor food choices, dehydration, lacking nutrients.)

Another game option is “My Plate Hoopla.” In this case the toy hoop is the dinner plate, and the bean bags represent each food group from the pyramid. Orange=grains, green=vegetables, purple=meats or beans,



blue=dairy, red=fruits. The object is for teams to gather up bean bags to represent a balanced meal. Organize students in teams of three or four each, one team per toy hoop "plate." Scatter bean bags around the room, and put a few on each "plate." Each team sends out one member to gather up bean bags one at a time and bring back to their hoop. Allow five minutes, and then have groups share what "meal" they made and what foods this represents. If the group is able to name a Wisconsin-grown food for any of the food groups, they get a bonus point. The team with the most points and a complete meal is the champion.

*(Adapted from a lesson by Darcie M. Bedtka.)*



# It's in the Bag

## Grades Four to Five

Topic	Nutrition for Growth, Health, and Energy Needs
<b>Wisconsin Nutrition Performance Standard</b>	A.4.4 Match food groups to their primary contribution for a healthy body, realizing that some foods are better fuel than others (nutrient density).
<b>Summary and Key Concept</b>	Students can match food groups to their primary role in the body—grains for energy, fruits and vegetables to prevent illness and heal wounds, milk for strong bones, and meat for muscles and growth.

### Goals and Objectives

Students will categorize foods into food groups, determine basic health contributions, and identify if the food is grown or processed in Wisconsin.

### Supplies Needed

- Large paper or reusable grocery bags (this will be the "guessing bag").
- Blindfolds (optional).
- A variety of foods (real or plastic foods and food containers, such as a washed yogurt or milk carton) that can be handled by the student, including foods grown and produced in Wisconsin.
- Large box, cooler, or bag to keep the foods out of sight.

### Anticipatory Set

This lesson serves as a review after discussions on plant parts, food groups, nutritional contributions from the food groups, and Wisconsin products.

### Time Line

One class meeting; continues as long as time allows and there are contestants to play.

#### Set Up

- Have the supplies out and available.
- Keep all the foods hidden in a box or different bag, so the contestants cannot see them.

### Activity

Students take turns being the contestants. The contestant leaves the room while a food is selected by the teacher, shown to the class, and put in the guessing bag. The contestant returns to the class and reaches into the bag (wearing a blindfold or without looking) and tries to guess what food they have grabbed. The rest of the class could help by giving clues. Clues can include what plant part, as discussed in previous Six Plant Part lessons.

When each food is pulled out of the bag, have the class decide the food group to which it belongs. Students should tell why each food goes where they put it. If it is a plant, have students also classify the plant part.

As each food is placed in its group, discuss what each food does for our bodies: Dairy provides calcium for bones; proteins (meats, fish, nuts, seeds) provides the protein building blocks for muscle; fruits and vegetables help us heal and keep eyes, hair, and skin healthy; and grains (bread, cereal, rice, and pasta) give us energy to work and play. Mention that fats and oils are needed in very small amounts for healthy growth, but too much fat in the diet will cause some health problems. Have students identify if the food is grown and/or processed in Wisconsin. The contestant who just guessed will then select the next contestant.

### Closure

Recap any areas of confusion and highlight exceptional clues and guesses from the game.

### Extension and Review Activity

Play the same game with students, except have several bags (three to five bags suggested) with items in them. Number the bags for ease of discussion. Prepare a list of written clues for each item that can be read to the class. Put each item in a bag before class, so students will not know what is in each bag. To get started, have all students stand up. Read the clues for bag number one. Students can either list possible guesses for the item, or have a prepared list of possible items in the bag. Instruct students to sit down when their answer choice on the list is read. Read the list so that the correct answer is the last student(s) standing. Repeat this process for each bag. Continue until all the items in the bags have been revealed. Recap the nutritional value of each item, and where it is grown.

### Classroom-to-Cafeteria Connection

Enlist help from the school principal and school student council to come up with clues for a mystery Wisconsin food item on the menu for Wisconsin Wednesday. Provide clues during the week (start on Thursday with new clues) and reveal the mystery food each Wednesday.

*(Adapted from: CHSE/U.S. Department of Health and Human Services.)*

# Super Snacking— Feel Good! Be Smart! Look Good!

Grades Four to Five

<b>Topics</b>	Nutrition for Energy and Growth Identification and Classification of Food
<b>Wisconsin Nutrition Performance Standards</b>	<p>A.4.2 Identify feeling hungry vs. feeling full/satisfied.</p> <p>A.4.3 Identify the benefits of the relationship between physical activity (using energy) and the need to have food and water; state that people need to eat food to have energy and grow.</p> <p>A.4.4 Match food groups to their primary contribution for a healthy body, realizing that some foods are better fuel than others (nutrient density).</p> <p>F.4.4 Identify the basic food groups, and give examples from each group for meals and snacks.</p>
<b>Summary and Key Concepts</b>	Introduce connections between food choices and growth, health, and energy at an age-appropriate level. Nutrition is important to feeling good, growing strong, and looking good. Demonstrate the pleasurable aspects of healthy dietary choices. Review the five food groups and how to make a variety of healthy snacks.

## Goals and Objectives

Introduce connections between food choices and growth, health, and energy at an age-appropriate level. Involve students in hands-on activities. Demonstrate the pleasurable aspects of healthy dietary choices. Promote trying new experiences. Promote sharing and community building values.

## Supplies Needed

- MyPlate large poster with space to write in each food group.
- Individual small MyPlate posters (or placemats).
- Colored construction paper, orange, green, red, blue, purple, and yellow.
- Small table or work space for each group of students.
- Separate table area for foods.
- A variety of foods, including Wisconsin products, for classifying and tasting:

- o Corn cereal (Chex, Corn Bran) made with corn meal, whole grain corn, and corn starch;
- o Cheerios or other oat cereal made from whole grain oats, modified corn starch, and oat bran;
- o Pretzels made from wheat flour;
- o Popcorn, cheese popcorn (contains popcorn), cheddar cheese, soybean oil, and buttermilk powder;
- o Dried or fresh apples;
- o Dried or fresh cherries (caution with pits);
- o Dried cranberries;
- o Roasted soy nuts made from roasted soybeans and sunflower oil;
- o Potato crisps made with potatoes;
- o Sunflower seeds;
- o Pumpkin seeds, washed and roasted;
- o Yogurt, cheese cubes, milk;
- o Carrot sticks;
- o Kohlrabi sticks;
- o Green beans;
- o Sugar snap peas;
- o Soy beans (edamame); and
- o Berries, in season (raspberries, blackberries, blueberries, strawberries).

### Anticipatory Set

The best time to do this activity is mid-morning, mid-afternoon, or right after school, when many kids and adults need a snack. Ask if anyone has ever felt really hungry, irritable, and less able to concentrate close to lunch time. Discuss with students that teachers have noticed as the school day gets closer to lunch time, many students feel hungry, crabby, low energy, or unable to concentrate. Discuss why that might happen and how what we eat can help us to feel better.

### Time Line

One class meeting of up to 45 minutes.

### Set Up

- Hang up the MyPlate poster.
- Label colored construction paper (orange, green, red, blue, and purple) to match the MyPlate food groups.
- Write key contributions for each food group, such as energy, good eyesight, strong muscles, beautiful skin, and smart brains on the corresponding paper. Set up workstations with sets to include all five food groups.



- Portion the snack foods in cups for appropriate serving sizes. See list above. Make sure you have accounted for food allergies or restrictions.

## Activity

Introduce MyPlate. Point out different food groups on the plate. Review what is in each food group and write on the board some ideas what those foods do for us. Call on students to tell what foods that they eat and where they might fit on the plate. Write what they report under appropriate food group sections on the poster.

Instruct students to write the foods in the appropriate section on their own MyPlate placemat. Point out some additional foods, including the foods already out on the table. Point out foods that are locally grown.

Have students select some foods from the snack table. Ask students to taste the foods and think about how they feel after eating these snacks (hungry? full? satisfied?).

Have students go to prearranged workstations in teams of three or four students each. Each table should include the large color-coded construction paper sheets, labeled for each food group. Ask each team to try to figure out where in the food groups each snack food belongs. The papers are cued with words like energy, good eyesight, strong muscles, beautiful skin, and smart brains to help students realize the benefits of eating these foods. Referring to MyPlate, have the student place the snack foods on the appropriate color and labeled food group papers. Challenge students to see which team can get the most foods in the right food group. Review and make changes as needed. Discuss how these foods benefit students.

## Extension Activities

- Have students make their own Wisconsin MyPlate by placing Wisconsin grown and produced foods into the proper food group. Use a blank MyPlate sheet for this activity.
- Have students make up their own Wisconsin snack using the foods shown above. Have them name their snack and write the recipe for it. Then have students come up with an advertisement poster for their snack, including the snack name and nutritional benefits.

## Closure

Encourage sharing of each other's snack combinations. Ask students how they think they would feel after eating these snacks.

## Classroom-to-Cafeteria Connection

Post student Wisconsin MyPlate worksheets and snack advertisement posters in the cafeteria.

*(Adapted from a lesson by Glorie Salas.)*

# Variety and Where Food Comes From

## Grades Four to Seven

<b>Topics</b>	Nutrition for Energy and Growth Critical Thinking and Practical Reasoning Nutrition for Health, Promotion of Healthy Behaviors Diversity
<b>Wisconsin Nutrition Performance Standards</b>	A.4.1 Identify why people need to eat different kinds of food. A.8.1 Explain the concepts of variety, moderation, and balance, and balancing caloric intake and energy expenditure. C.8.7 Demonstrate how to use food labels to make healthier choices. D.4.1 Understand the concept of variety and identify that eating a variety of foods is important to health. E.4.1 Understand that people eat many different foods as part of a healthy diet.
<b>Summary and Key Concepts</b>	Students will become aware from where their food comes.

### Goals and Objectives

Students will understand that there is a wide variety of food choices available, including many from local Wisconsin sources.

### Supplies Needed

A blank Wisconsin map for each student.

- Crayons or colored pencils.
- Wisconsin Food Groups List, Wisconsin MyPlate.

### Anticipatory Set

Review previous discussions on variety of food and health.

### Time Line

One to two class meetings to review, research, and share results. Up to one week between classes can be given as time to conduct the "food geography" project.

### Set Up

- Have resource materials available. This can be an out-of-class project assignment.
- Online resources to bookmark ahead of class:
  - o [http://www.savorwisconsin.com/resources/grow\\_guide.asp](http://www.savorwisconsin.com/resources/grow_guide.asp)

- o <http://100milediet.org/get-started/map>
- o <http://eatlocalmilwaukee.org/scavengerhunt.pdf>
- o <http://www.eatlocalchallenge.com/>.

## Activity

Tell students they are going to be food geographers. Over the next week, weekend, or other specified time frame before the next class, instruct students to read food packages, grocery store signage, and fruit/vegetable stickers to see from where the food they eat comes.

Have students record the foods and the origins of the foods they are putting on their lists. Instruct students to include at least 25 foods on their list and include at least 8 fruits and vegetables in this list. It may be challenging for students to determine the origin of produce or bulk foods. Encourage them to enlist the help of parents whenever possible. It is fine to list the origin as “unknown.” Students will need to bring their list to the next class.

Using the list of foods each student has collected, have students identify foods that are grown in Wisconsin or within a 100- or 200-mile radius from school. This is how “locally grown” will be defined for this lesson. Have students use encyclopedias, food labels, Internet, grocery store information, and other resources to confirm sources for unknown origins, and to list which food products from their lists also could be grown or produced in Wisconsin. Are there foods that are locally grown that would be healthy alternatives to other foods on their lists?

Have students determine if there are specific areas of the state where certain foods are grown, processed, and prepared. On the map, students should draw and label where at least five different fruits or vegetables are grown in the state. Students should also draw and label at least three locations where foods are prepared or processed. (Adjust expectations according to your grade.)

## Closure

Explain that we need a variety of climates and growing conditions to provide a variety of food products. What would our diet look like if we could only eat foods that are grown 100 miles from our house or only from Wisconsin? What would our meals be like? Would we be able to eat a variety of nutritional foods? Discuss why or why not. (Seasonality also can be discussed.)

## Classroom-to-Cafeteria Connection

Identify locally grown and Wisconsin grown foods on the cafeteria menu.

## Connection to Other Core Subjects and Curricula

This activity aligns with curricula in geography, social studies, and Wisconsin studies.

## Extension Activity

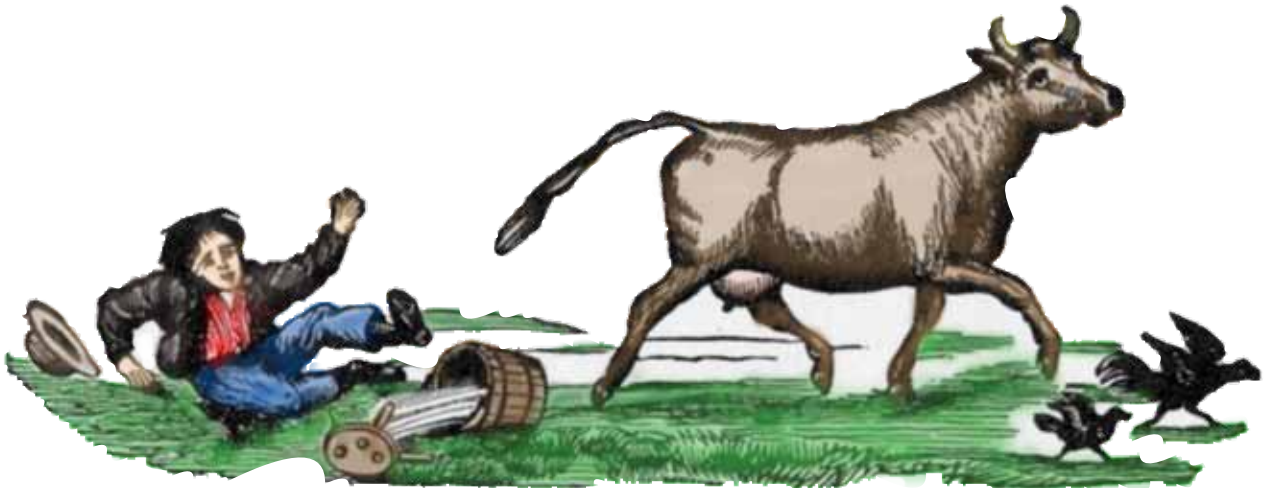
**Foods Fair Project:** This extension activity can be assigned as a project for each student or in teams of two. Students research an assigned food (fruit, vegetable, or other Wisconsin-grown products) and prepare a presentation or table-top display.

Students will research classification; selection of fruit or vegetable (how to purchase, what to look for, how to tell if ripe, price); various forms (fresh, frozen, canned, dried); nutritional value; where grown and what the growing season is; where and how the food is processed, stored, prepared; how to cook, serve, and eat the food. Have students calculate how many miles the food travelled from where grown to school.

Each student will prepare a written report citing at least three resources and a five-minute PowerPoint® presentation or table-top display. Students will share two recipes for the fruit or vegetable with the class. You may include the option to prepare the recipe and sample the product. (Note: Consider this in fall, as a way to celebrate the harvest.)

Have a food fair day where students share their presentations or set up the displays for other students and parents to view, ask questions, and learn about a variety of fruits, vegetables, and locally grown foods. Have students share how many miles their food item travelled to get from the farmer to the school cafeteria table.

Grade students on their presentation, use of resources, creativity, accuracy of information, and overall appeal of their PowerPoint® or table-top display.



# Milk From Cow to You

## Grades Two to Four

<b>Topic</b>	Food Safety
<b>Wisconsin Nutrition Performance Standards</b>	B.4.4 Trace a food from origin to table. B.4.5 Describe a food chain.
<b>Summary and Key Concepts</b>	Throughout this activity, students will learn how milk gets from the cow to the dinner table. It explores how milk is kept fresh and safe, and the different kinds of milk and dairy products.

### Goals and Objectives

Students will follow a food from origin to table.

### Supplies Needed

- Access to websites:
  - <http://kidzzone.wisdairy.com/>; and
  - <http://www.wmmb.com/wdc/MarketingMaterials.aspx> (to order handouts).
- Smart board or projector for Internet viewing.
- Small cups (two to three ounces) for tasting; variety of milks and dairy products (nonfat, 1 percent, 2 percent, whole, cream).
- Cartons of milk served at school (can use this for tasting).

### Time Line

One class meeting.

### Set Up

- Check for any dairy, lactose, or casein allergies or intolerances in your class. These students will need an alternate activity.
- Distribute the handout "Milk from Cow to You."
- Use a smart board or PowerPoint® projector to view the website and discuss as a class.

### Activity

Discuss what a dairy farmer does. What is a typical dairy farmer's day like? If any students live on a farm, or have relatives that do, they can share what happens on the farm. Ask where milk comes from.

Explain that every day, dairy farmers give their cows water to drink and a mixture of hay and grains to eat. Cows' bodies turn this food into milk. Two or three times a day, farmers milk their cows using a special machine attached to the cows' udders. Milk is then stored in a refrigerated tank on the farm. Farmers test the milk to make sure it is wholesome. Every other day or so, trucks visit each dairy farm to pick up the milk and take it to



a factory. At the factory, workers test the milk again. Milk is pasteurized, which means it is heated up to kill any germs it may contain. Milk is also poured through tiny holes to break up solid particles. This process is called homogenization. Workers then put the milk into containers. Cartons and jugs of milk are sent to restaurants, schools, and stores, where you can buy it to drink.

Open an Internet browser, go to <http://kidzzone.wisdairy.com/>, and click on Dairy Farm Tour.

Read aloud about the different steps to get the milk from the cow to you. Have students follow along on their handouts.

Ask students to listen carefully to the steps so they can remember what happens in the correct order.

### Closure

Review with students that milk is not touched by humans, it is constantly refrigerated, and it goes through several safety and quality checks. Taste dairy products. What do the students like best? Point out that nonfat milk and one percent milk are healthy beverages to help children grow.

### Classroom-to-Cafeteria Connection

Show students the cartons of what is served at school meals, so they can identify the milk available to them.

### Extension Activities

- Students can draw pictures for each of the events to process milk or make cheese.
- Students can visit <http://kidzzone.wisdairy.com/> for activities and quizzes.
- Check the dates on dairy products. What happens when milk is not refrigerated? Leave out a small cup of milk, and have the students check it to see.
- Tour a farm, milk/dairy plant, or cheese plant.
- Visit [http://video.discovermediaworks.com/WMMB\\_DW\\_ITO/player.htm](http://video.discovermediaworks.com/WMMB_DW_ITO/player.htm) for a video on the art and science of Wisconsin cheese making.



# Where Does Food Come From?

Grades One to Four

Topic	Food Safety
Wisconsin Nutrition Performance Standards	B.4.4 Trace a food from origin to table. B.4.5 Describe a food chain.
Summary and Key Concepts	Students explore the role plants and animals play in the bigger picture of life on earth.

## Goals and Objectives

Students will explore the origin of food. This lesson is primarily for younger students, but works well as a reading or science buddy project to pair up students of different ages.

## Supplies Needed

- Suggested Books: Where Food Comes From by David Suzuki and Barbara Heiner, and Growing Vegetable Soup by Lois Elbert for younger grades.
- Glass jars.
- Construction paper, poster board.
- Markers and writing supplies.
- Paper towels.
- Mung beans.
- Space to put the mung bean jars (in or near a window, table under grow light).

## Anticipatory Set

Discuss how plants are one of our main food sources and point out that we eat many parts of plants.

## Time Line

Two class meetings and additional observation time.

## Set Up

Prepare space for the mung bean jars (window, grow light).

## Activity

### Day 1: Where does food come from?

- For younger students, read one of the suggested books. Older students can read the book with a younger reading buddy, too. With all students, discuss names of plants they eat.
- Challenge students to share any farm stories or stories about growing food.

- Remind students that everybody tries new foods at some time. Have them discuss or share stories about times when they tried new foods.
- Students can draw or write about foods they like and where they come from. For example, they might draw an apple and an apple tree.
- Divide the students into teams of taste buddies. Have them explore how food gets to them by asking them to trace the origins of a favorite food.
- Once they trace the steps in the process, have them make posters illustrating the journey their food has to make to get to the table. It might be easier for them to trace backwards, from their plates to the kitchen to the store, and so on. They may need questions to help them: Does anyone prepare and cook the food? Who buys it? What happens on the farm?
- Have the students present their posters to the class.

### **Day 2: Wrap it up—watch food grow.**

- Tell students that they will have a chance to plant a seed and observe how it grows.
- Distribute a glass jar to each team.
- Line the inside of the jar with construction paper.
- Wet some tissues and place them in the jar.
- Place the mung beans between the construction paper and the side of the jar where you can see the beans easily.
- Keep the tissues wet and watch what happens over the next few days.
- Have older students keep a journal of their plant observations. They can write about what they see and draw pictures of their seeds and sprouts. They will identify basic parts, including the roots and stems. Ask them to identify which way the roots and stems grow and hypothesize why.

### **Closure**

Have a snack of mung bean sprouts (purchased and washed prior to class).

### **Classroom-to-Cafeteria Connection**

Discuss with students where they think the food in the grocery store, served at school, or at home is grown and processed. Review the school breakfast and lunch menus, and have students pick out foods that are grown in Wisconsin. Have the food service department share the origins of the items on the menu through signage or menu descriptions.

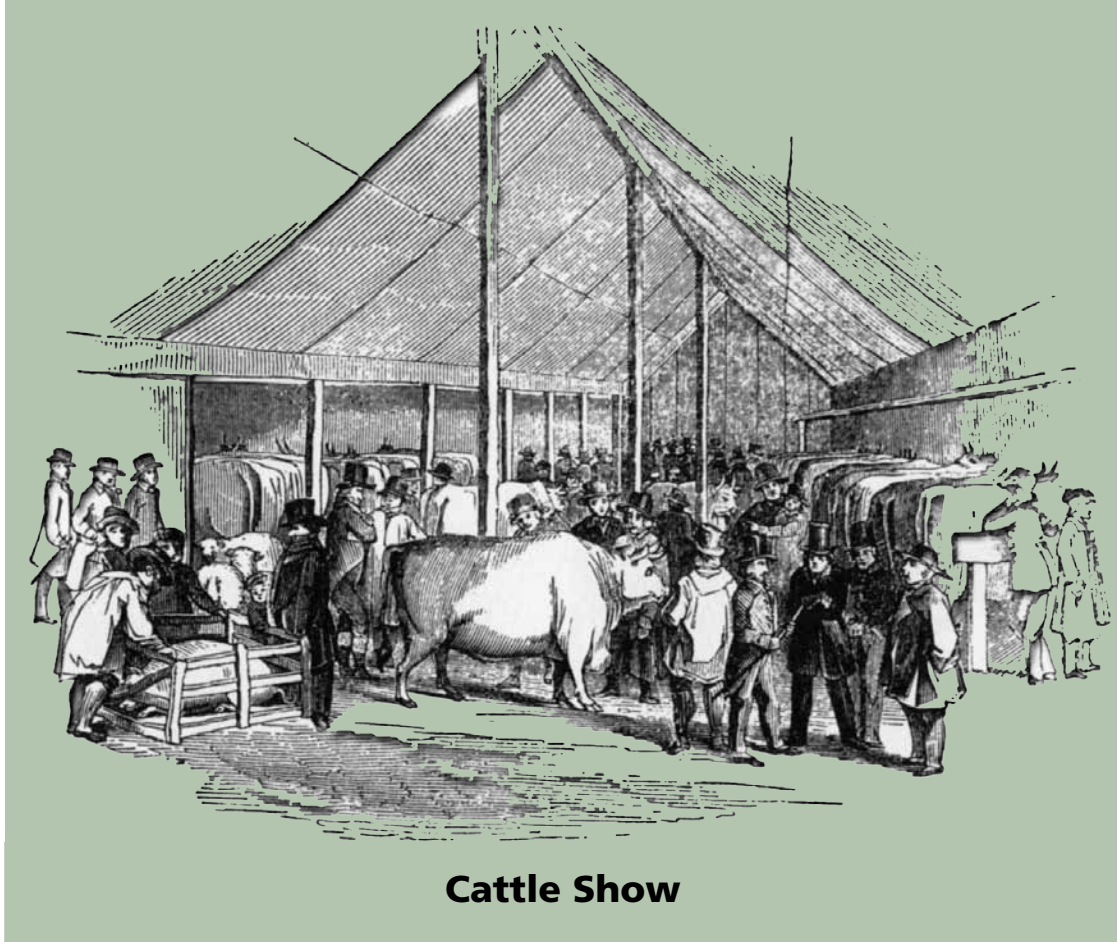
### **Extension Activity**

Ask children if they know what plants eat. Explain that they can help feed plants by making more soil through composting. Have them fill up a clear glass jar with layers of garden soil, leaves, and twigs (twigs allow air into the compost). Have them place raw vegetables, cooked vegetables, plastic, and metal in the jar against the glass. Over time they can observe which elements return to the soil as compost.

## Connection to Other Core Subjects and Curricula

Activity is aligned with curricula in science and language arts.

*(Adapted from Team Nutrition's Food Time Kit.)*



# Shopping for Nutrition

## Grades Four to Five

Topics	Nutrition for Health Promotion of Healthy Behaviors
<b>Wisconsin Nutrition Performance Standards</b>	D.4.1 Understand the concept of variety, and identify that eating a variety of foods is important to health. D.4.2 Describe the consequences of overeating. D.4.3 Identify sources of fat, sugar, salt, fiber, protein, and calcium in the diet. D.4.4 Recognize the relationship between diet and chronic diseases, such as blood pressure, heart disease, obesity, and tooth decay.
<b>Summary and Key Concepts</b>	Students will select foods to meet different nutrition criteria.

### Goals and Objectives

Students will use the worksheet to shop for items that fit their grocery lists. This can be done with food cards and labels or as a home connection assignment that students are to do at home or in the grocery store.

### Supplies Needed

- Grocery list handout.
- Food labels or food cards.

### Anticipatory Set

Review and discuss food groups, basic label reading, and some nutrient information.

### Time Line

Fifteen minutes.

### Set Up

- Provide the worksheet for each student.
- Have labels, food cards available, or have students complete at home or grocery store.

### Activity

Students will use the worksheet to “shop” for items that fit their grocery lists. This can be done with food cards and labels or as a home connection assignment to do at home or in the grocery store. Can they find foods that were grown or processed in Wisconsin to meet the list requirements? Complete the first item on the list together as an example. Vitamin C foods that are grown in Wisconsin include potatoes, bell peppers (all



colors), broccoli, kale, cauliflower, strawberries, Brussels sprouts, chard, cabbage, spinach, snow peas, tomatoes, zucchini, raspberries, asparagus. These would be circled. Other vitamin C foods not grown in Wisconsin include citrus (lemons, oranges, limes, grapefruit, tangerines), kiwi fruit, mango, pineapple, and papaya.

### Closure

Ask students if it was easy to select the foods on the list? Why or why not?



Name: \_\_\_\_\_

List foods that are good sources of the nutrient listed and fit the descriptions on your grocery list. Be sure to check labels to confirm your choices as "good sources." Circle any Wisconsin-produced foods. Be prepared to explain your choices in class.

### Grocery List—Can you list foods that are. . .

Vitamin C foods	
Protein foods	
Vitamin A foods	
High fiber foods	
Healthy snacks	
Something for breakfast	
Something for lunch	
Calcium-rich foods	
Iron-rich foods	
Complex carbohydrate foods	
Folic acid foods	
Good foods to take on a picnic	
Fun foods for a party	
<b>Bonus</b> What are some good foods to eat if you are going on a long bike ride?  Why?	

# Exploring Wisconsin Through Food

## Grade Four

<b>Content Standard</b>	Diversity
<b>Wisconsin Nutrition Performance Standard</b>	E.4.3 Identify examples of cultures and their food customs and habits. E.4.5 Describe how food choices are influenced by availability, individual and family preferences, media, and background.
<b>Summary and Key Concept</b>	Children expand the range of food they eat as they try foods from various cultures.

### Goals and Objectives

Wisconsin residents came from many countries to settle the state. We eat many kinds of foods that may have originated in other countries, as well as our own unique Wisconsin foods that have developed as the state's population and diversity grows. Tasting a variety of new foods allows children to expand

### Supplies Needed

- Wisconsin map (<http://www.enchantedlearning.com/usa/states/wisconsin/outline/>).
- White board/markers or flip chart.
- Large world map, globe.
- Pictures of each student.
- Yarn in a variety of colors, colored paper, and push pins.

### Anticipatory Set

Students will need to have completed a genealogy project previously, or at least have made a list of countries from where their ancestors came from.

Websites to provide additional information:

<http://www.nal.usda.gov/fnic/pubs/bibs/gen/ethnic.pdf>

<http://www.lkwdpl.org/lhs/foreignfoods/>

[http://www.pbs.org/opb/meaningoffood/classroom/pop-lesson\\_plan.shtml](http://www.pbs.org/opb/meaningoffood/classroom/pop-lesson_plan.shtml)

[http://www.apl.wisc.edu/publications/APL\\_Rural\\_Immigration\\_Summit.pdf](http://www.apl.wisc.edu/publications/APL_Rural_Immigration_Summit.pdf)

<http://www.wisconsinhistory.org/turningpoints/subtopic.asp?tid=4>.

### Time Line

Thirty minutes; additional time for expanded activities.

### Set Up

Prior to class, have the map posted on a bulletin board with the students' pictures posted around the map.

## Activity

Explain that people from different countries have shared foods throughout history. For example, pasta, including spaghetti, came to this country from Italy and was brought to Italy from China by Marco Polo. Explain that when people move, they bring favorite recipes with them, and will grow and prepare their favorite foods in their new land.

In America and Wisconsin, we have many people from different backgrounds, different traditions, and different foods that they eat. We call this culture. There are many delicious, nutritious, and fun foods to try from different cultures.

Review the changing population and immigration of people into Wisconsin, and how this can be related to food choices and preferences. Ask students if they know of any foods or recipes that come from other cultures and countries. Look for that country on the globe or map. List the foods and countries on the white board. Challenge students to think about cultural foods and Wisconsin traditions. (For example, fish fries and fish boils, brat festivals.) How are these food traditions relevant to the cultural groups in the community? Are these foods eaten regularly as part of a healthy diet or are they foods that are best eaten only occasionally ("sometimes" foods)?

Go to the large world map posted on a bulletin board. Have students trace their ancestry with different colors of yarn connecting from each student's picture to countries of ancestry. (Connect the yarn with push pins.) Have students graph the number of students from each country.

Assignment project: Have students explore all the food cultures in your classroom. Let everyone talk about the food habits and customs of their families. Ask your students to research one country in their own ancestry, share a recipe or food from that country, and also depict a cultural event or tradition through a poster. Ask students to identify any food traditions that their ancestors might have brought with them when they came to Wisconsin. Does this include any special foods for celebrations and special events? If so, what foods are part of the celebrations?

## Closure

Review the need for a variety of foods each day from all of the food groups.

## Extension Activity

Have students plan a Wisconsin dinner or feast and invite parents and caregivers.

## Connections to Other Core Subjects and Curricula

Make connections to other core subjects with the following activities:

**Reading/Language Arts**—Read folk tales from the countries students have identified in their ancestry.

**Social Studies**—Discuss more about the people of Wisconsin and immigration into Wisconsin.

**Geography**—Practice map skills by locating countries on a map.

**Mathematics**—Use plotting and graphing skills by having students create and label a graph.





# Lefse, Anyone?

## Grade Four

Topic	Diversity
<b>Wisconsin Nutrition Performance Standards</b>	E.4.1 Understand that people eat many different foods as part of a healthy diet. E.4.3 Identify examples of cultures and their food customs and habits.
<b>Summary and Key Concepts</b>	Lefse is a Norwegian food, enjoyed by many people in Wisconsin at holidays and celebrations.

### Goals and Objectives

Lefse is a soft, flat, type of bread. When Norwegians settled in Wisconsin, they brought lefse along with them. Many people enjoy the Norwegian traditions of making and eating lefse during the holidays. Throughout this activity, students will learn how lefse is made, its historical importance in Norwegian culture, and how it has been used.

### Supplies Needed

- Lefse making supplies or pictures of supplies.
- Lefse to taste.
- Butter (optional: sugar, cinnamon).
- Paper plates, napkins, plastic knives.

### Anticipatory Set

Explain that when settlers came to Wisconsin, they brought their traditions and foods with them.

### Time Line

One class meeting.

### Set Up

- Lefse to sample is set out.
- Tools and pictures are available to share.

### Activity

Introduce lefse, a traditional Norwegian flatbread made from potatoes, milk or cream, shortening or lard, and flour. Show lefse if possible. Show students where Norway is on a map.

Discuss the special cooking tools (a ricer, a thin, grooved rolling pin, and wooden turning sticks) and a griddle that are needed to cook lefse. Show cooking tools or pictures of tools. Lefse is made by ricing potatoes (shredding very fine) and making dough rolled very thin and cooked on a griddle. It is soft and a lot like a tortilla.

There are many ways of eating lefse—spread with butter and rolled up to eat, called “lefse-klenning” in Norway. The lefse also can be sprinkled with sugar and cinnamon before rolling up. (This is the traditional way settlers from central Norway ate their lefse.) Other options include spreading jelly or lingonberries, or a thin layer of peanut butter and sugar on the lefse before rolling. Other sweet variations are butter and brown sugar, maple syrup, honey, or corn syrup. Lefse filled with ham and eggs, beef, sausage, and other savory items makes a tasty sandwich. Lefse is a traditional accompaniment to lutefisk, a fish that is often rolled up in the lefse.

Try lefse as a class. Have students try it plain and with butter. Ask the class:

- *Has anyone tried lefse? Does it remind them of any other food they have eaten?*
- *Is lefse similar to other foods (tortilla, potato pancakes)? Is it eaten the same way?*
- *Has anyone made lefse or attended a gathering where lefse was prepared?*
- *How is lefse eaten in Norway or at Norwegian festivals or at the holidays? (Buttered, sprinkled with sugar and rolled up, or with lutefisk.) Are there other ways to eat lefse?*
- *What food group is lefse in?*

## Closure

Discuss with students any special foods they have during the holidays, if any. There are probably many different traditions in the class. Discuss whether students around the world eat the same or different foods. Ask if there are any ideas why. Ask students if they know of and/or have eaten foods that originally came from another country. Discuss how different cultures include different foods. What foods are grown in other countries? What happens when people travel or move? Do they bring foods with them?

## Classroom-to-Cafeteria Connection

- Have students identify cultural foods that are served as part of school meals.
- School staff and the food service director can work together to plan cultural theme days, and include foods on the menu that relate to the day’s learning activities and events.

## Expansion Activities

Discuss how the United States has been called a melting pot because so many people and cultures make up the country and blend to become Americans. Some people call it a salad bowl, since like a salad, our culture has many ingredients. None of our cultural ingredients lose their defining character, but all contribute to the flavor of American society.

Choose another food that is important to a cultural group in the community. Examples include:

- **Native American:** wild rice, fry bread, succotash, maple syrup, cranberry
- **Mexican Americans:** tamale, tortilla, salsa
- **Hmong Americans:** noodle dishes, Hmong eggrolls, sausage lettuce wrap
- **African Americans:** greens, black-eyed peas, grits, pork, soul food
- **German:** sausage, cabbage, potatoes, bread

Have students interview their family members or friends about foods or recipes that are important to them and their culture. Do they cook a special food or meal at celebrations and holidays? Do they associate a specific food with family members or cherished memories? Have students choose one food that represents their family or culture, and investigate the reasons for its importance. Encourage them to find out more about the food and its history.



# Comparative Tasting

Grades K to Five

Topic	Identification and Classification of Foods
<b>Wisconsin Nutrition Performance Standards</b>	F.4.1 Recognize foods by name. F.4.2 Describe different kinds of food (by physical and sensory characteristics—shape, taste, color, texture, etc.). F.4.3 Categorize foods by source (plant, animal), including processed foods. F.4.4 Identify the basic food groups, and give examples from each group for meals and snacks.
<b>Summary and Key Concepts</b>	Students taste, compare, and describe related foods.

## Goals and Objectives

The main goals of this lesson are to expose students to new foods and encourage them to compare, describe, and think about food beyond whether they like it or not. The descriptive activity is a fun way to familiarize students with a variety of fruits and vegetables using color, texture, and other distinguishing characteristics. Students are encouraged to use specific vocabulary to describe these characteristics.

### Students will

1. Taste and compare a variety of fruits and vegetables.
2. Use descriptive language to identify specific characteristics of fruits and vegetables.
3. Identify how these foods are related, alike, and different.
4. Identify foods that are part of a healthy diet.

### Supplies Needed

- The Team Nutrition book *Fruits and Vegetables Galore*, Helping Kids Eat More has posters to hang in the cafeteria and classroom. (Available free from USDA Team Nutrition.)
- Choose four or five varieties of related foods (consider color and texture groupings). See Set Up, below, for suggestions. Consider asking volunteer parents to help with food preparation.
- Plates, napkins, colander, knife, and cutting board (as needed).
- Copies of the Comparative Tasting Chart (third through fifth grade) for each student.

## Anticipatory Set

This lesson can vary with seasonal produce. In early September, try local tomatoes. Contrary to what some adults think, with encouragement many children will eat and enjoy fresh, local tomatoes. One activity is to have students taste and compare four varieties of tomatoes from a local farm, farmers market, or their school garden. In October and November, taste test four different types of apples for this lesson. In December and January consider using a variety of root vegetables or cucurbits. In Wisconsin, a variety of squashes, potatoes, and beets are readily available and fun to try. In spring, asparagus, radishes, and greens (or whatever is available from local farmers at the time) works well.

You may choose to do a food family tasting using a variety of related vegetables such as cucurbits (vegetables in the squash family) or brassicas (cole crops, such as broccoli, cauliflower, cabbage, kohlrabi, and turnips).

Tell students they will taste four different foods. Some may be familiar and some will probably be new. Ask students to use their five senses in order to go beyond “yum” or “yuck” in describing specific flavors, smells, textures, and appearances of food. Use the word bank for helpful suggestions. Local, seasonal food should be used for this lesson whenever possible.

## Time Line

About 30 to 45 minutes.

## Set Up

- Collect or purchase all the necessary supplies. Include different varieties of vegetables and fruits grown in Wisconsin (or grown in the school garden) that represent different colors (e.g., orange: carrots, sweet potatoes, butternut squash, pumpkin; purple: eggplant, kohlrabi, purple carrots, blackberries; red: purple or red cabbage, radishes, tomatoes, strawberries, raspberries, apples, cherries, watermelon; yellow: yellow carrots, sweet corn, Yukon gold potatoes, summer squash, yellow tomatoes; green: collard greens, asparagus, kale, broccoli, green peas, zucchini, spinach, cucumbers; white: cauliflower, white potatoes; blue: blueberries.
- Wash and prep fruits and vegetables as needed. Use colander as needed to rinse berries and let dry. If possible, delay slicing the fruits and vegetables until just before tasting to preserve freshness. Avoid putting the items to taste in the refrigerator, as it dulls the flavor and changes the texture.
- Print a copy of the included comparative tasting chart and word bank for each student.

## Activity

The introduction to this lesson will depend on the foods you are using. Have students look at the fruits and vegetables. Can they describe the appearance? Are they similar in any way?



For apple or tomato tastings, discuss how fruits grow and develop. Ask students to share memorable experiences they've had eating or harvesting apples or tomatoes. Talk about the different ways we eat apples and tomatoes. How many different colors and shapes of tomatoes or apples have students seen?

You may have similar discussions about other fruits or vegetables as well. If you do a root or leaf tasting, discuss the function of these plant parts and have students list an assortment of roots or leaves that we eat.

If you do a food family tasting such as cucurbits or brassicas, discuss the similarities and differences between the different fruits and vegetables. Ask students to share any experience they have growing or eating these foods.

For seasonal tastings you can discuss what is happening in nature and in the garden during the season on which you are focusing. Tell students that different plants grow well in different conditions. Ask: *What kind of conditions would spring plants like? How about summer and fall plants?* If you can, go outside and have students make observations about what is happening in nature. *What is growing? What is the temperature? Is the ground wet or dry?* Have them draw pictures or record what they see and feel.

Have students wash hands in preparation for tasting and comparing a variety of related foods. Some may be familiar and some will probably be new. Show students the foods one at a time and tell you what it is. Write the name of the food on the board. Give each student a slice of vegetable or fruit. Encourage them to taste it. Tell students that you don't expect everyone to like it, but it is important to try new healthy foods. Have them observe how the fruit or vegetable looks, smells, tastes, and feels. As students taste it, ask them to offer descriptive words for what they are experiencing. Have students take their time to taste the fruits and vegetables.

Have students fill out the included chart or write their descriptive words on the board under the name of the food. Ask them to base their descriptions on the following: appearance, taste, smell, texture, and sound (if applicable). It is helpful to list some appropriate descriptive words on the board for students to choose from while encouraging them to be creative and come up with their own. See the word bank for suggestions.

Continue to taste other different vegetables or fruits in the same manner. Briefly review and compare students' responses for the vegetable and fruit descriptions, noting similarities and differences. Have students vote for their favorite variety. Discuss voting results and reasons why students chose one fruit or vegetable over others.

## Closure

Discuss how fruits and vegetables provide many vitamins. Eating a variety of fruits and vegetables daily is part of a healthy diet and there are many choices to enjoy.

## Extension Activities

- Create a collective poem by stringing students' descriptive words together. Begin it with, "Today I tried some foods that were..."
- Have students use the descriptive words to write alliterations for the foods tasted: Example: Aromatic Apple
- Have students write acrostics for food tasted, for example:
  - Alluring taste
  - Pleasantly juicy
  - Pink Lady
  - Lustrous shine
  - Eye-catching red
- Include some of the descriptive words in the weekly spelling words. Have students write sentences using these words.
- Have students write short descriptive paragraphs or poems about the food they tried. Cut out paper in the shape of the foods you've tasted (leaves, tomatoes, apples, etc.) and paste or write the poems on the cut-outs. Then paste them all together on a piece of poster board or paper.
- Have students vote on their favorite variety tasted today. Tally the results and graph them using a bar graph or pie chart.
- Hold a classroom fruit and vegetable challenge. Information from Team Nutrition (<http://teammnutrition.usda.gov/Resources/fvchallengepacket.html>) is available to help keep track of how many fruits and vegetables students eat. Highlight Wisconsin products and encourage eating a rainbow of colors with the challenge.
- Coordinate the tastings with a growing plants unit as part of science class. Plant brassica seeds, observe growth, and then taste a variety of brassica vegetables.
- Discuss colors and nutritional contributions related to color content. Color is a good clue to the nutrient content of vegetables. Most yellow and orange vegetables such as carrots, sweet potatoes, and winter squash get their color from their high content of beta carotene and other carotenoids. Carotenoids are precursors of vitamin A. Dark-green leafy vegetables also contain carotenoids, but they're masked by the vegetables' high content of chlorophyll. Visit MyPlate.gov for lists of different fruits and vegetables by color.
- Discuss how the fruit or vegetable the students tasted can be available in multiple forms. For example, for the tomato tasting, fresh tomatoes, spaghetti sauce, ketchup, salsa, sun-dried tomatoes, and tomato soup. To expand the apple tasting lesson, compare raw apples with unsweetened applesauce and dried apple slices. Ask students how they think apples are turned into applesauce or dried apple slices. Ask if they think the taste, texture, and nutritional value changes with cooking or other processing?

## Connection to Other Core Subjects and Curricula

This activity can be aligned with Standards in

**English Language Arts:** vocabulary of words, phrases, and idioms as a means of improving communication;

**Math:** data in the context of real-world situations, problem-solving situations, read, extract, and use information presented in graphs, tables, or charts;

**Agricultural Education:** understand that some plants are sources of food; and

**Science:** plant growth lessons.

## Classroom-to-Cafeteria Connection

- Highlight items on the menu that were tasted in class.
- Hang up the Sensational Food poster that is included in the Fruits and Vegetables Galore resource kit.
- Have students use descriptive words to describe menu items, and then select a different student to read their descriptive menu for each day as part of the morning announcements.
- Plan an all-school color week. Assign a different color to each day of the week. Encourage students to wear the specific color each day. Feature a rainbow of colors menu in the cafeteria. Plan to highlight each specific day's color on the menu. Share nutritional tips about the color group through posters, either purchased or made by students in the classroom.



# Descriptive Word Bank

acidic	dry	icy	purple	sugary
alluring	dull	interesting	raw	sweet
aromatic	earthy	irresistible	red	syrupey
awesome	enticing	juicy	refreshing	tan
beautiful	exciting	leafy	rich	tangy
bitter	exquisite	lean	ripe	tantalizing
black	eye-catching	lumpy	rough	tart
bland	fibrous	luscious	round	tasty
blue	fiery	lustrous	salty	tempting
bright	fine	mashed	satisfying	tender
brilliant	firm	mealy	savory	thick
brittle	flaky	mellow	scrumptious	toasted
brown	flavorful	mild	sharp	tough
bumpy	fluffy	milky	shiny	unripe
chewy	fragrant	moist	simple	velvety
chilly	freezing	mouth-watering	slick	vibrant
chunky	fresh	mushy	smooth	vivid
clean	frosty	nice	soft	warm
coarse	fruity	nutritious	soggy	watery
cold	fuzzy	nutty	sour	wet
colorful	gooeey	orange	sparkling	white
cool	gorgeous	peppery	speckled	wilted
creamy	grainy	pink	spicy	wrinkly
crispy	green	pleasant	springy	yellow
crumbly	hard	pleasing	sprinkled	yummy
crunchy	harsh	pleasurable	squishy	zesty
curly	healthy	plump	steaming	zippy
delectable	heartly	popping	sticky	
delicate	heavy	prickly	stringy	
delicious	hot	pungent	strong	

# Food Tasting Chart

Name: \_\_\_\_\_

Describe each food in terms of the five senses: appearance, taste, smell, texture, and sound (if applicable).

<b>Food Item</b>	<b>Appearance</b>	<b>Smell</b>	<b>Taste</b>	<b>Texture</b>	<b>Sound</b>
<i>Example: Jonathan Apple</i>	<i>Bright red Small in size Shiny</i>	<i>Like fall</i>	<i>Sweet-tart Sour</i>	<i>Crisp Hard</i>	<i>Crunch Snap!</i>
1.					
2.					
3.					
4.					

## Some ideas to help with the chart

**Appearance:** color, shiny, wet, dry, dull

**Smell:** strong, slight, fruity

**Tastes:** sweet, tart, mild, bitter

**Textures:** crisp, soft, hard, mushy, stringy, grainy

**Sound:** snap, crunch



# Wisconsin's Cultural Cuisine and Nutrition

*Differentiated nutrition lesson for students ages 14 to 21, special education, cognitive disability, and autism.*

<b>Topic</b>	Diversity and Appreciation of Different Foods
<b>Wisconsin Nutrition Performance Standards</b>	To accommodate students with moderate to profound cognitive disabilities, the Wisconsin Extended Grade Band Standards and Instructional Achievement Descriptors should be followed for the student's grade level to help address IEP goals. E.4.1 Discuss that people eat many different foods.
<b>Summary and Key Concepts</b>	Students understand more about Wisconsin and become comfortable with cultural differences they will experience as adults.

## Goals and Objectives

The students will have an opportunity to experience examples of foods that different immigrants and Native American tribes ate and learn about some of the nutrients found in these foods.

Per student IEP goals, some students will only achieve one or two of the following objectives:

1. The student will recognize that people from different cultures eat different foods.
2. The student will identify fats, carbohydrates, and proteins used in cultural recipes.
3. The student will demonstrate the ability to perform—independently or with support—an assigned measurement of a recipe.
4. The student will determine if this is a recipe that they should eat on a regular basis or only occasionally.

## Supplies Needed

- Basic information about cultures from which the recipe is being taken. For example, information about how Native Americans used maple syrup recipes and maple syrup's importance in Native American culture can be found on the Wisconsin Department of Natural Resources' Environmental Education for Kids website (<http://dnr.wi.gov/org/caer/ce/eek/cool/maplerecipe.htm>).
- Printed or teacher-modified copies of recipes found on the Wisconsin State Historical Society website (<http://www.wisconsinhistory.org/teachers/lessons/elementary/flavor.asp>).

- Enlarged or teacher-prepared nutrition labels from the main ingredient of each recipe used.
- Outline map of Wisconsin, one copy for each student, and a copy on a transparency for overhead projector use (<http://www.enchantedlearning.com/usa/states/wisconsin/outline/>).
- Pictures of Wisconsin foods and Wisconsin immigrants; see <http://www.wisconsinstories.org/> for pictures of Wisconsin life.
- Overhead viewer or document viewer.
- Cloth organizer "board" with pockets or slats for recipe ingredients. A flannel board or a CD holder with clear pockets will work well.
- Information on Wisconsin immigrants (<http://comminfo.rutgers.edu/~dalbello/FLVA/background/demographics.html> and <http://www3.cesa10.k12.wi.us/explore-wi/people/index.htm>).
- Recipe steps and ingredients written on strips of paper to put into cloth organizer or with Velcro to attach to the flannel board.
- Cooking and measuring utensils for recipe preparation.
- Happy and sad faces for non-verbal students to use in evaluation activities.
- Aprons, wash clothes, dish towels.
- Pictures of different foods and cultural dishes.
- Teacher-prepared "cooking rubric."

### Anticipatory Set

Teacher will put up the map of Wisconsin, either by transparency or document viewer.

### Time Line

This lesson will be taught throughout a month-long lesson or unit on Wisconsin. The cooking activities will take approximately two to three hours from beginning to completion. Daily work on the lesson, such as reading recipes or learning about the different immigrants and tribes, will be done each day during functional academics (reading, math) classes.

### Set Up

- Teacher will modify each recipe and label the main ingredients with the words fat, carbohydrate, protein.
- Prior to the cooking activity, the teacher and students shop for ingredients necessary to prepare the recipe.

### Activity

Wisconsin has a rich tradition of eating foods that have been shared from the many cultures that are represented in our state. In conjunction with our class study of Wisconsin, the students will have an opportunity to prepare and eat foods of the different cultures that settled in Wisconsin by using sample recipes from *The Flavor of Wisconsin: An Informal History of Food and Eating in the Badger State* (Hachten, Harva; 1981) found on

the Wisconsin Historical Society website <http://www.wisconsinhistory.org/teachers/lessons/elementary/flavor.asp> and the EEK website <http://www.dnr.state.wi.us/org/caer/ce/EEK/cool/maplerecipe.htm>.

The recipes found in *The Flavor of Wisconsin* were “dishes that can be prepared in one or two class periods and do not involve extensive clean-up. We also looked for recipes that included relatively inexpensive and easy-to-obtain ingredients.” (See <http://www.wisconsinhistory.org/teachers/lessons/elementary/flavor.asp>.)

The maple syrup recipes were chosen to show a resource that Native American tribes of Wisconsin used in their cooking. During the lesson, the students will work with the teacher to evaluate the basic nutrition of our Wisconsin ancestors found in the recipes.

## Step-By-Step Procedures

### Day One: Preparation

1. Show pictures of early Wisconsin residents.
2. The teacher asks the students if they can name or choose a picture of some foods this person might eat. Give the students time to answer. If all students were reluctant to answer, hold up one of the food pictures and ask if this might be a type of food this person would eat. Give the students time to respond or ask the students to hold a thumb up for yes or a thumb down for no.
3. After the students have answered, explain that today they will be reading about a recipe that they will prepare during cooking class.
4. Distribute the teacher prepared and labeled recipes.
5. Have able students read the recipes, or teacher reads the recipe. As the recipe is read, have the students point to or read the nutrition words we are studying: fat, carbohydrates, and protein.
6. Remind the students that foods are made up of nutrients like fat, carbohydrates and protein and that our bodies need these nutrients to have energy and live. Each nutrient is important for healthy living.
7. The teacher will explain why some foods should not be eaten daily because of their nutrient content. (Such as foods that have a lot of fat or simple carbohydrates.) Ask the students if they think this is a recipe or food that they could eat everyday (thumbs up) or only occasionally (thumbs down). Give all students a chance to respond.
8. When students are finished reading the recipe, the teacher and students will prepare a shopping list of ingredients needed to prepare the recipe.
9. If time is up for the lesson, have the students use their map to point to the culture from which the recipe is derived and remind them that on cooking day they will prepare this recipe for their peers.

## Day Two: Cooking Day

1. Remind each student to wash their hands and put on their apron at the beginning of the lesson. Assist those students who need help tying the apron, drying their hands, and so on.
2. Review the cooking rubric at the start of the lesson. Remind the students they will be graded according to the rubric.
3. Assign one student to fill the dishpan and wash the table.
4. Assign one student to get the bowls, baking pans, and other equipment needed for the recipe.
5. Assign one student to get the measuring utensils.
6. Assign one student, with adult support, to turn the oven to the required temperature, if this is a baking activity.
7. Give each student a step of the recipe to perform. If the ingredient the student is working with is a fat, carbohydrates, or protein, have the student say the nutrient.
8. When the student has completed their assigned recipe step, the student will put the strip into the cloth organizer "board." Ask the student to say what nutrient was used in this step.
9. Not every ingredient will fall into the category of fat, carbohydrate, or protein. Explain to the students that all food has some nutritional value, but we are studying these nutrients.
10. When the recipe is cooking, the students will point to or state their part of the preparation.
11. While some students are working with one adult to prepare the recipe, the others will work with another adult to set the table and work with the adult to write a few sentences about the recipe(s) that are being prepared.
12. When the recipe is completed, students will be assigned to clean up the work area and put away the unused materials.
13. Three students will be assigned to wash and dry the dishes while the food is cooking.
14. Assign one student to get the other students to join us for lunch.
15. When all are assembled for lunch, ask the cooks to explain what they did to prepare the meal.
16. Ask the students to state what fats, carbohydrates, or proteins were used in the recipe.
17. Ask one student to read the sentence(s) about the recipe(s) prepared for the meal.
18. The teacher should remind the students that different cultures prepared different meals because of the types of foods available to them and where they lived.

19. The teacher should remind the students that as adults, we often have the opportunity to try new foods. It is polite to say “no thank you” to trying a new food, but consider at least taking a small portion to sample the food.

### Closure

Ask the students how many of them enjoyed this recipe. Remind the students that food is made up of different nutrients. Ask the students if they can remember the names of the three nutrients we have been looking for in the recipes. Ask for volunteers to raise their hands to answer or point to the nutrient words we are studying. Allow some of the slower students to answer or point to at least one of the nutrient words. Hold up the labeled Wisconsin map. Ask for a volunteer to point to the culture from which the recipe is derived.

### Assessment and Evaluation

Students will be assessed during cooking activities by using the cooking rubric and according to their IEP goals. Students will be given **v**, **v-** or **v+** during the classroom activities for their participation and understanding during the activity. This will be done according to the following scale:

- v-** Student does not demonstrate any understanding of the concept or lesson being studied.
- v** Student demonstrates ability to follow lesson by pointing to answers with verbal or teacher modeling or prompting.
- v+** Student demonstrates the ability to answer questions/ideas about the lesson on an independent level and without any teacher prompting.

### Connection to Other Core Subjects and Curricula

This lesson will be a valuable tool when studying the state of Wisconsin and the many cultures found in our state. The lesson would be expanded through a visit from persons with different cultural backgrounds or to different sites in the state. One valuable field trip would be to visit Old World Wisconsin. These activities would help the students integrate classroom activities into realistic life experiences.

**Language Arts:** reading to acquire information.

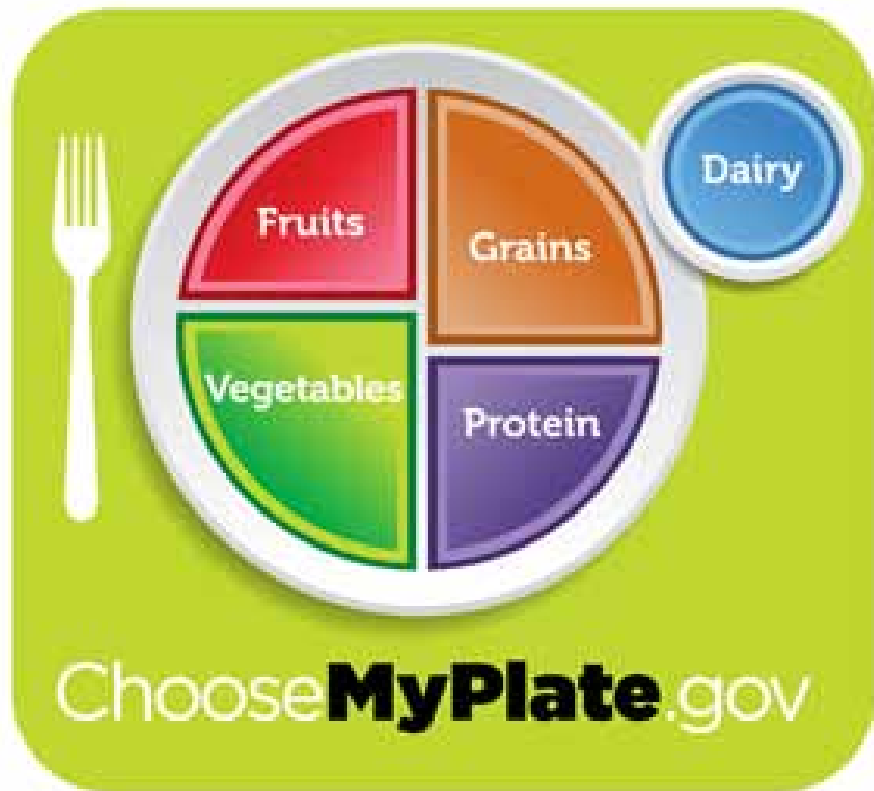
**Mathematics:** measurements, using measurement tools.

**Social Studies:** identify and describe important events and famous people in Wisconsin and United States history.

*(Adapted from a lesson by Roxanne Ciatti, Special Education Teacher, Milwaukee Public Schools.)*



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Resources



# Wisconsin Foods

## Grains

### Hay and Oats

Hay and oats are grown for livestock feed.

### Popcorn

Popcorn is a special kind of corn that was originally grown by Native American Indians. Popcorn is grown as a specialty crop in Wisconsin and can be found at many farmers markets in both unpopped and popped varieties. Popcorn is a nutritious snack food, low in calories, fat free (without butter), and high in fiber.

### Wheat

Wheat was the earliest and most important cash crop for white settlers in early Wisconsin history. Today, Wisconsin farmers plant soft red winter wheat typically in the fall for harvest in the spring. Soft red winter wheat flour is used to make pastries, cakes, pie crusts, biscuits, and muffins. Whole wheat contributes B vitamins, fiber, and vitamin E to a healthy diet.

## Wild Rice

Wild rice was an important food staple enjoyed by the Ojibwa and Menominee Indians. Wild rice was boiled rice and eaten with corn, beans, or squash and seasoned with meat, a small amount of animal fat or grease, or maple sugar. Wild rice is a cereal grass that grows in shallow lakes and streams, particularly in the Upper Great Lake regions of Wisconsin and Minnesota. Wisconsin has 70 major rice fields in 13 counties. The grain usually begins to ripen in sections of the Wolf and Wisconsin rivers first, before lake shore areas are ready to be harvested in early fall. Wild rice harvests are managed by the federal government. Wild rice is a good source of B vitamins, zinc, magnesium, iron, and other minerals.

# Vegetables

**Visit** [http://www.wisconsinfreshproduce.org/veg\\_facts.htm](http://www.wisconsinfreshproduce.org/veg_facts.htm) **for more information on Wisconsin grown vegetables.**

## Asparagus

Asparagus is an early spring vegetable that can grow wild in the garden or farmer's field. Asparagus is a hardy perennial that will yield for up to 40 years once the crop is established. The fern-like foliage grows to about four to five feet tall if the young stems are not cut. Asparagus is excellent for vitamin A and vitamin C, and also potassium, zinc, vitamins B1 and B2, and fiber. Asparagus is available from early May through June.

## Beans

Wisconsin ranks first in the nation for production of snap beans for processing. Beans provide vitamin A, vitamin C, folate, small amounts of iron, and protein, and are a good source of fiber and potassium, too. Varieties of beans include snap beans (green and wax), French green beans, Italian or Romano green beans, purple wax beans, Scarlet Runner beans and yard-long beans that originate from Asia. Beans originated in Central America and were grown in the western hemisphere before the arrival of Christopher Columbus. When the Americas were discovered, climbing beans were found planted with corn. Snap beans are typically available from July through September.

## Beets

Most Wisconsin-grown beets are red beets, but you can find pink, purple, white, and yellow or golden beets as well. Both the beet tops and the roots are eaten, and beets are eaten fresh and canned. Wisconsin is a leader in the production of beets. Beet tops are an excellent source of vitamin A, while beet roots are a good source of fiber, potassium, and vitamin C. Golden beets don't bleed when cooked but don't taste as sweet as red beets. White beets look like turnips and are even less sweet. Fresh Wisconsin beets are generally available from June through October.



### **Bell Peppers**

Green, red, orange, and yellow bell peppers are harvested from mid-July through the end of September. Peppers are excellent for vitamin C and have some fiber.

### **Broccoli**

Broccoli is an excellent source of fiber, vitamin C, vitamin A, calcium, iron, potassium, folate, and vitamin K. Broccoli is available from July through the beginning of October.

### **Brussels Sprouts**

Nutritional powerhouses, Brussels sprouts contribute fiber, vitamin C, some vitamin A, potassium, vitamin K, folate, zinc, and B vitamins to the diet. They are available July through September.

### **Cabbage**

Cabbage is high in beta-carotene, vitamin C, and fiber, and may help to reduce the effects of some kinds of cancer. Cabbage varieties include green, red, and Savo, and are used mainly for sauerkraut, cole slaw, stir fry, and assorted salads. Wisconsin ranks first in the nation for the production of cabbage for sauerkraut, a great addition to a summer indicator of Wisconsin's German heritage. Cabbage is high in beta-carotene, vitamin C, and fiber. Fresh cabbage is available in Wisconsin from mid-June through late October.

### **Carrots**

Carrots are crisp and crunchy root vegetables enjoyed raw and cooked. The bright orange, yellow, and purple colors mean they're high in beta carotene, an antioxidant and precursor to vitamin A, which helps eyesight. They're also full of calcium pectate, a fiber that can lower "bad" cholesterol levels, and some vitamin C. Wisconsin ranks third in the nation for carrot production. Carrots are generally available from late June through August.

### **Cauliflower**

A cruciferous vegetable, cauliflower can be found July through the beginning of October. Cauliflower provides vitamin C and fiber.

## Corn

Corn is a leading Wisconsin field crop. Most of the corn grown in the United States is “dent corn,” which also is known as feed or field corn. Dent corn is low in sugar content and high in starch with kernels that are very firm. It is primarily used for animal feed and commercially prepared products for human consumption, such as syrups, sugars, cereals, corn chips, starch, oil, liquor, and sweeteners for soft drinks.

Wisconsin grows both field corn and sweet corn. The corn we eat is sweet corn, and Wisconsin ranks third in the nation for sweet corn processing and canning. Sweet corn provides fiber and vitamin C, some potassium, and zinc. Fresh sweet corn is available as a local crop in many Wisconsin communities from July through September.

## Cucumber

Cucumbers contain mostly water but do have small amounts of vitamin C and lutein that is essential in eye health. Cucumbers are typically eaten raw on salads or with dip, but they are also made into many varieties of pickles. Fresh cucumbers are available in Wisconsin between mid-July through September. (Native to India, cucumbers may be one of the oldest cultivated vegetables.)

## Eggplant

Eggplant is available in several varieties in August and September, and adds fiber to the diet.

## Kale

Kale is a leafy green that provides potassium, vitamin A, calcium, and folate.

## Kohlrabi

Kohlrabi is a member of the cabbage family. It is an excellent source of vitamin C and a good source of potassium. Kohlrabi can be prepared by boiling, baking, steaming, frying, stir-frying, or with a sauce. Tender, young kohlrabi can be sliced or chopped and eaten raw with dip or in salads. Kohlrabi has a turnip-like appearance, with leaves shooting out of the rounded, edible stem part of the vegetable. There are two types of kohlrabi: green and purple. Kohlrabi is available June through September in Wisconsin.

## Peas

Green (garden) peas, snow peas, and sugar snap peas are all grown in Wisconsin. Peas are low in fat while also being a good source of fiber and protein, some zinc, and vitamin A. Wisconsin ranks third in the nation for growing and processing peas. Fresh peas are available in Wisconsin in June and July.



## Potatoes

Wisconsin is the third largest potato producer in the nation. A potato has twice as much potassium as a banana and as much vitamin C as a glass of orange juice. When you eat the potato and the skin, you get additional fiber, too. A medium-sized potato has only 100 calories, zero fat grams, no sodium, and small amounts of iron. Additionally, there is a wide variety of Wisconsin-grown potatoes to choose from. From the traditional brown Russet, to white, yellow, red, and even blue and purple, you can create a meal with a rainbow array of potatoes! Another, less obvious distinction is nutritional content and best uses of different varieties. For example, according to the Wisconsin Potato and Vegetable Growers Association, Russet potatoes are ideal for baking and mashing, while round white potatoes are ideal for scalloped potatoes, roasting, and potato salads. Potatoes are harvested from June through October.

## Rhubarb

Rhubarb is actually a vegetable (not a fruit!), and it looks a bit like celery. The rhubarb plant has large, elephant ear-like leaves and red, pink, or green stalks. It is the stalk that is eaten, not the leaves. Red is the most popular and is full of anthocyanins (good for you phytochemicals). It is really tart, so it is typically cooked with sugar into desserts, pies, and sauces. Fresh Wisconsin rhubarb is available in May through June.

## Spinach

Fresh spinach is high in vitamins A and C and is a good source of dietary fiber, iron, calcium, and folate. Cooked spinach is an excellent source of carotene, lutein, and zeaxanthin. Fresh spinach is available in Wisconsin from mid-June through July.

## Summer and Winter Squash

Winter squash is a good source of carbohydrates, fiber, and carotene. Fresh winter squash is available from September through November in Wisconsin. Acorn squash and butternut, two common winter squashes, are excellent sources of vitamin A, vitamin C, and fiber, and small amounts of iron, potassium, calcium, and vitamin E. Summer squash, including zucchini and yellow crookneck squash, is low in calories and a good source of fiber, vitamin A, and vitamin C. Summer squashes are available from July until frost.

## Swiss Chard

A leafy green, Swiss chard is a great source of fiber, potassium, calcium, iron, vitamin A, vitamin K, vitamin E, and folate.

## Tomatoes

Botanically classified as a fruit, but nutritionally more like a vegetable, tomatoes are excellent low calorie sources of vitamin A, potassium, vitamin C, and vitamin K. Tomatoes are ripe July through September.

# Fruit

## Apples

Wisconsin is home to over 300 apple orchards. There are more than 100 varieties of apples grown in Wisconsin. Wisconsin apples can be enjoyed fresh, and prepared as apple sauce, apple desserts, and apple baked goods, and as juice, cider, and even dipped in caramel at a festival or party. Apples are a good source of fiber. (See <http://www.waga.org/images/stories/pdf/facts.pdf>.) Apple picking is June through October, and Wisconsin apples are typically available into January.

## Blackberries

These luscious berries are low in calories and high in fiber and vitamin A, potassium, and vitamin C. They provide a little calcium and zinc as well. Berry picking is typically July through September.

## Cantaloupe or muskmelon

These orange melons are excellent for potassium and vitamin A. Fresh melons are available from August and September until frost.

## Cherries

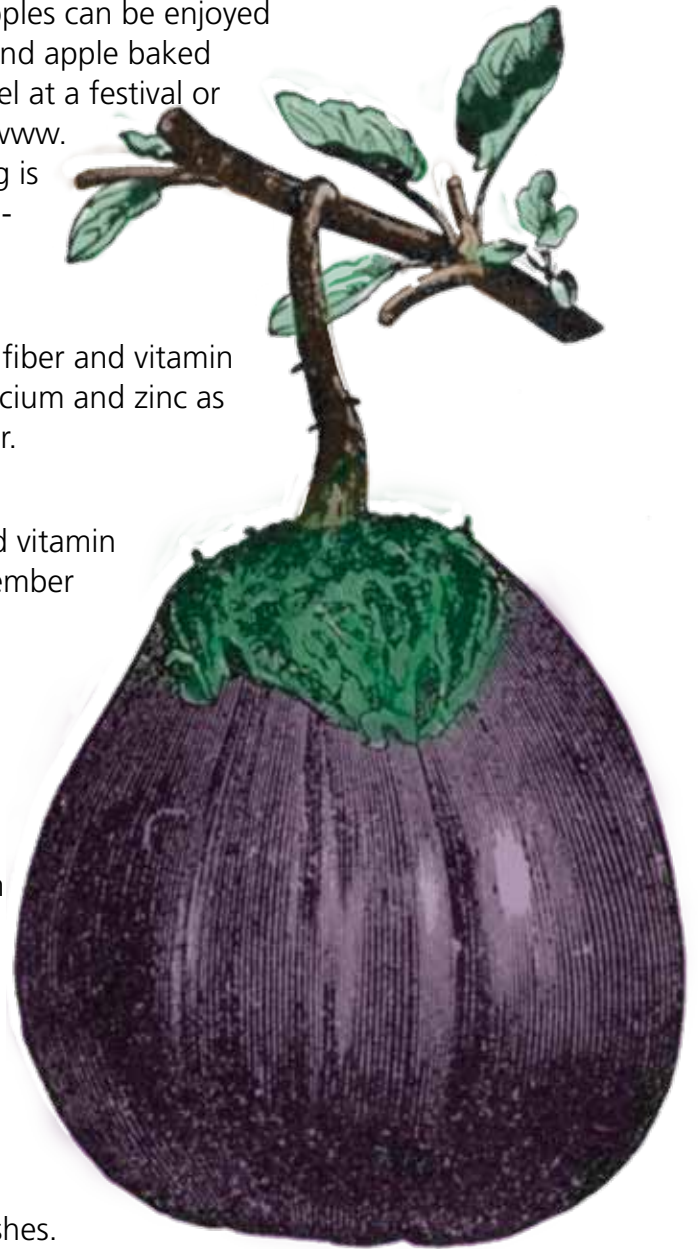
Cherries are a good source of antioxidants, which help fight cancer and heart disease. Cherries provide potassium, fiber, and a little iron. Tart cherries also relieve the pain of arthritis and gout. Most cherries grown in Wisconsin are tart cherries, and seldom eaten fresh. Instead, they are used in pies and jams. Fresh cherries usually ripen in Wisconsin in mid-July to August.

## Cranberries

Wisconsin ranks first in the nation for production of cranberries, producing about 300 million pounds of cranberries every year. Wisconsin farmers first began growing cranberries in 1853 in peat swamps or marshes.

Cranberries grow best in sandy, acidic soil, and are now grown in 18 Wisconsin counties. Cranberries grow on low vines. The fields are flooded, and the cranberries float to the surface for easier harvesting. Cranberry bogs and wetlands also provide a welcome habitat to Wisconsin wildlife.

The tart flavor and bright red color of cranberries is an expected part of Thanksgiving and holiday meals. But this tangy fruit is enjoyed year round in relishes, juices, desserts, trail mixes, sauces, mustards, and more. The cranberry is low in calories and contains fiber, antioxidants, and bacteria-blocking agents. Research shows eating cranberries helps prevent urinary



tract infections, ulcers, gum disease, certain cancers, and more. Fresh cranberries are typically available from September to early November every year.

### Pumpkin

Not just for jack-o-lanterns and pie, pumpkin is a low-calorie and nutrition-packed addition to eat year-round. Pumpkin is an excellent source of potassium, vitamin C, vitamin A, and fiber. Pumpkin seeds also contribute iron, magnesium, potassium, zinc, and vitamin E. Late September and October is the best time to pick a pumpkin in Wisconsin.

### Raspberries

Raspberries are a source of vitamin C, soluble fibers, and zinc. In addition, they contain ellagic acid, a potential cancer-fighting agent. Since raspberries soften quickly and are delicate, they should be used right away after picking or purchase. They can be stored overnight on a paper towel lined tray. Do not soak the berries, as their hollow core fills with water and makes the berry less flavorful. Fresh raspberries are available in mid-summer through early fall.

### Strawberries

Strawberries are delicious sources of vitamin A, vitamin C, potassium, and fiber. Strawberries are enjoyed fresh, frozen, and made into jam and jellies. Fresh strawberries are available in Wisconsin from mid-June through July.

### Watermelon

Smaller watermelons are grown in Wisconsin and are ready to pick in August and September. Nutritionally, watermelon adds fiber, potassium, vitamin A, vitamin C, and lutein to the diet.

## Dairy

Wisconsin is a leading milk and dairy producer, and produces about one-third of all the cheese made in the United States. Other dairy products made in Wisconsin include yogurt, cottage cheese, and ice cream. Dairy products are excellent sources of calcium, magnesium, protein, and milk fortified with vitamin D.

## Protein

### Beef cattle

While Wisconsin is known as America's Dairyland, the state's beef industry is thriving. Beef cows, beef heifers over 500 pounds, steers, and other heifers (excluding dairy heifers) account for nearly 23 percent of the total cattle population in the state. Beef cattle and hogs are second and third most valuable livestock products. Lean beef is a valuable source of iron, B vitamins, and protein.

## Brats

Germans brought their sausage recipes to Wisconsin when they settled throughout the state in the 1800s. Bratwurst differs slightly in taste because of the spices and other meat fillers and how fine the pork is ground by the sausage makers. The main ingredient in authentic bratwurst is pork; although there are other sausages called bratwurst that are all beef or a mix of various meats other than pork. In Wisconsin, bratwurst is a favorite food for tailgating, picnics, fairs, holidays, baseball, football, and summer celebrations. Bratwurst is typically a higher fat meat, but lower fat versions are becoming more prevalent in the local market.

## Bison

Bison has a sweeter, richer flavor than beef and can be prepared much the same as beef. Prior to cooking, bison meat is darker. This coloring is due to the fact that bison meat does not marble (produce internal streaks of fat) like beef. The lack of fat insures that bison meat will cook faster. Fat acts as an insulator—heat must first penetrate this insulation before the cooking process begins. Marbling aids in slowing down the cooking process. Since bison meat lacks marbling, the meat has a tendency to cook more rapidly. Caution must be taken to guarantee that you do not overcook bison.

## Chicken

Wisconsin chicken farms produce 1.3 billion eggs and 47 million broilers each year.

Lean chicken is an excellent source of protein and B vitamins. Eggs provide a quick source of protein and omega-3 and omega-6 fatty acids.

## Deer

The white-tailed deer is a large, brown animal found throughout Wisconsin. Nine states, including Wisconsin, have claimed the white-tailed deer as their state animal. Deer meat is typically made into sausage or ground meat, so the fat and nutrient content can vary.

## Emu

Emu meat is 97 percent fat free, high in iron and vitamin B12, and low in calories and cholesterol. The American Heart Association recently included emu meat in its listing of heart-healthy meats. The tenderness and texture of emu meat enable it to be prepared in a variety of ways. It is best prepared lightly grilled, pan fried, or sautéed.

## Ostrich

Ostrich meat is naturally rich in protein and iron and contains no marbled fat. Naturally low in calories, this healthful red meat is nearly identical to beef in taste, texture, and variety of uses.

## Pork

Wisconsin ranks 16th in the nation in hog receipts. The counties with the most hogs include Grant, Sauk, Dodge, Dane, and Lafayette, with most Wisconsin farms raising less than 100 head of swine. Hogs rank as the number eight commodity in Wisconsin. Lean cuts of pork are excellent protein choices for Wisconsin meals. Pork contributes iron and B vitamins to a healthy diet.

## Soybeans

Soybeans are the second most popular crop grown in Wisconsin. Wisconsin ranks 16th in the nation for soybean production. Most soybeans grown in Wisconsin are used for animal feed; however, a small amount are grown for human consumption. This legume is an excellent source of protein, iron, B vitamins, fiber, and many other minerals. Soybeans are a great meat extender and meat alternative, and are used in soups, stews, casseroles, and vegetarian proteins.

## Turkey

Ben Franklin, in a letter to his daughter, proposed the turkey as the official United States bird. Turkey white meat is a very lean protein, while dark meat is a better source of iron.

## Walnuts

Rich, crunchy walnuts are always delicious, whether sprinkled on top of a waffle at breakfast, added to brownies whipped up for an after-lunch treat, or tossed with a crisp green salad for dinner. Walnuts are a good source of omega-3 fatty acids, thought to reduce risk of cancer. They also provide protein, several essential vitamins and minerals, and antioxidants, yet are free of trans-fats and cholesterol. Today, they're ranked as America's third most popular tree nut.

## Whitefish

At the fish boil Friday night food tradition on Door County Peninsula, whitefish is commonly served. The fish is cooked in boiling water with potatoes and salt, and served with cole slaw, rye bread, and cherry pie for a traditional Wisconsin meal. Whitefish is an excellent low fat protein source, and provides B vitamins.



# Not Food Groups, but to be Considered: Oil, Others

## Butter

Wisconsin is a leading butter producing state. Lightly salted butter is the perfect ingredient for general cooking. Unsalted butter is great for baking, creating flaky crusts and sweet treats with great taste and texture. Both lightly salted and unsalted butter are available in sticks for easy measuring when cooking or baking. Whipped butter is whipped with air to make it light and fluffy and comes in tubs, making it an ideal table spread.

## Honey

Using honey instead of sugar adds antioxidant protection to your diet. The sweet treat of honey is also perfect for the fall season farmers markets, as extraction starts in September.

## Maple Syrup

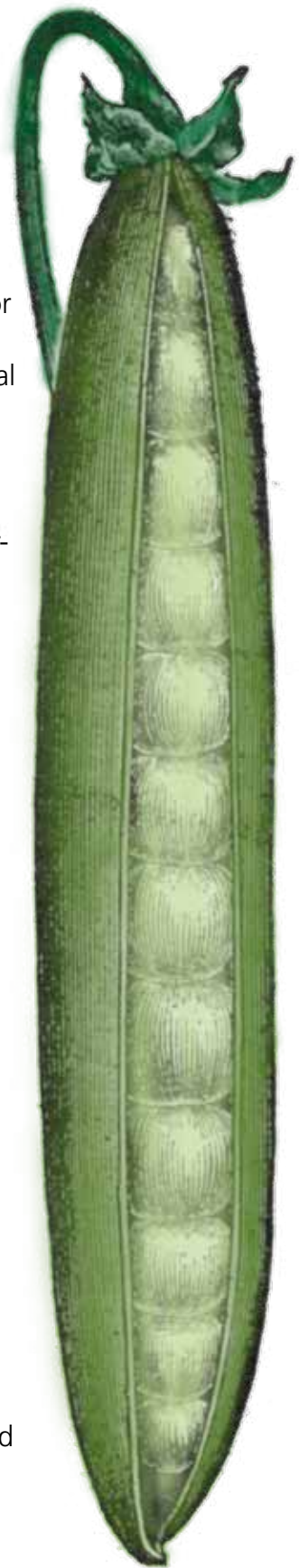
Wisconsin ranks third among the states in the production of maple syrup, and maple products were one of the state's earliest agricultural products. Pure maple syrup has no artificial coloring, flavoring, preservatives, or additives, and contains 50 calories per tablespoon.

## Garden Fresh: When Will Vegetables Be Ready to Harvest?

The Growing Season Guide on Savorwisconsin.com indicates when Wisconsin's fruits and vegetables come into season. For example, several vegetables, such as broccoli and spinach, come into season during July, but these dates are approximate due to variations during the growing season.

Nothing beats the flavor of foods prepared fresh from the garden and farmers market. Recipes can be fun to try for family meals and as part of the classroom to cafeteria connection. Recipes and meal ideas using local foods can also be sent home in newsletters and included with family communications.

For recipes and cookbooks on Wisconsin foods, visit: <http://www.globaldialog.com/~tallen/books.html#aboutfave>. Note, not all are healthy recipes. This is an opportunity to discuss the historical value and the personal connections we can make with certain foods.



# Wisconsin Vegetable and Fruits Quiz

Test your knowledge of these wonderful Wisconsin vegetables and fruits with the 25 questions that follow below. The answers are in the information that follows each question.

**1. This is the favored jewel of the summer squashes. It has a light, sweet flavor and is low in calories and high in vitamins A and C. What is it?**

- Splendid squash
- Zucchini
- Butternut
- Watermelon

Summer squashes, including **zucchini**, are native to the Americas and belong to the **Cucurbitaceae** family. Archaeologists have traced their origins to Mexico when they were an integral part of the ancient diet of maize, beans, and squashes. The colonists of New England adopted the name squash, a word derived from several Native American words for the vegetable which meant “something eaten raw.” There are many varieties of zucchini. Some are round, some are yellow, some are a combination of green and yellow, and some are a cross between zucchini and the fluted patty pan squash. With their high water content (more than 95 percent), zucchini squashes are very low in calories. There are only 13 calories in a half-cup of raw zucchini, with a slight increase to 18 calories in the same quantity cooked. Nutritionally, zucchinis offer valuable antioxidants. Zucchini is a good source of vitamins A and C, potassium, and is low in calories.

**2. Spaghetti, banana, butternut, hubbard, pumpkin, acorn, golden acorn, turban, kabocha, delicata, and sweet dumpling are all kinds of:**

- Summer squash
- Melons
- Winter squash
- Vine fruits

**Winter squashes** have a hard outer shell and generally have a firm inner core with many seeds. Although some winter squashes are available year round, they are most flavorful from early fall through winter and at a better price. The most common varieties are spaghetti, banana, butternut, hubbard, pumpkin, acorn, golden acorn, turban, kabocha, delicata, and sweet dumpling. When picking a winter squash look for a heavy, hard-skinned squash with no blemishes or bruises. Skin color varies considerably according to variety, from the creamy tan-orange color of butternut squash to the grayish-blue of some kabocha squash. Flesh color can be a brilliant deep orange or various shades of yellow or green. Winter squash is an excellent source of beta carotene and potassium and a source of vitamin C and folacin.

3. This root vegetable is delicious in soups and stews and can be mashed like potatoes. It is a member of the crucifer family. Both the root and greens are eaten, and can be eaten raw or cooked. What is it?

- Turnip
- Brussels sprouts
- Jicama
- Lettuce

**Turnips** are a root vegetable that can be eaten in a variety of ways, including mashed like potatoes. They belong to the crucifer family, and are grown for their roots and greens. Turnips are available in amber and white globe, baby bunch, and purple top varieties. They are good sources of vitamin C, calcium, and potassium.

4. This tuber has "eyes" but does not see. It is, however, a good source of vitamin C. What is it?

- Sugar beet
- Pumpkin
- Potato
- Apple

Before **potatoes** were abundant beyond South America, turnips were everyday staples, particularly in Europe during the Middle Ages. The origins of the turnip are vague but it may have come from northeastern Europe or Asia many thousands of years ago. At some undetermined point in history, the less nutritious turnip gave up its role as everyday vegetable to the more nutritious spud. Potatoes are an excellent source of potassium, a good source of vitamin C, and a source of fiber and folacin. Potatoes belong to the nightshade family and are related to tomatoes, peppers, and eggplant. Potatoes come in many varieties and colors, including white, yellow, red, and purple. Whenever possible, eat the potato and the skin for the most nutrition.

5. This vegetable can be made into a pie or a jack-o'-lantern. Its seeds can be roasted for a delicious snack. What is it?

- Turnip
- Jack frost melon
- Pumpkin
- Spaghetti squash

**Pumpkins** belong to the **Cucurbitaceae** family, which includes cucumbers, melons, squash, and gourds. Pumpkins are available in all shapes, colors, and sizes, but one of the best known is the jack-o'-lantern pumpkin, which can weigh as much as 100 pounds and is popular for carving at Halloween.

**6. Cooked and eaten like a vegetable, but botanically really a fruit, this vegetable is high in vitamin A and C and is found in salads, pasta dishes, and even on your sandwich. What is it?**

- Tamarind
- Tomato
- Tangerine
- Ketchup

Botanically speaking, the **tomato** you eat is a fruit. A fruit is any fleshy material covering a seed or seeds. Horticulturally speaking, the tomato is a vegetable plant. The plant is an annual and non-woody. In 1893, the United States Supreme Court ruled the tomato was a vegetable. One medium tomato has 25 calories; it's a good source of vitamin C and a source of vitamin A and folacin.

**7. These fruits contain more vitamin C than oranges, are high in fiber, low in calories, and a good source of folic acid. What is it?**

- Pink berries
- Apples
- Sugar beets
- Strawberries

**Strawberries** were cultivated by the Romans as early as 200 BC. In the 16th century, strawberries were sold in cone-shaped straw baskets thus becoming one of the earliest packaged foods. About 10 strawberries have 27 calories, and 192 percent of the RDA of vitamin C. In Wisconsin, we produce over 4.3 million pounds of strawberries per year. That's almost three tons per acre—that's a lot of picking!

**8. Icelanders enjoy eating this vegetable in soup, while Americans favor it in pie. The stem of this plant is what is eaten, and leaves of this plant are poisonous. What is it?**

- Rhubarb
- Rhine grape
- Rhinoceros root
- Potato

**Rhubarb** is called the "pie plant" because it was used in pies in the 1800's in England and America. This deadly poisonous plant—don't eat the leaves!—started out as a medicinal aid, its root considered excellent by the Chinese for constipation and other unmentionable digestive troubles. Rhubarb is a cool weather plant grown commercially in Poland, Russia, and the United Kingdom, and is common in Wisconsin gardens.

**9. According to the movie "Shrek," an ogre is like this vegetable—having layers. The vegetable may also make you cry when you chop it. What is it?**

- Spring roll
- Onion
- Rutabaga
- Ogre root

**Onions** not only provide flavor, they provide health-promoting phytochemicals as well as nutrients. Onions contain quercetin, a flavonoid (one category of antioxidant compounds) that helps to eliminate free radicals in the body, to inhibit low-density lipoprotein oxidation (an important reaction in the atherosclerosis and coronary heart disease), protect and regenerate vitamin E (a powerful antioxidant), and inactivate the harmful effects of chelate metal ions. Eating onions may be beneficial for reduced risk of certain diseases, such as preventing gastric ulcers and beneficial effects against many diseases and disorders including cataracts and cardiovascular disease as well as cancer of the breast, colon, ovaries, stomach, lung, and bladder. Onions are also a source of vitamin C, potassium, dietary fiber, and folic acid. They also contain calcium, iron, and have a high protein quality. Onions are low in sodium and contain no fat.

**10. This vegetable adds a spicy crunch to salads and relish trays. It is a member of the crucifer family and is a good source of vitamin C and potassium. What is it?**

- Runner bean
- Radish
- Tomato
- Rhubarb

**Radishes** are members of the crucifer family. They vary in size, shape, and color. Radishes, besides adding zip to salads and sandwiches, are a good source of vitamin C. Radishes can be eaten raw, baked, roasted, or stir fried. Try the greens in a salad, too. Ten small radishes equal eight calories.

**11. The vegetable is an edible pod and is found in several shapes, sizes and colors. Green and yellow varieties are common. In addition to this variety, you might find wax, Italian (Romano), and French varieties in your garden. What is it?**

- Viney sprouts
- Green beans
- Sugar snap peas
- Zucchini

**Green beans** are a good source of vitamin A and potassium, and contain 40 calories per cup. Green and yellow (wax) beans are a type of snap bean, and can be eaten cooked or raw.



**12. This vegetable is a prominent part of ratatouille and other stew-like dishes, and can be enjoyed roasted and stir-fried. Purple, white, green, and striped varieties are common. What is it?**

- Eggplant
- Carrot
- Potato
- Butternut squash

**Eggplant** is found in purple, white, and striped varieties, and is a member of the nightshade family. It's a source of folacin and potassium. One serving contains 28 calories. Eggplant was probably first cultivated in India over 4,000 years ago.

The eggplant really took hold in countries bordering the Mediterranean. Greeks, Egyptians, and other peoples of the Middle East feature the eggplant as daily fare. Southern Italians enjoy eggplant parmigiana, while the French of the south favor ratatouille, a vegetable stew. Spicy eggplant dishes abound in the plant's home country of India, as well as in China and Thailand.

**13. Green and slender, this vegetable grows on a vine. It is enjoyed raw in salads and made into pickles. What is it?**

- Cucumber
- Pickle melon
- Watermelon
- Radish

**Cucumbers** are very low in calories. A cup of sliced cucumber contains 14 calories and is a source of vitamin C. Cucumbers were native to India and may be one of the oldest cultivated crops. These cucurbits were brought by Columbus to the New World on one of his voyages, and the vegetable soon spread to English and Spanish colonies and to the Native Americans. Cucumbers come in a variety of sizes, some up to two feet long. Wisconsin grows cucumbers for pickling and salads. Pickles are smaller cucumbers that have been cured in brine or vinegar solution. According to Pickle Packers International, Inc., the trade and research association founded in 1893, the perfect pickle should exhibit seven warts per square inch for American tastes. Americans eat about 5,200,000 pounds of pickles daily, or about 106 pickles per person, per year.

**14. This vegetable is enjoyed near the end of Wisconsin summers. Its crisp, sweet kernels grow on an ear, and can be roasted, steamed, and boiled. What is it?**

- Sweet pickles
- Sweet peppers
- Sweet peas
- Sweet corn

**Corn** is a good source of folate and contains fiber, vitamin C, niacin, and thiamine. An average ear of corn has 83 calories. Also known as maize, grain corn was the chief source of nourishment for thousands of years, sustaining the Mayas, Aztecs, Incas, and the Indian peoples of North and South America. Originally corn was grain corn; now it's used for cattle feed and a variety of industrial applications. Sweet corn, as such, is a relatively recent development, becoming popular chiefly since the American Civil War period. Wisconsin is a leading producer of sweet corn.

**15. This fruit is grown in Door County. It is picked from trees. It is enjoyed raw, dried, and cooked in pies and other desserts and made into jams and jellies. What is it?**

- Blueberries
- Onions
- Cherries
- Pumpkin

**Cherries** are a good source of vitamin C and potassium, and one cup contains 81 calories. All varieties of sweet and sour can be made into jams, preserves, or brandied. Studies show that cherries are a good source of antioxidants. Darker cherries have higher levels than red-yellow ones.

**16. This vegetable grows in a head. It can be white, yellow, green, or purple in color. It is eaten raw, steamed, stir-fried, and roasted, often with sauce or spices. What is it?**

- Cauliflower
- Rutabaga
- Tomato
- Onion

According to Mark Twain, "**Cauliflower** is nothing but a cabbage with a college education." Cauliflower is formed from the natural flowers of the cabbage plant gathered together, unopened, to create a mass that becomes a large head over time. Depending on type, the heads can be pale green, white, or even purple. A native of Asia Minor, the cauliflower was once described as resembling a bridal bouquet. The Romans grew cauliflower, but we know little about how they prepared it. A bland vegetable, it is often eaten slathered with thick cheese sauces, perhaps to add interest. Asian Indians may well prepare the cauliflower best, seasoned with curry spices. Cauliflower is an excellent source of vitamin C, a good source of folacin and a source of potassium.

**17. This root vegetable can be found in a casserole, a salad, or even a cake. It is commonly orange, but may also be white, yellow, and purple. What is it?**

- Potato
- Beet
- Carrot
- Turnip

The **carrot** originated some 5,000 years ago in Middle Asia around Afghanistan and slowly spread into the Mediterranean area. The first carrots were white, purple, red, yellow, green, and black—not orange. By the 13th century, carrots were being grown in fields, orchards, gardens, and vineyards in Germany, France, and China. Orange roots, containing the pigment carotene, were not noted until the 16th century in Holland and were cultivated in the colors of the House of Orange. Because of this vegetable’s inherent sweetness, it is used for desserts and sweets, as well as a vegetable, soup, and stew mainstay. No other vegetable or fruit contains as much carotene as carrots, which the body converts to vitamin A. Carrots are excellent sources of vitamins B and C, and a fiber that has been found to have cholesterol-lowering properties.

**18. This vegetable looks like a tiny cabbage. Several varieties of this vegetable are grown in Wisconsin and may be sold still attached to the stalk. What is it?**

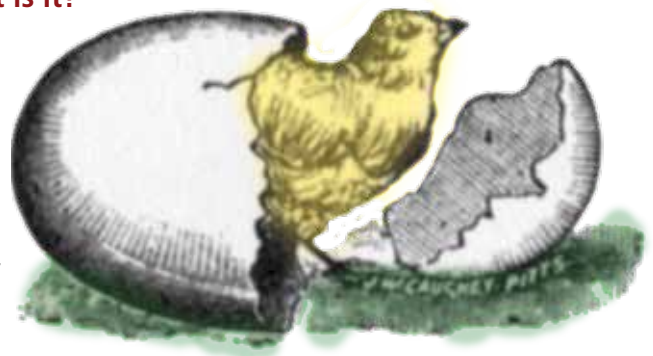
- Brussels sprouts
- Lettuce
- Green onions
- Pears

**Brussels sprouts** are an excellent source of vitamin C, and a good source of folacin and a source of vitamin A, potassium, and fiber. The vegetable may have been given its name from the fact it was sold in Brussels’ markets in the 1200’s. By the late 18th century, it was being cultivated in England and France. Today it’s grown in Ontario, across Europe, and in the United States and Australia. Several varieties are grown in Wisconsin and are commonly found at farmers markets across the state.

**19. This cool season vegetable includes red, green, purple, Savoy, and crumpled leaf varieties. You may enjoy it in cole slaw, salads, stir-fries, and stuffed with rice. What is it?**

- Broccoli
- Turban squash
- Cabbage
- Corn

The **Brassica Oleracea** family includes **cabbages**, cauliflower, collards,



broccoli, Brussels sprouts, kale, and kohlrabi. Wisconsin produces more cabbage for processing than any other state in the United States. Most processed cabbage goes into the production of sauerkraut. Cabbage is high in beta-carotene, vitamin C, and fiber. In the early 1920's, citizens of the United States ate a whopping 27 pounds of cabbage per year. Now the average per capita consumption is about nine pounds.

**20. A member of the Brassica family, this vegetable is rich in vitamin A. Green and purple varieties are common. You may enjoy this vegetable raw or steamed, and it has a delicious crunch when stir-fried. What is it?**

- Broccoli
- Turban squash
- Celery
- Corn

**Broccoli** is a member of the brassica family. More likely because of poor cooking practices than anything else, some people, including one American president, simply do not like broccoli, and they let you know it. But a recent poll of middle school students revealed that this generation not only likes broccoli (stir-fried, please), but prefers it to other more traditionally kid-friendly vegetables. Clearly an Italian-named plant, broccoli actually may have been developed in Italy from the cabbage plant by the gifted farming people who preceded the Romans. Broccoli is an excellent source of vitamin C and folacin, and a source of fiber, vitamin A, and potassium.

**21. This vegetable is found in sweet and hot varieties, both grown in Wisconsin. The sweet varieties are green, yellow, red, or purple in color, and are enjoyed on pizza, salads, and in casseroles and other dishes. What is it?**

- Carrot
- Trumpet bean
- Bell peppers
- Acorn squash

**Bell peppers** are excellent sources of vitamins A and C. The red, yellow, and orange varieties of bell peppers have the highest levels of vitamin C. Bell peppers are actually sweet, and when eaten raw, make a crisp, juicy, and healthy snack.

**22. This vegetable grows wild in Wisconsin and is also in many gardens. It is an early spring vegetable with a slender stalk. What is it?**

- Asparagus
- Fennel
- Wild turnip
- Blueberry

**Asparagus** is a member of the lily-of-the-valley family and is unique in having no leaves, but rather phylloclades, which are delicate photosynthetic branches. Before it was used as a food, it was considered a cure for heart trouble, dropsy, and toothaches. It was even supposed to prevent bee stings. Asparagus was brought to the United States by early colonists, who called it "sparrow grass." Asparagus is low in calories (six spears are about 25 calories), high in fiber, and is a source of folacin, vitamin C, and vitamin A.

**23. This fruit is a delicious fall treat. It is crisp and juicy, and is a nutritious and easy snack. It is found in many varieties and is picked from trees. What is it?**

- Raspberry
- Cabbage
- Tomato
- Apple

**Apples** are a member of the rose family and are found in 7,500 varieties around the world. In America, apples were spread by settlers. The first seeds were planted in New England by members of the Massachusetts Bay Company around 1629. And, thus, the American folk hero Johnny Appleseed, who planted apple seeds everywhere he went. One medium apple contains about 80 calories and is a good source of fiber and vitamin C.

**24. Wisconsin ranks third in the nation for the production of this vegetable for processing. These vegetables are low in fat and high in plant protein. What is it?**

- Green peas
- Black-eyed peas
- Sugar beets
- Kohlrabi

**Green peas**, snow peas, and sugar snap peas are fresh legumes. Green or garden peas are shelled before cooking, while snow peas and sugar snap peas are edible pods. They are low in fat and high in plant protein. Central Wisconsin is famous for vegetable production, making us second in sweet corn and carrot processing, and third in production of potatoes and green peas for processing.

**25. The leaves and root of this vegetable are eaten. There are red, pink, purple, white, and yellow varieties of this vegetable, but the kind most often grown in Wisconsin is the red. What is it?**

- Beet
- Radish
- Carrot
- Potato



**Beets** are a potherb related to Swiss chard. The beet dates back to prehistoric times; ancient civilizations along the shores of the Mediterranean Sea grew beets for the medicinal quality of their tops. Later, when the root grew plumper and more succulent, they savored its pleasant taste and texture. The bright red pigment in beets is called betacyanin. Sliced, tangy, pickled beets, packed in a special brine of vinegar and natural flavoring, add color and zest to an hors d'oeuvre tray or salad bar. Whole beets can be made into a delicious Eastern European soup, borscht. Cut and diced style beets are perfect for use in many ethnic vegetable dishes to complement a meat or fish entree. Beets are an excellent source of fiber and phosphorous. And, a half-cup serving of canned beets contains just 35 calories.



# Wisconsin's Agricultural Rankings

## First

Snap beans for processing  
Cheese, total production  
American cheese  
Muenster cheese  
Italian Cheese  
Cranberries  
Ginseng  
Mink pelts  
Dry whey for human foods  
Milk goats  
Corn for silage  
Oats

## Second

Butter  
Milk  
Milk cows  
Mozzarella cheese  
Carrots for processing  
Vegetable processing, total

## Third

Green peas for processing  
Potatoes  
Sweet corn for processing

## Fourth

Maple syrup

## Fifth

Cucumbers for pickles  
Mint for oil  
Cherries, tart

## Other items in the top ten

Trout  
Strawberries  
Cabbage  
Corn for grain



*Source: Wisconsin 2009 Agricultural Statistics and Wisconsin 2010 Agricultural Statistics, Wisconsin Department of Agriculture, Trade and Consumer Protection.*

# Helpful URLs

## **Lessons from Wisconsin Agriculture in the Classroom:**

*<http://www.wisagclassroom.org/index.php>*

### **Apple lessons:**

*<http://www.wisagclassroom.org/teachers/docs/faces/Apple%20Lessons.pdf>*

### **Beef:**

*<http://www.wisagclassroom.org/teachers/docs/faces/Beef%20Lessons.pdf>*

### **Cherry:**

*<http://www.wisagclassroom.org/teachers/docs/faces/Cherry%20Plans.pdf>*

### **Corn:**

*<http://www.wisagclassroom.org/teachers/docs/faces/Corn%20Plans.pdf>*

**Cranberry:** *<http://www.wisagclassroom.org/teachers/docs/faces/Cranberry%20Plans.pdf>*

### **Dairy:**

*<http://www.wisagclassroom.org/teachers/docs/faces/Dairy%20Plans.pdf>*

### **Pork:**

*<http://www.wisagclassroom.org/teachers/docs/faces/Pork%20Plans.pdf>*

### **Potato:**

*<http://www.wisagclassroom.org/teachers/docs/faces/Potato%20Plans.pdf>*

### **Strawberry:**

*<http://www.wisagclassroom.org/teachers/docs/faces/Strawberry%20Plans.pdf>*

The Dairy Council has developed the **Nutrition Expeditions and Bridges to Wellness™ lessons** to help make the classroom-to-cafeteria connection. For more information, visit

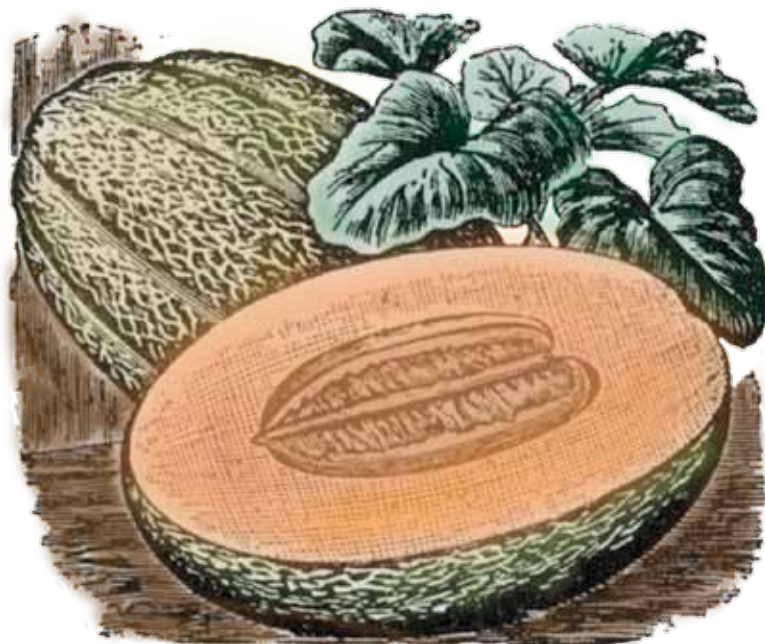
*[http://www.nutritionexplorations.org/sfs/cafeteria\\_classroom\\_ways.asp](http://www.nutritionexplorations.org/sfs/cafeteria_classroom_ways.asp)*

## Wisconsin Wednesdays

Connecting the curriculum between the classroom and cafeteria will reinforce the lessons and help children make a nutritious connection to learning. The cafeteria is a natural learning lab for your school, and the menu a natural reinforcement of lessons learned. Common planning time for teachers can include working with the food service director to coordinate events, nutrition education, and school menus.

On each lesson, a Cafeteria-to-Classroom section highlights ideas on how school meals and classroom nutrition education can support each other. Schools looking for a connection may appreciate ways to celebrate Wisconsin through Wisconsin Wednesday promotions. It's easy and fun to highlight local foods on the menu on a designated day of the week. The promotion can be part of a harvest-of-the-week or -month program, or a chance to feature a garden's abundance. Promote Wisconsin Wednesdays on the menus, and classes can research Wisconsin facts to go with the menu.

The USDA Team Nutrition resource, *Fruits and Vegetable Galore, Helping Kids Eat More* is recommended for all school nutrition directors to use to provide ideas for Wisconsin Wednesday and other coordinating menu ideas. This resource is available free for all Team Nutrition Schools through USDA. Many other food service and nutrition education materials are available through USDA Team Nutrition. The team nutrition enrollment form and directions on completing the form are found on the USDA team nutrition website, <http://teammnutrition.usda.gov/team.html>. Once your school is enrolled, use the online order form at <http://teammnutrition.usda.gov/library.html> to request free materials.



# Cafeteria to Classroom to Community Connections

These are ideas to extend the Nutritious, Delicious, Wisconsin curriculum outside the school and into the community.

- Encourage parents and local restaurants to continue the Wisconsin Wednesday theme by serving a special local food item every Wednesday.
- Celebrate a “Home Grown” fruit or vegetable of the month. Plan activities with the local librarian, art teacher, and classroom teachers. Pick a Wisconsin food to highlight each month on the school menu, and share the food of the month with the public library staff. Interconnections can be made when public library activities include the same food of the month in stories, art projects displays (stampings, still life drawings, collages), and tastings hosted at the public library. This activity can also be connected to city events, such as harvest festivals and park and recreation events.
- Sponsor a nutrition minute. Provide a nutrition trivia fact to be read after the menu during morning announcements at school. Post the trivia facts on the district website, on menus, and in the local paper. Classroom teachers can have students share interesting Wisconsin food facts in the classroom or for posting on a bulletin board. (Parent groups can help with this, too.)
- Encourage teachers and parents to eat lunch with their children at school. Have teachers “talk it up” about nutritious meals and snacks, and what is offered in the school meal program. School nutrition staff can partner with teachers during parent conferences to showcase how classroom instruction is being applied at mealtime and have children share what they have learned.
- Invite students and parents on a guided tour of the cafeteria. Show how food comes to the school and is prepared for meals. Display a variety of foods from the Five Food Groups (on the menu) and discuss the importance of getting foods from each group. Showcase foods from Wisconsin on the menu.
- Feature a gallery of nutrition. Encourage teachers to conduct poster contests related to a specific food or nutrition concept. Have the school district and local paper feature the winning posters on menus, calendars, in the cafeteria, at city hall, at local businesses, and as art show entries.
- Consider a local food harvest promotion in your community. Have local businesses sponsor a Wisconsin food, and display student art and writings about that food on the business site (such as in display windows, lobby areas, office areas). Work with local grocery stores to highlight the nutritional value of local foods in conjunction with the promotion. Invite the community to view the displays while shopping local businesses.



# Nutrition Color Chart

Color	Fruits and Vegetables (* can be grown in Wisconsin)	Benefits
<b>Blue and Purple</b>	*blackberries, *blueberries, *plums, figs, *grapes, raisins, *purple cabbage, *eggplant, *purple-fleshed potatoes	Blue and purple fruits and vegetables are especially good sources of phytochemicals such as anthocyanins and phenolic compounds. They are also high in vitamin C and fiber.
<b>Green</b>	avocados, kiwi, *green apples, *peas, *green grapes, artichokes, *lettuce, *asparagus, *celery, *broccoli, *spinach, *green beans, *green cabbage, *cucumbers, limes, okra, *Brussels sprouts, *green leafy vegetables (including collard greens, kale, mustard greens, spinach, Swiss chard, and watercress), *green onions, *zucchini	Green fruits and vegetables are sources of phytochemicals such as chlorophyll, lutein, and indoles. They contribute in iron, fiber, calcium and magnesium, vitamins C, E, K, and many of the B vitamins to a healthy diet.
<b>Yellow and Orange</b>	*carrots, oranges, apricots, cantaloupes, lemons, mangoes, nectarines, peaches, papayas, *sweet potatoes, pineapple, *corn, *butternut squash, *yellow beets, *yellow peppers, *pumpkins, *yellow potatoes, *rutabagas, *yellow summer squash, *yellow winter squash	Yellow and orange fruits and vegetables are sources of antioxidants, such as vitamin C, carotenoids, and bioflavonoids.
<b>White, Tan, and Brown</b>	bananas, *cauliflower, *garlic, ginger, *mushrooms, *onions, *turnips, *parsnips, Jerusalem artichokes, jicama, *kohlrabi, *shallots, *white corn, *white-fleshed potatoes	White, tan, and brown fruits and vegetables are especially good sources of anthocyanins. Additional nutrients will vary by the fruit or vegetable.
<b>Red</b>	*red apples, *tomatoes, *cherries, *cranberries, *beets, *red peppers, *radishes, *watermelon, *raspberries, *rhubarb, *beets, *radicchio, *red onions, *red potatoes	Red fruits and vegetables contribute phytochemicals, such as lycopene, and anthocyanins to a healthy diet.

**Read more:** <http://www.kids-meal-ideas.com/fruit-and-vegetable-nutrition-chart.html#ixzz1CMLcOoOV>





# The Hayride

*A Resource for Educational  
Farm Field Trips*



**GROWING MINDS**  
2012





## About Growing Minds

Growing Minds is ASAP's Farm to School program, part of a national Farm to School initiative. Growing Minds strives to cultivate mutually beneficial relationships between farms and schools that create dynamic, wellness-focused learning environments for children. We do this by working with farmers, educators, and communities to serve local food in schools and expand opportunities for farm field trips, experiential nutrition education, and school gardens.

## About ASAP (Appalachian Sustainable Agriculture Project)

**Our vision** is of strong farms, thriving local food economies, and healthy communities where farming is valued as central to our heritage and our future.

**Our mission** is to help local farms thrive, link farmers to markets and supporters, and build healthy communities through connections to local food.



### Appalachian Sustainable Agriculture Project

306 West Haywood Street, Asheville, NC 28801

[www.asapconnections.org](http://www.asapconnections.org)

[www.growing-minds.org](http://www.growing-minds.org)

[www.fromhere.org](http://www.fromhere.org)

[www.appalachiangrown.org](http://www.appalachiangrown.org)

(828) 236-1282

*Thank you to the sponsor of this project:*



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### **About this Guide**

The *Hayride* serves as a guide for educators in Western North Carolina who wish to incorporate farm field trips into their classroom and curriculum. The guide, revised and updated every couple of years, connects schools with farms in their community by listing farms that welcome school groups. Each farm listing provides practical information that teachers need to know in planning a field trip such as the parking options, cost, and available facilities. In addition to farm listings, the *Hayride* also includes information about farm field trip logistics, how to connect field trips to classroom curriculum, and other resources that Growing Minds offers. If you have questions about the guide or farm field trips, notice a farm missing from the list, or would like to offer additional suggestions for the guide, please contact the Growing Minds staff at ASAP.

### **The Importance of Farm Field Trips**

Children come away from farm field trips forever connected to local food and farms. As students harvest sugar snap peas, grind dried corn, and feed pigs, they make long-lasting and life-changing memories. On the farm, classroom lessons about soil, life cycles, community, and storytelling come to life. Students form relationships with the people who grow their food and gain a deeper understanding of rural ways of life. Through the hands-on experiences of farm field trips, children explore new ideas, discover their own strengths, and awaken new interests.

### **Understanding the Farmer Perspective**

Opening their farm to students and school groups is a daunting concept for many farmers. In addition to the time, planning, and organization involved in hosting a group, issues of insurance and liability are usually at the forefront of farmers' considerations. What happens if a child twists their ankle or gets stung by a bee? Can the farmer count on the teacher and chaperones for help during the field trip? What activities will the farmer do with the students? How much time will the farm field trip require and how can the farmer juggle everyday farm duties with an added activity?

Farmers ask themselves many questions when considering farm field trips and spend many hours preparing for school groups. They calculate the cost per child for the farm field trips based on the time and energy they devote. Often, a farmer's set charge for field trips includes a large discount for school groups. Farmers who open their land to students believe in the power of education and are devoted to giving back to the community.

When teachers and students venture onto a farm, it is important to remember that the rows of crops, groups of animals, and even the farm infrastructure are all a part of the farmer's livelihood, home, and business. Farm field trips become a useful and effective opportunity to help your students understand the importance of being respectful and considerate on farms and in new environments.

**PLANNING YOUR FARM FIELD TRIP**



## **Guided Questions for Planning Your Trip**

Unsure of which farm to visit? Here are a few questions to help you choose a farm that fits your classroom and goals. Use the guide to select a few farms to interview and use your responses to the questions below to formulate questions for the farmer.

### **Initial Questions and Logistics**

- How many children will be going on the field trip and what activities does the farm offer?
- How many chaperones do you need?
- Is there anything in particular you want the children to see? A certain agricultural practice or a type of farming or animal?
- What is your budget? How will you fund the field trip?
- How will you integrate the farm trip into your classroom studies?

### **Travel and Timing**

- How far are you willing to travel to a farm?
- How will you travel (carpool, vans, bus)?
- What are the dates you are considering for the trip? What you will be able to do and see on the farm will vary widely depending on the season. It is a good idea to have a few dates in mind before contacting the farmer.
- How long would you like to spend at the farm?

### **Special Accommodations**

- Do you have any children in wheelchairs or with other special needs that the farm would need to accommodate?

### **Preparation**

- What will you do in the case of inclement weather? It's a good idea to discuss this with your farmer before the trip.
- Do you have a first aid kit to take with you? Do you have a field trip emergency plan?
- Do you need to get release forms signed?
- Will you take a snack or lunch with you to the farm?

***The farmers listed in this guide will be willing to work with you. Even if you cannot find a listing that perfectly matches your criteria, contact the farmer to discuss what you need.***

### Communicating With Farmers: What to Discuss

Once you have chosen a farm to visit, it is important to establish good communication with the farmer so that you each know what to expect from the field trip. Have a thorough conversation with the farmer and follow up with an email to make sure communication is clear. Clarify the timeframe and logistics of the trip and how you can work together to create hands-on activities. Have the discussion well in advance of the visit so that both of you have time to prepare. Laying out expectations and clarifying details will make field trips run more smoothly and be more enjoyable for everyone involved. Farmers, like teachers, are busy and often hard to reach by phone. Ask the farmer what the best number to reach them is and when the best times are to call.

It is useful to discuss the following issues with the farmer:

- **Number of students visiting:** Discuss the number of students the farm can accommodate and if there are any students with special needs.
- **Age of students:** Tell the farmer the age of the students so that they can prepare appropriate activities for the age or grade level. Give the farmer an idea of what the students can handle.
- **Number of adult chaperones and small groups:** How many adults will need to be present? Often when the students are divided into smaller groups it allows for more hands-on time and it is easier to move around the farm.
- **Role of adult chaperones:** Discuss what the expectations and roles are for the adults and how they can help.
- **Rules on the farm:** Discuss any rules or guidelines of the farm. Share these with all the adults and students.
- **Travel time and directions:** Discuss the length of the visit and how long travel time will be. Make sure you get clear directions from the farmer to pass along to the drivers.
- **Parking:** Discuss where the bus or cars can turn around and park.
- **Facilities:** Is there a bathroom that groups can use? Is there a clean site for hand washing (mandatory if children are petting animals or eating while on the farm)? Is there a covered space out of the sun and rain?
- **Lunch and snacks:** Clarify what the group's needs are for lunch and snacks, and schedule breaks accordingly. Ask if the farmer will offer snacks of fresh produce or farm products.
- **Costs:** Farms typically charge per student and/or per adult. Discuss the total costs so that you can arrange for funding for the trip.
- **Planned activities:** What activities does the farmer have planned?
- **Special interests:** Are there specific interests or curricular goals that you have for this trip? Discuss possible themes or activities that could fit these goals.
- **Rain and emergency plan:** Have a plan for rain and emergencies. Make sure there is a first aid kit available.

# PLANNING YOUR FARM FIELD TRIP

## **What to Bring**

Ask your students to bring the following:

- Sun hat
- Sturdy shoes (no open toes)
- Water bottle
- Wind parka or rain gear (if rain is likely)
- Notebooks, art paper, pens
- A bag lunch (minimal waste please)
- Layers -children should be prepared for both hot and cool weather

Teachers should pack:

- First aid kit – including any medications a student might need (for allergies, for example)
- Sunscreen
- Extra water
- Blankets for picnic



## **Lunch, Water, and Snacks**

Encourage reusable containers for the students' lunches to minimize waste, and bring garbage bags to carry your lunch waste out with you. Ask farmers about bathrooms, hand washing stations, and where the best place would be for the class to eat. Many farms do not have picnic tables, so be prepared to bring blankets for a picnic. Bring water and make sure to double check with farmers that there will be drinking water available for refills. If a farm is able, it is great to have a fresh farm snack for students. When contacting farms, ask about this possibility and make sure to compensate farmers for whatever they provide.

## **Name Tags**

Have your students make name tags so that the farmer, farm staff, and chaperones can easily communicate with them. If everyone (students, teachers, parents, farmer, and chaperones) has name tags, the day will go smoother.

## **Weather**

Be sure students are prepared for all types of weather. Determine if you will schedule a rain day for the visit or cancel the trip altogether. Make sure to determine who is responsible for making calls on the weather: you or the farmer. Advise students to bring a rain jacket if there is a high probability of precipitation.



## **On-Farm Activities**

Farm field trips are opportunities for unique activities for students. It is important to discuss planned activities with the farmer as well as have backup activities to bring along if weather or other unexpected events change the plan. See the last section of this guide for specific examples of activities.

## **General Guidelines**

- Be flexible – While it is important to have activities planned throughout the trip, you want to allow for flexibility in your schedule – spend more time on activities that the students are enjoying and move on from activities that students aren't engaged with. Leave time for play!
- Hands-on activities – One of the most important aspects of farm field trips is the opportunity for hands-on experiences. Put the students to work and let them get dirty! Explain how each farm activity fits into the bigger picture of farm production and operation. If the students are able to understand the purpose of their work, they will make even stronger connections.

## **Activity Ideas**

- Journals or notebooks – Having notebooks for each child offers a huge range of options on a field trip, from sketching and observations to data collection or reflection.
- Children's literature – A few books that are connected to the trip are worthwhile to haul in your daypack. Reading books can fill in ten minutes while the group waits for an activity to begin or can be stretched to an hour with reflection activities. Consider having the farmer read the book(s) to the group.
- Scavenger hunt – Print copies of the scavenger hunt below and bring brown paper bags for children to use in collecting items. Make a scavenger hunt specific to the farm you'll be visiting. What might the students spot on a farm? See examples of more farm scavenger hunts on our website.

## **Scavenger Hunt**

Collect only things that you can handle safely.

- a feather
- 3 different kinds of seeds
- something round
- something beautiful
- something that makes a noise
- something that reminds you of yourself
- something soft
- something that does not belong





### **DISCLAIMER**

The information included in this resource book is submitted by farm owners. Although we have made every effort to be accurate, ASAP cannot guarantee the information or vouch for the field trip experience. ASAP is not responsible for the outcome of your field trips or any damages resulting from the use of this information. Farms' services and offerings are subject to change. Please contact the farmers and visit the farms yourself so that you can make an informed decision.

## Crosscreek Farm

Contact: Colette Nester  
2416 Nile Rd.  
Sparta, NC 28675  
Alleghany

336-372-8574  
[crosscreekfarm@hotmail.com](mailto:crosscreekfarm@hotmail.com)  
[www.crosscreekfarmnc.com](http://www.crosscreekfarmnc.com)

### Who Can Visit

**Grade Levels/ Ages:** Children K-1 (age 4-7),  
gr. 2-3 (age 7-9), gr. 4-5 (age 9-11), gr. 6-8 (age  
11-14)

**Size of Groups:** One or two classes

**Wheelchair Access:** No

### When to Visit

**Best season:** Spring, summer, fall

**Duration:** Half of one school day

### Farm Description

We are a family homestead raising dairy cows, steers, pastured hogs, and free range poultry. Our animals are raised without antibiotics or hormones and aren't fed animal by-products. We are an Animal Welfare Approved farm. We welcome the public for farm tours, but please call first. Our products include butter, eggs, milk, farm tours, beef, chicken, lamb, pork, and preserves.

### Available Resources

**Parking:** Space for buses

**Picnicking:** No

**Rain shelter:** No

**Snacks:** No

**Farmer visit to classroom:** No

### Costs

\$2 per student, \$5 per chaperone





**Foxfire Holler**

Contact: Nancy Weaver-Hoffman  
 3524 NC Hwy 88 West  
 Warrensville, NC 28693  
 Ashe

336-384-9463  
 foxfireholler@aol.com  
 www.foxfireholler.com

**Who Can Visit**

**Grade Levels/ Ages:** K-1 (age 4-7), gr. 2-3 (age 7-9), gr. 4-5 (age 9-11), gr. 6-8 (age 11-14), High School (age 14-18)  
**Size of Groups:** One class  
**Wheelchair Access:** No

**When to Visit**

**Best season:** Summer, fall  
**Duration:** Half of one school day

**Farm Description**

We are a fourth-generation farm dedicated to heritage, sustainability and the premise that all life is simple and connected. We have sheep, cattle, poultry, and hogs. We provide pasture raised meat to the High Country. Visitors are welcome; call first.

**Farm Tour Activities**

We offer harvesting, planting, animals to pet and see, butter churning, spinning, weaving, grain grinding, vegetable growing, worm composting, chicken tractors, educational programs for school children, celebrations, petting zoo, and workshops.

**Available Resources**

**Parking:** There is ample space for school buses at the bottom of the hill. A wagon can meet classes there and give a hay ride up to the farm, dependent on class size. Further, unlimited parking for cars and vans is available.  
**Picnicking:** No  
**Rain shelter:** No  
**Snacks:** No  
**Farmer visit to classroom:** No

**Costs**

\$5 per student, \$5 per chaperone

**Old Orchard Creek Farms**

Contact: Walter Clark and Johnny Burleson  
 410 Swansie Shepherd Rd.  
 Lansing, NC 28643  
 Ashe

336-384-2774  
 oldorchard@skybest.com  
 www.oldorchardcreek.com

**Who Can Visit**

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)  
**Size of Groups:** One or two classes  
**Wheelchair Access:** Yes

**When to Visit**

**Best season:** Summer  
**Duration:** Half of one school day

**Farm Description**

Old Orchard Creek Farm is a historic artisanal Appalachian farm. We raise blueberries and heirloom apples using sustainable, pesticide-free farming practices. We're open to the public as a u-pick blueberry operation from July to August.

**Available Resources**

**Parking:** Space is available for buses  
**Picnicking:** Yes  
**Rain shelter:** Yes  
**Snacks:** Yes  
**Farmer visit to classroom:** Yes

**Costs**

Free for students and chaperones



## Woodland Harvest Mountain Farm

Contact: Elizabeth West

P.O. Box 1511

Boone, NC 28607

Ashe

336-877-5571

[woodlandharvest@riseup.net](mailto:woodlandharvest@riseup.net)

[www.growfood.org/farm/1155](http://www.growfood.org/farm/1155)

### Who Can Visit

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)

**Size of Groups:** One or two classes

**Wheelchair Access:** No

### When to Visit

**Best season:** Spring, summer, fall

**Duration:** Full school day

### Farm Description

We are a small rustic permaculture farm offering a variety of vegetables, fruits, eggs, compost, woodland herbs, and specialty products. We use biodynamic, organic (not certified), no till practices. We offer workshops related to social justice, sustainability, alternative building, grease conversions. Our products include eggs, firewood, medicinal herbs, mushrooms, ramps, sustainable wood products, apples, blackberries, cherries, amaranth, popcorn, dried herbs, fresh herbs, chicken, duck, pork, baked goods, bread, cider, dried fruits, jam or preserves, pesto, pickles, vinegar, artisan crafts, compost, and earthworms.

### Farm Tour Activities

We offer harvesting, planting, cooking, educational programs for school children, festival, celebrations, petting zoo, and workshops.

### Available Resources

**Parking:** Space for buses

**Picnicking:** Yes

**Rain shelter:** Yes

**Snacks:** Yes

**Farmer visit to classroom:** Yes, cost negotiable

### Costs

Negotiable





**Aycocks' Sundance Farm**

Contact: Barbara and Ellis Aycock  
61 Little Hill Ln.  
Newland, NC 28657  
Avery

828-733-1465  
[bgaycock@gmail.com](mailto:bgaycock@gmail.com)

**Who Can Visit**

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11)  
**Size of Groups:** One class  
**Wheelchair Access:** No

**When to Visit**

**Best season:** Summer, fall  
**Duration:** Half of one school day

**Farm Description**

Our goal at Aycocks' Sundance Farm is to share our love of the land and our enthusiasm for farming by growing tasty and healthy organic fruits, vegetables, and herbs, as well as freshly cut flowers. Our products include fresh flowers, apples, blackberries, blueberries, raspberries, fresh herbs, artisan crafts, and a wide variety of fresh vegetables.

**Available Resources**

**Parking:** One school bus and 2–3 cars or vans  
**Picnicking:** No  
**Rain shelter:** No  
**Snacks:** No  
**Farmer visit to classroom:** Yes

**Costs**

Free for students and chaperones

**Additional Comments**

We warmly welcome visitors to our farm. Since we are a 2-person outfit with 2 farmers markets/week, please call (828-733-1465) to schedule your visit.

**Trosly Farm**

Contact: Amos Nidiffer  
95 Peter Harding Ln.  
Elk Park, NC 28622  
Avery

828-733-4938  
[troslyfarm@att.net](mailto:troslyfarm@att.net)

**Who Can Visit**

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)  
**Size of Groups:** One class  
**Wheelchair Access:** No

**When to Visit**

**Best season:** Spring, summer  
**Duration:** Half of one school day

**Farm Description**

Our farm is committed to agricultural sustainability and diversity. We specialize in pastured poultry, chemical-free vegetables, and artisan breads (made with whole grains milled on farm). Check out our website for events this season! Our products include eggs, fresh flowers, apples, blueberries, melons, watermelons, fresh herbs, chicken, duck, game bird, geese, lamb, rabbit, turkey, baked goods, bread, and a wide variety of fresh vegetables.

**Available Resources**

**Parking:** Space for buses is available  
**Picnicking:** Yes  
**Rain shelter:** Yes  
**Snacks:** Yes  
**Farmer visit to classroom:** Yes, cost negotiable

**Costs**

Negotiable based on class size

### Cane Creek Valley Farm

Contact: Jeremy and Amanda Sizemore, George and Celia Nesbitt  
1448 Cane Creek Rd.  
Fletcher, NC 28732  
Buncombe

828-338-0188  
[info@canecreekorganics.com](mailto:info@canecreekorganics.com)  
[www.canecreekorganics.com](http://www.canecreekorganics.com)

#### Who Can Visit

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)  
**Size of Groups:** One or two classes  
**Wheelchair Access:** No

#### When to Visit

**Best season:** Spring, summer, fall  
**Duration:** Half of one school day

#### Farm Description

We are now offering a wide variety of USDA Certified Organic vegetables, herbs, fruits and free range brown eggs through our CSA subscription program...join now!! All natural pork and beef packages year-round! Visit our website. Our products include eggs, fresh flowers, cantaloupes, melons, strawberries, watermelons, fresh herbs, beef, pork, and a wide variety of fresh vegetables.

#### Farm Tour Activities

We offer hayrides, harvesting, planting, and workshops. Please email us to set up a tour.

#### Available Resources

**Parking:** Space for buses is available  
**Picnicking:** Yes  
**Rain shelter:** Yes  
**Snacks:** No  
**Farmer visit to classroom:** Yes, \$50 per visit

#### Costs

\$5 per student, \$5 per chaperone

### Dogwood Hills Farm

Contact: David and Jenny Zoppo Nielsen  
369 Ox Creek Rd.  
Weaverville, NC 28787  
Buncombe

828-645-6286  
[dogwoodhillsfarm@frontier.com](mailto:dogwoodhillsfarm@frontier.com)

#### Who Can Visit

**Grade Levels/ Ages:** gr. K-1 (age 4-7), gr. 2-3 (age 7-9), gr. 4-5 (age 9-11), gr. 6-8 (age 11-14), High school (age 14-18)  
**Size of Groups:** One class  
**Wheelchair Access:** No

#### When to Visit

**Best season:** Summer, fall  
**Duration:** Half of one school day

#### Farm Description

We are a 10-acre mountain valley u-pick farm: blueberries, blackberries, concord grapes, heirloom apple varieties. Sorghum syrup is available seasonally. We are currently growing organically, not certified. Call or email for availability and hours. We offer tours and events by appointment. Our products include apples, blackberries, blueberries, grapes, and sorghum molasses.

#### Farm Tour Activities

We offer educational programs for school children and harvesting, and farm tours are available upon request. Please call or email for availability and hours.

#### Available Resources

**Parking:** Space for buses is not available  
**Picnicking:** No  
**Rain shelter:** No  
**Snacks:** No  
**Farmer visit to classroom:** No

#### Costs

Charge per student per amount of fruit or berries picked, chaperones free

**Gaining Ground Farm**

Contact: Anne and Aaron Grier  
298 Sluder Branch Rd.  
Leicester, NC 28748  
Buncombe

828-545-2362

[sluderbranch@yahoo.com](mailto:sluderbranch@yahoo.com)

[www.gaininggroundfarm-nc.com](http://www.gaininggroundfarm-nc.com)

**Who Can Visit**

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)

**Size of Groups:** One class

**Wheelchair Access:** No

**When to Visit**

**Best season:** Summer, fall

**Duration:** Half of one school day

**Farm Description**

For over 12 years, we have been producing a wide variety of seasonal vegetables, flowers, and herbs for sale at local tailgate markets and restaurants. We offer CSA shares, as well as grassfed beef. We use ecologically responsible growing methods. Our products include eggs, dried flowers, edible flowers, fresh flowers, fresh herbs, beef, and a wide variety of fresh vegetables.

**Farm Tour Activities**

Educational programs for school children, festivals, celebrations, and a look at one small diversified farm only 25 minutes from downtown Asheville. You'll see vegetable production, beef and dairy cows, flowers, chickens, and lots of wild birds.

**Available Resources**

**Parking:** Space for buses is available

**Picnicking:** Yes

**Rain shelter:** Yes

**Snacks:** No

**Farmer visit to classroom:** No

**Costs**

\$5 per student, \$5 per chaperone

**Green Hill Urban Farm**

Contact: Mike Fortune  
30 Green Hill Ave  
Asheville, NC 28806  
Buncombe

828-775-0548

[greenhillurbanfarm@gmail.com](mailto:greenhillurbanfarm@gmail.com)

[www.greenhillurbanfarm.com](http://www.greenhillurbanfarm.com)

**Who Can Visit**

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)

**Size of Groups:** One class

**Wheelchair Access:** Yes

**When to Visit**

**Best season:** Spring, summer, fall

**Duration:** Half of one school day

**Farm Description**

Created in 2005 off Patton Ave. 62' greenhouse, gardens, fruit tree nursery, ducks, produce stand, rainwater systems. CSA runs May to October. Our products include eggs, edible flowers, fresh flowers, medicinal herbs, mushrooms, ramps, apples, blackberries, cantaloupes, figs, grapes, melons, peaches, pears, plums, raspberries, strawberries, watermelons, wineberries, grain corn, fresh herbs, Christmas wreaths, gourds, and a wide variety of fresh vegetables.

**Farm Tour Activities**

We offer educational programs for school children, festivals, celebrations, workshops, harvesting, planting, cooking, and u-pick apples, raspberries, and pears.

**Available Resources**

**Parking:** Space for buses is available

**Picnicking:** No

**Rain shelter:** No

**Snacks:** Yes

**Farmer visit to classroom:** Yes, \$30 per classroom

**Costs**

\$5 per student, \$5 per chaperone

**Hickory Nut Gap Farm**

Contact: Amy and Jamie Ager  
 57 Sugar Hollow Rd.  
 Fairview, NC 28730  
 Buncombe

828-628-1027  
 jamie@hickorynutgapfarm.com  
 www.hickorynutgapfarm.com

**Who Can Visit**

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)  
**Size of Groups:** One or two classes  
**Wheelchair Access:** Yes

**When to Visit**

**Best season:** Fall  
**Duration:** Full school day

**Farm Description**

Our mission is to connect sustainable agriculture practices, our family history, and our customers by sharing the family farm experience and serving as an example of healthy land stewardship while providing high quality ethically raised meats. Our products include eggs, goat cheese, apples, blueberries, beef, chicken, goat, pork, jam or preserves, soap, sorghum molasses, and artisan crafts.

**Farm Tour Activities**

Corn maze, educational programs for school children, farm tours, festival, celebrations, petting zoo, and scavenger hunt. We offer educational tours to school groups in the fall. Our farm store is open Wed.-Sat. 1-5 pm and we are open 7 days a week September and October. U-pick pumpkins mid-September through October.

**Available Resources**

**Parking:** Space for buses is available  
**Picnicking:** Yes  
**Rain shelter:** Yes  
**Snacks:** Yes  
**Farmer visit to classroom:** No

**Costs**

\$5 per student, \$5 per chaperone

**Imladris Farm**

Contact: Walter and Wendy Harrill  
 45 Little Pond Rd.  
 Fairview, NC 28730  
 Buncombe

828-628-9377  
 info@imladrisfarm.com  
 www.imladrisfarm.com

**Who Can Visit**

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)  
**Size of Groups:** One or two classes  
**Wheelchair Access:** No

**When to Visit**

**Best season:** Spring, summer, fall, winter  
**Duration:** Half of one school day

**Farm Description**

Shhh...hear that? At any time of year, a visit to Imladris Farm is an adventure of flavor and a chance to rejoin the age old cycle of seasons. Farm tours available by appointment. Tours run up to 2 hours, cost \$6 per person, and come with a \$6 credit towards any purchase made that day. Our products include eggs, firewood, blackberries, blueberries, raspberries, goat, rabbit, jam and preserves.

**Available Resources**

**Parking:** Space for buses is not available  
**Picnicking:** Yes  
**Rain shelter:** Yes  
**Snacks:** No  
**Farmer visit to classroom:** Yes, cost negotiable

**Costs**

\$6 per student, \$6 per chaperone



### Ivy Creek Family Farm

Contact: Paul and Anna Littman  
390 North Fork Rd.  
Barnardsville, NC 28709  
Buncombe

828-626-2447

[wncfarm@gmail.com](mailto:wncfarm@gmail.com)

[www.ivycreekfamilyfarm.com](http://www.ivycreekfamilyfarm.com)

#### Who Can Visit

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)

**Size of Groups:** One to two classes

**Wheelchair Access:** No

#### When to Visit

**Best season:** Spring, summer, fall

**Duration:** Half school day

#### Farm Description

At Ivy Creek Family Farm we grow a wide variety of vegetables, flowers, mushrooms, and fruits using all natural practices. We sell our produce at area tailgate markets, through an 80-member CSA, and to area restaurants. On our farm field trips, students can plant, harvest, explore, and have fun! We can tailor the farm field trip to any age or curriculum focus. From leading students in soil explorations to teaching about composting to organizing farm scavenger hunts, we work to meet the needs of each school group.

#### Available Resources

**Parking:** Space for one bus is available

**Picnicking:** Yes

**Rain shelter:** No

**Snacks:** No

**Farmer visit to classroom:** Yes, cost negotiable

#### Costs

\$5 per student, \$5 per chaperone

### Long Branch Environmental Education Center

Contact: Paul Gallimore  
P.O. Box 369  
Leicester, NC 28748  
Buncombe

828-683-3662

[paul@longbrancheec.org](mailto:paul@longbrancheec.org)

[www.longbrancheec.org](http://www.longbrancheec.org)

#### Who Can Visit

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)

**Size of Groups:** One to three or more classes

**Wheelchair Access:** Yes

#### When to Visit

**Best season:** Spring, summer, fall, winter

**Duration:** Full school day

#### Farm Description

Come explore our solar/eco-demonstrations, u-pick organic blueberries, raspberries, apples, cider, chestnuts, edible landscape, and trout pond. Hike exhilarating trails on 1,635 wild acres in the Newfound Mountains. Waterfalls, wildflowers, panoramic vistas, wildlife! Our products include fresh flowers, firewood, honey, medicinal herbs, sustainable wood products, many fruits, fresh herbs, trout, chestnuts, walnuts, cider, dried fruits, jam or preserves, compost, earthworms, and gourds.

#### Farm Tour Activities

We offer harvesting, planting, school programs, eco-tourism, environmental education programs for families, a pond for fishing, picnic areas, hiking trails, and scenic vistas.

#### Available Resources

**Parking:** Space for buses is available

**Picnicking:** Yes

**Rain shelter:** Yes

**Snacks:** No

**Farmer visit to classroom:** Yes, cost negotiable

#### Costs

Negotiable



### Meadow Cove Farm

Contact: Claudine and Paul Cremer  
Dula Springs Rd.  
Weaverville, NC 28787  
Buncombe

828-658-0294

[meadowcovefarm@frontier.com](mailto:meadowcovefarm@frontier.com)

[www.ncagr.gov/ncproducts/ShowSite.asp?ID=100853](http://www.ncagr.gov/ncproducts/ShowSite.asp?ID=100853)

#### Who Can Visit

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11)

**Size of Groups:** One class

**Wheelchair Access:** No

#### When to Visit

**Best season:** Spring, summer, fall

**Duration:** Half of one school day

#### Farm Description

Growing and processing seasonal vegetables, berries, fruits, flowers, and shiitake mushrooms. Free range chicken eggs also available. Interested in contract growing desired produce or flowers for individuals, local restaurants, grocers or residential and commercial businesses. Our products include eggs, fresh flowers, apples, Asian pears, blackberries, blueberries, cherries, figs, grapes, kiwis, pears, persimmons, raspberries, strawberries, wineberries, fresh herbs, chestnuts, landscape plants, and a wide variety of fresh vegetables.

#### Available Resources

**Parking:** Room for about 10 cars

**Picnicking:** No

**Rain shelter:** No

**Snacks:** No

**Farmer visit to classroom:** Yes, in exchange for a donation to ASAP or MANNA FoodBank

#### Costs

Free for students and chaperones

### Mountain Meadows Farm

Contact: Trey Scott  
221 Garrett Cove Rd.  
Leicester, NC 28748  
Buncombe

828-989-9898

[trey@mountainmeadowsnc.com](mailto:trey@mountainmeadowsnc.com)

[www.mountainmeadowsnc.com](http://www.mountainmeadowsnc.com)

#### Who Can Visit

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)

**Size of Groups:** One or two classes

**Wheelchair Access:** No

#### When to Visit

**Best season:** Spring, fall

**Duration:** Half of one school day

#### Farm Description

We are in our third year of operation. We have organically grown raspberries, blackberries, blueberries, muscadine grapes, Japanese variety pears, apples, peaches, pluots, and fresh flowers. Our products include fresh flowers, apples, Asian pears, blackberries, blueberries, grapes, peaches, pears, raspberries, wineberries, dried herbs, fresh herbs, and landscape plants.

#### Available Resources

**Parking:** Space is available for buses in the field, but call ahead of time to make sufficient arrangements. Additional parking available for multiple cars and/or vans.

**Picnicking:** Yes

**Rain shelter:** No

**Snacks:** No

**Farmer visit to classroom:** Yes, \$50 per visit

#### Costs

\$5 per student, \$5 per chaperone

#### Additional Comments

I am willing to work with your curriculum and goals. ASAP is also a wonderful resource!

## Warren Wilson College Garden

Contact: Pat Ross  
Warren Wilson College - CPO#6081  
Asheville, NC 28815-9000  
Buncombe

828-771-3066  
[pross@warren-wilson.edu](mailto:pross@warren-wilson.edu)  
[www.warren-wilson.edu](http://www.warren-wilson.edu)

### Who Can Visit

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)

**Size of Groups:** One class

**Wheelchair Access:** No

### When to Visit

**Best season:** Spring, fall

**Duration:** Half of one school day



### Farm Description

The Warren Wilson College Garden is a 5-acre operation of mixed fruits and vegetables. We market our produce to the dining service on campus, to a CSA, and to two farmers markets on campus. We have a farm tour and garden tour available upon request. Our products include dried flowers, edible flowers, fresh flowers, honey, apples, Asian pears, blackberries, blueberries, cantaloupes, cherries, figs, grapes, melons, paws paws, pears, persimmons, plums, raspberries, strawberries, watermelons, wineberries, wheat, dried herbs, fresh herbs, transplants, and a wide variety of fresh vegetables.

### Available Resources

**Parking:** Space is available for buses

**Picnicking:** Yes

**Rain shelter:** Yes

**Snacks:** No

**Farmer visit to classroom:** Yes

### Costs

Please contact us for more information.

**Apple Hill Orchard and Cider Mill**

Contact: Gail and Hurley Prewitt  
5205 Apple Tree Ln.  
Morganton, NC 28655  
Burke

828-437-1224

[hprewitt@applehillorchard.com](mailto:hprewitt@applehillorchard.com)  
[www.applehillorchard.com](http://www.applehillorchard.com)

**Who Can Visit**

**Grade Levels/ Ages:** K-3 (age 4-9)  
**Size of Groups:** One to three classes  
**Wheelchair Access:** Yes

**When to Visit**

**Best season:** Fall  
**Duration:** Half of one school day

**Farm Description**

We offer u-pick apples and Saturday wagon tours. The country store has our award winning cider, fruit butters and gift baskets. Our bakery makes baked items with the fruits we grow. Our products include apples, nectarines, peaches, baked goods, and cider.

**Farm Tour Activities**

Hayride, u-pick or we-pick apples and peaches in season. Saturday orchard tours in September through October. Educational tours by reservation. Visit the country store for fruit butters, jams, and gift baskets.

**Available Resources**

**Parking:** Space for buses is available  
**Picnicking:** Yes  
**Rain shelter:** Yes  
**Snacks:** Yes  
**Farmer visit to classroom:** No

**Costs**

\$6 per student, \$6 per chaperone

**Bluebird Farm**

Contact: William Lyons and Marie Williamson  
4178 Bluebird Dr.  
Morganton, NC 28655  
Burke

828-584-7359

[bluebirdfarmnc@gmail.com](mailto:bluebirdfarmnc@gmail.com)  
[www.bluebirdfarmnc.com](http://www.bluebirdfarmnc.com)

**Who Can Visit**

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)  
**Size of Groups:** One class  
**Wheelchair Access:** No

**When to Visit**

**Best season:** Spring, winter  
**Duration:** Half of one school day

**Farm Description**

Bluebird Farm raises healthy, flavorful heirloom vegetables, pastured chicken and pork, and eggs using techniques that build soils to ensure quality vegetables and meat. Purchase our products at local farmers markets or through our CSA. Our products include eggs, fresh flowers, medicinal herbs, persimmons, fresh herbs, chicken, lamb, and pork.

**Available Resources**

**Parking:** Space is not available for buses  
**Picnicking:** No  
**Rain shelter:** No  
**Snacks:** No  
**Farmer visit to classroom:** Yes, \$25 per visit

**Costs**

\$25 up to 10 students + \$2/student over 10 students

## Muddy Creek Farm

Contact: Patrick Stephens  
3515 Seals Rd.  
Morganton, NC 28655  
Burke

828-403-5569  
[pbstephens@hughes.net](mailto:pbstephens@hughes.net)

### Who Can Visit

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)

**Size of Groups:** One class

**Wheelchair Access:** No

### When to Visit

**Best season:** Spring, fall

**Duration:** Half of one school day

### Farm Description

We are located in the foothills of Burke Co. beside Muddy Creek. We have shiitake mushrooms and a variety of produce available in season. Our products include mushrooms, fresh herbs, beets, broccoli, Brussels sprouts, cabbage, carrots, cucumber, eggplant, green beans, hot peppers, lettuce, okra, peas, pumpkins, radish, salad greens, spinach, summer squash, sweet peppers, and tomatoes.

### Available Resources

**Parking:** Space is available for buses

**Picnicking:** No

**Rain shelter:** No

**Snacks:** No

**Farmer visit to classroom:** Yes

### Costs

Please contact us for more information.



**Farmville, Inc.**

Contact: Richard Knee  
 670 Ranger Estate Rd.  
 Murphy, NC 28906  
 Cherokee

828-361-1419  
 richard@richardandjoy.com

**Who Can Visit**

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11)  
**Size of Groups:** One class  
**Wheelchair Access:** No

**When to Visit**

**Best season:** Spring, fall  
**Duration:** Half of one school day

**Farm Description**

Our products include eggs, goat cheese, cucumbers, okra, pole beans, potatoes, sweet corn, sweet peppers, tomatoes, and winter squash. We also offer hayrides, harvesting, farm tours, and farm education for children.

**Available Resources**

**Parking:** Space is available for buses  
**Picnicking:** No  
**Rain shelter:** No  
**Snacks:** No  
**Farmer visit to classroom:** Yes

**Costs**

Please contact us for more information.





## Stoney Hollow Farm

Contact: Scott Boxberger  
944 Ollies Creek Rd.  
Robbinsville, NC 28771  
Graham

828-735-2983  
[scott@stoneyhollowfarm.net](mailto:scott@stoneyhollowfarm.net)  
[www.stoneyhollowfarm.net](http://www.stoneyhollowfarm.net)

### Who Can Visit

**Size of Groups:** One class

**Wheelchair Access:** No

### When to Visit

**Best season:** Spring, fall

**Duration:** Half of one school day

### Farm Description

Family farm offering fruits, berries, vegetables, grapes, herbs, and flowers, as well as jams, honey, and baked goods. U-pick/we pick operates seven days a week. Our rental cabin is an ideal location for family vacations or special events.

### Farm Tour Activities

Farm tours can include harvesting, planting, and cooking. We operate on a u-pick or we pick basis 7 days a week from sunrise to sunset. Our products include cherries, peaches, plums, blueberries, raspberries, blackberries, apples, grapes, vegetables, and flowers.

### Available Resources

**Parking:** Space for buses is available

**Picnicking:** No

**Rain shelter:** Yes

**Snacks:** No

**Farmer visit to classroom:** No

### Costs

Negotiable



### Seasonal Produce Farm

Contact: Skipper Russell  
133 Berea Ct.  
Waynesville, NC 28786  
Haywood

828-648-8575, 828-734-5500  
ptfarmer58@aol.com

#### Who Can Visit

**Grade Levels/ Ages:** KK-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)  
**Wheelchair Access:** Yes

#### When to Visit

**Best season:** Spring, summer, fall  
**Duration:** Full school day

#### Farm Description

We grow tomatoes, bell peppers, beans, romaine lettuce, basil, broccoli, potatoes, cucumbers and sweet corn. Look for our vegetables at Ingles markets. Call or email to arrange to purchase directly from the farm. Cold Mountain Corn Maze is on our farm Sep. through Oct.

#### Farm Tour Activities

We offer hayrides, harvesting, and cooking. We also have the Cold Mountain Corn Maze in Sep. through Oct., with a Halloween maze in the evenings.

#### Available Resources

**Parking:** Space for buses is available  
**Picnicking:** Yes  
**Rain shelter:** No  
**Snacks:** No  
**Farmer visit to classroom:** Yes, price negotiable

#### Costs

\$1 per hayride participant, \$7 per corn maze participant

### Wildcat Ridge Farm

Contact: Ricardo and Suzanne Fernandez  
3553 Panther Creek Rd.  
Clyde, NC 28721  
Haywood

828-627-6751  
wildcatridgefarm@gmail.com  
www.wildcatridgefarm.com

#### Who Can Visit

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14)  
**Size of Groups:** One class (limit 40 people)  
**Wheelchair Access:** No

#### When to Visit

**Best season:** Spring, summer, fall  
**Duration:** Half of one school day

#### Farm Description

We grow and sell award-winning peonies and gourmet fig trees. Cut flowers available mid-Apr. through mid-May. Peony plants and fig trees available spring through fall.

#### Farm Tour Activities

Ricardo is a certified master gardener with a passion for growing flowers, gourmet fig trees, and an abundance of fruits and vegetables for his family and his award-winning Chef Ricardo's tomato sauces. We offer our customers the chance to walk through our farm and select the peonies they would like for us to cut for them. We also offer the chance to view all of our fig trees before purchasing. Visits are by appointment only spring through summer.

#### Available Resources

**Parking:** Space for buses is not available  
**Picnicking:** Yes  
**Rain shelter:** No  
**Snacks:** Yes  
**Farmer visit to classroom:** \$50 per visit, only for Haywood County classrooms

#### Costs

\$10-\$15 per student, \$10-\$15 per chaperon, depending on activity

**Holler Ministries**

Contact: Justin Rhodes  
 455 Huntley Rd.  
 Fletcher, NC 28732  
 Henderson

828-651-9827  
 rlrhodes@bellsouth.net

**Who Can Visit**

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)  
**Size of Groups:** One to three or more classes  
**Wheelchair Access:** No

**When to Visit**

**Best season:** Spring, summer, fall  
**Duration:** Half of one school day

**Farm Description**

Community farm featuring "Hollerganic" produce through CSA and pastured beef. Growing lovers of God and people while providing food for the community, camp ministry, and the less fortunate of WNC.

**Farm Tour Activities**

We offer hayrides, harvesting, and scavenger hunts. Pick a bushel of seasonal veggies for \$30 (Saturdays only)!

**Available Resources**

**Parking:** Space for buses is not available  
**Picnicking:** No  
**Rain shelter:** No  
**Snacks:** No  
**Farmer visit to classroom:** Yes, \$50 per visit

**Costs**

\$5 per student, \$5 per chaperone



**Justus Orchard**

Contact: Don Justus  
 187 Garren Rd.  
 Hendersonville, NC 28792  
 Henderson

828-685-8033  
 mdjustus@yahoo.com  
 www.justusorchard.com

**Who Can Visit**

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)  
**Size of Groups:** One to three or more classes  
**Wheelchair Access:** Yes

**When to Visit**

**Best season:** Fall  
**Duration:** Half of one school day

**Farm Description**

We are a fourth-generation family farm growing apples, blackberries, peaches, and pumpkins. All are u-pick or we pick. We also offer fried apple pies, apple cider, boiled peanuts, canned goods and local vegetables.

**Farm Tour Activities**

We offer hayrides, harvesting, u-pick or we pick apples, blackberries, peaches, nectarines, and Asian pears. During apple season we offer farm baked goods, cider donuts, fresh apple cider, horse drawn hayrides, tractor rides, pick your own pumpkin patch, and much more. Pick your own apples, blackberries, peaches, and pumpkins.

**Available Resources**

**Parking:** Space for buses is available  
**Picnicking:** Yes  
**Rain shelter:** Yes  
**Snacks:** Yes  
**Farmer visit to classroom:** Yes

**Costs**

Please contact us for more information.

**McConnell Farms**

Contact: Danny McConnell  
 177 Old Dana Rd.  
 Hendersonville, NC 28792  
 Henderson

828-692-2819  
 mcconnell\_farms@bellsouth.net

**Who Can Visit**

**Grade Levels/ Ages:** gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)  
**Size of Groups:** One or two classes  
**Wheelchair Access:** No

**When to Visit**

**Best season:** Spring, summer  
**Duration:** Half of one school day

**Farm Description**

We grow strawberries, rhubarb, asparagus, blackberries, micro-mix greens, vegetables, raspberries, apples, peaches, plums, Asian pears, and greenhouse and nursery plants. Our other products include preserves, fruit butters, artisan crafts, and ciders. We offer field trips and tours and have an ice cream shop on the farm.

**Available Resources**

**Parking:** Space for buses is available  
**Picnicking:** Yes  
**Rain shelter:** Yes  
**Snacks:** Yes  
**Farmer visit to classroom:** No

**Costs**

Please contact us for more information.

**Oliver Organics**

Contact: Hal Oliver  
 101 Winsom Trail  
 Hendersonville, NC 28739  
 Henderson

828-697-1153  
 olivorg@bellsouth.net

**Who Can Visit**

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)  
**Size of Groups:** One class  
**Wheelchair Access:** No

**When to Visit**

**Best season:** Spring, summer, fall  
**Duration:** Half of one school day

**Farm Description**

We have over 150 types of bedding plants, and 10 to 20 different items of produce weekly. We sell at the Henderson County Tailgate Market, the Asheville Herb Festival, and "Growin' in the Mountains" at the WNC Farmers Market.

**Available Resources**

**Parking:** Room for 5-6 cars and/or vans  
**Picnicking:** No  
**Rain shelter:** No  
**Snacks:** No  
**Farmer visit to classroom:** Yes, cost negotiable

**Costs**

Negotiable



**Sky Top Orchard**

Contact: David and Lindsey Butler  
 P.O. Box 302  
 Flat Rock, NC 28731  
 Henderson

828-692-7930  
*skytoporchard@gmail.com*  
 www.skytoporchard.com

**Who Can Visit**

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11)  
**Size of Groups:** One to three or more classes  
**Wheelchair Access:** Yes

**When to Visit**

**Best season:** Fall  
**Duration:** Half of one school day

**Farm Description**

We are a 50-acre apple orchard offering 25 varieties of u-pick/we pick apples, grapes, Asian pears, peaches, and pumpkins. We press our own apple cider. Educational field trips are offered. We are open daily, 9 am-6 pm, Aug.-Nov.

**Farm Tour Activities**

We offer hayrides and harvesting. Our educational tours include a learning session about growing apples, watching our sorter or cider press, a hayride, and picking a 2 lb. bag of apples per child. We have a beautiful panoramic view of the Blue Ridge Mountains. Bring a picnic, feed our farm animals, and visit our playground.

**Available Resources**

**Parking:** Space for buses is available  
**Picnicking:** Yes  
**Rain shelter:** Yes  
**Snacks:** Yes  
**Farmer visit to classroom:** Yes

**Costs**

Please contact us for more information.

**Stepp Farm’s Hillcrest Orchard**

Contact: Sonya Hollingsworth  
 221 Stepp Orchard Dr.  
 Hendersonville, NC 28792  
 Henderson

828-685-9083  
*applesjhs@hotmail.com*  
 www.steppapples.com

**Who Can Visit**

**Grade Levels/ Ages:** K-1 (age 4-7)  
**Size of Groups:** One to three classes  
**Wheelchair Access:** Yes

**When to Visit**

**Best season:** Fall  
**Duration:** Half of one school day

**Farm Description**

We are a 40-year, three-generation family farm. We offer pick your own with 22 varieties of apples, grapes, honey, molasses, cider, potatoes, and pumpkins, as well as weekend wagon rides. We have a gift shop and gift packs are available. School tours occur during the week. Groups and buses are welcome.

**Available Resources**

**Parking:** Space for buses is available  
**Picnicking:** Yes  
**Rain shelter:** Yes  
**Snacks:** Yes  
**Farmer visit to classroom:** No

**Costs**

Please contact us for more information.





### Avant Garden and Venue

Contact: Curt Collins  
P.O. Box 3041  
Cullowhee, NC 28723  
Jackson

919-800-8708  
[avantgardenorganicfarm@gmail.com](mailto:avantgardenorganicfarm@gmail.com)

#### Who Can Visit

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)  
**Size of Groups:** One or two classes  
**Wheelchair Access:** No

#### When to Visit

**Best season:** Summer, fall  
**Duration:** Half or full school day

#### Farm Description

Avant Garden is an organic primitive small farm, relying on ancient methods and modern know-how. We work in harmony with nature to provide real food security to our community. Contact us or look us up on Facebook. Our products include fresh flowers, medicinal herbs, blackberries, raspberries, strawberries, dried herbs, fresh herbs, trout, sunflower seeds, corn meal, preserves, pesto, pickles, compost, transplants, and a wide variety of fresh vegetables.

#### Farm Tour Activities

We offer a corn maze, educational programs for school children, and celebrations.

#### Available Resources

**Parking:** Space for buses is available  
**Picnicking:** Yes  
**Rain shelter:** No  
**Snacks:** No  
**Farmer visit to classroom:** Yes, cost negotiable

#### Costs

Negotiable

### Balsam Gardens, LLC

Contact: Steven Beltram  
433 Crawford Cemetery Rd.  
Sylva, NC 28779  
Jackson

828-713-0450  
[balsamgardens@gmail.com](mailto:balsamgardens@gmail.com)  
[www.balsamgardens.com](http://www.balsamgardens.com)

#### Who Can Visit

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)  
**Size of Groups:** One class  
**Wheelchair Access:** No

#### When to Visit

**Best season:** Spring, summer, fall  
**Duration:** Half of one school day

#### Farm Description

We produce vegetables, pastured poultry, and pork. Join our CSA or find us at the Waynesville and Sylva farmers markets. Our products include eggs, edible flowers, fresh flowers, chicken, pork, garlic braids, transplants, and a wide variety of fresh vegetables.

#### Available Resources

**Parking:** 8-10 cars or vans in the driveway  
**Picnicking:** No  
**Rain shelter:** No  
**Snacks:** No  
**Farmer visit to classroom:** Yes, cost negotiable

#### Costs

Free for students and chaperones



**Pomme de Terre**

Contact: John Beckman  
2541 Tilley Creek Rd.  
Cullowhee, NC 28723  
Jackson

828- 269-3050  
*beckmanmtn@frontier.com*

**Who Can Visit**

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)  
**Size of Groups:** One or two classes  
**Wheelchair Access:** No

**When to Visit**

**Duration:** Half of one school day

**Farm Description**

Pomme de Terre grows vegetables, flowers, plants, and shrubs and trees. In early-to mid-May the farm is full of colorful blossoms and blooms. In late summer and early fall, the fields are packed full of different varieties of pumpkins and winter squash. Come learn about seeds, planting, grafting apple trees, and much more! We can tailor the farm field trip to class curriculum and interests.

**Available Resources**

**Parking:** Space for buses is not available  
**Picnicking:** Yes  
**Rain shelter:** Yes  
**Snacks:** No  
**Farmer visit to classroom:** Yes

**Costs**

Please contact us for more information.



**Shared Blessings Farm**

Contact: Jackie Hooper  
195 Indian Mound Rd.  
Cullowhee, NC 28723  
Jackson

828-293-1421  
*sharedblessingsfarm@frontier.com*

**Who Can Visit**

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)  
**Size of Groups:** One or two classes  
**Wheelchair Access:** No

**When to Visit**

**Duration:** Half of one school day

**Farm Description**

We offer the largest variety of animals in Jackson County. In our version of "Ole MacDonald's," you will be up close and personal with over 12 different species of animals and nearly every kind of vegetable. Our products include eggs, rabbit, gourds, landscape plants, transplants, beets, green beans, green onions, kale, lettuce, peas, radish, salad mix, spinach, and sweet potatoes.

**Available Resources**

**Parking:** Space for buses is not available  
**Picnicking:** No  
**Rain shelter:** No  
**Snacks:** No  
**Farmer visit to classroom:** No

**Costs**

Please contact us for more information.

## Deal Family Farm

Contact: Joe, Butch and Devon Deal  
825 Higdon Rd.  
Franklin, NC 28734  
Macon

828-524-5151  
[info@dealfarms.com](mailto:info@dealfarms.com)  
[www.dealfarms.com](http://www.dealfarms.com)

### Who Can Visit

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)  
**Size of Groups:** One to three or more classes  
**Wheelchair Access:** Yes

### When to Visit

**Best season:** Spring, fall  
**Duration:** Half of one school day

### Farm Description

We have been farming locally since 1951. We are located on Hwy. 64 West in Franklin, NC. We have a variety of fresh produce and agritourism services. Our products include eggs, fresh flowers, firewood, honey, mushrooms, apples, blackberries, blueberries, cantaloupes, melons, peaches, raspberries, strawberries, watermelons, grain corn, popcorn, fresh herbs, beef, cider, preserves, sorghum molasses, Christmas wreaths, corn shocks, gourds, ornamental corn, transplants, and a wide variety of fresh vegetables.

### Farm Tour Activities

We offer hayrides, educational tours, school programs (elementary through high school), and a corn maze. We also have u-pick tomatoes, peppers, and beans available during Sep. until frost, and u-pick pumpkins Sep. through Oct.

### Available Resources

**Parking:** Space for buses is available  
**Picnicking:** Yes  
**Rain shelter:** Yes  
**Snacks:** Yes  
**Farmer visit to classroom:** Yes, free

### Costs

\$3 per student, \$3 per chaperone

## Nantahala Herb Company

Contact: Nicole Denison  
1914 Otter Creek Rd.  
Nantahala, NC 28781  
Macon

828-321-9810  
[nantahalaherbcompany@yahoo.com](mailto:nantahalaherbcompany@yahoo.com)

### Who Can Visit

**Grade Levels/ Ages:** gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)  
**Size of Groups:** One to three classes  
**Wheelchair Access:** No

### When to Visit

**Duration:** Half of one school day

### Farm Description

We offer all natural soaps and scrubs using herbs and flowers grown on-site and organic ingredients. Custom orders and gift sets are available. Our products include transplants, in-season vegetables with fresh, eggs, dried flowers, edible flowers, fresh flowers, medicinal herbs, dried herbs, fresh herbs, trout, soap, teas, artisan crafts, candles, and salves.

### Available Resources

**Parking:** Space for buses is not available  
**Picnicking:** Yes  
**Rain shelter:** Yes  
**Snacks:** No  
**Farmer visit to classroom:** Yes, \$30 per visit

### Costs

Please contact us for more information.



## Otter Creek Trout Farm

Contact: Alex and Nicole Denison  
1914 Otter Creek Rd.  
Topton, NC 28781  
Macon

828-321-9810  
[ottercreektrout@yahoo.com](mailto:ottercreektrout@yahoo.com)

### Who Can Visit

**Grade Levels/ Ages:** gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)  
**Size of Groups:** One to three classes  
**Wheelchair Access:** No

### When to Visit

**Best season:** Spring, summer, fall  
**Duration:** Half of one school day

### Farm Description

We provide farm-fresh rainbow trout, whole or fillet, and live trout for stocking. We offer pond and creek fishing. Call ahead for school groups or public farm tours and learn more about aquaculture in Western NC. Our products include eggs, dried flowers, edible flowers, fresh flowers, medicinal herbs, dried herbs, fresh herbs, trout, soap, teas, artisan crafts, landscape plants, salves, transplants, and a wide variety of fresh vegetables.

### Farm Tour Activities

We offer educational programs for school children, farm tours, celebrations, workshops, and scavenger hunts. We also offer trout tours that include information about aquaculture, permaculture, and the history of trout production in WNC. We offer pond and creek fishing to guarantee you the farm-freshest catch!

### Available Resources

**Parking:** Space for buses is available  
**Picnicking:** Yes  
**Rain shelter:** Yes  
**Snacks:** No  
**Farmer visit to classroom:** Yes, \$30 per visit

### Costs

25 or more people for \$2 per person; 20-25 people for \$4 per person; under 20 people for \$5 per person





**East Fork Farm**

Contact: Stephen Robertson  
 215 Meadow Branch Rd.  
 Marshall, NC 28753  
 Madison

828-206-3276  
 eastforkfarm@main.nc.us  
 www.eastforkfarm.net

**Who Can Visit**

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)  
**Size of Groups:** One class  
**Wheelchair Access:** Yes

**When to Visit**

**Best season:** Spring, summer  
**Duration:** Half of one school day

**Farm Description**

We are a family farm raising grassfed lamb, free range chickens, farm-fresh eggs, and rabbits, all without added hormones or antibiotics. Our mission is to employ sustainable farming practices by producing superior tasting and healthy products for your family.

**Farm Tour Activities**

Enjoy hands-on time with our newborn lambs, newly-hatched chicks and adorable bunnies; stroll through our pastures and observe the sheep and chickens benefiting from our rotational grazing practices; take home some free range chicken, and farm fresh eggs.

**Available Resources**

**Parking:** Space for buses is available  
**Picnicking:** Yes  
**Rain shelter:** Yes  
**Snacks:** No  
**Farmer visit to classroom:** Yes

**Costs**

Free for students and chaperones





## Mulberry Gap Farm

Contact: Deborah Kaye  
1126 Upper Thomas Branch Rd.  
Marshall, NC 28753  
Madison

828-649-9690  
[deb.kay108@gmail.com](mailto:deb.kay108@gmail.com)  
[www.mulberrygapfarm.com](http://www.mulberrygapfarm.com)

### Who can visit

**Grade Levels/ Ages:** K-1 (age 4-7), gr. 2-3 (age 7-9), gr. 4-5 (age 9-11), gr. 6-8 (age 11-14), High School (age 14-18)  
**Size of Groups:** One or two classes  
**Wheelchair Access:** No

### When to Visit

**Best season:** Spring, summer, fall  
**Duration:** A few hours to half day

### Farm Description

We are a diversified farm with many animals. Students can see chickens, pigs, cows, sheep, and goats. Depending which season, students may see young animals. We have a hay barn, and the children can climb on the hay. We have an orchard, and we can explain the different types of trees. We also have a large garden seasonally.

### Available Resources

**Parking:** Bus parking available  
**Picnicking:** Yes  
**Rain shelter:** No  
**Snacks:** No  
**Farmer visit to classroom:** Yes

### Costs

\$4 to \$5 per student, chaperone



## Orchard at Altapass

Contact: Skip Carson  
1025 Orchard Rd.  
Altapass, NC 28761  
Mitchell

828-765-9531

[skipcarson@altapassorchard.com](mailto:skipcarson@altapassorchard.com)

[www.altapassorchard.com](http://www.altapassorchard.com)

### Who Can Visit

**Grade Levels/ Ages:** Pre-k and up

**Size of Groups:** Any size

**Wheelchair Access:** Yes

### When to Visit

**Best season:** Fall

**Duration:** Full School Day

### Farm Description

The Historic Orchard at Altapass is a 104-year-old apple orchard that is also an Appalachian Cultural Center celebrating the people, music, art, and natural beauty of the Blue Ridge Mountains in North Carolina. Built by the Clinchfield Railroad in 1908, the Orchard sits right on the Blue Ridge Parkway providing some of the most amazing scenery around. In addition to seeing our beautiful orchards, children can watch the entire lifecycle of Monarch butterflies at our Butterfly Conservation Center, and they can see thousands of our busy tree pollinators in the orchard beehive. Groups are all invited to take hayrides where you gaze out at the picture-perfect views while listening to stories that have shaped our area for centuries.

### Available Resources

**Parking:** Space for buses is available

**Picnicking:** Yes

**Rain shelter:** Yes

**Snacks:** Available for purchase, during apple season, students get one apple each

**Farmer visit to classroom:** Yes

### Costs

\$6 per person, teachers, teacher-assistants and drivers are free



## Lattimore Farms

Contact: Alex Lattimore  
P.O. Box 423  
Lattimore, NC 28089  
Rutherford

704-434-7190  
[alexlattimore14@hotmail.com](mailto:alexlattimore14@hotmail.com)  
[www.lattimorefarms.com](http://www.lattimorefarms.com)

### Who Can Visit

**Grade Levels/ Ages:** K-3 (age 4-9)  
**Size of Groups:** One class  
**Wheelchair Access:** No

### When to Visit

**Best season:** Spring  
**Duration:** Half of one school day

### Farm Description

We have freshly grown strawberries and a roadside stand. Either you can pick berries or we have them readily available.

### Available Resources

**Parking:** Space for buses is available  
**Picnicking:** No  
**Rain shelter:** No  
**Snacks:** No  
**Farmer visit to classroom:** No

### Costs

Please contact us for more information.



### Coffey's Orchard at Coffey Grounds

Contact: Nancy C. Moretz  
833 Ridge Rd.  
Boone, NC 28607  
Watauga

828-964-2645  
nancynjerry@charter.net

#### Who Can Visit

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11)  
**Size of Groups:** One or two classes  
**Wheelchair Access:** No

#### When to Visit

**Best season:** Fall  
**Duration:** Half of one school day

#### Farm Description

Our small Century farm sells apples, fall produce, and fall decorations in season. Please call ahead. Reservations required for fall agri-education tours. We offer year-round fiber arts programs, hayrides, and educational programs for children. Our products include eggs, apples, dried fruits, artisan crafts, Christmas trees, Christmas wreaths, corn shocks, felt, gourds, hand knit clothing, hand spun yarn, ornamental corn, cabbage, potatoes, pumpkins, and winter squash.

#### Available Resources

**Parking:** Space for buses is available  
**Picnicking:** No  
**Rain shelter:** No  
**Snacks:** No  
**Farmer visit to classroom:** Yes, cost negotiable

#### Costs

\$5 per student, \$5 per chaperone

#### Additional Comments

We prefer 1 or 2 classes for onsite visits, depending on the program. Farm tours are available from mid-September to mid-Oct. Farmer in-classroom visits available year-round. Onsite and in-classroom fiber arts programs available year-round.

### North Fork Farm

Contact: Jimmy and Sheila Greene  
680 North Fork Rd.  
Zionville, NC 28698  
Watauga

828-297-5755  
northforkfarm@skybest.com  
www.northforkfarmbeef.com

#### Who Can Visit

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3 (age 7-9), gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)  
**Size of Groups:** One class  
**Wheelchair Access:** No

#### When to Visit

**Best season:** Spring, summer, fall  
**Duration:** Half of one school day

#### Farm Description

We're a small family farm located in Western NC. We sell beef, pork, and chicken, which are raised without antibiotics or added hormones. You may purchase custom cut or prepackaged products. We look forward to serving you.

#### Available Resources

**Parking:** There is a parking lot available at the church. Additional parking is available for about 6 cars or vans.  
**Picnicking:** No  
**Rain shelter:** No  
**Snacks:** No  
**Farmer visit to classroom:** Yes, free

#### Costs

Free for students and chaperones





### Bee Log Farm and Nursery

Contact: Robin and Wayne Smith  
 90 Hensley Branch Rd.  
 Burnsville, NC 28714  
 Yancey

828-682-4060  
 tomatolady@beelogfarm.com  
 www.beelogfarm.com

#### Who Can Visit

**Wheelchair Access:** No

#### Farm Description

Our small family farm grows using organic practices. We offer herbs, heirloom plants, and heirloom vegetables, berries, free range eggs, and honey. Anyone interested in learning more about bees, chickens, or growing your own food is welcome to visit. Our products include eggs, farm tours, honey, blackberries, blueberries, fresh herbs, vinegar, wheat grass, transplants, and a wide variety of fresh vegetables.

#### Available Resources

- Parking:** No
- Picnicking:** No
- Rain shelter:** No
- Snacks:** No
- Farmer visit to classroom:** No

#### Costs

Please contact us for more information.



### Firefly Farm

Contact: Elizabeth Gibbs and Scott Paquin  
 534 Grindstaff Rd.  
 Burnsville, NC 28714  
 Yancey

828-675-4739  
 firefly@mtnarea.net  
 www.fireflyfarmnc.com

#### Who Can Visit

- Grade Levels/ Ages:** gr.4-5 (age 9-11), gr.6-8 (age 11-14), High School (age 14-18)
- Size of Groups:** One or two classes
- Wheelchair Access:** No

#### When to Visit

- Best season:** Fall
- Duration:** Full school day

#### Farm Description

Small diverse farm on the S. Toe River near Celo, NC. We use organic and sustainable methods to grow our vegetables. We sell to restaurants, groceries, and at farmers markets. We have a young heirloom fruit tree orchard and 100% grassfed Devon beef. Our products include eggs, edible flowers, fresh flowers, sustainable wood products, apples, blackberries, blueberries, peaches, dried herbs, fresh herbs, beef, preserves, tomato sauce, Christmas wreaths, seeds, and a wide variety of fresh vegetables.

#### Available Resources

- Parking:** Space for buses is available
- Picnicking:** Yes
- Rain shelter:** Yes
- Snacks:** Yes
- Farmer visit to classroom:** Yes, \$50 per visit

#### Costs

\$5 per student, \$5 per chaperone

#### Additional Comments

We've had successful exciting school visits including harvest, food prep, and meal for a group of 30 middle school age. A mini-tour is also available.



**Mountain Farm**

Contact: Marilyn Cade  
125 Copperhead Bend  
Burnsville, NC 28714  
Yancey

828-675-4856  
[marilyn@mountainfarm.net](mailto:marilyn@mountainfarm.net)  
[www.mountainfarm.net](http://www.mountainfarm.net)

**Who Can Visit**

**Grade Levels/ Ages:** K-1 (age 4-7), gr.2-3  
(age 7-9), gr.4-5 (age 9-11)  
**Size of Groups:** One class  
**Wheelchair Access:** No

**When to Visit**

**Best season:** Spring  
**Duration:** Half of one school day

**Farm Description**

We are a beautiful mountain farm offering lavender gardens, annual Lavender Festival, u-pick blueberries, dairy goats, llamas, Angora goats, rabbits, weddings, vacation rental, family farm visits, on-farm shop, and lavender products. Open year-round. Some of our other products include eggs, wool, maple syrup, salad dressing, soap, artisan crafts, Christmas wreaths, decorative, floral wreaths, hand knit clothing, manure, salves, and transplants.

**Available Resources**

**Parking:** Space for buses is available  
**Picnicking:** Yes  
**Rain shelter:** Yes  
**Snacks:** Yes  
**Farmer visit to classroom:** Yes

**Costs**

\$5 per student, \$5 per chaperone

**Wellspring Farm**

Contact: Elke Amenda-Spirakis  
166 Wellspring Ln.  
Burnsville, NC 28714  
Yancey

828-682-0458  
[llama1@yancey.main.nc.us](mailto:llama1@yancey.main.nc.us)  
[www.wellspringfarm.com](http://www.wellspringfarm.com)

**Who Can Visit**

**Grade Levels/ Ages:** gr.2-3 (age 7-9), gr.4-5  
(age 9-11), gr.6-8 (age 11-14), High School  
(age 14-18)  
**Size of Groups:** One class  
**Wheelchair Access:** No

**When to Visit**

**Best season:** Spring, summer, fall

**Farm Description**

Wellspring Farm raises llamas, Jacob/Tunis/Corriedale sheep, and Angora and meat rabbits. Farm tours, workshops, school programs and llama shearing services offered. Farm shop sells wool products, spinning wheels, honey, and handmade soap. Check our website for details. Some of our other products include eggs, alpaca wool, beeswax, honey, blueberries, peaches, raspberries, rabbit, soap, artisan crafts, candles, felt, hand knit clothing, hand spun yarn, manure, and transplants.

**Available Resources**

**Parking:** Available for 8 cars or 3-4 vans  
**Picnicking:** Yes  
**Rain shelter:** Yes  
**Snacks:** No  
**Farmer visit to classroom:** Yes, contact farm for cost quote

**Costs**

Varies based on program

## Whispersholler Farms, LLC

Contact: Kendall Huntley and Anna Whitley  
689 Bald Mountain Rd.  
Burnsville, NC 28714  
Yancey

828-536-4953  
[whispersholler@gmail.com](mailto:whispersholler@gmail.com)  
[www.whispershollerfarms.com](http://www.whispershollerfarms.com)

### Who Can Visit

**Grade Levels/ Ages:** K-3 (age 4-9), gr. 4-5 (age 9-11)  
**Size of Groups:** One class  
**Wheelchair Access:** No

### When to Visit

**Best season:** Spring, summer  
**Duration:** Half of one school day

### Farm Description

We are a series of small farms specializing in organic vegetable production, fruits, berries, and native plants. We offer farming classes for young and old, a CSA, a blog, and a farm stand. Our products include edible flowers, fresh flowers, firewood, honey, mushrooms, fresh herbs, and a wide variety of fresh vegetables.

### Farm Tour Activities

We offer harvesting, planting, cooking, and a scavenger hunt. Tours and educational programs by appointment only. If you are interested, you can make an appointment to check out one of our farms and harvest your own "Box Of Love." Appointments are set based on availability.

### Available Resources

**Parking:** Space for buses is available  
**Picnicking:** Yes  
**Rain shelter:** Yes  
**Snacks:** Yes  
**Farmer visit to classroom:** Yes, cost negotiable

### Costs

Negotiable



### **Curriculum Connections: Activity Ideas**

There are many ways of linking your field trip into classroom curriculum. The following section contains ideas for activities to use with your students during and after farm field trips. You will also find an expanded section for activities that directly connect to science standard course of study.

#### **English Language Arts**

- Work with students to develop a list of questions they would like to ask the farmer. During the farm field trip, interview the farmer and record his/her answers. Students can also connect this project with technology by adding video or photography components to the interview.
- Create a field trip journal with expectations, observations, ideas, stories, feelings, questions, thoughts, memories, drawings, etc.
- Study agricultural terms with students in the classroom before the field trip, and identify them later on the farm. You can then use the terms as spelling words in the classroom.
- While on the field trip, teach students to use field guides to identify plants, birds, insects, etc.
- Go on a letter hunt during the farm field trip. What do students see that starts with A, B, C, etc.?
- Go on a syllable hunt on the farm—find five things that are two syllable words, five things that are three syllable words.
- Take photographs of different things on the farm. Use the photos to put together a class newspaper or newsletter about the farm and farm field trip.
- Back in the classroom, guide students in writing a report on something learned during the farm field trip and present it to the class.
- Read a children’s book that relates to the farm field trip. Ask students to recall information from the book and relate it to the farm.
- Teach students one simple farm task such as feeding an animal, digging potatoes, or starting seeds in the hoop house. Break the task into three or four clear steps. After the students complete the task, give them four or five pieces of paper and ask them to illustrate and/or write out the steps of the task.

#### **Healthful Living**

- Introduce students to food groups. Ask students to identify the food groups they see on the farm (if you are on a vegetable farm that has a cover crop of barley or buckwheat, you can explain that they might look like a vegetable, but when processed are a grain!). Can the students find all of the food groups on the farm?
- Cook with students on the farm. Connect the cooking lesson to states of matter and state changes, tools used, temperature, or parts of a plant. (Carrots have leaves, but we eat the root!)

### Mathematics

- Have students estimate lengths and heights of things on the farm. Bring along measurement tools to get actual numbers and compare them to their predictions.
- Measure wind speed, temperature, and humidity on different parts of the farm. How would these things impact what farmers grow or raise in different locations?
- Chart temperatures of things on the farm (the weather, pond water, creek water, puddles, compost pile) in Fahrenheit and Celsius.
- Work with students to determine weight and volume of wet and dry soil samples from the farm.
- Make seed tapes using paper towels, glue made from corn starch, and seeds. Use rulers to measure space between seeds and then plant the whole thing.
- Harvest and weigh vegetables using proper tools for weight measurement. Compare one pound of spinach to one pound of broccoli. What difference or similarities do students see?
- Have students harvest vegetables and sort them by size, color, or variety.
- Have students ask the farmer how many eggs their chickens lay in a day. Then, ask students to calculate how many they lay in a week/one month. Do the same activity with gallons of milk produced.



### Science

- Take soil samples from around the farm—in the field, around a forest, next to a stream. Analyze and compare the soil from each location.
- Talk with students about insects on the farm. Which are beneficial? Which are harmful? What are the insects' life cycles? Go on an insect hunt on the farm and then analyze the insects.
- Show students the farm compost pile. With the farmer, let students add a layer of hay or other material and explain what they added to the compost and why. Introduce decomposition.
- Talk with students about pollinators. Ask them to identify pollinators as they tour the farm.
- Lead students in collecting seeds from plants on the farm.

## CONNECTING YOUR FIELD TRIP TO THE CLASSROOM

### Social Studies

- Learn about how food gets from the farmer to the consumer. Identify people in the community involved in getting food to community members (include seed producers, truck drivers, grocery store attendants, etc).
- Talk with students about the roles of family members and workers on the farm. Does the farmers' entire family work on the farm? What role/task would the students want?
- Glean food from the farm and take it to a local food bank. Talk with students about people in need and how farms can help.
- Talk with students about historic planting and harvesting rituals and folklore. Ask the farmers if they follow any traditions on their farm and why.
- Allow students to talk with the farmer about how they have seen farming practices change on the family farm. Does the farmer work with their parents or grandparents? What does he/she remember about farming as a young person?
- Trace the histories of familiar plants – where they originated, who brought them to this country, the impact they have had on our diets, and how the original plants have been altered. Ask students to make up a fable about one fruit or vegetable on the farm. Where did it come from?



### Visual Arts

- Make drawings, sketches, and paintings of things on the farm.
- Make leaf poundings. Gather leaves and arrange them on watercolor paper. Cover with a layer of paper towels or wax paper. Pound lightly, but thoroughly, with a hammer. Remove the paper towels and the leaf matter. The color and shapes of the leaves will transfer to the paper.
- Make vegetable and fruit prints. Cut the vegetable or fruit in half and paint it with watercolors. Make a print of the shape onto paper.
- Design and create a scarecrow.



## CONNECTING YOUR FIELD TRIP TO THE CLASSROOM

- Make rubbings using plant leaves and bark. Use the rubbings to make a collage, bookmark, or journal cover.
- Make a color wheel with objects from the farm.
- Put together a photo essay of the farm.
- Create and use natural dyes made from plants.

### Music and Theatre Arts

- Put together a puppet show to share your farm experience with others.
- Write parodies of well-known songs, turning them into farm songs.
- Write farm/food poems and set them to music.
- Listen to the music of composers inspired by nature.



### Curriculum Connections: Science K - 5

#### Kindergarten Science Goals

- Students observe and study animals that live on the farm or in the soil, comparing and contrasting worms, cows, turtles, chickens, dogs, humans, etc.
- Students observe the weather on the farm. Bring along a thermometer to measure the different temperature in different places on the farm. Have the farmer read *The Year at Maple Hill Farm* or describe the changes in the seasons and how it affects their farm. Compare the weather at the farm to the weather at the school.
- Students participate in a farm scavenger hunt, sorting their discoveries by color, size, shape, and texture, using their senses.
- The class discusses and/or reads books about how different things on the farm are used as natural resources, or were made from other resources.
- Students create art from natural materials they find on the farm, creating a sensory experience.
- Students measure plants or other items on the farm using hands (how horses are measured) and feet (compare a child's foot to a ruler). These measurements are compared to measurements taken with other tools (pencils, crayons, etc.). These non-standard units are compared with standard units of measurement.

#### First Grade Science Goals

- Students make a diagram about what the farmer grows/raises on their farm and what they give those plants/animals for them to grow.
- Students read the book *What's This?* by Caroline Mockford in which a little girl finds an unknown seed that she plants and cares for, illustrating basic needs of the plant. Students then plant a mystery seed in a pot that they take home. Over several weeks, they care for it and eventually discover what it is.
- Students compare the basic needs of plants with those of humans.
- Students examine a cup of soil from the farm and sort out different components of the soil, such as rocks, shells, insects and worms. Students then record their findings in their journal using descriptive language.
- Students collect several soil samples from different areas of the farm or bring a soil sample from their own yard or garden. Students work with a partner to compare and contrast their soil samples.
- Students cook with foods from the farm using a recipe with steps that change the foods' state of matter. Students learn about the different properties of solids, liquids, and gases, sorting out ingredients and describing how they were changed by heat or blending.
- Students explore different ways to move mulch, compost, or dirt on the farm. Is it easier to push a bucket, pull a bucket, or maneuver a wheel barrow? Are buckets or wheelbarrows easier to balance? How does the amount of material in the wheelbarrow, or where it is piled, affect balance and movement?

### Second Grade Science Goals

- Students explore what lives on a farm and how different animals affect the garden over their entire life cycle.
- Students collect, observe, or identify different insects on the farm – explore which ones are beneficial to the farm or not. Compare different life cycles of insects.
- Students observe, measure, record, and graph the weather on the farm versus the weather at school. Take measurements at the school before you leave for the trip, noting the time. Do the same at the farm.
- Students cook using ingredients from the farm, observing and exploring changes in properties.

### Third Grade Science Goals

- Students plant seeds at the farm. Discuss how variables such as nutrients, light, and water will affect the growth of the seeds.
- Students observe how insects move through the farm. They then write a story describing an insect's farm adventure.
- Students participate in a pollination game in which they kinesthetically learn how and why bees pollinate flowers.
- A beekeeper/farmer talks with students about their work and the importance of pollinators.
- Collect different types of soil at the farm and at school. Set up a percolation demonstration and have a water race. Students feel the difference between sand, silt, and clay and discuss soil particle size. Students will try to predict which soil the water will flow through the fastest and the slowest.
- Students observe a compost pile and help the farmer add different materials and turn the pile. What do they see and smell? What is the temperature of the compost pile?
- Students help construct a scarecrow for the farm, comparing and contrasting its skeleton, joints, and muscles with their own.

### Fourth Grade Science Goals

- Students observe and examine animals that live on the farm and in the garden (worms, birds, turtles, etc.) and describe how their lives are influenced by other animals, plants, weather, and climate. Students then write a creative fictional story about the life of the animal they observed.
- Students observe and touch different farm animals such as chickens, hens, goats, cows, and horses. Where do these animals live on the farm and what things do they need to survive? Have the students describe differences between the same animals and then compare different animals.
- Students help prepare two different recipes using things grown on the farm, categorizing all ingredients as carbohydrates, fats, proteins, water, vitamins, or minerals.

### Fifth Grade Science Goals

- Have an eco-system scavenger hunt. Students gather a soil sample from each of the three eco-systems: forest, creek, and agriculture, and compare and contrast the texture, color, moisture, and particle size.
- Students measure the circumference of several trees in the farm's forest eco-system. Calculate the average circumference of the farm's trees.
- Students ask the farmers how/where water flows on the farm. Using this information, they make a map showing the farm and its water flow when it rains and when it is dry.
- Students build several different types of landforms with soil, rocks, and vegetation on the farm. Watching how water moves over their creations, students note what type of canyons, valleys, meanders, and tributaries are created. Erosion is discussed as a soil-forming factor and students write about where the soil started and where it ended, comparing their created land forms with real life situations.
- Students collect weather data at school in preparation for field trip. Collect more data on the farm and compare. Have the farmer describe the climate on the farm – how does geography affect the weather and climate on their farm?



### Sample Journal Prompts

Journaling is a great pre-, post-, or on-site activity for farm field trips. Here are some ideas for journal questions and prompts:

- *Write about a farmer you know. What do you admire about them? If you don't know a farmer, write about a gardener or what you admire about farmers in general.*
- *Why do you think farming is important?*
- *Would you want to be a farmer? Why or why not?*
- *Write about one thing that surprised you about the farm you visited.*
- *What will you want to tell your family about the farm?*
- *What do you think a farmer needs to know to be a good farmer?*
- *Describe the farm as if you were an insect or animal living there.*
- *What two senses did you use most at the farm? Describe.*
- *Why do you think farmers like to farm?*
- *What did you like most about the farm? Least?*
- *Write about the food grown on the farm and how your family eats it/cooks it.*
- *What do you think farmers do in the winter?*
- *What insects did you see today? Why are some insects good and some bad for farmers?*
- *What do you think would be the hardest part about farming?*
- *If you were a farmer what would you like to grow? Why?*
- *Write step-by-step directions for something you saw on the farm, such as how to plant potatoes, how to harvest apples, how to make sorghum molasses, how to care for a chicken.*
- *Write a poem inspired by your trip to the farm.*





### **Farm-Related Children's Books**

***A is for Appalachia! - The Alphabet Book of Appalachian Heritage*** by Linda Pack – This book is about Appalachia, the people, the geographic region, and the culture. (All ages)

***All the Places to Love*** by Patricia MacLachlen – This book builds children's appreciation of place and home and offers a child's unique perspective on farm life. (K-2)

***Bring Me Some Apples and I'll Make You a Pie*** by Robbin Gowley - This book takes readers on a family's journey of collecting fruits and vegetables from the woods, orchards, and garden all year long. (K-2)

***Cabbage and Kings*** by Elizabeth Seabrook – Two spring crops, Albert the asparagus and Herman the cabbage, make unlikely friends in farmer John's vegetable garden. Students will enjoy following the garden through the growing season from a plants' eye view and finding out the fate of these friends as fall approaches. (K-2)

***An Edible Alphabet: 26 Reasons to Love the Farm*** by – With Happy Herefords Hiccapping Home and Tip Top Tasty Tomatoes, alphabet books are not just for little kids anymore. A great mix of fiction and non-fiction, this alphabet book is fun for a variety of age groups. (pre-k-3)

***Farmer's Alphabet*** by Mary Azarian – This ABC book all about farms includes wood cuts that should be framed. (pre-k-2)

***Farming*** by Ann Love and Jane Drake– Nick thinks farming beef cattle must be easy compared to all of the work that goes into growing onions on his family's farm. Two farm kids share with each other the day to day work that goes into two very different farms. Full of facts and detail, this book helps you appreciate all of the different work that goes into a hamburger on your plate. (3-5)

***Growing Vegetable Soup*** by Lois Ehlert –This is a great book for introducing children to gardening and includes a recipe for vegetable soup. (pre-k-2)

***Harvest of Color - Growing a Vegetable Garden*** by Melanie Eclare – This book is full of realistic photographs coupled with growing tips from kids. (K-2)

***Jack's Garden*** by Henry Cole –Jack starts a garden from scratch in his backyard. We explore with the garden with Jack week by week and discover that it is made up of much more than flowers! This book is a miniature field guide for naturalists of all ages. (K-2)

***Jamberry*** by Bruce Degen – One berry two berry pick me a blue berry. Combining counting, rhyming, and berries for jam, this book is a great addition to planting berries, a field trip to a u-pick farm or a visit from a Grandma telling the story of making jam. (pre-k-2)

***Jody's Beans*** by Malachy Doyle – Through spring, summer, and fall, Jody and her grandpa watch her scarlet runner beans grow. (K-2)

***Oliver's Milkshake*** by Vivian French – Join Oliver as he visits a farm to buy ingredients for a different kind of milkshake. (pre-k-2)

## CONNECTING YOUR FIELD TRIP TO THE CLASSROOM

***On the Farm*** by David Elliott – Meet the animals that live on the farm through simple poetry. (K-2)

***One Watermelon Seed*** by Cilia Barker Lottridge – More than just a counting book, Max and Josephine plant their garden and watch their hard work multiply. (K-2)

***Pick a Pumpkin Mrs. Millie*** by Judy Cox– A fun book to go along with a field trip to an orchard or pumpkin patch. Silly Mrs. Millie loves to play word games with her students. (pre-k-2)

***Pumpkin Circle - The Story of a Garden*** by George Levenson – A first-rate introduction to the growth cycle of pumpkins coupled with outstanding photos and rhythmic text that provide a wealth of information. (pre-k-2)

***Scarlette Beane*** by Karen Wallace – A fantastic tale of growing vegetables and seeing the miracles of the garden. (pre-k-2)

***This Year's Garden*** by Cynthia Rylant – As seasons change, so do the garden tasks for Uncle Dean, Granny, and Uncle Joe. Winter is a time for planning next year's garden, spring is for planting, and summer and fall are for harvesting. Reflecting on a full year of maintaining a family garden, this story emphasized the enthusiasm the family has during the winter for starting next year's garden. (K-2)

***Tiny Seed*** by Eric Carle – In autumn, the wind blows a tiny seed off a flower and the seed embarks on a long journey. Avoiding the hot sun and deep ocean, the tiny seed lands on the ground and grows into an enormous flower. Eric Carle's magnificent collages and inspiring message of perseverance teach a valuable lesson about the life of a seed. (pre-k-2)

***Tops and Bottoms*** by Janet Stevens - A trickster tale that also shows how differences vegetables grow. (pre-k-2)

***Tractor*** by Craig Brown – A simple story illustrating a tractor's work growing corn on a farm. This is a great story to introduce children to new vocabulary and start a discussion about how farms used to grow crops before tractors. (pre-k-2)

***Up We Grow! A Year in the Life of a small, Local Farm*** by Deborah Hodge – Beautiful real-life pictures tell the story of the seasons on a working farm. With so many things happening on a farm, you might want to read this book one season at a time. (K-2)

***When the Frost is on the Pumpkin*** by James Whitcomb Riley – An ode to autumn on the farm, featuring unique dialect and rhyme. (All ages)

***ASAP has these and many more Farm to School- themed children's books available for check out from our lending library at our office.***



## **Additional Resources: What Does Growing Minds Offer?**

*The following resources are useful for leading farm to school field trips as well as for incorporating all components of Farm to School into your classroom. We also offer other Farm to School resources related to school gardens, cooking in the classroom, and local food in the cafeteria. Please visit our website - [www.growing-minds.org](http://www.growing-minds.org) - for more information about these resources.*

### **General Farm to School Resources**

**Lending library** – The Growing Minds’ library, in ASAP’s office, is full of children’s literature and curricula targeted for pre-k and elementary schools. Come check out a book today!

**‘This Week in the Garden’ newsletter** - Created for every week of the school year, our newsletter features Farm to School recipes, children’s books, and activity ideas. Download the newsletters at [www.growing-minds.org](http://www.growing-minds.org).

**Monthly Farm to School updates** – Information about new grant opportunities, new children’s literature, new trainings, etc. Sign up for our monthly email on our website.

**Training** - Sign up for our teacher email list to hear about Growing Minds’ workshops and trainings that help teachers use the school garden, cooking with local food, and farm field trips as instructional tools.

**National Farm to School Network SE Regional Lead Agency** - Growing Minds connects Farm to School in the Southeast with national efforts. Visit [farmtoschool.org](http://farmtoschool.org) to become part of the Farm to School movement. ASAP is a co-lead of the National Farm to Preschool subcommittee – sign up for the monthly e-newsletter at [farmtopreschool.org](http://farmtopreschool.org).

**Kids Corner Market** – Weekly activities at the Asheville City Market (June, July, and August) that feature a community partner and healthy food and physical activity. Visit [growing-minds.org](http://growing-minds.org) for more information.

### **Farm Field Trips**

**Farm field trip mini-grants** – Hands-on local food and farm experiences are a big part of Farm to School, and that is why ASAP offers annual farm field trip mini-grants to schools in our region (\$100 for the farmer, \$100 to cover travel and materials.) Visit [growing-minds.org](http://growing-minds.org) to find out how to apply.

**Training** – ASAP can help teachers identify a farm for their farm field trip, and we work with farmers to strengthen the field trips they offer.

### **Garden**

**Gift cards for school gardens** – We provide a limited number of gift cards to be used for school garden materials. Contact Growing Minds staff to ask about availability.



**Quarterly school garden meetings** - Held at a different school garden site each quarter, the meetings offer teachers a chance to share their experiences, successes, and challenges. Sign up for our teacher updates to hear about upcoming meetings.

**Free seeds for school gardens** – ASAP’s office is stocked with a selection of seeds that grow well during the school year. Stop by to pick them up for your classroom or school garden.

## **Cooking**

**Farm to School cooking resources** – To make cooking in the classroom possible, we offer stipends, recipes, and a guide to best practices for cooking with children. We also help make community chef connections. Visit [growing-minds.org](http://growing-minds.org) for details.

## **Print Materials**

**Stickers** – We have ‘I tried local \_\_\_\_\_’ stickers for every product on our Get Local at School calendar. These stickers are available for pick up at our office and are available to teachers in the Appalachian Grown region.

**Get Local recipe cards and bookmarks** – These are available at our office to those in the Appalachian Grown region to be used in the classroom and sent home to parents. The bookmarks include a mini Get Local at School calendar, which lists monthly, seasonal products. The recipe cards include information and a recipe for each Get Local at School product.



ASAP helps local farms thrive, links farmers to markets and supporters, and builds healthy communities through connections to local food. Our vision is of strong farms, thriving local food economies, and healthy communities where farming is valued as central to our heritage and our future.

Farm to School is a large part of ASAP's commitment to reconnect people with the way that food is grown and to the farmers who are growing it. As a nonprofit organization, ASAP relies on the generosity of supporters like you to make this work possible.

To make a secure online donation, visit [asapconnections.org](http://asapconnections.org). Or, mail your check to ASAP, 306 W. Haywood St., Asheville, NC 28801. For more information about how you can sustain Growing Minds, contact Scott Bunn at [scott@asapconnections.org](mailto:scott@asapconnections.org) or 828-236-1282 ext. 104. All donations are tax-deductible.





# Food Education Resources

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## *Lessons and Curricular Resources*

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### **Got Veggies? Garden-Based Nutrition Education Curriculum**

<http://www.dhs.wisconsin.gov/publications/P0/P00228.pdf>

*Got Veggies?* is a garden-based nutrition education curriculum created with the goal of getting children to eat more fresh fruits and vegetables. *Got Veggies?* features seven full lesson plans that are aligned with Wisconsin's Model Academic Standards for Nutrition, Health, Science and other related subjects. A series of shorter garden-based activities are included, as well as fun recipes and helpful tips for cooking and eating in the garden. This curriculum provides an all-around great way to nurture students' interest in growing and eating fresh fruits and vegetables!

### **Nutritious Delicious, Wisconsin: Connecting Nutrition Education and Local Foods**

<http://ne.dpi.wi.gov/files/ne/pdf/ndw.pdf>

The Nutritious, Delicious, Wisconsin curriculum is a thematic unit of instruction that uses local foods to teach nutrition concepts to elementary students. Nutritious, Delicious, Wisconsin focuses on Wisconsin foods with a connection to Wisconsin's history, culture, and people. The primary goal of this curriculum is to broaden the food experiences of Wisconsin students and provide another aspect to the study of nutrition as a part of the study of our great state.

### **The Whole Plate: A Real Food Curriculum**

<http://www.thewholeplate.yihs.net/>

The Whole Plate is composed of 4 Units, which stand alone and work in concert: What is food?, Nourishment for People and Planet, Why Organic?, and The Spice of Life. These Units have been tailored for young adults, but have also been successfully used with full adults. In addition to the main Units, there are 2 mini-Units that address specific topics in nutrition: Wild Foods and Nutrition for Pregnancy.

### **California School Garden Network**

<http://www.csgn.org/curriculum>

Access over a hundred creative garden- and food-based lessons, from various sources in California. Lessons can be easily adapted to fit local standards.

### **Food, Land & People**

<http://www.foodlandpeople.org/>

"Based in Chandler, Arizona. Food, Land & People is a nonprofit organization committed to helping people of all ages better understand the interrelationships among agriculture, the environment and people of the world. Food, Land & People's science- and social sciences-based curriculum, *Resources for Learning*, currently serves Pre-K to 12th grade students throughout the United States. The curriculum consists of 55 hands-on lessons, developed and tested by more than a thousand educators." Check out their extensive list of resources and the 20 lessons available in Spanish on the "Lessons" page.

### **Kidsnacks: Traditional Foods for a Healthy Future**

<http://www.nativefoodsystems.org/node/105>

Kidsnacks teaches youth how to make healthy snacks from traditional foods. The curriculum – developed for schools and child care providers – focuses on traditional foods of the Ojibwe like berries, morel mushrooms, and wild peas, but could serve a model for foods native to other tribes.

### **Food for Thought: by Healthy and Active Preschoolers**

<http://www.healthypreschoolers.com/food-for-thought>

Five units of nutrition education for preschoolers: Fall Fruits and Vegetables, Winter Fruits and Vegetables, Power up with Protein, Go-Grains and Spring Snacking.



# Food Education Resources

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## Food For Life

<http://www.foodforlife.org.uk/Resources/Teachingresources/Resourceview/tabid/79/ArticleId/39/Food-for-Life-Curriculum-Pack.aspx>

This is great farm to school curriculum for elementary school teachers. It's from the UK, but is easily adaptable to fit our standards and curricula.

## Growing Healthy Kids

[http://extension.oregonstate.edu/nep/garden\\_nutrition/](http://extension.oregonstate.edu/nep/garden_nutrition/)

A 12 lesson, hands-on, activity-rich curriculum for 2<sup>nd</sup> and 3<sup>rd</sup> graders focused on nutrition education and the connection to plant parts.

## Cooking with Kids

<http://cookingwithkids.net/>

This New Mexico organization has created an engaging, hands-on elementary curriculum with a focus on fresh, affordable foods from diverse cultures. Free lesson plan downloads and bilingual (Spanish and English) food-based curriculum for sale.

## *Toward a Sustainable Agriculture Curriculum for High School Students*

<http://www.cias.wisc.edu/curriculum/index.htm>

Multi-module curriculum geared toward high school students with a focus on Upper Midwest agricultural systems. Modules cover all aspects of our food system from production to market.

## Sustainable Agriculture Research and Education (SARE)

<http://www.sare.org/publications/edguide.htm>

"Sustainable Agriculture Resources and Programs for K-12 Youth" features more than 50 sustainable agriculture programs and curricula nationwide. Available free of charge online, this guide includes direct links, program contact information and ideas for integrating lessons into school programs.

## Teaching the Food System

<http://www.jhsph.edu/research/centers-and-institutes/teaching-the-food-system/curriculum/>

Teaching the food system is a project of the John Hopkins center for a livable future. It is a great food system curriculum for high school students and includes a variety of food system topics including food safety, food processing, agriculture and ecosystems, diet and influences on food choices, and much more.

## Wisconsin Ag In the Classroom

<http://www.wisagclassroom.org/>

Wisconsin-focused resources and lessons aligned with state standards in core subject areas including language arts, math, science and social studies. Lessons are free to download and connect to important themes such as local history, community, geography and climate. There is also information about local grants for agriculture education. You do not have to teach agriculture to make use of this resource; it would be useful to any elementary or middle school educator.

## Food Day Curriculum

[http://d3n8a8pro7vhm.cloudfront.net/foodday/pages/24/attachments/original/1373291130/FoodDay2013\\_SchoolCurriculum\\_FINAL.pdf?1373291130](http://d3n8a8pro7vhm.cloudfront.net/foodday/pages/24/attachments/original/1373291130/FoodDay2013_SchoolCurriculum_FINAL.pdf?1373291130)

Designed for upper elementary and middle schools students, this curriculum offers five lessons designed to teach the importance of eating real, fresh foods, cutting back on processed foods and advocating for a healthier community.



# Food Education Resources

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## Center for Ecoliteracy – Rethinking School Lunch

<http://www.ecoliteracy.org/programs/rsl-guide.html>

Great site with extensive curricular resources including tips for integrating food and gardening themes into everyday lesson. Download the entire *Rethinking School Lunch* guide or choose individual chapters.

## Linking Food and the Environment (LiFE) Curriculum Series

<http://blogs.tc.columbia.edu/cfe/education/nutrition-curriculum/>

LiFE is an inquiry-based science and nutrition program that explores themes of food production, the food system and the effects of food choices on our bodies and environment.

## CHOICE (Citizen for Healthy Options in Children's Education)

<http://www.choiceusa.net/LessonPlans/Garden%20Foods.htm>

This organization has resources to support teachers, food service directors, administrators and students interested in developing healthy eating habits.

## Great Garden Detective Adventure

<http://www.fns.usda.gov/tn/great-garden-detective-adventure-standards-based-gardening-nutrition-curriculum-grades-3-and-4-1>

An exploratory, 11 lesson curriculum connecting the school garden with the classroom, cafeteria and home.

## Wisconsin DPI Curriculum Resource Center

[http://www2.dpi.state.wi.us/sig/practices/high\\_2.asp](http://www2.dpi.state.wi.us/sig/practices/high_2.asp)

Search by subject area and grade level for standard aligned curriculum and lesson. Check the health and agriculture education categories for food and farm lessons.

## US Department of Agriculture

**Team Nutrition Healthy Meals Resource System:**

<https://healthymeals.nal.usda.gov/>

**Farm to School:**

<http://www.fns.usda.gov/cnd/f2s/>

These sites offer links and downloadable resources for farm to school and child nutrition programs.

## *Farm Field Trip Resources*

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### Community Alliance with Family Farmers

<http://caff.org/wp-content/uploads/2010/07/MakingtheFarmConnection.pdf> This site has a free manual that helps teachers get the most out of their farm field trips. There is also information to help farmers prepare for the visit. This is provided by CAFF, a group focused on fostering family-scale agriculture that cares for the land, sustains local economies and promotes social justice.

### The Hayride: A Resource for Educational Farm Field Trips

<http://growing-minds.org/the-hayride-a-resource-for-educational-farm-field-trips/>

This is a great resource for educational farm field trips put together by Growing Minds, based out of Asheville North Carolina.

## *Film Resources*

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### Media that Matters Film Festival: Good Food

<http://www.mediathatmattersfest.org/>



**Wisconsin Farm to School – Linking the Land to the Lunchroom**

# Food Education Resources

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This website contains fun and educational short films about food, sustainability and free trade. Click on “films” to find them. These films are inspirational and instructional for teachers, as well as useful for classroom viewing. Thinking about starting a school garden? Watch “Inch by Inch: Providence Youth Gardens for Change”. “Food For Thought” is a creative student production that poetically documents the benefits of eating healthy foods. Check the links below the film for additional web resources on related topics and teacher resources.

## Music Resources

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### The Banana Slug String Band

<http://www.bananaslugstringband.com>

This group of musicians and educators writes ecological songs for children. Ecological lesson plans and audio CDs are available on this website. Check out the song “Dirt Made My Lunch,” already a hit in some local elementary schools.

## Wisconsin Resources

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### The Southern Wisconsin Farm Fresh Atlas

<http://www.reapfoodgroup.org/atlas/index.htm>

Here is REAP Food Group’s list of farms and food-related business that sell local, sustainable foods in southern Wisconsin. Look here for local sources of healthy snacks and possibilities for farm field trips.

### Dane County Farmers Market

<http://www.madfarmmkt.org/>

Downtown Madison has had one of the largest farmers’ markets in the U.S. since 1972. Check here for market history and lists of vendors and products. The market is year-round, located in Monona Terrace or the Madison Senior Center in the winter. Purchase food for a locally grown classroom snack and meet the farmer who grew it.

### FaireShare Community Supported Agriculture Coalition

<http://www.csacoalition.org/>

Community Supported Agriculture (CSA) farms provide fresh produce and other foods to conscientious eaters all over southern Wisconsin. On this website, find a map and listings of more than 40 CSA farms. The MACSAC website also includes information on their Partner Shares Program that facilitates low-income households’ memberships in CSA farms, and ordering information for their popular cookbook: *From Asparagus to Zucchini: A Guide to Cooking Farm-Fresh, Seasonal Produce*.

### Wisconsin Local Food Network

<http://wilocalfood.wordpress.com/>

The Wisconsin Local Food Network (WLFN) is a collection of individuals and organizations that share a common vision for Wisconsin: a state that offers communities and businesses a local food system that supports sustainable farms of all sizes, a strong infrastructure for those farms and supporting food business to thrive, and affordable access to healthy locally grown food for all Wisconsin residents

### Wisconsin Farmers Market Association

<http://www.wifarmersmarkets.org/>

This website can help you find a farmers market close to you or your school.

### Snack Bites from RAEP Food Group

<http://www.reapfoodgroup.org/farm-to-school/classroom-snack-program>

Information for students on where food comes from and fun nutrition facts to accompany snacks and tasting activities.



**Wisconsin Farm to School – Linking the Land to the Lunchroom**

# Food Education Resources

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## Get Active Wood County Farm to School Curriculum

<http://getactive.co.wood.wi.us/GetActiveYouth/FarmtoSchool.aspx>

These resources are for 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> grade students. Each resource has lesson topics unique to each grade.

## School Garden Resources

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### Got Dirt? Youth Garden Toolkit

<http://www.dhs.wisconsin.gov/publications/P4/p40112.pdf>

The Wisconsin Department of Health Services offers this excellent, step-by-step plan for starting school and community gardens. The full version of the toolkit is downloadable. Also, check the list of scheduled training sessions if you'd like to attend one in your area.

### WI School garden Initiative

<http://www.communitygroundworks.org/what-we-do/wsgi>

The Wisconsin School Garden Initiative (WSGI) is a three-year project of Community GroundWorks, which seeks to employ youth gardening and garden-based education to improve child health outcomes. At the end of the three years, the initiative intends to launch an ongoing Wisconsin School Garden Network (WSGN) that will continue to promote youth gardening throughout Wisconsin. Check out this site to sign up for their e-newsletter and learn about ongoing training, funding and resource opportunities.

### Cultivating Childhood Wellness Through Gardening

<http://www.dhs.wisconsin.gov/physical-activity/FoodSystem/Gardening/Index.htm>

This online training video was developed by the Wisconsin Nutrition, Physical Activity, and Obesity Program and Community Groundworks in partnership with UW-Extension-Cooperative Extension, Life Lab, Wisconsin Obesity Prevention Network, UW-Madison School of Medicine and Public Health and the Center for Integrated Agricultural Systems. This online training video is a curriculum tool associated with Got Dirt?, a garden toolkit designed to provide step-by-step plans for starting a school garden.

### Youth Gardening Publication from UW Extension

<http://learningstore.uwex.edu/Youth-Gardening-P1705.aspx>

Youth Gardening will help you design, plan and build a garden

### Kids Gardening

<http://www.kidsgardening.org>

This site has extensive school garden resources (including grant information) and lessons that connect to core subject areas such as math and science. On their home page, you can sign up for "Kids Garden News" for more great ideas and lessons.

### The Edible Schoolyard

<http://www.edibleschoolyard.org>

This is a model school garden and cooking project in Berkeley, California. Explore the site to get inspired and borrow ideas from their garden, classroom and kitchen lessons. Under "Resources," check out their publications, lessons and links for more ideas.

### Youth Farmer's Market Handbook

<http://www.thelunchbox.org/sites/default/files/YFM%20Manual.pdf>

This resource was created for teachers, parents and community members interested in starting or improving youth farmer's markets in their community.





# Food Education Resources

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## ProTeacher

[www.proteacher.com/110013.shtml](http://www.proteacher.com/110013.shtml)

This site has a long list of links for plant- and garden-based lessons, as well as other educator resources.

## Garden-Based Learning – Cornell University

<http://blogs.cornell.edu/garden/>

This site offers quick activities, lessons and other garden-based projects for students and teachers.

## Life Lab

<http://www.lifelab.org/>

Life Lab teaches people to care about themselves, each other and the world through farm and garden-based programs. They offer curricular materials in addition to the information on their website.

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## Books

### *Fruits, Veggies and Gardens*

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#### Fiction

*Apples and Pumpkins* by Anne Rockwell, illustrated by Lizzy Rockwell  
New York: Macmillan, 1989

*Blueberries for Sal* by Robert McCloskey  
New York: The Viking Press, 1948

*Compost!* by Linda Glaser  
Brookfield, CT: The Millbrook Press, 1996

*Danilo the Fruit Man* by Amy Valens  
New York: Dial Books for Young Readers, 1993

*Eating the Alphabet: Fruits and Vegetables from A to Z* by Lois Ehlert  
San Diego: Harcourt Brace Jovanovich, 1989

*Growing Vegetable Soup* by Lois Ehlert  
New York: Harcourt Brace Jovanovich, 1987

*Johnny Appleseed* by Steven Kellogg  
New York: Clarion Books, 1990

*June 29, 1999* by David Wiesner  
New York: Clarion Books, 1992

*Moose in the Garden* by Nancy White Carlstrom  
New York: Harper and Row, 1990

*Tops and Bottoms* by Janet Stevens  
New York: Harcourt Children's Books, 1995



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*The Carrot Seed* by Ruth Krauss  
New York: Harper and Row, 1945

*The Little Mouse, The Red Ripe Strawberry, and The Big Hungry Bear* by Don and Audrey Wood  
Singapore: Child's Play (International) Ltd., 1984

*The Seasons of Arnold's Apple Tree* by Gail Gibbons  
New York: Harcourt Brace Jovanovich, 1984

*The Giant Vegetable Garden* by Nadine Bernard Westcott  
Boston: Little Brown and Co., 1981

## Nonfiction

*An Apple Tree Through the Year* by Claudia Schnieper, photos by Othmar Baumli  
Minneapolis: Carolrhoda Books, Inc., 1987

*Citrus Fruits* by Susan Wake  
Minneapolis: Carolrhoda Books, Inc., 1987

*Cranberries* by William Jaspersohn  
Boston: Houghton Mifflin, 1991

*Fruit* by Gallimard Jeunesse  
New York: Scholastic, 1989

*My Apple* by Kay Davies and Wendy Oldfield, photos by Fiona Pragoff  
Milwaukee: Garth Stevens Publishing, 1994

*The Life and Times of the Apple* by Charles Micucci  
New York: Orchard Books, 1992

*We Love Fruit* by Fay Robinson  
Chicago: Children's Press, 1992

*Why Are Pineapples Prickly?* by Christopher Maynard  
New York: DK Publishers, 1997

## Poetry

*Jamberry* by Bruce Degen  
New York: Harper Collins, 1983

*Vegetable Garden* by Douglas Florian  
New York: Harcourt Brace Jovanovich, 1991



# Food Education Resources

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## *Books for Teachers*

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*The Amazing Apple Book* by Paulette Bourgeois  
Reading, MA: 1987

*Digging Deeper: Integrating Youth Gardens into Schools and Communities* by Joseph Kiefer and Martin Kempf  
Montpelier: Common Roots Press, 1998

*Eat, Think and Be Healthy!* by Michael F. Jacobson, Ph.D. and Paula Kelvan Zeller  
Washington, DC: Center for Science and Public Interest, 1987

*French Fries and the Food System* by Sara Coblyn  
Lincoln and Roxbury, MA: The Food Project, 2000

*Gardening Wizardry for Kids* by L. Patricia Kite, illustrations by Yvette Santiago Banek  
Barrons, 1995

*Linnea's Windowsill for Kids* by Lena Anderson and Christina Bjork  
New York: R&S Books, 1978

*More Story Stretchers* by Shirley Raines and Robert Canady  
Mt. Rainier, MD: Gryphon House, Inc., 1991

*Preparing Young Children for Science: A Book of Activities* by Lois B. Arnold  
New York: Schocken Books, 1980

*Story Stretchers* by Shirley Raines and Robert Canady  
Mt. Rainier, MD: Gryphon House, Inc., 1989

*Teaching Children About Life and Earth Science* by Elaine Levernson  
New York: TAB Books, 1994

