

Farm to School Month Toolkit

Gallatin Valley Farm to School





Gallatin Valley Farm to School (GVF2S) has compiled the following activities and resources to help you showcase Farm to School Month while teaching children about nutrition, agriculture, and health in a fun and delicious way! We are a Bozeman-based nonprofit organization that



connects schools and farmers in the Gallatin Valley. This toolkit can be downloaded online at: http://gyfarmtoschool.org/fsm/.

Big thanks!

We are very fortunate to have a supportive and engaged community. This updated toolkit was made possible by funding and resources provided by our 2016 Farm to School Month Sponsors:



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Morrison Guide Service – Nova Café
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Gallatin Valley Botanical – Treeline Coffee Roasters - Three Hearts Farm
Broken Ground – Kenyon Noble Lumber - Rootstock Acupuncture
ilovekickboxing.com – Blackbird - Rockford Coffee - Bozeman Honey Co

For more information contact:

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C E L E B R A T E Farm to School Month

October is Farm to School Month



In November 2010, Congress approved a resolution introduced by Representative Rush Holt (NJ) to officially designate October as National Farm to School Month, demonstrating the growing importance and role of Farm to School programs as a means to improve child nutrition,

support local economies and educate children about the origins of food. To celebrate National Farm to School Month, schools across the country will be inviting farmers and chefs to visit their classrooms during the month of October.

More information about Farm to School Month including ideas, posters, and resources are available online at www.farmtoschoolmonth.org or www.gvfarmtoschool.org.

Events in Bozeman and the Gallatin Valley

- □ Gallatin Valley Farm to School will kick off National Farm to School Month with our **Dining for Dirt Fundraiser on September 27, 2016 at Montana Ale Works** in Bozeman. Join us to support local farms and food education in the Gallatin Valley. The evening is divided into two seatings: 5:30-7pm or 7:30-9pm. Tickets are \$40 per person and include scrumptious tapasstyle plates and delicious Montana beer. Proceeds benefit Gallatin Valley Farm to School's education programs! Advance tickets available at www.gvfarmtoschool.org.
- ☐ Grab your boots and meet us at Rocky Creek Farm for the third annual **Farm to School Feastival on Saturday, October 15, 2016 from 11 am 3 pm**. This family friendly event will feature handcrafted pizza from LaFoley Wood Fired Oven, kids' activities, a mini farmer's market with vegetable and honey producers, a cutting board making station, farm fun and more! Local chefs will be leading cooking demonstrations using farm fresh foods with samples to share! More information at www.farmtoschool.org or the Facebook event page.
- □ Grab a locally or regionally grown apple and join students and businesses statewide in a collective crunch in celebration of Food Day and Farm to School Month in Montana on **October 24 at 2:00pm**. For more information about **Montana Crunch Time**, including a guide for schools, visit www.opi.mt.gov/Farm2School. Be sure to share your crunch byte (video, photos, and audio are welcome) by using the tag #MontanaCrunchTime on social media sites including Facebook, Twitter, and Instagram.

- ☐ Stay up to date on Gallatin Valley Farm to School Happenings:
 - o Sign up to receive our <u>newsletter</u>: <u>www.gvfarmtoschool.org/</u>
 - o Like us on <u>Facebook</u>: <u>facebook.com/gvfarmtoschool</u>
 - o Follow us on Instagram: @gvfarmtoschool, instagram.com/gvfarmtoschool/
 - Visit our <u>website</u>: <u>www.gvfarmtoschool.org</u>

Farm to School Month Resources

- 1. Check out the **official** National Farm to School Month website <u>www.farmtoschoolmonth.org</u> to get ideas, download the communications toolkit, shop for Farm to School Month posters and aprons, and more!
- 2. Watch the *Celebrate Montana Farm to School Month* **archived webinar** hosted by Montana Rural Health Initiative: http://healthinfo.montana.edu/RHI%20Webinars.html
- 3. Celebrate **Food Day** on October 24, 2016. Event kits and school curriculum resources are available at www.foodday.org.
- 4. **Montanans celebrate Farm to School Month!** Information and school recipes at http://opi.mt.gov/Farm2School.

General Farm to School Resources

- ☐ Gallatin Valley Farm to School <u>www.gvfarmtoschool.org</u>
- ☐ Montana Team Nutrition Program http://www.opi.mt.gov/Farm2School
- ☐ Montana Farm to Cafeteria Network http://farmtocafeteria.ncat.org/
- □ National Farm to School Network <u>www.farmtoschool.org</u>

Farm to School Library Collection

Gallatin Valley Farm to School donated the following materials to the Bozeman School District Media Center. All materials are available **free-of-charge** to teachers within the district, teachers in other districts, and community members. To access the Farm to School library collection, visit http://library.bsd7.org/ or contact the District Media Center at (406) 522-6046.

Print Materials:

- □ Botany On Your Plate: Investigating The Plants We Eat Barrett, Katharine D. Burlington, VT: National Gardening Association, 2008. (Grades K-4)
- □ Choice, Control & Change: Using Science To Make Food & Activity Decisions Koch, Pamela A. South Burlington, VT: National Gardening Association, 2010. (Grades 5-6)

Farm To Table & Beyond Koch, Pamela A. South Burlington, VT: National Gardening Association, c2008. (Grades 5-6)
French Fries And The Food System: A Year-Round Curriculum Connecting Youth With Farming And Food Coblyn, Sara. Lincoln, MA: The Food Project, Inc., 2002.
Updated and tested activities for engaging teenagers from intensely varied backgrounds with agriculture and food systems. Lessons range from practical, hands-on activities designed to give the young person a complete introduction to the operations of a farm and garden to the socioeconomic aspects of the food system. (Grades K-12)
The Growing Classroom: Garden-Based Science Jaffe, Roberta. [New ed.]. South Burlington, VT: National Gardening Association, c2007.
Activities for teaching science, environmental awareness, and nutrition in an outdoor living laboratory as well as in a classroom setting. The combination of direct observation and experimentation in the garden laboratory and focused lessons on specific topics is the core of Life Lab. (Grades K-6)
Growing Food Koch, Pamela A. New York: Teachers College, Columbia University, c2007.
Human impact on the natural world is expected to increase as human populations grow and as science and technology develop ever more sophisticated ways to manage the natural world to meet human desires more effectively. Today's children, as tomorrow's adults, need solid understanding of science concepts and skills to engage in scientific discussions and to participate in public debate about important issues that involve science and technology. (Grades 4-6)
GrowLab: A Complete Guide To Gardening In The Classroom Pranis, Eve. 2nd ed. South Burlington, VT: National Gardening Association, c2006. (Grades K-8)
Growlab: Activities For Growing Minds Pranis, Eve. 2nd ed. Burlington, VT: National Gardening Association, c2009. (Grades K-8)
How To Grow A School Garden: A Complete Guide For Parents And Teachers Bucklin-Sporer, Arden. Portland, Or.: Timber Press, 2010.
A comprehensive guide to planning and creating a school garden and helping students understand the importance of good nutrition and health.
In The Three Sisters Garden Dennee, JoAnne. Dubuque, Iowa: Kendall/Hunt Pub. Co., c1996.
<u>Literature In The Garden</u> Bryan, Tex. : Texas Agrilife Extension Service, c2005.
Engage children through powerful garden and ecology themed books. Inspire learning through outdoor activities, creative expression and open exploration; helps make stories more relevant and exciting!

□ Lunch Lessons: Changing The Way We Feed Our Children Cooper, Ann. 1st Collins p New York: Collins, 2007, c2006.			
	Explains the basics of proper childhood nutrition, suggesting various recipes for breakfast, lunch, and snacks; and offers advice to parents and school officials on implementing healthier eating habits for children.		
	Math In The Garden Burlington, VT: National Gardening Association, c2006. Gardens are magical settings filled with colorful shapes, delightful aromas, and myriad patterns. Patterns, measurement, comparisons, and problem solving are a few of the mathematics strands embedded in typical gardening activities. Includes suggested age range for each activity and connections to math and science.		
	Nourishing Choices: Implementing Food Education In Classrooms, Cafeterias, And Schoolyards Pranis, Eve. South Burlington, VT: National Gardening Association, c2008.		
	Drawing on a wealth of collective experience, "Nourishing Choices" offers a roadmap for developing a food education program and exciting children about healthful eating. (Grades K-12)		
	Schoolyard Mosaics: Designing Gardens and Habitats Pranis, Eve. Burlington, VT: National Gardening Association, c2002.		
	What's On Your Plate?: The Film About Kids And Food Politics Gund, Catherine. Oley, PA: Bullfrogfilms.com, 2009. DVD and curriculum guide. (Grades 6-8)		
Fi	lms: What's on Your Plate? - Also has separate teaching models that fit within class periods and match the curriculum guide activities		
	Nourish - Includes 54 bite-sized videos about the story of your food, featuring Michael Pollan, Jamie Oliver, and other voices from the food movement.		
Sh	ort Videos		
	ve access to the internet? Pull up one of these short videos to watch and discuss with your dents.		
	<u>Bozeman Eats</u> – An exploration of the Bozeman area food system. (20 minutes) <u>https://vimeo.com/40781403</u>		
	<u>Carrots Farm to Fork: Meet California Farmer Matthew Martin</u> – (9 minutes 39 seconds) http://www.youtube.com/watch?v=RTNuOpIALDQ		
	Grow Your Own Food – Missoula Coyote Choir (K-5) – (3 minutes 50 seconds) A fun musical tribute to the benefits of growing and eating healthy food. http://www.youtube.com/watch?v=d1Gm6F 8pjg		

	Farm to School Elementary Economics (K-5) – (1 min 19 seconds) http://www.youtube.com/watch?v=wt-KMFARwLo					
	<u>Montana Beef to School</u> – (7 min 29 seconds). Provides a peek into how and why Montana schools are serving local beef in school meals. https://vimeo.com/72750719					
	National Farm to School Network (K-5) – (3 min 11 seconds). From the kids' point of view, this short entertaining video provides the what, why, how, and who of Farm to School. http://www.youtube.com/watch?v=ayvdX9s1mxw&feature=related					
M	usic					
	<u>Dirt Made My Lunch</u> by The Banana Slug String Band http://www.bananaslugstringband.com/					
	Six Plant Parts by Mary Miche http://www.marymiche.com/					
В	ooks					
	llatin Valley Farm to School recommends the following reading materials to enhance farm to nool curriculum and discussion in the elementary classroom.					
Ki	indergarten					
	Pumpkin Circle: The Story of a Garden by George Levenson					
	Eating the Alphabet: Fruits and Vegetables from A to Z by Lois Ehlert					
	Growing Vegetable Soup by Lois Ehlert					
	The Very Tiny Seed by Eric Carle					
	The Garden That We Grew by Joan Holub					
Gı	rades 1st and 2nd The Giant Carrot by Jan Peck					
	The Henhouse by Carol Shorey Dean					
	The Year at Maple Hill Farm by Alice Provensen					
	Century Farm: One Hundred Years On A Family Farm by Cris Peterson					
	The Very Hungry Caterpillar Visits Montana by Montana Dept. of Agriculture					
Gı	rades 3rd - 5th <u>Growing Seasons</u> by Elsie Lee Splear <u>Life on a Cattle Ranch</u> by Judy Wolfman					

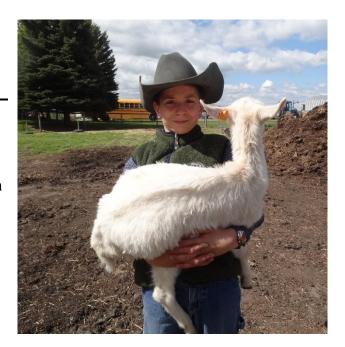
This toolkit is courtesy of **Gallatin Valley Farm to School**, a Bozeman-based nonprofit organization. Visit <u>gvfarmtoschool.org</u> for more information.

☐ <u>Winter Wheat</u> by Brenda Guiberson

	Our Farm: Four Seasons With Five Kids On One Family's Farm by Michael Rosen			
	Local Farms and Sustainable Foods by Julia Vogal			
	Wheat the Golden Harvest by Dorthy Hinshaw Patent			
M	iddle School through Adult			
	Bringing it to the Table: On Farming and Food by Wendell Berry			
	Harvest for Hope: A Guide to Mindful Eating by Jane Goodall			
	In Defense of Food: An Eater's Manifesto by Michael Pollan			
	Everything I Want to Do Is Illegal: War Stories from the Local Food Front by Joel Salatin			
	Fast Food Nation by Eric Schlosser			
	<u>Chew on This: Everything You Don't Want to Know About Fast Food</u> by Eric Schlosser			
Cı	arriculum Resources			
	Project Seasons: Developed at Shelburne Farms, Project Seasons is a collection of hands-on education activities for discovering the wonders of the world. Classroom educators, preschool & after-school teachers, camp instructors and parents will find it invaluable in cultivating an awareness and appreciation of agriculture and natural resources. Available for purchase at http://store.shelburnefarms.org/product/179/education resources			
	<i>Kids Cook Farm-Fresh Foods: Seasonal Recipes and Activities</i> : This thorough toolkit, prepared for and reviewed by the California Dept of Education, includes everything you need to know to help your class prepare and taste easy, seasonal recipes. Printable PDF format: http://www.cde.ca.gov/ls/nu/he/documents/kidscookcomplete.pdf			
	<u>Agriculture in the Classroom:</u> Prepared and published by the USDA, this website includes easy lesson plans for all grade levels, state-by-state agricultural facts, quizzes, and virtual ag "tours." http://www.agclassroom.org/teacher/index.htm			
	The Great Garden Detective: Discover what fruits and vegetables are sweetest, crunchiest, and juiciest through a series of investigations and fun experiences connecting the school garden to the classroom, school cafeteria, and home. This eleven-lesson curriculum for 3rd and 4th grades includes bulletin board materials, veggie dice, fruit and vegetable flash cards, and ten issues of Garden Detective News for parents. http://teamnutrition.usda.gov/Resources/gardendetective.html			
	<i>Dig in!</i> Explore a world of possibilities in the garden and on your plate using ten inquiry-based lessons that engage 5th and 6th graders in growing, harvesting, tasting, and learning about fruits and vegetables. This kit, created by USDA Team Nutrition includes: teacher's guide, gardening guide, at home parent booklets, six posters, and an Eat Smart To Play Hard MyPlate poster. http://teamnutrition.usda.gov/Resources/dig_in.html			

Farm Field Trips

Taking students on field trips to farms is a great way to celebrate Farm to School Month. Farm field trips allow students to experience agriculture first-hand, using all their senses. Depending on grade level and topics discussed on the field trip, many education standards can be covered. See below for a list of farmers in the Gallatin Valley who are interested in hosting field trips. Tips for planning a farm field trip can be found in the Farm Field Trip Toolkit available at www.gvfarmtoschool.org. Contact erin@gyfarmtoschool.org with questions.



Gallatin Valley Farm List

Alpine Organics - Dawn Sampson

Three Forks, MT (406) 570-4619 Field Trips, Classroom Visits Notes: Passive Solar Greenhouses, Hoophouses

Amaltheia Dairy - Sue Brown

3380 Penwell Bridge Road, Belgrade MT (406) 388-5950 mbamaltheia@aol.com Field Trips, Classroom Visits

Notes: Goats, pigs, chickens, herbs, vegetables

Eagle Ridge Ranch - Danielle Fisher

Bozeman, MT (406) 581-9101 info@eagleridgeranchbeef.com Classroom Visits

Gallatin Grown-Melissa & Travis Stuber 5464 Amsterdam Rd Manhattan, MT 59741

406-570-6212

info@gallatingrown.com Field Trips, Classroom Visits

Gallatin Valley Botanical -**Matt & Jacy Rothschiller**

250 Chester Lane, Bozeman MT (406) 599-2361 Field Trips Notes: Available May- October

Rocky Creek Farm - Pete Fave

34297 Frontage Road, Bozeman MT (406) 585-0225 orchardman32@yahoo.com Field Trips

Notes: U-pick, hayrides, and pumpkin patch

Strike Farm - Dylan Strike

5180 Stucky Rd, Bozeman MT (406) 581-5483 strikefarmsmt@gmail.com Field Trips

Three Hearts Farm - Sarah Gregory

2111 Love Lane, Bozeman (484) 888-9936 threeheartsfarmmt@gmail.com Field Trips, Classroom Visits

Towne's Harvest Garden - Mac Burgess West Garfield off of 19th Ave, Bozeman, MT

townes.harvest@gmail.com

Notes: Available May, Sept. and Early Oct.

Classroom Activities

ga try	rden, and food and nutrition lessons. Pages 13 – 29 include the following activities to 7:
	Quick Garden Activities: These are great activities to have ready when working with groups of students in the garden.
	Making butter: Fun and easy in-class or take-home activity.
	Crockpot Applesauce: Recipe for applesauce with no added sugar.
	Plant Identification Scavenger Hunt: Kids can test their knowledge of what's growing in the garden on the farm.
	Sunflower Exploration: Students dissect sunflowers to review life cycle and plant parts.
	Tops and Bottoms: A garden and classroom based activity.
	Where Does Our Food Come From: An exploration of the process from farm to table.

There are many great books, videos, and resources available for farm to school, school

Connecting to Common Core

The purpose of Common Core Standards are to provide consistent and clear learning goals for student so that teachers and parents can help them achieve academic success. Common Core Standards are also designed to teach students material that is relevant to the real world. Garden-based learning activities are an excellent way to make connections between the content and real world applications. Many examples have been provided to demonstrate how Common Core Standards can easily be applied to hands-on experiential learning activities.

Reference: Common Core State Standards Initiative (2012). Retrieved from: http://www.corestandards.org/

Quick & Easy Garden Activities

Most of the activities on this list were provided by Food Share. Check out their Educator Resources for ready to go lesson and unit plans: http://www.foodshare.net/educator-resources.



Dried Herbs

- 1. Harvest a bunch of herbs straight from the garden
- 2. Tie the bunches with some string
- 3. Hang upside down from a railing or string in a space with some air flow
- 4. Herbs are ready when completely dry
- 5. Store in an air-tight container

Herbalicious Tea Bags

- 1. Sew a small pouch from clean, un-dyed fabric using a needle and thread, or simply use a square of cheesecloth fabric or a coffee filter
- 2. Place a small amount of the herbs (dried previously) into the pouch, or middle of the cheesecloth square or coffee filter
- 3. Gather pouch together with some string and tie in a knot
- 4. You have a tea bag! Steep in hot water and enjoy!

Harvest Blanket

- 1. Hide various garden produce items (vegetables, fruits, etc.), tools, or garden-based objects underneath a tablecloth, towel, or blanket.
- 2. Students need to sit around the blanket and use their sense of touch to guess what each item is!

Garden Investigation & Mapping

- 1. Students can mark out their own small, square space in the garden using string and four pencils as stakes.
- 2. Students then investigate this small part of the garden, making note of everything that happens inside that space: any insects that fly in or out, anything growing... This is great for creating pictures and poetry later!
- 3. Students can also create a grid within their square and draw a to-scale map of their garden section or determine its area.

<u>Grade 5, Mathematics: 5.MD.C.5</u> Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.

<u>Grade 7, Mathematics:</u> <u>7.G.A.1</u> Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.

Photography

Students can create their own scavenger hunt using close-up photography of leaves, seeds, roots, stems and fruits!

Six of One, Half Dozen of the Other (credit to Lifelab's "Growing Classrooms")

- 1. Label the bottom of egg cartons with opposite qualities of garden objects such as "wet" and "dry" or "rough" and "smooth". Write words that will encourage students to use their senses.
- 2. Divide students into small groups and give each group an egg carton, telling them not to share the secret words.
- 3. Have students collect specimens that fit the category. Students should place six of each specimen in each row.
- 4. Once students have finished, have groups exchange cartons and try to determine the opposite categories without looking at the bottom of the carton.
- 5. Discuss strategies used by the groups to identify other groups' categories.

Common Core Connections:

<u>Kindergarten</u>, <u>Mathematics</u>: **K.MD.3** Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

Grade 2, ELA:

- **2.L.5** Demonstrate understanding of word relationships and nuances in word meanings.
- **2.L.5.a** Identify real-life connections between words and their use (e.g., describe foods that juicy).
- **2.L.5.b** Distinguish shades of meaning among closely related verbs (e.g., toss, throw, hurl) and closely related adjectives (e.g., thin, slender, skinny, scrawny).
- **2.L.5.d** Distinguish shades of meaning among verbs differing in manner (e.g., look, peek, glance, stare, glare, scowl) and adjectives differing in intensity (e.g., large, gigantic) by defining or choosing them or by acting out the meanings.

Next Generation Science Standards:

<u>Grade 2:</u> **2.PS1.1** Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties

Grade 5: 5.PS1.3 Make observations and measurements to identify materials based on their properties

Plant Parts Tag

- 1. Divide students into two groups and have the groups line up shoulder to shoulder facing each other. Choose a plant part for each group (i.e. one side is "roots" the other side is "stems"). If appropriate, give the teams a minute to think about vegetables and fruits that fit into their plant part.
- 2. To begin the game, call out a root or stem veggie (i.e. asparagus). The stem team is "it" and chases the root team to the outer boundary. If the stem team tags a root player, they take the root player to their side and he or she becomes a stem.
- 3. Continue the game until all players are on one team. To make it more difficult, choose a new plant part for each team half way through.



Making Butter

This activity was adapted from Shelburne Farms' "Project Seasons" curriculum.

Grade Level: K-5

Time: 30 minutes

Materials

Small mason jars (the 4 oz canning jars work best)

- Marbles (one or two per jar)
- Heavy whipping cream
- Crackers or local bread for sampling

Lesson Activities:

Ask the students to sit in a circle on the floor. Tell the students that they will be making something that homesteaders often made. Can they guess what it is? It's made out of something that comes from cows. What comes from cows? (Milk!) Read the riddles below and tell the students that the riddles are clues about things that can be made from milk. Ask the students to wait to guess until the end of the riddle.

Cold and creamy,
A frozen treat,
In a cone or a shake,
It can't be beat! (Ice cream)

A thick, tart, custard
Fruit flavored or plain,
Curdled or cultured,
With a funny name. (Yogurt)

Now tell the students they will be making this next treat:

Rich, creamy, yellow,

Salted or sweet,

On toast or corn,

It's good to eat. (Butter!)

Tell students they will be making butter. What do you need to make butter? All you need is cream and a jar, but homesteaders sometimes had butter churns to make more butter at a time. Put a couple marbles in each jar and fill with cream about 1/3 of the way up and ask the students to take a turn shaking the jar and pass it on to the next person. While the students are shaking have them sing the butter making song below (sing to the tune of "I Have Something in My Pocket" or the "Brownie Smile Song").

Shake it

We're going to make butter,

Rich and creamy too, With milk from a cow's udder

Before you can say moo

before you can say moo

Chorus:

So shake, shake it, shake it,

Shake it if you can

Shake it like a milkshake

And pass it to a friend.

Put some cream into a Jar, You can add a marble or two, Make sure the lid is on tightly,

That's all you have to do.

Chorus

We're learning while we're churning,

Hey this is lots of fun! It's easy to make butter, Let's eat it when it's done.

Chorus

Oh listen very carefully, It's sounding different now, Hooray it's finally butter! Be sure to thank the cow!

When the marbles in the jars start making louder thumping noises instead of high-pitched "clinking" noises, check the jars. Reveal to the students what they have made—butter! The thick yellow "blob" is butter (all the fat molecules in the cream sticking together) and the thin liquid is buttermilk. Drain off the buttermilk (chill it to enjoy later) and spread butter on salted crackers or bread. You may store the butter in the refrigerator but first remove the marbles.

Common Core Connections

Kindergarten, Reading:

K.RL.10 Actively engage in group reading activities with purpose and understanding.

Kindergarten, Speaking & Listening:

<u>K.SL.2</u> Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.

Grade 1, Reading:

1.RL.10 With prompting and support, read prose and poetry of appropriate complexity for grade 1.



Crockpot Applesauce

(No Added Sugar)

Montana Crunch Time is on October 24, 2016 at **2:00pm**! Follow this recipe for a simple way to celebrate local apples in the classroom!

Prep time: 10 minutes **Cook time:** 4 hours

Servings: 16

Ingredients

5 pounds apples - peeled, cored, and thinly sliced 1 1/2 tablespoons ground cinnamon or 1 cinnamon stick 1/2 teaspoon ground cloves 1/4 teaspoon ground nutmeg Water

Directions

- 1. Layer apples into a slow cooker. Add enough water to cover bottom of pot. Sprinkle cinnamon, cloves, and nutmeg over the apples.
- 2. Cook on High until apples are soft, 4 to 5 hours. Whisk apples vigorously for a chunkier-style applesauce. Puree with an immersion blender for a smoother applesauce.

Consider combining this activity with another that is apple-related such as a classroom visit from a farmer who has apple trees.



Plant Identification Scavenger Hunt

This activity was developed by Erin Jackson, Montana FoodCorps service member at Hyalite Elementary in Bozeman, Montana, 2014.

Preparation

Remove any signs from the garden that label plants. Assign each plant a different number, and place a paint stirrer with number written on it next to the corresponding plant. Update and make copies of the scavenger hunt sheet (below), enough for each student or group of students.

Activity

Hand out the scavenger hunt worksheet to each student or group of students. Students should search for the numbered signs in the garden and assign the correct plant name to each number using the word bank.

Wrap-up

Once students complete the worksheet, walk through the garden together to identify each plant. Ask students to name which plant part we eat (carrots are the root, tomatoes are the fruit, spinach is the leaf, etc.). If possible, allow students to take some of the vegetables to promote excitement about healthy eating.

Extensions

- Repeat the activity later in the year and see if the students are able to better identify the plants.
- Take your students on a farm field trip and repeat the activity, making sure to set boundaries and rules for how to navigate the fields safely.
- Challenge older students to unscramble each plant name and then search for it.

Name:	

Plant Identification Scavenger Hunt Worksheet

Try to identify each labeled plant in the garden then match the name of the plant to the correct numbered stake.

Broccoli	Onions	Spinach	Kale	Potatoes	Peas	Corn
Ве	ets Carr	ots Toma	toes Garlic	Cabbage		Peppers
		Cucı	umbers	Mint		
Na	ame of Plant			Plant Part	We Eat	
1		_				_
2		_				_
3		_				_
4		_				_
5		_				
6		_				_
7		_				_
8		_				_
9		_				_
10		_				_
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12		_				_
13		_				_
14		_				_
15						



Sunflower Exploration

Lesson developed by Erin Jackson, FoodCorps Montana, 2014

Grade Levels: K-2

Subject Area: Life science: living/non-living, plant parts, basic needs of plants

Prep Time: 10 minutes

Time: 45 minutes

Materials:

Sunflowers, one for each student

Magnifying glasses, one for each student

Book: From Seed to Sunflower by Anita Ganeri or similar book

Learning Objectives:

- □ Students will understand that sunflowers are living things and will review the needs of plants and living things.
- ☐ Students will identify the parts of a sunflower and their functions (grade-appropriate).
- ☐ Students will dissect a sunflower to understand where and why it produces seeds.
- ☐ Students will practice counting and sorting.

Common Core Standards Addressed:

K.CC.4-6 Count to tell the number of objects.

K.OA.1-4 Understand addition, and understand subtraction.

K.MD.3 Classify objects and count the number of objects in each category.

Bozeman Science Standards Addressed:

K.LS1.1 Students ask questions, make predictions, and investigate whether objects are living or non-living.

K.LP.1.0 Students observe and record basic requirements that allow living things to grow.

Next Generation Science Standards Addressed:

1.LS1.1. Plants have different parts (roots, stems, leaves, flowers, fruits, seeds) that help them survive and grow.

1.LS3.1 Individuals of the same kids of plant or animal are recognizable as similar but can also vary in many ways.

Lesson Activities:

- 1. Introduce lesson by asking students if they've seen sunflowers growing in the gardens. Explain to them that they will become experts on sunflowers by learning how they grow. Then, they will be scientists and dissect the sunflowers! (Explain the term "dissect").
- 2. Engage in a discussion about living things by asking students the following questions: Is a sunflower living or non-living? What do living things need to grow? What do plants need to grow?
- 3. Read book "From Seed to Sunflower" with discussion throughout.
- 4. Sing the "Six Plant Parts" song, with students repeating words and copying motions:

Start as a seed with body in a ball and head looking at teacher. "I have my seeds" (students repeat)

"I have my roots" (students repeat, fingers wiggle into the ground in front of feet)

"I have my stem" (students repeat, stand up straight with arms at side)

"I have my leaves" (students repeat, elbows near body, hands out to side with fingers wiggling)

"I have my flower" (students repeat, hands frame face, fingers spread)

"I have my fruit" (students repeat, arms out, hands together making big circle in front of body)

"I have my seeds" (students repeat, sprinkle seeds down to the ground and back into seed ball)

"I have my six plant parts" (repeat, holding up six fingers) "Six plant parts that plants and people need" (repeat).

- 5. Repeat the song a few times, faster and faster as students catch on. Finally, have students perform without repeating.
- 6. Pass out one sunflower to each student (or to pairs sharing one flower) and instruct students to point to the stem, leaves, flower, and seeds. Have students count the leaves to show that the plants are not exactly alike.
- 7. Show tiny disc flowers that make up the large flower head. Have students find them and take them off the sunflower.
- 8. Instruct students to look for the seeds and count them and/or explore with magnifying glasses.
- 9. Once students have had about 10-15 to explore the sunflowers, ask a few questions to assess learning:
 - What was something interesting you found?
 - What color seeds did you find?
 - How many seeds did you find? Take away 2 seeds—now how many do you have?
 - Are all of the sunflowers the same?
 - Why are sunflowers important? (Bring pollinators to the garden, give us air to breathe)
- 10. Optional (time permitting): Have students sort seeds into groups of 5, 10, 20 or by color and/or size. Or, lead a math lesson using sunflower seeds as the object.
- *Compost sunflower pieces after activity and save seeds to plant in the spring

Extensions

If possible, read the story outside in front of the sunflower plants and then harvest the sunflowers in front
of the students.
Add the sunflowers to the sensory table for students to continue to explore during free time.
Count seeds or sort seeds by color and/or size.
Bring sunflower seeds for the kids to taste.

Farm to Table: The Journey of Produce

This lesson is part of the YAH Curriculum developed by the Food Bank of Western Massachusetts. Visit https://www.foodbankwma.org/get-involved/youth-program/ to download the full curriculum.

TIME 1 hour ADDITIONAL PREP1 hour 30 min



OBJECTIVES

- Examine the many steps food goes through from the farm to the table.
- Understand the journey industrial food takes and the benefits of purchasing local foods.

DESCRIPTION

Play a round of charades, with participants being farmers, drivers, cashiers and shoppers. Bring produce from around the world into the classroom and have students guess where it came from. Do a taste test with local and non-local produce that may be in season (tomatoes, carrots, strawberries).

ESSENTIAL QUESTIONS

- How does food get from where it is grown to our plates?
- What is the difference between the industrial food system and the local food system?

COMMON CORE CONNECTIONS

- ELA SL.6/7/8/9/10/11/12.1
- L.6/7/8/9/10.1
- SL.7.2

MATERIALS NEEDED

• Script cards (below), "tomato", bag of 20 nickels, one dollar bill, examples of produce from around the world, local vs. non-local taste test items and plates to serve.

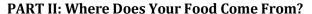
DIRECTIONS

PART I: CHARADES, THE TALE OF TWO TOMATOES

- 1. Print, cut and fold script cards (see appendix).
- 2. Sit in a circle. Pass cards out in order. The script provides 20 cards. If your group is larger, have students pair up to share cards or create additional roles.
- 3. Find an object that represents a food, for example a bean bag represents a ripe red tomato, or the actual food
- 4. Pass the 'tomato' to the student holding card #1 (farmer). Ask the student to stand up and mime the action written on their card. Encourage the rest of the group to shout out guesses for what the card might say. Alternatively, have the students read the role on their card without acting.
- 5. Once the action is guessed correctly (optional), have the student standing read their card aloud, then pass the 'tomato' to the next person, holding card #2.
- 6. Continue around the circle.
- 7. When the tomato has made its way around the circle and all cards have been acted out. Give the student holding the last card, #20(shopper/eater), a bag of 20 nickels. Ask them to 'pay' for their tomato by passing the money back along the circle in the reverse order. Instruct each person in the chain to take out a nickel

for their work.

- 8. When the bag reaches the student holding card #1, ask the 'farmer' to count how much they earned.
- 9. Ask students if this surprised them. Share will them that on average, only about 10 cents of every dollar spent on non-local produce goes back to the farmer.
- 10. Hand the person holding card #16 (shopper/eater) a dollar bill. Say to them, "Pretend you bought this tomato at a farmer's market; what would that look like if you acted it out?". How much of the dollar bill does your local farmer receive?
- 11. Ask participants what surprised them and what they learned from the activity that they may not have thought about before. What are the pros and cons of industrial versus locally sourced foods?
- 12. Have students list advantages of locally grown food. Encourage them to think about quality and freshness of food, environmental benefits, economic benefits to the region, and working conditions of farm workers.



Prior to the lesson, go to the supermarket and purchase a variety of produce items that come from different locations around the world. Some widely available possibilities are:

Apples from New Zealand Bananas from Costa Rica or Ecuador Fruit from California, Florida, Washington, etc.



Lesson Activities:

- 1. Bring a bag with the produce to the workshop. Pull items out one by one, having kids guess where the food was grown. Having a map on hand or access to Google Maps is useful to illustrate how far food travels, or the "food miles" of the food.
- 2. Ask participants to list foods they know/see are grown in Montana. Foods can include more than vegetables and fruits, such as eggs, dairy products, honey and meat. How many food miles would those foods have?
- 3. Ask participants to imagine places where they could buy local foods such as farmers markets, farm stands, grocery stores, co-ops, or restaurants. Do many places in your community sell local foods? Why or why not? Could businesses make a commitment to buy local foods? Could individuals make a commitment to buy local foods?
- 4. Discuss or incorporate written response: What are some of the barriers to accessing fresh healthy foods? Is everyone able to afford groceries? What might make it difficult for people to get to the store? Do some streets have more fast food restaurants than others? Does local food have to be expensive? Highlight some ways people are working to make healthy local foods easier to access, such as community and school gardens, growing your own garden, or SNAP at farmers markets.

PART III: Local vs. Non-local Taste-test

- 1. Lead a taste-test of locally grown produce against non-local varieties. What differences do you notice in flavor, color, freshness, etc.? Actual items will vary based on the season. For each item, have students vote using the following categories: "Tried it", "Liked it", "Loved it". Tally votes to determine the class preference.
- 2. Ask students what healthy benefits might come from eating local foods? Why do many people choose national brands over local foods?

Farm to Table Script Cards

Print the following pages and cut out the cards.

- 1. I am a farmer who *planted* this tomato.
- 2. I am a farm worker who watered and tended this tomato.
- 3. I am a farm worker who picked this tomato.

- 4. I am a farm worker who washed this tomato.
- 5. I <u>loaded</u> this tomato onto a truck at the farm.
- 6. I <u>drove</u> this tomato from Florida to a packaging plant.

- 7. I <u>inspected</u> the tomato at the plant and approved it.
- 8. I <u>packaged</u> the tomato for shipping at the warehouse.
- 9. I <u>re-loaded</u> cases of tomatoes on the truck to be shipped across the U.S.

10. I <u>drove</u> the tomatoes <u>a long</u> <u>distance</u> across the country.

the tomatoes to make sure they weren't bruised on the journey.

12. I <u>re-loaded</u> the tomatoes onto a truck to be delivered to a grocery store.

13. I <u>drove</u> the tomatoes to a grocery store in the Gallatin Valley

14. I <u>unloaded</u> the tomatoes at the grocery store.

15. I am a manager at the grocery store and <u>received</u> the tomatoes at the loading dock.

16. I am a worker at the store who prices the tomatoes with stickers.

17. I work at the grocery store and put the tomatoes out for display.

18. I <u>ring</u> this tomato up at the cash register.

19. I <u>bagged</u> the tomatoes so you can carry them home.

20. I <u>bought</u> the tomatoes and bring them home to eat!

Tops and Bottoms

This activity was provided by the Montana Department of Agriculture's "Agriculture in the Classroom" program. More lesson plans, posters, and other resources are available at: http://agr.mt.gov/agr/Programs/AgClassroom/

Grade 1-2 but can be easily adapted to be suitable for older students

Duration of Lesson 50 minutes

Purpose

Students will understand that plants have different parts: roots, stems, leaves, seeds, flowers, etc. Lesson is based upon children's book **Tops and Bottoms** by Janet Stevens.

Materials

IVI	iterials
	Tops and Bottoms by Janet Stevens
	Seed Packets: corn, lettuce, spinach, carrots, radish, etc.
	Plants with roots and tops attached: Potato plant, spinach or lettuce with roots
	attached, radishes and carrots with tops attached, and any other food items with the plant
	parts intact.
	Copy of list: Fruit and Vegetables Grown and Harvested in Montana (see below)
	One copy of Worksheet 1 for each student (see below)
Κe	v Terms

Common Core Connections

☐ Leaf, Stem, Seed, Root, Flower, Fruit, Harvest

<u>Grade 1, Mathematics:</u> <u>1.MD.C.4</u> Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

<u>Grade 2, Mathematics: 2.MD.D.10</u> Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.

Montana State Science Standards

<u>Content Standard 1:</u> Students, through the inquiry process, demonstrate the ability to design, conduct, evaluate, and communicate results and reasonable conclusions of scientific investigations. Benchmark 1.1 <u>Content Standard 3:</u> Students, through the inquiry process, demonstrate knowledge of characteristics, structures and function of living things, the process and diversity of life, and how living organisms interact with each other and their environment. Benchmark 3.1

Performance Task(s)

Identify food parts of plants by observation. Observe and identify location of food growth on plants, graph the data.

Other Evidence

Students will receive a grade based on their participation and completion of the projects, and use of vocabulary terms related to plant growth for food.

Lesson Activities

Introduction

Read *Tops and Bottoms* by Janet Stevens. Explain that when the characters in the book gather the food this is called harvesting food. Farmers and gardeners harvest their food as well. Let students know that after harvest we buy the foods farmers and gardeners grew. We buy these foods in our local grocery stores or at farmer's markets. There are many ways to harvest foods. Some foods like wheat and potatoes are harvested using machinery; other foods like raspberries must be harvested by hand.

Learning / Inquiry Activities

- 1. Discuss the different plant parts (roots, stems, leaves, flowers, seeds, and fruit) and where they grow on the plant in relation to tops, bottoms, or middle. Show the examples of the foods you brought in for demonstration. Ask students to identify the food sources on each plant, and if it grows on the top, middle, or bottom of the plant.
- 2. Ask students to think of as many items as they can that come from each food (e.g., corn is used for the following: bread, vegetables, sugars, biofuels, and animal feed).
- 3. From each whole food plant item you brought in, ask students to identify each of the other plant parts. Can any of the other plant parts be used for food? Some parts may not be used for human consumption, but may be made into animal feed, like corn stalks.
- 4. Following the discussion, post copies of Montana food crops on the board (see below). Students will identify if the food crop grows on the top, middle, or bottom of the plant and use that information to fill out the worksheet below.

Lesson Extensions

- Graph the data that was collected during this lesson. Graph the items on the above list by color, shape, location on plant, etc.
- Conduct activity in the school garden to identify examples of tops, bottoms, and middles.

Credit and More Information

Partial listing of foods for examples sourced from:

http://www.fruitsandveggiesmorematters.org/?page_id=1600

For more information on many of the crops below please visit <u>www.aginmontanaschools.org</u> and check out the wide variety of lesson plans.

For each harvested food, determine the plant part and whether it grows on the top, bottom, or middle of the plant. Use this data to create a graph to represent your findings.

Harvested Food	Grows on the Top	Grows in the Middle	Grows on the Bottom
Carrot			Root

Fruits and vegetables grown and harvested in Montana!

RED FRUITS AND VEGETABLES

Red Apples

Cherries

Chokecherries

Raspberries Strawberries

Red Peppers

Radishes

Radicchio

Red Onions

Red Potatoes

Rhubarb

Tomatoes

Corn

Yellow Apples

Apricots

Peaches

Yellow

Pears

Butternut Squash

Carrots

Yellow Peppers

Yellow Potatoes

Pumpkin

Rutabagas

Yellow Summer Squash

Sweet Potatoes

Yellow Tomatoes

Yellow Winter Squash

WHITE FRUITS AND VEGETABLES

Cauliflower

Garlic

Ierusalem Artichokes

Kohlrabi

Mushrooms

Onions

Parsnips

Potatoes (White Fleshed)

Shallots

Turnips

GREEN FRUITS AND VEGETABLES

Green Apples

Honeydew

Green Peas

Arugula

Asparagus

Broccoli

Green Beans

Green Cabbage

Cucumbers

Leafy Greens

Leeks

Lettuce

Green Onions

Peas

Green Peppers

Snow Peas

Spinach

Sugar Snap Peas

Zucchini

PURPLE FRUITS AND VEGETABLES

Plums

Elderberries

Purple Asparagus

Purple Cabbage

Purple Carrots

Purple Peppers

Potatoes (purple fleshed)

GOLDEN GRAINS

Oats

Wheat

Barley

LEGUMES

Peas

Beans

Lentils



Where Does Our Food Come From?

This activity was provided by Learning by Nature. More information available at: www.learningbynature.org.

While teaching about gardens and food, keep in mind that many people never see food or fiber before those products get to retail stores. Primary-school children may only vague ideas about where foods and fibers come from. Through garden-based learning, students discover where foods come from, how plants grow, climate, the elaborate steps involved in commercial food processing, and nutrition. Comparisons can be made to see what happens if some plants do not get their basic needs met (i.e. water and sunlight).

Students also benefit from knowing that many people and types of resources are involved in the agricultural/farming industry. These include workers who farm the land, manufacture farm equipment, and those involved in the food processing, storage, transportation, packaging, distribution, sales and marketing. It is insightful and empowering to understand many forms of transportation, refrigeration, processing, and packaging today, that enables food to be transported, stored and consumed thousands of miles from its place of origin.

As a result, through studies in history, math, economics, science and ecology students can better understand how our culture has gone from historically producing and consuming locally to being dependent on products from across the globe, and the many far reaching consequences thereof.

Peanuts into Peanut Butter (grades 4-8)

As a way for students to step back a bit from what they have learned and better conceptualize the food-to-table process, encourage them to think about some common foods in their homes and discuss or draw out (using a mind map or flow chart) what kind of processes and travel their food went through to get to their plate or lunch bag. Students should make the connection, when possible, back to the crops and reference the many steps where energy and people power are needed in the food-to-table process. Use the peanut butter and jelly sandwich as an example.

Students consider and discuss the possible process that peanuts undergo to become peanut butter (or that berries take to become jelly or that wheat takes to become bread). Younger ages can focus on the theoretical steps taken to get food from the field to the plate. Older students can investigate the more detailed processing, transporting, marketing/advertising and different energy inputs required (both human and nature energy) to get food to our plate. Larger world connections can be made analyzing possible related environmental and nutritional impacts and ways to reduce these impacts by shopping and growing locally or closer to home.

This kind of fun and practical pondering will help to reinforce what they have already learned, and allow them to make the crop connection with everyday foods that are real to them, including items they may grow in/near their schoolyard. Other simplified examples may include:

Oatmeal - oats	Ice Cream - milk, sugar cane
Tater Tots- potatoes	Hot Chocolate - cocoa beans, milk,
Juice box- fruit, sugar	sugar
Bread – wheat (flour), sugar, yeast	Coffee - coffee beans

Common Core Connections

3.W.7 Conduct short research projects that build knowledge about a topic.

4.W.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

4.W.7 Conduct short research projects that build knowledge through investigation of different aspects of a topic.

<u>5.W.6</u> With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of two pages in a single sitting.

COFFEE FOR CLASSINGS



of every cup of coffee sold at the Flying C Café and Co-op Downtown goes to a different local school each month.

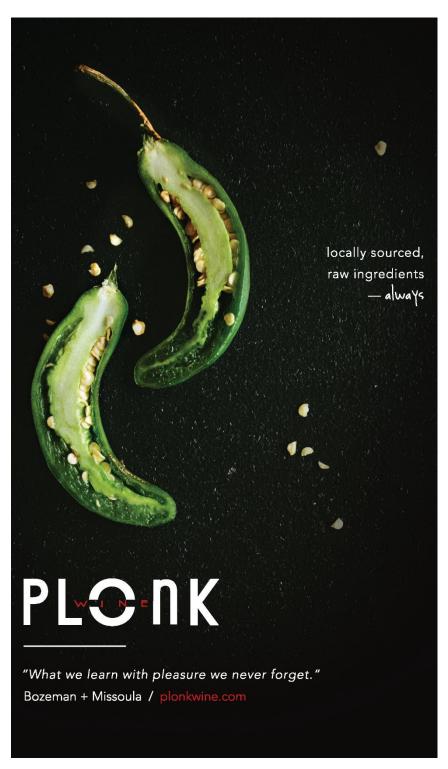
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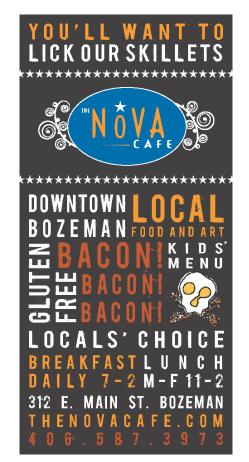


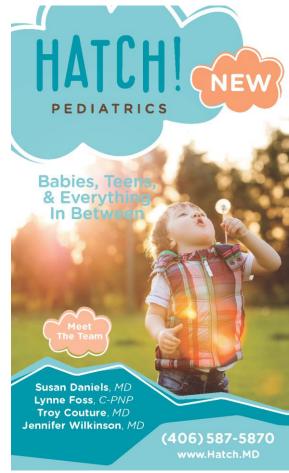




















Thank you for celebrating National Farm to School Month!

Gallatin Valley Farm to School

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