

Growing Healthy Kids

Garden-Enhanced Nutrition

http://extension.oregonstate.edu/nep/garden_nutrition/

Lesson 1 Digging In!

Lesson overview

There are three activities available for Lesson 1.

1. Introduction to Growing Healthy Kids: Students will share their ideas about where vegetables and fruits come from, and their experiences trying/growing vegetables and fruits from/in a garden.
2. GHK Food Adventurer Adjectives: Students will try vegetables and fruits with at least one of their senses, and will report their experience using adjectives.
3. Garden Options: Students will start a mural, indoor or outdoor garden, where they will grow fruits and/or vegetables. Choose Activity 3A or 3B.

What you will need

General Materials and Supplies

- Pocket folders (one per student). These are optional, but recommended for collecting student materials throughout the class.

Activity 1, Introduction to GHK

- No materials are needed for this activity.

Activity 2, GHK Food Adventurer Adjectives

- Flipchart, overhead projector and transparency sheets, or blank piece of paper and document camera. Use to record adjectives from class. Save list for use in future lessons.
- Food Adventurer Adjectives worksheets (Appendix H, one per student)
- Food Adventurer stickers (Appendix I, one per student)
- Fresh, frozen, canned and/or dried fruit and vegetable samples (four per student or pair of students): Working individually or in pairs, children will try four different samples. Preserved options that have worked well include frozen peas, canned pears and sundried tomatoes. Incorporate garden-fresh produce into activity, if it is available at the education site.
- Paper cups (four per student or pair of students): Divide food samples into cups, so that they can be easily distributed to students.
- Plastic forks (one per student) for tasting canned foods

Activity 3A, Mural Garden Option – Creating the background

- Flip chart and easel, or chalkboard to collect and vote on garden names
- Butcher paper for garden mural
- Painters' tape to secure edges of garden mural to the floor
- Tape or other adhesive for hanging mural on a wall
- Art supplies and clip art (Appendix M) for adding elements to the garden mural

Activity 3B, Indoor or Outdoor Garden Options

- Flipchart and easel, overhead projector and transparency, or document camera and blank piece of paper, to write list of garden rules.
- Flipchart and easel or letter sized paper, to write list of seeds.
- Seeds of fruits and/or vegetables that will grow well in an indoor or outdoor garden (For suggestions of suitable seeds, refer to Miller et al. 2011. *An educator's guide to vegetable gardening*. Oregon State University Extension and Experiment Station Communications Publication EM 9032. For information and varietal recommendations for container gardeners, please refer to *Growing Plants in Containers* by Chip Bubl, Oregon State University Department of Horticulture
<http://extension.oregonstate.edu/nep/edmaterials/Gardening/infosheet-containerplants.pdf>)
- GHK flash cards of vegetables and fruits whose seeds are planted
- Basic garden kit (Appendix C)
- Access to soap, sink and paper towels to wash hands

Take Home Materials

- GHK family letters and envelopes for Lesson 1 (one set per student)

Supplementary Materials (as needed)

- Crayons, storybook, journal and/or coloring sheet

Preparation

Activity 1, Introduction to GHK

- No activity-specific preparation is needed.

Activity 2, GHK Food Adventurer Adjectives

- Set up flip chart, arrange for space on chalkboard, or arrange for use of overhead projector or document camera to compile and display the list of Food Adventurer adjectives. Save the list with the Food Adventurer adjectives for subsequent lessons.
- Gather fruit and vegetable samples for the activity. Master Gardener volunteers may be able to provide fresh fruit and vegetable samples from the garden. Preserved fruit and vegetable samples must be purchased. Choose healthy options, with little to no added sugar, for these samples.
- Using safe food handling techniques, prepare and set aside some of the samples for tasting. The other samples will be passed around so that children can try them with their senses of sight, touch and smell.

Activity 3A, Mural Garden Option – Creating the background

- Set up flip chart, arrange for space on chalkboard or arrange for use of overhead projector or document camera to record, display and vote on choices for a mural garden name.
- Roll out butcher block paper on the floor. Tape the edges to the floor.
- Arrange for wall space to hang the garden mural.

Activity 3B, Indoor or Outdoor Garden Options

- Set up flip chart, or arrange for use of overhead projector or document camera to write down rules for the indoor and outdoor garden, and to list seeds planted. Save these for subsequent lessons.
- If you will be using an indoor garden with a light bank, check to make sure that the light bank is set up and working. If you will be using an indoor garden without a light bank, make sure that space is set aside, near a south- or west-facing window, where students grow and tend their garden plants.

Take Home Materials

- Stuff envelopes with a family letter.

Supplementary Activities (as needed)

- Talk to the Classroom Teacher about Lesson 1 supplementary activities.

Teaching outline

Activity 1: Introduction to Growing Healthy Kids

Introduce the Growing Healthy Kids program.

Hello! For the next few weeks, we're going to learn about healthy foods that can be grown in a garden. This program is called Growing Healthy Kids.

Introduce yourself.

My name is _____, and I work for Oregon State University as an Extension Nutrition Educator. I love to teach kids and their families about healthy and yummy foods. I am going to share my favorite fruit or vegetable. I love _____.

If present, invite other team members to introduce themselves, and to share their favorite fruit or vegetable. Invite students to share with a partner or a small group of students at their table.

Now, it's your turn. I want you to share the name of your favorite fruit or vegetable with a partner (or those at your table).

After students have shared with one another, call on a few students to share their answers with the entire class. You may also want to invite the Classroom Teacher to share.

Raise your hand if you enjoy eating fruits. Raise your hand if you enjoy eating vegetables.

Allow students to react.

Why do you eat fruits? Why do you eat vegetables? Allow students to answer. Responses may include: *because they keep you healthy, they protect our bodies from sickness, they taste good.*

Where do we get vegetables and fruits? Allow students to answer. Some answers may include *the grocery store, the ground, from our dad or mom cooking, from farms and gardens.*

We will be learning about vegetables and fruits that can grow in a garden. Stand up if you have seen a garden. Call on students who have stood up. *Can you name some things that grow in a garden?* Allow students to answer.

Explain that not only flowers grow in a garden. Many of the vegetables and fruits that we eat fresh, or as an ingredient in a healthy recipe, can also be grown in a garden. Continue to ask a series of questions, to start discussion and to better understand their experience with gardening. Sample questions are listed below.

- *Do we have a garden at school?*
- *Do you have a garden at home or in your neighborhood?*
- *Have you eaten vegetables from the garden?*
- *Have you grown your own vegetables in a garden?*

Allow time for discussion.

Activity 2: GHK Food Adventurer Adjectives

Introduce the idea of the Food Adventurer.

A yummy way to stay healthy is to fill half your plate with fruits and veggies. We all have favorite vegetables and fruits that we love to taste and to eat. There may also be vegetables and fruits that we don't like or that we haven't tasted before. Together we're going to be Food Adventurers. Does anyone know what an Adventurer is? What does an Adventurer do?

Allow students to answer. Responses may include: someone who likes to try new things, someone who does something they haven't done before, someone who is brave. Ask the cooperating Classroom Teacher for any examples of Adventurers that the class has learned about, and relate these to the topic of Food Adventurers.

A Food Adventurer tries new foods. These include vegetables and fruits that are part of a healthy diet. We are going to try these foods with four of our senses: our eyes (sense of sight), our nose (sense of smell), our hands (sense of touch), and our mouths (sense of taste). However, before we try our foods, we must first wash our hands. It is important to wash our hands before we prepare, handle or eat foods. Clean hands help to keep us from getting sick.

Have students wash their hands. If necessary, remind students about proper handwashing technique (Appendix B). After students have washed their hands, they will participate in a sensory evaluation of vegetables and fruits that may be new to them.

When choosing vegetables and fruits for this activity, look for ones that appeal to multiple senses. Also look for vegetables and fruits that students may not have tried in the past, but that they are likely to enjoy. Remember that all forms count: fresh, frozen, canned and dried vegetables and fruits. In addition, 100% vegetable or fruit juice also count towards students' daily vegetable and fruit intake. If the students tend a garden where you are teaching, incorporate their garden grown vegetables and fruits into this activity. Examples of preserved

vegetables and fruits that have been used successfully with this activity include: sundried tomatoes, canned pears, frozen peas. When using these forms, you can discuss how there are different ways to preserve food.

Pass out the paper cups filled with the food samples they will be evaluating with their sense of sight, touch, and smell. Keep separate the set of food samples that you prepared for tasting. Make sure to tell the students not to taste the foods that you have passed out.

Each of you will be offered a chance to taste the foods. Please be patient about tasting the foods. We will do this as a class, after we have described how the foods look, feel and smell.

Pass out the Food Adventurer Adjective worksheet (Appendix H) that students will use to describe their foods. Students will use adjectives to describe the foods that they sample. Students also have the option of drawing their descriptions.

We can try a new food with our eyes. Look closely at your food. What do you see? What color do you see? What shape do you see? Have you seen this fruit or vegetable before, or is it new to you?

Use a flip chart or board to list any adjectives given in reply to your questions. Younger students may need help thinking of adjectives. For these students, you can have them draw an image or use colors to illustrate different adjectives. As much as possible, encourage children to use descriptive adjectives, and steer them away from subjective adjectives. Subjective adjectives are based on personal opinions. Examples are: good, bad, nasty, delicious, disgusting. Descriptive adjectives are more objective. Examples are: cold, fuzzy, smooth, sweet, orange, bitter, sour, round, hard, soft. In this way, children are encouraged to more objectively experience the samples.

We're going to use adjectives to describe what we see. Adjectives are words that describe things. For example, if I say 'green grape', I'm using the word 'green' to describe the grape. 'Green' is an adjective. I could also say 'green apple', or 'green lettuce' to describe the color of an apple or the color of lettuce.

Allow students time to examine their fruit or vegetable with their eyes, and to describe their observations on their worksheet. Depending on age and grade level, students can draw and use color to represent their observations. Ask students to share their observations with their partner or group, before calling on a few students to share their observations with the entire class. Add any new observations to the list of adjectives on the board or flip chart.

A Food Adventurer can also try a new food with their nose. Hold your fruit or vegetable close to your nose. What can you smell? Does the smell remind you of another food?

Allow students time to examine their fruit or vegetable with their sense of smell, and to describe their food on their worksheet. Once again, students can write a word or draw an image that represents their experience. Examples of adjectives that can be used to describe smells include: sweet, fruity, woody, fresh, earthy, and strong. If students have trouble thinking of a descriptive

word, you can ask them to close their eyes, smell their food, and to say the first word that comes to mind. As new adjectives are used, add to the list of adjectives on the board or on a flip chart.

A Food Adventurer can also try a new food by touch. Hold your fruit (or vegetable) in your hands. Is it soft or firm? Does it feel smooth, bumpy or fuzzy?

Allow the students to examine their fruit or vegetable with their sense of touch. Examples of adjectives that can be used to describe how the foods feel include: cold, soft, smooth, bumpy, fuzzy, mushy. Students record their sensations on their worksheet, using images and/or words. Continue collecting adjectives to describe sensations.

Repeat this activity for the other food samples. Allow children to experience the samples with their sense of sight, touch and smell. After children have finished evaluating samples with these senses, you can invite them to taste samples that you have reserved for this purpose. Collect the set of food samples that students have experienced with their sense of sight, smell and touch. These may be composted, if you have composting facilities on site or in the garden. Pass out the paper cups with the set of food samples that you prepared for tasting.

If you would like, you are welcome to taste the vegetables and fruits.

Tasting is optional. The choice to taste a sample should be left up to each student.

How does your food taste? Is it sweet or sour? Does it taste salty or bitter? Does it taste like something else you have eaten? What do you think of the taste? Do you like the taste? Have you tasted this food before?

Allow students who would like to taste their fruit or vegetable the time to do so, and to record their experience on the worksheet, using drawings or adjectives.

Great job, Food Adventurers! We varied our veggies. We focused on fruits. We tried (canned, dried, frozen, fresh) vegetables and fruits. At meals, we should try to fill half of our plate with vegetables and fruits, and all forms count!

Any time you explore a new fruit or vegetable, using your eyes to look, your hands to touch, your noses to smell and your mouths to taste, you're being a Food Adventurer. In the Growing Healthy Kids classes, we'll learn about vegetables and fruits that can be grown in a garden.

Some of these foods will be new to you.

List each food used in today's activity, and ask students to raise their hand if it was a new food for them.

Some of these foods will be ones you really like.

List each food, and ask students to raise their hand if they liked the food.

Some will be ones that you may not have liked in the past.

List each food, and ask students to raise their hand if they liked it today, even if they have not liked it in the past.

Pass out GHK Food Adventurer stickers, and allow students to attach them to their shirt or sweater.

Please wear this sticker to let everyone know that you're a Food Adventurer! You tried a new food - with your eyes, your nose, your hands or your mouth - as part of your Food Adventurer mission. If someone asks you why you are wearing a Food Adventurer sticker, what will you say? If someone asks you what a Food Adventurer is, what will you say?

Allow students to answer, encouraging them to share their Food Adventurer experience with their peers and their family.

Great job, Food Adventurers!

Activity 3A: Mural Garden Option - Creating the background

This lesson's mural garden activity, creating the background, will be the longest (time wise) of the curriculum. Here are some tips for having the time to complete the mural background:

- Create a background that doesn't have too many details. Not only will this save time, but it will also save space for the addition of garden features in future lessons
- Prepare portions of the background ahead of time such as cutting out clipart and having students glue it on as their mural contribution.
- Have the Classroom Teacher finish the Lesson 1 mural activity with the class after the Nutrition Educator leaves and before Lesson 2.
- Schedule Lesson 1 for a longer time period than other lessons.

The mural garden can be created by drawing and coloring, using a collage technique, or a combination of both. Examples of garden murals can be found on the GHK website next to the text, *Garden Images and Info*.

If possible, get permission from the educational site administrator to hang the mural on a wall throughout the Growing Healthy Kids series of classes. Consider getting permission to hang the mural in a public hallway during or after the GHK classes. Displaying the mural throughout and after the GHK classes will reinforce curricular objectives. If approval is granted for the long-term display of the mural, tell students that all kids and adults at the site will be able to see their garden growing! Otherwise hang the mural in the room where the series is taught.

Draw students' attention to the blank piece of butcher paper you have rolled out on the floor. Use painters' tape to secure the edges of the paper to the floor, as needed. This will prevent the ends from rolling up, and will lower the chances of someone tripping over the mural. Tell students to be careful not to step on the mural.

Point to the blank mural.

We're going to start building a garden mural. A mural is a large image that is displayed on a wall. Our mural will be our very own classroom garden. We will work on it together and everyone will help. Together, we will help our classroom garden grow. We will add in garden plants that you can eat, like vegetables and fruits. We will add sun, soil, water, insects, and all of the things that we want in our garden. Right now there's nothing on our mural. By the end of Growing Healthy Kids we will have a beautiful garden, full of healthy vegetables and fruits. We will be Food Adventurers, and will try the vegetables and fruits that we grow.

Today, we're going to start by adding a name and healthy message to our garden. We will also add soil, the sun and the school (or other educational site, such as Boys and Girls Club). Later, we'll plant our healthy eating seeds, and will help and watch our plants grow.

Lead the class in naming the garden and deciding on a healthy message. This should be decided by the group. However, in case the children are too shy to suggest names, the Educator may come up with ideas on which the group can vote (e.g. Very Veggie Garden, Fun and Fruitful Garden, Active Kids Garden, Healthy Eating Garden, Rainbow of Foods Garden, GHK Garden). The healthy message must be consistent with the most current US Dietary Guidelines. Use a flip chart or chalkboard for this activity.

Divide the students into teams. Have one team add the sun (wait to draw any clouds as that will occur in a future lesson). Have another team add the garden soil. Overlaying brown butcher block paper and stapling it to the white mural paper is one way to add the soil. Have another team add the school or educational site where GHK is being taught. Additional teams can add the grass and trees, a playground surrounding the garden and/or a garden shed.

To encourage students to work together, rather than vying for the same spot on the garden mural, you may want to divide up the butcher block paper into sections. Assign each team a defined section of the mural. This is the space in which they can work.

Now that you have your team task, I would like for us all to work together to create the place where we will plant our garden. Distribute the art materials.

Once students are finished, close by saying, *We are going to build the mural each day we are together. In the next lesson, we are going to draw ourselves on the garden mural. We will add in garden tools. We will plant seeds.*

Activity 3B: Indoor or Outdoor Garden Options

Rules for the Indoor and Outdoor Garden: This week, rules should be set for working in the indoor or outdoor garden that will be used in all lessons. Ask students what the classroom rules are. Explain rules for the garden. These rules might be new for many of the students.

Rules that you may want to adhere to in the garden include:

- **Plants:** Handle plants gently. Pick leaves, fruit or other plant parts only if the teacher gives permission. Wash hands and vegetables or fruit before tasting.
- **Garden:** Be careful not to step on plants or tools in the garden.
- **Tools:** Handle tools carefully. Never raise tools above the height of your belly button. Never leave your tools lying on the ground, where others might accidentally step on the tool and hurt themselves.
- **Wildlife:** If you find insects or other animals in the garden, let an adult know. Some insects are safe to touch and pick up. Others may sting or bite. Let an adult who knows the difference teach you about the different insects in our garden.

Generate a list of garden rules on a flip chart. Display the list in the classroom. If time allows, invite the children to come up to the flip chart, and sign the list of rules. This helps to solidify the “official” status of the rules, and increases students’ compliance with them, since they helped to generate the list. You can refer to this list of garden rules in future classes.

If safety or car traffic are concerns, you may want to have students walk to and from the garden. Otherwise, you may want to encourage students to skip or jog or dance to and from the garden, to provide an opportunity for more vigorous physical activity.

Indoor or Outdoor Garden Options: Tell students they will be planting seeds today. Tell the students about the vegetables and/or fruits that will grow from these seeds. You can use the GHK flash cards to illustrate the vegetables and/or fruits that you are growing. Tell the students that they will harvest and eat the food that they grow! To choose seeds for this activity, consult with a Master Gardener volunteer or refer to the Oregon State University Extension Publication [*An Educator’s Guide to Vegetable Gardening*](#) for a list of vegetables and/or fruits that will grow well in your area, from seed. If time allows, consider letting students vote on the list, to determine which seeds are planted in the garden.

If you are new to vegetable gardening, you may want to focus your efforts on foods that are fairly easy to grow, if given the proper care. These include radishes (root), peas (seed), leaf lettuce (leaf), carrots (root), spinach (leaf), bush beans (seed), nasturtiums (flower), summer squash (fruit), and hybrid varieties of tomatoes (fruit of the vegetable plant). Annual herbs, such as cilantro and basil (leaf and stem), are also fairly easy to grow.

In both the indoor and outdoor garden, use garden stakes to label the seeds that were planted. Wide popsicle sticks work well as garden stakes. Clip seed packets to popsicle sticks (using a binder clip or clothespin) for quick and easy stakes. Low cost plastic stakes may also be purchased at home and garden stores. Prepare some stakes that exclusively bear a healthy message and put a laminated GHK Sign (Appendix O) in the garden. In both the indoor and outdoor garden, have students place garden stakes where they planted their seeds, so that they can track the progress of their plant.

Keep in mind that not all seeds will germinate (sprout). Thus, it is better to overplant, and thin out the seedlings at a later date, than to underplant and have too few plants to work with for later lessons.

If you are using a light bank for the indoor garden, explain to the students that the lights will “stand in” for the sun, so that the seeds can germinate (sprout) and grow. As the seedlings grow taller, the light bank will have to be adjusted to a higher position.

Also, caution students not to play around the lights, because they may be hot (especially if the lights are incandescent and not fluorescent) or they may break.

Make a list of seed types that were planted on a piece of flip chart paper, or on letter-sized paper, if classroom wall space is limited. This paper should remain in the classroom, as it will be used throughout the GHK class series.

Clean up and put away any supplies or tools that were used. Have the students wash their hands thoroughly after they are done planting their seeds.

Closure

Thank you for a great class today. Remember, we can be Food Adventurers, by trying new fruits or vegetables when we use our eyes to look, our hands to touch, our noses to smell and our mouths to taste. In our garden, we will grow foods that may be new to some of you. As Food Adventurers, we will watch the growth of our garden plants with our eyes. We will care for our garden plants with our hands. We will use our body's energy when we're active in the garden. Finally, we will harvest and try the vegetables and fruits that we get from our garden. We can try these foods with our mouth, if we would like to taste them. But, we can also use our eyes, nose and hands!

Point to your eyes, hands, nose and mouth as you speak.

*Food Adventurers - I have a mission for you to complete! The first part of your mission is to **FIND** a fruit or a vegetable that you have never tried before. It can be a fresh, dried, canned or frozen fruit or vegetable, because ‘All Forms Count.’ This mission can be completed in the cafeteria or at home. Find a fruit or vegetable that is new to you. Food Adventurers - do you accept this mission? If so, shout out YES!*

Allow students to answer.

*The second part of the mission is to **TRY** the new fruit or vegetable. Remember, you can try it with your eyes, your hands, your nose—and maybe even with your mouth. Try the food with all of your senses, and taste it if you like. Food Adventurers - do you accept this mission? If so, shout out YES!*

Allow students to answer.

Wonderful! I can't wait to hear how your missions went, the next time we meet. The last thing I am going to do for our lesson is to give your teacher a special letter for your family about what we did today. There is also a fun activity for you in here. (Hold up a family letter envelope.) Before taking this home, your teacher will let you draw a picture of your favorite fruit or vegetable on the front of the envelope. Make sure to share your picture with your family, and tell

them why you like that fruit or veggie so much.

Supplementary activities

These activities are for the Classroom Teacher to do with the students before you return for next lesson. Or, you can do these with the students during the lesson if time allows.

- **Supplementary Activity 1 - Family Envelope Drawing** - Students draw a picture of their favorite fruit or veggie on the front of the envelope. These envelopes are sent home with the students, to be given to their family.
- **Supplementary Activity 2 - Storybook and Discussion and Journal** - Read the storybook to children and then lead a discussion on key points that connect the book to GHK messages and activities. Sample discussion questions can be found on the next page. Children then write or color about what they learned on a journal sheet. Journal sheets are collected and will be combined into a book after the final lesson.

Storybook Options: *Vicky's Vegetables*, by Diane Stango and Patricia McKissack or *One Bean*, by Anne Rockwell (more appropriate for younger students or grade levels).

- **Supplementary Activity 3 - Art Exhibit** - Discuss Lesson 1 coloring sheet message and caricature drawing, and how it is connected to the messages and activities in Lesson 1. Allow children to color the sheet. Allow children to display the colored sheet on their desk/table and invite them to walk around to see everyone's art. Coloring sheets are collected and will be combined into a book after the final lesson.

Supplementary Storybook Activity: Sample Discussion Questions and Journal Sheet Ideas***Vicky's Vegetables*, by Diane Stango and Patricia McKissack**Discussion Questions

- *Did you know vegetables could grow from seeds?*
- *If you could plant a garden like Vicky did what veggie seeds would you plant?*
- *What did Vicky do to help make her garden grow?* (dig dirt, plant seeds, water garden)
- *What did Vicky do to make dinner?* (pick veggies, wash veggies, cut veggies, cook veggies)
- *Did Vicky get any physical activity in the story?* (digging, planting, watering, picking)
- *Is Vicky a Food Adventurer? Why?*

Journal Sheet Idea

- *Draw some seeds you would like to plant in your vegetable garden. Write the name of the vegetable you would like to grow.*

These drawings can be enhanced by providing the students with sample seeds. If possible, choose a variety of seeds, of different shapes, sizes and colors.

***One Bean*, by Anne Rockwell**Discussion Questions

- *What did the seed need to grow into food?* (soil, water, sun)
- *What food was made from the seed?*
- *Who has tasted a bean? What color was the bean you tasted?*
- *Can anyone name a kind of bean?* (green bean, black bean, pinto bean, lima beans, soy beans)
- *What food groups are beans in?* (in the 'protein foods' group and the 'vegetables' group)
- *Are the kids in the story Food Adventurers? Why?*

Journal Sheet Ideas

- *Draw an imaginary bean plant. What color will the beans be?*
- Purchase seeds or beans that can be used to make a mosaic by gluing the seeds/beans into a design. This activity will take a large quantity of seeds to execute well, but these might be available from local garden centers, for low or no cost. Ask a Master Gardener volunteer for suggestions.

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Lesson 2: Six Yummy Plant Parts

Lesson overview

There are five activities available for Lesson 2.

1. Food Adventurer, Mission Accomplished: Students will report on the new vegetables and fruits they tried, as part of the Food Adventurer mission that was given to them in Lesson 1.
2. Plant Parts We Eat: Students will learn about the different plant parts that we eat by going over the Plant Part Poster as a group and coloring their individual Plant Part Poster coloring sheets.
3. Roots, Stems and Leaves Song: Students will sing and dance to a song that reinforces the concept of edible plant parts.
4. Food Adventurer Adjectives, Fruit and Nut Slaw Recipe: Students will help make and will be offered an opportunity to try a healthy recipe.
5. Garden Options: Students will continue work on their mural, indoor or outdoor garden. Choose Activity 5A or 5B.

What you will need

General Materials and Supplies

- Pocket folders (one per student). These are optional, but recommended for collecting student materials throughout the class.

Activity 1, Food Adventurer, Mission Accomplished

- Food Adventurer stickers (one per student). Oregon State University Educators can order these on campus. Other Educators can use the template on the GHK website to make stickers.

Activity 2, Plant Parts We Eat

- Plant Part Poster
- Plant Part Poster coloring sheets (one per student)
- Crayons (one set per student or pair of students)
- Tape and small pieces of paper, or sticky notes, for covering up plant part names on the poster

Activity 3, Roots, Stems and Leaves Song

- Roots, Stems and Leaves song, CD: Oregon State University Educators can ask for CD from campus. Other Educators can order the song [online](http://www.songsforteaching.com/bananaslugstringband/rootsstemsleaves.htm).
<<http://www.songsforteaching.com/bananaslugstringband/rootsstemsleaves.htm>>
- Roots, Stems and Leaves song, lyrics sheet (Appendix F, one per student)
- CD player or other compatible music player

Activity 4, Food Adventurer Adjectives, Fruit and Nut Slaw Recipe

- Access to soap, sink and paper towels to wash hands
- List of Food Adventurer adjectives (from Lesson 1)
- Food Adventurer Adjectives worksheets (Appendix H, one per student)
- Paper cups (four per student or pair of students): Divide recipe into cups, so that they can be easily distributed to students.
- Plastic forks (one per student) for tasting Fruit and Nut Slaw
- Fruit and Nut Slaw recipe sheets (one per group). Recipes may be found in Section 3 of this curriculum, as well as on the Oregon State University Food Hero website (<https://www.foodhero.org>).
- Fruit and Nut Slaw ingredients (refer to recipe)

Activity 5A, Mural Garden Option - Planting the seeds and adding people

- Art supplies and clip art (Appendix M) for adding elements to the garden mural

Activity 5B, Indoor or Outdoor Garden Options

- Basic garden kit (Appendix C)
- Flip chart paper, board space, overhead transparency or paper with list of garden rules and seeds planted (from Lesson 1).
- GHK flash cards of vegetables and fruits whose seeds are planted
- Access to soap, sink and paper towels to wash hands
- Garden journal pages, pencils or pens

Take Home Materials

- GHK family letters, recipe sheets and envelopes for Lesson 2

Supplementary Materials (as needed)

- Crayons, storybook, journal and/or coloring sheet

Preparation

Activity 1, Food Adventurer, Mission Accomplished

- None.

Activity 2, Plant Parts We Eat

- Hang Plant Part Poster in classroom.
- Cover up the names of the different plant parts on the poster, using tape and paper or sticky notes.

Activity 3, Roots, Stems and Leaves Song

- Photocopy Roots, Stems and Leaves song lyrics sheet (Appendix F, one per student). To save paper and time, you can instead transfer lyrics to an overhead transparency or use a document camera to project the lyrics for the entire class to read.
- Set up CD player or other music device.
- Discuss with the Classroom Teacher the appropriate volume for playing the song, singing and dancing at the educational site.

Activity 4, Food Adventurer Adjectives, Fruit and Nut Slaw Recipe

- Set up flip chart or arrange for space on chalkboard to compile the list of Food Adventurer adjectives. Alternatively, arrange to use an overhead projector and transparency, or document camera and sheet of paper, to compile the list of adjectives.
- Gather ingredients for the recipe. If available, gather cabbage, carrot and/or apples from the garden.
- Using safe food handling techniques, prepare the recipe ingredients for quick and easy recipe assembly. Slice the apples and cabbage. Chop the toasted nuts.
- Photocopy Food Adventurer Adjectives worksheets.

Activity 5A, Mural Garden Option - Planting the seeds and adding people

- Prepare the mural garden, so that images of seeds, people and tools can be added to the mural.

Activity 5B, Indoor or Outdoor Garden Options

- Set up flip chart or arrange for board space to display rules for the indoor and outdoor garden, and list of seeds planted.

Take Home Materials

- Stuff family envelopes with a letter and recipe.

Supplementary Activities (as needed)

- Talk to the Classroom Teacher about Lesson 2 supplementary activities.

Teaching outline

Activity 1: Food Adventurer, Mission Accomplished

Welcome back, Food Adventurers. Does anyone remember what it means to be a Food Adventurer? Raise your hand if you would like to answer.

Allow students to raise their hands and suggest answers.

Food Adventurers explore new fruits or vegetables. We can use our eyes to look, our hands to touch, our noses to smell, or our mouths to taste.

Point to your eyes, hands, nose and mouth as you speak.

The last time we met, I gave you a mission. Does anyone remember your Food Adventurer mission? Raise your hand if you remember.

Allow student volunteers to recall last week's mission.

The first part of your mission was to find a fruit or a vegetable that you have never tried before. It could be a fresh, dried, canned or frozen fruit or vegetable, because 'All Forms Count.' Raise

your hand if you found a fruit or vegetable that was new to you. This could be one that you've never tried before or that you've never seen before.

Allow students to raise their hands. Call on one or more students to share the new fruit or vegetable that they found.

Great job, Food Adventurers! Remember to be on the lookout for new fruits or vegetables in the cafeteria, or at home.

The second part of the mission was to try a new fruit or vegetable. Remember, you could have tried it with your eyes, your hands, your nose—and maybe even with your mouth. How many of you Food Adventurers completed this mission? Raise your hand if you tried a new fruit or vegetable.

Call on students who have raised their hands. Ask them questions about their Food Adventurer experience.

- *Which fruit/vegetable did you try?*
- *Did you try it with your nose/eyes/hands/mouth?*
- *Where did you try this fruit/vegetable? Was it at home, in the cafeteria or some other place?*
- *Did you taste it? If so, did you like it? Would you try it again?*

Well done, Food Adventurers! Remember to be on the lookout for new vegetables and fruits, at home or in the cafeteria. Even seeing the new fruit or vegetable completes your Food Adventurer mission. You can also use your sense of touch, smell or taste to try a new food.

Pass out Food Adventurer stickers.

When eating a meal or snack, try to fill half your plate with vegetables and fruits. This is one way to make healthy food choices. The more we try new vegetables and fruits, the easier and more exciting it will be to fill half of our plate with vegetables and fruits.

Activity 2: Plant Parts We Eat

Today, we're going to learn about the different plant parts we eat. Many of these yummy plant parts can be grown in a garden. We can grow grains (such as corn) or proteins (such as beans) in a garden. Most people grow vegetables and fruits in their garden.

When we grow fruits or vegetables in a garden, we mostly eat only one part of the plant. For example, lettuce leaves are yummy and crunchy, but we don't eat lettuce roots. Apples are the tasty fruits of an apple tree, but we don't eat apple leaves off the tree.

Today, we are going to learn more about the six parts of garden plants. Each can be added to a healthy meal or snack. Before we name the six parts of a plant, let's point to different parts of our bodies that we use when we're active.

Lead students in exercises, based upon the body parts that they choose. For example- for shoulders- ask them to roll their shoulders for movement. For legs, ask them to shake their legs. For knees, ask them to bend their knees into a squat.

Point to the Plant Part Poster. Make sure that the plant part names have been covered.

Just like you, a plant has different parts. Plants have six parts. Each of these parts helps the plant do something. Just like your hands help you draw, or eat, or brush your hair, a plant has parts to help it live and grow.

However, these different parts of a plant often look very different on different types of plants.

We are going to use a sunflower, a beet and broccoli to learn about plant parts. Pass out the Plant Part Poster coloring sheets and crayons. Ask the students to put their names on the sheets. *Is there a volunteer who wants to come up and see if they can point to the root on the drawing of the sunflower, the beet and the broccoli?*

Allow time for a volunteer to come up and point out the roots on the Plant Part Poster. Have the rest of class follow along on their coloring sheet and point to the roots. If the volunteer does not point to the roots on their first try, allow them to try again until they correctly point to the roots. Remove the pieces of paper from the poster that are covering the words “Root” and ask the class to color in the roots on their coloring sheet. Afterwards, point out that beets are a type of root vegetable and show examples of other roots we eat from the GHK flash cards (e.g. radish, parsnip, carrot). Go through the same protocol (i.e. ask for volunteer, ask class to follow along on the coloring sheet, allow volunteer to try again until correct, have class color in plant part on their coloring sheet, show example from educator flash cards) for all of the plant parts, as follows.

Is there another volunteer who wants to come up and see if they can point out the stems on the sunflower, the beet and the broccoli? Remove the pieces of paper from the poster that are covering the words “Stem” when the student correctly points to the plant stems. Instruct the class to color. Point out that broccoli stalks are a type of stem that we eat. Show examples of other stems we eat from the GHK flash cards (e.g. celery, asparagus, rhubarb).

Is there another volunteer who wants to come up and see if they can point out the leaves on the sunflower, the beet and the broccoli? Once the leaves have been identified on the Plant Part Poster, instruct the class to color. Point out that we can eat beet leaves and broccoli leaves (primarily in broccoli raab). Show examples of leafy greens we eat from the GHK flash cards (e.g. spinach, cabbage, kale).

Is there another volunteer who wants to come up and see if they can point out the flowers on the sunflower and the broccoli? As above. Show an example of a flower we eat from the GHK flash cards (e.g. cauliflower, calendula, squash blossoms).

Is there another volunteer who wants to come up and see if they can point out the fruits on the

sunflower? The fruits of a sunflower are what we know as the sunflower seeds. The actual seed is only part of what we commonly recognize as sunflower seeds. These differences aren't important for this class, but the information may be handy to have if students ask. Students should point to the head of the sunflower for this answer. Once identified, remove the paper on the poster covering the word "Fruit." Instruct the class to color. Then show an example of a fruit we eat from the GHK flash cards (e.g. blueberries, cucumber, tomato).

Now we are on the last part of a plant. Is there another volunteer who wants to come up and see if they can point out the seeds on the sunflower? As above. Show an example of seeds we eat from the GHK flash cards (e.g. green peas, sunflower seeds, lentils).

Remember, we learned that we usually eat only one part of the plant. This is particularly true for the fruits that we eat. We eat tomatoes, which are the fruit of a tomato plant, but we don't eat tomato leaves or stems. We eat melons, which are the fruit of the melon plant, but we don't eat melon leaves or stems. In case students ask, there are some instances in which we eat more than one part of a plant. Examples include broccoli (leaves, stem, flowers), peas (seeds, flowers, shoots) or turnips (roots and leaves).

What is the part on the sunflower we eat? What parts of broccoli do we eat? What parts of beets do we eat? Allow time for answers. Show students sunflower seeds on the GHK flash cards.

Finish the section by reviewing the plant parts. Then explain that you have a fun way to help everyone remember the six plant parts. Point at the Plant Part Poster and demonstrate motions for each plant part, asking students to mimic you.

Roots – Wiggle your feet.

Stem – Bend your legs at the knees.

Leaves – Shake your hands out to the side.

Flower – Raise your arms above your head, to form a "V".

Fruit – Clasp your hands above your head, to form a circle with your arms.

Seeds – Wiggle your fingers and move your hands down to the ground.

Use these same motions when singing the song in the next activity.

Activity 3: Roots, Stems and Leaves Song

*To remind you of the six parts of the plant, we are going to sing a song and dance! This song is called **Roots, Stems and Leaves**.* The dance can focus on the parts of the body equated to the plant parts, can be a freestyle dance experience, or can be a combination of both.

The full version of the song is rather long. The shortened version of the song includes just the chorus. Depending upon the time available, and the attention span of the class, you may want to focus on the chorus, rather than the entire song. Or, you may want to use the chorus plus one or more verses.

Play the song on a CD player, or sing the song for the students. Have the students try and sing

along as they get used to the chorus. Pass out lyrics sheets (Appendix F) as needed, highlighting versus that will be sung. Incorporate dancing.

Thank you so much for singing and dancing to the Roots, Stems and Leaves song. We had fun, and learned about different plants that we eat!

Activity 4: Food Adventurer Adjectives, Fruit and Nut Slaw Recipe

Prior to preparing the recipe, have students wash their hands.

We're going to prepare a fruit and nut slaw as a healthy snack. A slaw is a type of salad, usually one that contains shredded cabbage. But first, before handling, preparing or eating food, we need to wash our hands! We want to make sure that we keep our hands clean. This will help to keep us healthy.

If necessary, remind students about proper handwashing technique (Appendix B).

The recipe for the fruit and nut slaw can be found in Section 3 of this curriculum, as well as on the Food Hero website (foodhero.org).

Prepare the recipe. Divide the students into teams. Assign each team one task: measure, cut, mix, clean. Volunteers can assist the students with these tasks.

In this recipe, there are seeds (nuts), leaves (cabbage), fruits (apples and dried fruit) and roots (carrot). Ask the students, *Which of the ingredients is a [root vegetable, leafy green, fruit]?*

When it is time to taste the snack, remind students of their Food Adventurer mission.

Which one of you Food Adventurers would like to remind us of all of the different ways that we can try a new food?

Allow students to answer.

That's right! We can try a new food with our eyes, our nose, our hands or our mouth. Your Food Adventurer mission today is to try the snack with at least one of your senses. So, you can try it with your eyes, or with your hands, or with your nose, or with your mouth. Or, you can try the snack with two, three or all four senses. Do you accept this mission? Great!

Pass out the Food Adventurer Adjectives worksheets.

We're going to practice our adjectives, while completing our Food Adventurer mission! We're going to describe our snack – how it looks, feels, smells and tastes.

Refer to the list of adjective words or drawings that was generated in Lesson 1. Students can use these adjectives, or suggest new adjectives, to describe the fruit and nut slaw.

Where possible, encourage older children or grade levels to use descriptive adjectives, rather than subjective adjectives. Remember, subjective adjectives are based on personal opinions. Examples are good, bad, delicious, disgusting. Descriptive adjectives are more objective. Hard, fuzzy, smooth, sweet, orange, round, are examples.

Lead the children through these different steps of the Food Adventurer process. This may be particularly important for a new food. Students who do not want to try the snack by touching, smelling or tasting should be allowed to 'opt out' after recording how the slaw looks to them.

Okay, Food Adventurers. Let's look at our fruit and nut slaw. What do you see? What color do you see? Can you think of other foods that are the same color?

Allow students time to examine the slaw with their eyes, and to record and share their observations.

Let's try the fruit and nut slaw with our sense of touch, by holding the cup in our hands. How does it feel on your skin? Is it warm or cold? Can you softly squeeze the cup? Is it soft or hard?

Allow the students to try the fruit and nut slaw with their sense of touch, and to record and share their observations.

Let's try the fruit and nut slaw with our nose. What can you smell? Does the smell remind you of another food?

Allow students time to try their snack with their sense of smell, and to record and share their experience.

Let's try our slaw with our mouths. How does it taste? Does it taste like something else that you've tried? What do you think of the taste? Would you try it again?

Allow students to taste their snack, and to record and share their observations.

Great job, Food Adventurers! You can take the recipe for the fruit and nut slaw home, to share with your family. Let them know that you were a Food Adventurer today, and encourage them to be one, too.

If you like, you can pass out GHK Food Adventurer stickers, and allow students to attach them to their shirt or sweater.

Please wear this sticker, to let everyone know that you tried a new food - with your eyes, your nose, your hands or your mouth - as part of your Food Adventurer mission.

Activity 5A: Mural Garden Option - Planting the seeds and adding people

Today, we're going to add ourselves into the mural garden. We will also add garden tools and will plant seeds in our garden.

Have students and the Classroom Teacher either draw themselves on the mural or use clip art of kids and a teacher. The students can select an image of a person that represents themselves, and glue it on the mural. *First we are going to add ourselves on the mural. Place yourself on the mural being active.* Allow students to do this and then return to their seats.

Before we add the seeds in our mural garden, I want to know what types of vegetables or fruit you like to eat.

Go around the class and ask each student to say their favorite vegetable or fruit. Make a list of these on a flip chart. Choose several vegetables and fruits to plant in the mural garden, as space and class size allows. Identify the vegetables and fruits that the class chose on a piece of flip chart paper, for use in later lessons.

Fantastic! We will plant the seeds of these plants in our garden. We will help them grow. When they're ready to be eaten, we will celebrate with a garden harvest and taste test.

Gardening is a great way to be physically active! Using tools in the garden works our muscles, so that we can be strong. Stretching beforehand keeps us flexible and guards against soreness. Does anyone know what tools we need to plant our healthy eating seeds?

Allow students time to answer (e.g. seeds, shovel, watering can, and seed marker). Hold up examples of donated tools or of clip art pictures. Lead children in exercises that mimic tool use: raking, hoeing, shoveling. Before and after the tool exercises, lead children through simple stretching exercises that target muscles in the abdomen, back and shoulders (e.g. trunk rotations, shoulder circles, side bends).

Divide the students into teams. Provide each team with clip art of the tools they will need, as well as seeds, markers and crayons. Have each team paste their tools on the mural (perhaps by a garden shed) and draw in a mounded row where the seeds will be planted. They can also draw in the seeds beneath the soil or glue on seeds and they can 'mark' their row with a labeled popsicle stick.

In the next lesson, we are going to add the roots of the plant.

Point to roots on the Plant Part Poster, if available.

Activity 5B: Indoor or Outdoor Garden Options

The last time we met, we planted seeds in our garden. Can anyone remember one of the seeds that we planted? Raise your hand if you remember.

Allow students to name some of the seeds that they planted. Refer to the list that the class generated the previous week.

Today we're going to check on our seeds. We want to make sure that they are growing well in

our garden. Before we go out into the garden (or go to the indoor garden), I want to review a few of our garden rules.

Refer to the list of garden rules. These may be written on the board, displayed on a piece of paper that is hanging on a wall, or projected via a document camera or overhead projector.

These rules have to do with the plants, garden, tools and animals. We can have fun in the garden, and we can be active, but we need to do so safely and carefully. For example, we handle plants gently, and we're careful not to step on them. We handle tools carefully and safely. If we find insects or other animals in the garden, we let an adult know. Some insects are safe to touch and pick off of our garden plants. Others may bite or sting. Let an adult who knows the difference teach you the difference.

Remember, if safety or car traffic are concerns, you may want to have students walk to and from the garden. Otherwise, you may want to encourage students to skip or jog or dance to and from the garden, to provide an opportunity for more vigorous physical activity.

Once in the garden, you can pass out clipboards, garden journal pages, and pencils or pens. Have the students write or draw anything they observe about the plants in their gardening journal. You can prompt the students with questions.

- *Do the plants look taller, compared to the last time you saw them?*
- *How much have the plants grown?*
- *Can you see the plant stems?*
- *Do the seedlings have leaves?*

To help students understand that many of the foods they see at a grocery store originate from a farm or garden, ask them to compare the appearance of their seedlings to the appearance of the foods that they produce. For example:

- If they planted radish seeds, ask them if the plant looks like a radish. As needed, refer to the GHK flash cards to help with identification.
- If they planted tomato seeds or seedlings, ask them if anything about the plant resembles a tomato? As needed, refer to the GHK flash cards to help with identification.

If the seeds or seedlings need to be watered, demonstrate how to carefully water plants. If available, a Master Gardener or other garden volunteer can demonstrate how this is done.

We're going to water our seeds/seedlings. Like us, plants need plenty of water to keep from becoming thirsty or dehydrated. With the help of (volunteer's name), we're going to show you how to water the seeds and seedlings in a garden. For our garden seeds/seedlings, being watered is their way of drinking water. You drink water when you're thirsty. Plants need water, too!

Point out any seedlings or plants that might show signs of wilting/dehydration, or work with a Master Gardener or other garden volunteer to identify plants that might need to be watered.

We're watering gently, so that we don't wash away the soil or damage the plant. This is a better way to water. We don't want to dump the water on to the plant.

When the demonstration is over, lead the students back to the classroom. Remember to emphasize garden rules about walking to and from the garden. Have students wash their hands.

Closure

Thank you for a great class today. Thank you for learning about plant parts that we eat, and singing and dancing. Thank you for taking time to carefully notice things in the garden.

The next time we are together we will learn about the roots of the plant.

Point to the roots on the Plant Part Poster.

The last thing I am going to do for our lesson is to give your teacher a special letter for your family about what we did today. You might remember this letter from last week. There is also a fun activity for you in here (hold up a family letter envelope), and a recipe for your family. Before taking this home, your teacher will let you draw a picture of a sunflower on the front. Make sure to share your sunflower picture with your family.

Supplementary activities

These activities are for the Classroom Teacher to do with the students before you return for next lesson. Or, you can do these with the students during the lesson if time allows.

- **Supplementary Activity 1 - Family Envelope Drawing** - Students draw a picture of a sunflower on the front of the family letter envelope. These envelopes are sent home with the students, to be given to their family.
- **Supplementary Activity 2 - Storybook and Discussion and Journal** - Read the storybook to children and then lead a discussion on key points that connect the book to GHK messages and activities. Sample discussion questions can be found on the next page. Children then write or color about what they learned on a journal sheet. Journal sheets are collected and will be combined into a book after the final lesson.

Storybook Options: *We Are What We Eat*, by Sally Smallwood or *All Our Fruits and Vegetables*, by Roberta L. Duyff and Patricia McKissack

- **Supplementary Activity 3 - Art Exhibit** - Discuss Lesson 2 coloring sheet message and caricature drawing, and how it is connected to the messages and activities in Lesson 2. There are two choices of coloring sheets for this lesson. Both can be offered to children, and they can choose the one they would like to color. Allow children to color the sheet. Allow children to display the colored sheet on their desk/table and invite them to walk around to see everyone's art. Coloring sheets are collected and will be combined into a book after the final lesson.
- **Supplementary Activity 4 - Research Project** - Have students research the plants that they are growing in their mural, indoor or outdoor garden. Examples of topics they can research and share with the class are:
 - what part of the plant we eat,
 - how tall and/or how wide the plant grows (e.g. how much space it needs in a garden),
 - cultivation requirements (e.g. sun, water, fertilizer) and how long it takes to go from seed to harvest.

Supplementary Storybook Activity: Sample Discussion Questions and Journal Sheet Ideas***We Are What We Eat*, by Sally Smallwood**Discussion Questions

- Ask students if they want to help you find edible/eatable plant parts we eat from the fruits and veggies pictured (use the Plant Part Poster to illustrate).
 - Root – radish
 - Leaf
 - Stem – celery
 - Seeds
 - Fruit – avocado, kiwi, cucumber, grape, strawberry, apple, banana, pineapple
 - Flower
- *We learned what the kids in the book eat. Now I want to know what you eat!* Have students name one fruit or veggie they like to eat.

Journal Sheet Idea

- Draw a fruit or veggie you like to eat. Write the name of your fruit or vegetable.

***All Our Fruits and Vegetables*, by Roberta L. Duyff and Patricia McKissack**Discussion Questions

- Ask students if they want to help you find edible/eatable plant parts we eat from the yummy fruits and veggies pictured (use the Plant Part Poster to illustrate).
 - Root – carrot, turnip
 - Leaf – greens, cabbage, onion (onion is a bulbs, and bulbs are specialized leaves that store energy for the plant)
 - Stem – celery, rhubarb, potato (also a tuber)
 - Seeds – peas, corn
 - Fruit – grapes, berries, apple, banana, pineapple, tomato, fig, plum, pear, peppers, melon, papaya, orange, star fruit, noni, kiwi, cherry, guava
 - Flower – broccoli, cauliflower
- *Do you remember why the students in the story got stickers?* (tasting a veggie)
- *What recipe did the students use edible/eatable plant parts to make?* (fruit salad, orange and lemon juice)
- *Are the students Food Adventurers? Why?*

Journal Sheet Idea

- Draw a salad with different edible/eatable plant parts. Choose a name for your salad. Write that name next to your drawing.

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Lesson 3: Root, Root Hurray!

Lesson overview

There are six activities available for Lesson 3.

1. Plant Parts We Eat, Review: Students will review the six plant parts that they learned about in Lesson 2.
2. Roots, Stems and Leaves Song, Continued: Students will learn about root functions and root vegetables, by singing the chorus and the verse about roots.
3. Carrot Demonstration: Students will examine the parts of a carrot root that are responsible for nutrient storage and nutrient transport.
4. Food Adventurer Adjectives, Carrot, Jicama and Orange Salad Recipe: Students will help make and will be offered an opportunity to try a healthy recipe.
5. Root Watchers: Students will plant the seeds of root vegetables in a container that will allow them to observe and track root growth, beneath the soil surface.
6. Garden Options: Students will continue work on their mural, indoor or outdoor garden. Choose Activity 6A or 6B.

What you will need

General Materials and Supplies

- Pocket folders (one per student). These are optional, but recommended for collecting student materials throughout the class.

Activity 1, Plant Parts We Eat, Review

- Plant Part Poster

Activity 2, Roots, Stems and Leaves Song, Continued

- Roots, Stems and Leaves song materials: CD, CD player, lyrics sheets (Appendix F)
- GHK flash cards of root vegetables

Activity 3, Carrot Demonstration

- One large carrot
- One knife, to slice the carrot lengthwise

Activity 4, Food Adventurer Adjectives, Carrot, Jicama and Orange Salad Recipe

- Access to soap, sink and paper towels to wash hands
- List of Food Adventurer adjectives (from Lesson 1)
- Food Adventurer Adjectives worksheets (Appendix H, one per student)
- Paper cups (four per student or pair of students): Divide recipe into cups, so that they can be easily distributed to students.
- Plastic forks (one per student) for tasting Carrot, Jicama and Orange Salad

Lesson 3: Root, Root Hurray!

- Carrot, Jicama and Orange Salad recipe sheets (one per group). Recipes may be found in Section 3 of this curriculum, as well as on the Oregon State University Food Hero website (<https://www.foodhero.org>).
- Carrot, Jicama and Orange Salad ingredients (refer to recipe)

Activity 5, Root Watchers

- Clear plastic containers, at least 8 inches deep (1 per group). The container will be used to observe root growth beneath the soil. Clear beverage containers or cups, with flat sides, work well.
- Potting soil
- Scissors
- Radish seeds
- Rulers
- Markers

Activity 6A, Mural Garden Option - Adding the roots

- Art supplies for adding roots to the garden mural

Activity 6B, Indoor or Outdoor Garden Options

- Flip chart paper or board space, with list of garden rules and seeds planted (from Lesson 1)
- GHK flash cards of vegetables and fruits that the class planted as seeds (in Lesson 2).
- Access to soap, sink and paper towels to wash hands
- Garden journal pages, pencils or pens

Take Home Materials

- GHK family letters, recipe cards and envelopes for Lesson 3 (one set per student)

Supplementary Materials (as needed)

- Crayons, storybook, journal and/or coloring sheet

Preparation

Activity 1, Plant Parts We Eat, Review

- Hang Plant Part Poster in classroom.

Activity 2, Roots, Stems and Leaves Song, Continued

- Set up CD player or other music device.
- Discuss with the Classroom Teacher the appropriate volume for playing the song, singing and dancing at the educational site.
- Arrange for chalkboard space, or hang flip chart paper, to write down the three functions of a root.

Activity 3, Carrot Demonstration

- Set up carrot demonstration (be prepared to safely slice a large carrot, lengthwise).

Activity 4, Food Adventurer Adjectives, Carrot, Jicama and Orange Salad Recipe

- Set up flip chart or arrange for space on chalkboard to compile the list of Food Adventurer adjectives.
- Gather ingredients for the recipe. If available, carrots from the garden.
- Using safe food handling techniques, prepare the recipe ingredients for quick and easy recipe assembly. Complete any food preparation tasks necessary to expedite the lesson (e.g. peel and grate the carrots; peel the oranges; slice the jicama or substitute).
- Photocopy Food Adventurer Adjectives worksheets (Appendix H).

Activity 5, Root Watchers

- Gather or prepare containers that will be used as root boxes. If using tissue boxes, cover the window with clear cellophane, using glue to adhere the cellophane to the inside of the window edges. (one per pair of students). If brand names are visible on the container or box, cover these with tape. Enlist the help of a Master Gardener or other volunteer to make the root boxes.
- Set out root containers paper towels, water soluble glue, tape, markers, rulers, radish seeds and soil.
- Talk to the Classroom Teacher to arrange for window ledge space, or table space next to a window. South- or west-facing windows are best. These sites receive the most sun.

Activity 6A, Mural Garden Option - Adding the roots

- Make sure that mural garden is hanging in an area where roots can be added to the mural.
- Prepare the mural garden, so that images of roots can be added to the mural.

Activity 6B, Indoor or Outdoor Garden Options

- Display rules for the indoor and outdoor garden, and list of seeds planted.

Take Home Materials

- Stuff family envelopes with a letter and recipe.

Supplementary Activities (as needed)

- Talk to the Classroom Teacher about Lesson 3 supplementary activities.

Teaching outline

Activity 1: Plant Parts We Eat, Review

Welcome the students back.

Who can remember what we learned last time we were together? Help the students to recall the Plant Part Poster, *Roots, Stems and Leaves* song or other activities that will remind them of the six plant parts.

Excellent job everyone! With a partner, see if you can name all six parts of a plant. You may look at the Plant Part Poster for help and think about how we connected plant parts to body parts to help you remember. Make sure both you and your partner get a chance to say the six parts. Use

Lesson 3: Root, Root Hurray!

your fingers to count to six, as you say the names of the plant parts.

Allow students time to review the six plant parts with their partner.

Is there a team that would like to share the names of the six plant parts we learned about, with the rest of the class?

Choose one pair to come to the front of the room and recite the names of the plant parts. One of the students can point to the Plant Part Poster. The other students, following your lead, can pantomime the six parts of a plant by being physically active with different parts of their body.

- *Rock back on your heels. Rock forward on your toes. Our feet help to hold us to the ground, just like the roots of a plant.*
- *Stand nice and tall, with your ankles and knees and thighs touching, so you're your legs are strong and straight. Pull your belly button in, to keep your torso tight. This gives us strength to stand up tall, just like the stem of a plant.*
- *Hold your arms out to the side, and open up the fingers on your hands nice and wide. Wiggle your fingers, and pretend you're catching the sunlight, just like the leaves on a plant capture sunlight for energy.*
- *Hold your head up high. Pretend that your head is a flower, looking to attract bees and butterflies.*
- *If bees and butterflies visit our beautiful, flowering heads, this will help our plants to bear fruit. Pretend your ears are the fruits that grow on your plant.*
- *Finally, for the last of our six plant parts, let's pretend that our hair is the seeds that we can collect and plant, so that we can grow all over again.*

Activity 2: Roots, Stems and Leaves Song, Continued

Today, we will be learning about root vegetables. Let's review what we know about roots by singing the Roots, Stems and Leaves song. Today, we're going to sing the chorus and the verse about roots.

Pass out the laminated lyrics sheet and sing the chorus and verse about roots. Students can dance as they are singing.

For the following activity, write the three functions of roots on a flip chart or chalkboard. This will help visual learners to follow along with this section.

The three functions of roots are: 1) hold the plant in the ground, 2) help the plant take up water and nutrients from the soil, and 3) store energy and nutrients for the plant.

Also for this activity, use the Plant Part Poster as a visual.

In the song, there are clues about what roots do for a plant. The song says: "Roots hold the plant in the ground" and "Roots gather up water that falls all around." Roots have a few jobs. They hold the plant in the ground (like an anchor holds a boat in the water). You can wiggle your feet when talking about roots. They help the plant drink up water and food from the soil.

Lesson 3: Root, Root Hurray!

These food contains the nutrients that plants need to grow and be healthy.

Nutrients are healthy parts of foods. Different food groups have foods that are high in different nutrients. For example, foods in the protein group – like nuts and beans and lean cuts of meat – are high in protein, which helps us build muscles. Foods in the dairy group—like low fat milk and Swiss cheese—are high in calcium, which helps us build strong bones. The fruit group and the vegetable group have foods with a lot of vitamins and minerals, which help with things like healthy eyes and skin and healing cuts.

Point to the list of root functions on the flip chart or board.

Remember, roots 1) hold the plant in the ground, and 2) help the plant drink up water and nutrients from the soil. Another job of a root (number 3) is to store energy (fuel) and nutrients for the plant. Plants that use their roots to store energy (fuel) and nutrients are special. These are the roots that we eat.

Hold up the Growing Healthy Kids flash cards as you list examples of root vegetables.

A carrot is a root vegetable we eat. We're eating the stored energy and nutrients from the carrot plant. One nutrient that carrots store is vitamin A, which helps our eyes and skin stay healthy! Parsnips, beets, radishes, turnips and daikon are also root vegetables. These vegetables are the roots of the plant. They help the plant to store energy and nutrients. We eat the stored energy and nutrients when we taste a root vegetable.

Activity 3: Carrot Demonstration

Show students a whole carrot.

We know that a carrot is a root vegetable. Can anyone point out the root on this carrot? Can you tell me what other plant parts you see?

If the carrot still has its top, the students will be able to see the root, stem and leaves of a carrot.

Can you tell me what other plant parts are missing?

Carrots bought at the market or harvested from the garden should not have flowers, fruits or seeds.

This carrot was harvested before it had a chance to develop flower, fruits and seeds. These parts develop later in a carrot's life. The carrot plant uses the energy it has stored in its roots to make flowers, which are then pollinated and develop fruits with the seeds inside. When carrot plants go to seed, they're no longer tasty to eat. But, without carrot seed, we couldn't plant more delicious and nutritious carrots in our garden.

I'm going to cut this carrot in half, so that we can see what it looks like inside.

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Cut the carrot in half, lengthwise, from tip to top. Show students the carrot halves.

Point to the outer, darker layer of the carrot. *Can you see the two layers of the carrot? The outer layer is darker. This is where the carrot root stores energy and vitamin A. Vitamin A gives the carrot its color, and helps to keep our eyes healthy.*

Point to the inner, lighter layer of the carrot. *The inner layer is a lighter color. It's also harder than the outside layer. This is what the carrot uses to move nutrients and water into the stem and leaves.*

Pass the carrot halves around for students to touch and examine.

Activity 4: Food Adventurer Adjectives, Carrot, Jicama and Orange Salad Recipe

Prior to preparing the recipe, have students wash their hands.

We're going to prepare a salad with root vegetables. Eating root vegetables, like carrots, is a great way to vary our veggies. We'll then be able to taste this healthy snack. But first, before handling, preparing or eating food, we need to wash our hands! We want to make sure that we keep our hands clean. This will help to keep us healthy.

If necessary, remind students about proper handwashing technique (Appendix B).

Prepare the recipe. Divide the students into teams. Assign each team one task: measure, cut, mix, clean. Volunteers can assist the students with these tasks.

In this recipe, there is a fruit (oranges) and there are two types of roots (carrot and jicama). Parsnip and celeriac, which may be substituted for jicama, are also roots. Water chestnuts may also be substituted for jicama. A water chestnut is a special type of stem that grows underground and stores energy for the plant. This type of stem is known as a *corm*. If canned water chestnuts are used, rather than focusing on terminology, tell students that they are special stems, which grow underground and store energy for the plant – just like the roots we've learned about!

When it is time to taste the snack, remind students of their Food Adventurer mission. Refer back to Lesson 2, Activity 4, for spoken prompts and directions associated with a Food Adventurer Adjectives recipe activity.

Activity 5: Root Watchers

To learn more about roots that we eat, we're going to work in groups and plant the seeds of a root vegetable, so that we can see the seeds germinate and watch the roots grow. Germination is a word that describes how plants come out of seeds and begin to grow.

Have students work in pairs or small groups. If students have been learning about measurement, reinforce these concepts when students use the ruler or when they fold and divide the paper towel 'seed mat.'

Lesson 3: Root, Root Hurray!

Hand out the root containers, soil and paper towels.

We're going to germinate radish seeds in a special container that will allow us to peek below the soil, so that we can watch the roots as they grow. We'll use a clear container, so that we can watch the roots as they grow underneath the soil.

Pass out paper towels, radish seeds, glue and scissors. Four students, or two pairs of students, can share these supplies.

Radish plants need room to grow, so the seeds should be planted about 1" apart. We will plant our seeds on a seed mat so that it will be easier to space them out. We will use a paper towel to make our seed mat. We can glue our seeds to the paper towel, and will place them next to the root box window. We'll then fill our root container with soil. The seeds will germinate, and we can watch as the roots grow.

Slowly demonstrate the next steps, and ask students to follow along. Fold a paper towel in half, four times. When the paper towel is unfolded, there should be 16 smaller squares. Use the scissors to cut the paper towel, to create four rows of four squares.

Radish seeds need to be planted about ½" deep in the soil. You have four squares on your paper towel. For each square, use a ruler to measure ½" from the top of the paper towel.

For students who do not know how to read a ruler, or who have not yet learned fractions, you can mark the ½" line with colored tape, or ask the volunteer or Classroom Teacher to mark the ruler with colored tape. If rulers aren't available, you may use popsicle sticks with a line marked ½" from the edge.

Use a marker to 'dot' where a seed should be planted. This is where you will glue your radish seeds.

One or two radish seeds should be planted in each section. Because some seeds may fail to germinate, two seeds per section provides additional insurance that a radish plant will grow. Allow time for the glue to dry, before taping the seed mat to the inside of the root box, so that the seeds are facing outwards. This will allow students to view the seeds as they germinate and grow. Students may only be able to fit two to three (out of four) seed squares in the window the container. That's okay.

Have students work with a Master Gardener or other volunteer to fill the root box with soil and water the seeds. Take care not to wash the soil away and/or expose the newly planted seeds. Once planted, have the students label their root boxes and place them on a table or ledge next to a window, so that the seeds and seedlings get lots of sun.

Write your name on your root container. Allow your partner to write their name, too. Carefully place your container next to the window, so that the seeds will get lots of sunlight. The sunlight and the damp potting soil will help your radish seeds to germinate and grow. Because you

Lesson 3: Root, Root Hurray!

planted your seeds against the edge of the container, you should be able to watch the roots as they grow. Be patient. You may see your seeds germinate, and the plant grow roots and leaves, in about 5-7 days. The next time I visit you, we should be able to see the roots of the radish.

If the Classroom Teacher allows, have the students check their root boxes each morning. The Teacher can help them to keep the soil damp, as necessary. Students can write or draw their observations on their Growing Healthy Kids journal sheet.

Activity 6A: Mural Garden Option - Adding the roots

Raise your hand if you remember the vegetables/fruits that we planted in our mural garden.

Allow students to answer. Refer to the flip chart list of seed names that were planted.

Today, we're going to help our vegetable and/or fruit seeds sprout (germinate) and grow. We can add their roots in the ground. This will help our plants to take up nutrients from the soil like water and vitamins and minerals.

Point to the Plant Part Poster as an example of what the roots of a sprouted (germinated) seed may look like. For this lesson, you may want to have students work in the same teams they were in for the Lesson 2 Mural Garden activity.

Pass out the crayons/markers or other supplies to make the roots. Pipe cleaners are a good option for roots, as their hairs mimic root hairs, which are a part of all roots. They give the root increased surface area from which the plant can better absorb water and nutrients.

Add roots to your plants. In the coming weeks, we will continue to help the (recite names of vegetables planted in the mural garden) in our garden grow.

Collect mural materials when you are through.

In the next lesson, we are going to add water to the mural.

Activity 6B: Indoor or Outdoor Garden Options

Refer to list of garden rules from Lesson 1.

These rules have to do with the plants, garden and tools. The rules help us to be active in the garden, and to have fun safely. For example, we handle plants gently. We walk, and do not run in the garden or to and from the garden. We're careful not to step on plants. We handle tools carefully and safely. We don't touch insects or other animals unless we know it is safe.

If you have a garden on site with root vegetables growing and ready to harvest, you can have students harvest the root vegetables. While doing this, note that gardening is a form of physical activity. Refer to the MyPlate Garden Poster images to reinforce this point. Allow students to carefully dig up the roots, before bringing them inside to wash the vegetables and their hands.

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You can cut the vegetables into small pieces, and allow the students to taste what they have grown. If you are using an in-class recipe activity, you may want to include your harvest in the recipe.

Examples of root vegetables that do not need to be cooked prior to tasting include carrots and radishes. Parsnips, beets and rutabagas are options that require cooking prior to tasting. These vegetables can be roasted with a small amount of olive oil and salt, if you have access to an oven.

Another indoor or outdoor garden option is to have students check on the seeds that they planted in Lesson 1. They can water the seeds, if necessary, or can record observations on seedling growth in their garden journal (pass out clipboards, garden journal sheets, pens and pencils).

Closure

Today we learned about different roots we can eat like carrots and radishes. We learned that roots we eat store energy and nutrients for the plant and they can be yummy! The next time we are together we will learn about water for people and plants (point to girl watering on MyPlate Garden Poster).

Food Adventurers: before we go, I want to give you another mission. Your mission is to find and to try a root vegetable. You can find the root vegetable at home or in the cafeteria. You can try it with your eyes, nose, hands or your mouth. Food Adventurers - do you accept this mission?

Allow students to answer.

Wonderful. I can't wait to hear your mission reports, the next time we meet.

I've given your teacher an envelope to take home to your family. (Hold up a family letter envelope.) In the envelope, there is letter describes what we did today. There is also a really fun activity for you and a recipe for your family. Before you take the envelope home, your teacher will let you draw a picture of a root vegetable on the front. You can share your drawing with your family, and talk about what you learned about root vegetables.

Supplementary activities

These activities are for the Classroom Teacher to do with the students before you return for the next lesson. Or, you can do these with the students during the lesson if time allows.

- **Supplementary Activity 1 - Family Envelope Drawing** - Students draw a picture of a root vegetable on the front of the family letter envelope. These envelopes are sent home with the students, to be given to their family.
- **Supplementary Activity 2 - Storybook and Discussion and Journal** - Read the storybook to children and then lead a discussion on key points that connect the book to GHK messages and activities. Sample discussion questions can be found on the next page. Children then write or color about what they learned on a journal sheet. Journal sheets are collected and will be combined into a book after the final lesson.

Storybook Option: *Carrot Soup*, by John Segal

- **Supplementary Activity 3 - Art Exhibit** - Discuss Lesson 3 coloring sheet message and caricature drawing, and how it is connected to the messages and activities in Lesson 3. Allow children to color the sheet. Allow children to display the colored sheet on their desk/table and invite them to walk around to see everyone's art. Coloring sheets are collected and will be combined into a book after the final lesson.
- **Supplementary Activity 4 - Research Project** - Have students research the plants that they are growing in their mural, indoor or outdoor garden. Examples of facts they can research and share with the class are:
 - what part of the plant we eat,
 - how tall and/or how wide the plant grows (e.g. how much space it needs in a garden),
 - cultivation requirements (e.g. sun, water, fertilizer) and how long it takes to go from seed to harvest

Supplementary Storybook Activity: Sample Discussion Questions and Journal Sheet Ideas

***Carrot Soup*, by John Segal**

Discussion Questions

- *Why did rabbit plant carrot seeds?* (He looked forward to enjoying his favorite food, carrot soup.)
- Point out the page showing the many kinds of carrots to choose from. *What plant part are carrots?* (Use the Plant Part Poster to illustrate the answer: roots.)
- *Did rabbit get any physical activity during the story? If so, what?* (plowing, planting, watering, weeding)
- *Is Rabbit a Food Adventurer? Why?*

Journal Sheet Idea

- Draw a picture of soup you could make from carrots in your garden. If appropriate, give your soup recipe a name.

Lesson 3: Root, Root Hurray!

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Lesson 4: Water for People and Plants

Lesson overview

There are six activities available for Lesson 4.

1. Food Adventurer, Mission Accomplished: Students will report on the results of their Food Adventurer mission (to try a new root vegetable) from Lesson 3.
2. Root Watchers Review: Students will visit and view the growth of radish seeds that were planted in root containers, from Lesson 3.
3. Drinking, Dehydration and Physical Activity: Students will participate in a physical activity and will discuss the importance of drinking water to prevent dehydration. Students will receive their Growing Healthy Kids water bottle, as a reminder to drink water throughout the day.
4. Handwashing Review: Students will discuss the importance of washing their hands, and will review proper handwashing technique.
5. Food Adventurer Adjectives, Flavored Waters Recipe: Students will try waters flavored with herbs, flowers or fruits with at least one of their senses, and will report their experience using adjectives.
6. Garden Options: Students will continue work on their mural, indoor or outdoor garden. Choose Activity 6A or 6B.

What you will need

General Materials and Supplies

- Pocket folders (one per student). These are optional, but recommended for collecting student materials throughout the class.

Activity 1, Food Adventurer, Mission Accomplished

- Food Adventurer stickers (one per student)

Activity 2, Root Watchers Review

- GHK flash card of radish
- Root containers from Lesson 3

Activity 3, Drinking, Dehydration and Physical Activity

- Growing Healthy Kids water bottle (one per student) or paper cups (one per student)
- Access to a drinking fountain or pitcher of water
- MyPlate Garden Poster
- Flip chart and marker or chalkboard and chalk

Activity 4, Handwashing Review

- Access to soap, sink and paper towels to wash hands
- Flip chart or board, with markers or chalk

Activity 5, Food Adventurer Adjectives, Flavored Waters Recipe

- List of Food Adventurer adjectives (from Lesson 1)
- Food Adventurer Adjectives worksheet (Appendix H, one per student)
- Food Adventurer stickers (one per student)
- Pitchers to hold water
- Cups for tasting
- Refrigerator for storing flavored waters (optional)
- Plant Part Poster
- Flavored Water recipe sheets (one per group)
- Flavored Water ingredients (refer to recipe). Recipes may be found in Section 3 of this curriculum, as well as on the Oregon State University Food Hero website (<https://www.foodhero.org>). In this recipe, a variety of fruits, leaves (herbs) and flowers may be used. However, it is ESSENTIAL that only pesticide-free ingredients be used for this activity. If you are harvesting items from the school garden or school grounds, it is ESSENTIAL you use only those items that have never been sprayed with a pesticide. Many pesticides are soluble in water. Thus, plants that have been sprayed with a pesticide could harm students, if used in this recipe. When in doubt, leave it out.

Activity 6A, Mural Garden Option - Adding water for healthy plants and people

- Garden mural, from previous lessons
- Art supplies for adding water to the garden mural

Activity 6B, Indoor or Outdoor Garden Options

- Flip chart paper or board space, with list of garden rules and seeds planted (from Lesson 1)
- Watering can or other item that can be used to water garden plants
- Access to soap, sink and paper towels to wash hands
- Garden journal pages, pencils or pens

Take Home Materials

- GHK family letters, recipe cards and envelopes for Lesson 4 (one set per student)

Supplementary Materials (as needed)

- Crayons, storybook, journal and/or coloring sheet

Preparation

Activity 1, Food Adventurer, Mission Accomplished

- None.

Activity 2, Root Box Review

- Make sure that root boxes can be checked by students.

Activity 3, Drinking, Dehydration and Physical Activity

- Prepare flip chart page or board area with the title: "Ways We Use Water."
- Make sure water bottles are clean.

Activity 4, Handwashing Review

- Prepare flip chart page or board area with the title: “When We Wash our Hands During the Day.”

Activity 5, Food Adventurer Adjectives, Flavored Waters Recipe

- Prior to the class, prepare one or more of the flavored water recipes by steeping fruit, herbs and/or flowers for one hour, in a gallon of filtered tap water.
- Display the GHK Plant Part Poster.
- Photocopy Food Adventurer Adjectives worksheet.

Activity 6A, Mural Garden Option - Adding water for healthy plants and people

- Make sure that mural garden is hanging in an area where water elements can be added to the mural.
- Prepare mural garden, so that images of water can be added to the mural.

Activity 6B, Indoor or Outdoor Garden Options

- Display rules for the indoor and outdoor garden, and list of seeds planted.
- Make sure that there is a water source to add water to garden plants.

Take Home Materials

- Stuff family envelopes with a letter and recipe.

Supplementary Activities (as needed)

- Talk to the Classroom Teacher about Lesson 4 supplementary activities.

Teaching outline

Activity 1: Food Adventurer, Mission Accomplished

The last time we met, I gave all of you Food Adventurers a mission. Does anyone remember what your mission was?

Allow the students to raise their hands and answer.

Your mission was to try a new root vegetable. Remember, Food Adventurers can try new foods in many different ways. We can use our eyes to see, or our noses to smell. We can use our hands to touch, or we can use our mouths to taste.

Point to your eyes, nose, hands and mouth as you speak.

Would any of you Food Adventurers like to tell me about your mission?

Call on students who have raised their hands. Ask them questions about their Food Adventurer experience.

- *Did you try a new root vegetable?*
- *Which root vegetable did you try?*
- *Did you try it with your nose/eyes/hands/mouth? What did your eyes tell you? What did your nose tell you? How did it feel? How did it taste?*
- *Where did you try this root vegetable? Was it at home, in the cafeteria or some other site?*
- *Did you like it, or would you try it again?*

Good work, Food Adventurers! Remember to be on the lookout for new fruits or vegetables in the cafeteria, or at home. Some of these foods will be new to you, like the (repeat names of foods that were new to the class). Some of these foods will be ones you really like, such as (repeat names of foods that the class liked). Some will be ones that you may not have liked in the past. Please wear this sticker, to let everyone know that you tried a new food, as part of your Food Adventurer mission.

Pass out GHK Food Adventurer stickers, and allow students to attach them to their shirt or sweater.

Activity 2: Root Watchers Review

Last week, we also planted seeds in special containers. These containers allow us to see the roots growing beneath the soil. Does anyone remember the name of the seeds that we planted?

Allow students to answer.

We planted radish seeds. Remember, radishes are root vegetables. When we eat a radish, in a salad or as a snack, we are eating the root of the plant. The radish stores energy and nutrients

in its root. Then we get the energy and nutrients when we eat the radishes.

If available, you can hold up the GHK flash card showing a radish. For the next part of this activity, you can ask a Master Gardener or other volunteer to lead.

Last week, when we planted our radish seeds, we learned a new word. The word is 'germinate.' When a seed germinates, it means that the plant comes out of the seed, and starts to grow. These young plants are called seedlings.

Have students retrieve their root boxes. Ask students questions about their seeds and seedlings.

- *Did your seeds germinate? Did a plant come out of your seed and begin to grow?*
- *Can you find the roots of your radish? Where are the roots growing? Are they growing up towards the sunlight, or down towards the ground?*
- *When we eat a radish in a salad or as a snack, we are eating the root of the radish plants. Do the roots from your radish plant look like the radishes that we eat? Hold up the GHK flash card, showing the radish.*

Allow students to answer. You can tell the students that if the radishes are given time, water, sunlight and care, the plants will produce radishes that can be harvested and eaten.

Activity 3: Drinking, Dehydration and Physical Activity

Today, we're going to be learning about water. Can anyone name a way that we use water? Raise your hand if you would like to answer.

Potential answers can include:

- Drinking
- Cooking
- Swimming
- Watering garden plants
- Washing clothes

List answers on the board or flip chart. Stop taking answers after someone mentions drinking and watering garden plants. If the students do not generate these answers, you can prompt them or refer students to the MyPlate Garden Poster for clues. Circle 'drinking' and 'watering garden plants' on the list.

This water bottle (hold up) says 'Water for healthy people and plants.' You can carry a water bottle with you throughout the day, as a reminder to drink water and other healthy fluids. Who can guess why the water bottle is green in color?

Give time for answers. *The water bottle is green to remind us about the veggies group on MyPlate. Like all garden plants, veggies need to be watered to stay healthy and grow. Without water, we wouldn't be able to grow and eat our garden plants.* Point out related pictures on the MyPlate Garden Poster.

If they are available, and if you have the Classroom Teacher's permission to do so, pass out the Growing Healthy Kids water bottles (one per student). This is a reinforcement that supports the GHK curriculum. If the Teacher prefers that you do not pass out the water bottles, you can leave them in the classroom, for the Teacher to distribute to the students before they go home for the day.

We want to make sure to drink water when we are thirsty. When do you get thirsty? Raise your hand if you would like to answer.

Allow students to answer.

Let's talk about why it is important to drink water throughout the day. We need water to stay alive. Being thirsty is our body's way of telling us that we need to drink more water. Water helps our brain to think well. Water helps our body to work well. This is because our muscles and the joints between our bones need water so that we can climb and run and play. Our blood needs water. Our heart, our blood, and even our skin need water. We want to make sure that we give all of the parts of our body enough water throughout the day.

You may want to share one or more of the following facts with students: 80% of our brain, 75% of our muscles, and 85% of our blood is water. If we were to look at all of the things that make up our body – proteins, minerals, and other nutrients – we would find that water is the most abundant! In fact, about 72% of our body is made up of water. This water can be found in our blood, brain, muscles, bones and all the different parts of our body.

Hold up GHK water bottle full of water.

Because water is such an important part of your body, you should try to drink whenever you are thirsty. You can carry around your GHK water bottle to help you remember to drink water. Refer to the message on the front of the water bottle. Both people and plants need water to be healthy!

Have the students stand up, in preparation for a physical activity. You can lead the class in simple calisthenics (e.g. arm circles, jumping jacks, squats, trunk twists), and/or (if allowed and appropriate for the educational setting) in dancing to the Roots, Stems and Leaves song.

Who feels warm after that physical activity? Who started to sweat? You need to drink more fluids if it is hot or if you're sweating a lot. When our bodies do not get enough water, we can become dehydrated. You may want to repeat this word a couple of times if it is new to the students. *Dehydrated means we lost too much water from our body.*

It is important to drink liquids throughout the day so that we don't become dehydrated. When it is hot outside, or if you are running or playing, it is especially important to avoid becoming dehydrated.

Signs of mild dehydration include:

- Feeling tired

- Headache
- Dry mouth
- Lightheadedness
- Feeling thirsty

Activity 4: Handwashing Review

Because we worked up a sweat, it is important for us to replenish our bodies by drinking water. We're going to be Food Adventurers, and try waters that have been flavored with fruits, herbs and even flowers! You can practice being a Food Adventurer, and can practice using your Food Adventurer adjectives. However, before we sample our flavored waters, it is important to wash our hands.

Notice that we use water to keep our hands clean. Clean hands are important when we're touching food, when we're cooking food and when we're eating food. Clean hands help to keep us from getting sick, and help us to keep from spreading colds and other illnesses to somebody else. That's why we cough into our elbow, rather than directly on our hands.

As you're talking, pantomime the motions of eating, coughing into your elbow, and then washing your hands.

Washing our hands is an important part of being healthy. When should we wash our hands during the day?

Allow students to answer. Make a list of the answers given on a flip chart or chalkboard. Examples could include: before eating, before preparing food, before handling food, after gardening, after using the bathroom.

How can we make sure that we wash our hands long enough? Are there songs we can sing that help us to know if we've washed our hands long enough?

Allow time for answers.

Remind students about proper handwashing technique.

Activity 5: Food Adventurer Adjectives, Flavored Waters Recipe

In this recipe, a variety of fruits, leaves (herbs) and flowers may be used. You may want to refer to the Plant Part Poster to point out the different plant parts that are in this recipe.

When it is time to taste the flavored waters, remind students of their Food Adventurer mission. Refer back to Lesson 2, Activity 4, for a spoken prompts and directions associated with a Food Adventurer Adjectives recipe activity.

Activity 6A: Mural Garden Option - Adding water for healthy plants and people

We need to drink water to stay alive, and so do plants.

Pass out the crayons or markers and/or collage supplies.

Today, we are going to water our garden plants, which are growing on our mural garden. Just as you need to drink water when you're thirsty, our garden plants need water to grow, and to produce yummy vegetables/fruits! We will also add water for all of us on the mural.

Assign students to teams. One team can water the plants with clouds and rain. Another can water the plants with a hose. Another team can water the plants with a watering can. Another team can add water for the teachers and kids such as a drinking fountain, water bottles, and/or a cooler.

To water our growing vegetables/fruit, we can add in the clouds and rain. We can add in a garden hose. We can add in a watering can. To make sure we all have water, too, we can add in drinking fountains, coolers, and water bottles.

Allow students to add to the mural. Collect the mural materials when they are through.

In the next lesson, we are going to add the stems of the plant. Point to the Plant Part Poster if available.

Activity 6B: Indoor or Outdoor Garden Options

We need to drink water to stay alive, and so do plants. Today, we are going to water the plants growing in our garden. Just as you need to drink water when you're thirsty, our garden plants need water to grow, and to produce the yummy vegetables/fruits that we can pick and taste!

Refer to the list of garden rules, from Lesson 1, as needed. Before starting with the watering lesson, and if time allows, you may want to allow students time to record observations on their seedlings' progress and growth in their garden journal.

Who remembers what it means to be dehydrated? Raise your hand if you would like to answer.

Allow students to raise their hand and answer. (To be dehydrated is when we lose too much water from our body.)

A Master Gardener volunteer would be a great person to lead the students through the rest of this activity.

Like people, plants get dehydrated if they don't get enough water. When plants are dehydrated, they wilt.

To demonstrate, pantomime what it is to wilt (going limp).

If plants do not get enough water, they stop growing and may die, and then we won't get food from them. We can test whether or not our garden plants have enough water by pinching the soil.

Have students squeeze a pinch of soil in their fingers.

If the soil is loose and falls away, the soil is too dry. The plant needs more water. If the soil sticks together, then the plant has enough water. If you can squeeze water out of the soil, like you squeeze water out of sponge, there is too much water in the soil. If the soil has too much water, then the roots can't get enough air.

Allow students to test their soil.

Do our plants need more water? Raise your hand if you think that we need to water the plants.

Allow students to raise their hands. If the plants need to be watered, demonstrate how to do so properly, so that the plants are not injured. If the plants do not need to be watered during this lesson, you can demonstrate how to water properly in another lesson.

When watering our garden plants, you want to make sure to be gentle. If we turn the hose on too hard, or if we dump water onto the plants, the plant may get hurt. Water gently, onto the soil. Water the soil, rather than the leaves. This keeps our plants from getting hurt, and also helps to keep them healthy so they can grow food for us to eat.

When students complete this activity, have them wash their hands.

Before we end today's lesson, we need to wash our hands. We want to make sure that we keep our hands clean. This will help to keep us healthy.

Remind students about proper handwashing technique. Allow time for handwashing.

Closure

Today you learned about the importance of water. We use water to wash our hands. We drink water to keep our body working in tip top shape. Each day, we should drink whenever we are thirsty. Water is a healthy choice! Just as we need water to keep us healthy, our garden plants need water. Plants need water to grow, and to produce the yummy vegetables and fruits that we eat. Point to water graphics for people and plants on the MyPlate Garden Poster.

The next time we're together we'll learn about the stems of the plant. Point to the sunflower stems on the MyPlate Garden Poster or Plant Part Poster if displayed.

I've given your teacher an envelope to take home to your family. (Hold up a family letter envelope.) In the envelope, there is a letter that describes what we did today. There is also a really fun activity for you and a recipe for your family. Before you take the envelope home, your teacher will let you draw on the front a picture of a vegetable plant being watered. You can

share your drawing with your family, and talk about what you learned about the water for people and water for plants.

Supplementary activities

These activities are for the Classroom Teacher to do with the students before you return for the next lesson. Or, you can do these with the students during the lesson if time allows.

- **Supplementary Activity 1 - Family Envelope Drawing** - Students draw a picture of a vegetable plant being watered on the front of the family letter envelope. These envelopes are sent home with the students, to be given to their family.
- **Supplementary Activity 2 - Storybook and Discussion and Journal** - Read the storybook to children and then lead a discussion on key points that connect the book to GHK messages and activities. Sample discussion questions can be found on the next page. Children then write or color about what they learned on a journal sheet. Journal sheets are collected and will be combined into a book after the final lesson.

Storybook Options: *Harvey the Gardener*, by Lars Klinting or *Little Red Hen Makes Soup*, by Rozanne Lanczak Williams.

- **Supplementary Activity 3 - Art Exhibit** - Discuss Lesson 4 coloring sheet message and caricature drawing, and how it is connected to the messages and activities in Lesson 4. Allow children to color the sheet. Allow children to display the colored sheet on their desk/table and invite them to walk around to see everyone's art. Coloring sheets are collected and will be combined into a book after the final lesson.

Supplementary Storybook Activity: Sample Discussion Questions and Journal Sheet Ideas**Harvey the Gardener, by Lars Klinting**Discussion Questions

- *What could Harvey have done to avoid wilting his first plant?* (put the right amount of water in it – not too much or too little, made sure it got the right amount of sun)
- *How did Harvey and Chip use water in the story?* (soak, grow, and cook beans)
- *What things did Harvey and Chip use to grow the seed into food?* (water, soil, pot, trowel, stick, pot pieces, string, bamboo)
- *What plant part are beans?* (Use the Plant Part Poster to illustrate that beans are seeds.)
- *Are Harvey and Chip Food Adventurers? Why?*

Journal Sheet Idea

- *Draw a plant that will grow beans you can eat. If appropriate, list something you will need to do to help your plant grow.*

Little Red Hen Makes Soup, by Rozanne Lanczak WilliamsDiscussion Questions

- *What plant parts are the ingredients of the soup?* (use the Plant Part Poster to illustrate)
 - roots – carrot
 - seeds – green beans and corn
 - stem – potato (Potatoes are corms. Corms are specialized stems that grow underground and store energy and nutrients that allow a plant to survive the winter.)
- *How is water used in the story?* (in the soup, and it was needed to make the veggies grow)
- *Are Little Red Hen, Rabbit, Duck, Dog, and Cow Food Adventurers? Why?*

Journal Sheet Idea

- Draw a picture of Hen making soup. List the garden-grown vegetables you would put in Hen's soup.

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Lesson 5: Stand Strong with Stems

Lesson overview

There are six activities available for Lesson 5.

1. Roots, Stems and Leaves Song, Continued: Students will sing and dance to a song that reinforces the concept of edible plant parts.
2. Plant Part Poster and GHK Flash Cards: Students will learn about stem vegetables that we eat.
3. Standing Strong with Stems: Students will take part in a physical activity that highlights the importance of exercise to bone health.
4. Elevator Up: Students will set up a simple activity which demonstrates that stems transport water and nutrients throughout the plant.
5. Food Adventure Adjectives, Celery with Quick and Easy Bean Dips Recipe: Students will help make and will be offered an opportunity to try a healthy recipe.
6. Garden Options: Students will continue work on their mural, indoor or outdoor garden. Choose Activity 6A or 6B.

What you will need

General Materials and Supplies

- Pocket folders (one per student). These are optional, but recommended for collecting student materials throughout the class.

Activity 1, Roots, Stems and Leaves Song, Continued

- Roots, Stems and Leaves song materials: CD, CD player, lyrics sheets

Activity 2, Plant Part Poster and GHK Flash Cards

- GHK flash cards of celery, rhubarb and asparagus
- Plant Part Poster

Activity 3, Standing Strong with Stems

- None

Activity 4, Elevator Up!

- Celery stalks with leaves
- Food color
- Access to water
- Tall, clear unbreakable jar or cup (one per 4-6 students)

Activity 5, Food Adventurer Adjectives, Celery with Quick and Easy Bean Dips Recipe

- Access to soap, sink and paper towels to wash hands
- Flip chart or board and markers or chalk
- Food Adventurer Adjectives worksheet (Appendix H, one per student)

- Food Adventurer stickers (one per student)
- MyPlate Garden Poster
- Plant Part Poster
- Ingredients for making dip(s)
- Fork, potato masher, blender or food processor for making dip(s)
- Bowl(s), spoon(s) for serving dip(s)
- Quick and Easy Bean Dips recipe sheets. Recipes may be found in Section 3 of this curriculum, as well as on the Oregon State University Food Hero website (<https://www.foodhero.org>).
- Quick and Easy Bean Dips ingredients (refer to recipe).

Activity 6A, Mural Garden Option - Adding the stems

- Garden mural, from previous lessons
- Art supplies for adding stems to the garden mural

Activity 6B, Indoor or Outdoor Garden Options

- List of garden rules and seeds planted (from Lesson 1)
- Access to soap, sink and paper towels to wash hands
- Garden journal pages, pencils or pens
- GHK flash cards of vegetables and fruits being grown in the garden
- Decide which indoor or outdoor gardening activities you will do with the class (i.e. harvest, garden/grocery store comparison, garden journal, and/or propagating stems). Refer to activity description, for list of supplies needed.

Take Home Materials

- GHK family letters, recipe sheets and envelopes for Lesson 5 (one set per student)

Supplementary Materials (as needed)

- Crayons, storybook, journal and/or coloring sheet

Preparation

Activity 1, Roots, Stems and Leaves Song, Continued

- Set up CD player or other music device.
- Discuss with the Classroom Teacher the appropriate volume for playing the song, singing and dancing at the educational site.

Activity 2, Plant Part Poster and GHK Flash Cards

- Hang Plant Part Poster.

Activity 3, Standing Strong with Stems

- None.

Activity 4, Elevator Up!

- Gather supplies.

- Talk to the Classroom Teacher before the lesson, to make sure that there is a clear spot where the celery containers can be placed, so that students can check in on them over the next few days.
- With the Classroom Teacher, decide who will break down the celery set up (you, volunteer, students and/or Classroom Teacher).
- Fill jars with enough water to cover the bottom 2-3 inches of the celery.

Activity 5, Food Adventurer Adjectives, Celery with Quick and Easy Bean Dips Recipe

- Set up flip chart or arrange for space on chalkboard to compile the list of Food Adventurer adjectives.
- Gather ingredients and supplies for making dips.
- Decide how much preparation you will do beforehand, versus having the students assist with the recipe. You can either prepare the dips ahead of time, or have the children assist. You can wash and cut the celery beforehand, or have the children assist.
- Photocopy Food Adventure Adjectives worksheets.

Activity 6A, Mural Garden Option - Adding the stems

- Prepare mural garden activity.

Activity 6B, Indoor or Outdoor Garden Options

- Display rules for the indoor and outdoor garden, and list of seeds planted.
- Decide which indoor or outdoor gardening activities you will do with the class (i.e. harvest, garden/grocery store comparison, garden journal, and/or propagating stems). Refer to activity description, for list of supplies needed.

Take Home Materials

- Stuff family envelopes with a letter and recipe.

Supplementary Activities (as needed)

- Talk to the Classroom Teacher about Lesson 5 supplementary activities.
- Talk to the Classroom Teacher about allowing children to check on celery over the next few days.

Teaching outline

Activity 1: Roots, Stems and Leaves Song, Continued

In Lesson 2, we learned about the six plant parts that we eat. We sang the Roots, Stems and Leaves song to help us learn about the six parts of a plant [Lessons 2 and 3]. We also learned about roots, and planted root boxes with radish seeds [Lesson 3, with a review in Lesson 4]. Today, we'll be learning about stem vegetables. Let's review the six plant parts by singing the Roots, Stems and Leaves song. Since we're learning about stems, we'll sing the verse about stems.

Pass out the lyrics sheet (Appendix F).

Lead the students in song, and dance around while you're singing. Have the students dance, as well.

To shorten the length of this activity, as well as to highlight what students will be learning about stems, limit this activity to singing the chorus and the verse about stems. When singing the verse about stems, have the students pantomime the words, by moving from a crouched position to a tall stretch, and then back down again.

Activity 2: Plant Part Poster and GHK Flash Cards

Today, we will be learning more about stem vegetables. Point to the stem portion of the sunflower on the Plant Part Poster.

Raise your hand if you can name a stem vegetable that we eat.

Call on students with their hands raised. Acceptable answers include: celery, rhubarb, and asparagus. We also eat the stems of broccoli and cauliflower. Potatoes are also a special type of stem, called a tuber. Tubers are stems that grow underground, and store energy. Students may have a hard time coming up with answers on their own. In this case, you can tell them and show them examples of stems that we eat using the GHK flash cards for props.

Stems help the plant to stand strong and tall. In this way, stems in a plant are like our skeletons. Point to your legs and torso as you say this, to refer to Lesson 2 when the body parts were used as analogies for plant parts.

There aren't very many stems that we eat. Stems are tough and rigid. This helps a plant to stand strong and tall - but also makes many plant stems too tough for us to digest. For example, we don't eat the stems of apple trees or blueberry bushes. We don't eat stems of sunflowers.

Point to the stem portion of the sunflower on the Plant Part Poster.

However, there are some very good examples of stems that we eat. Celery is a stem vegetable. Rhubarb is another stem that we can eat. Asparagus is another type of stem that we can eat.

Hold up GHK flash cards of celery, rhubarb and asparagus as you speak.

Activity 3: Standing Strong with Stems

Stems are like the skeleton of a plant. They help our garden plants stand straight and strong. If the stem of a plant were to break, the plant may not be able to grow.

Our bones make up our skeleton. Our bones help us stand up straight and strong. But in addition to being strong, it's also important to be flexible. Like a tree in the wind, we want to be able to bend, but not break.

Pantomime a tree, with arms extended upwards for branches. Sway back and forth to demonstrate the strong, flexible analogy of bending but not breaking.

Being physically active, with play or exercise, is important for our bones, muscles and overall health. Let's be active now! We can pretend to grow into strong stems.

Students should start from a seated position. From here, they can pantomime growing from a seed, to a tall plant with a rigid stem.

Can you curl your bodies up tight on the ground, like a seed that hasn't yet sprouted? Now, bust out of your seed, and grow your bodies just like a plant grows towards the sun. Reach your arms up high, and stretch your bodies like a strong and tall stem. Open your hands to catch the sunlight. Keep your feet glued to the floor, like plant roots that anchor a plant to the ground.

Allow students time to stretch their bodies and be physically active with the pantomime. Have them repeat the exercise a few times. Variations you can try include having students: balance on one leg (yoga tree pose); lunge to each side to catch the sunlight; flex their biceps to show their strong muscles and bones.

Great job everyone! Your bones and muscles get stronger when you're active with exercise or play. Exercise, play and other types of physical activity also help to keep our bodies flexible. Being physically active also helps our balance. When we're strong, flexible and have good balance, we can be like a tree – standing strong, and bending, but not breaking.

Activity 4: Elevator Up!

Besides helping plants to stand strong and tall, stems also help to carry water and nutrients from the roots to the leaves, and throughout the plant. Point to the Plant Part Poster and use your torso, feet and hands to help explain this concept. You can also remind students of the stems verse of the Roots, Stems and Leaves song.

In this way, stems are like the blood vessels in our bodies. Look at the inside of your wrists. Can you see the veins in your arms? They move nutrients in your blood around your body.

We're going to do an activity that will show us that stems can move water and other nutrients to all parts of the plant. Do you remember what we talked about last week? Allow students to answer - water.

Yes! We talked about the importance of water to people and to plants. Today we will see what water does when it enters a plant. Gather around your work tables/desks. You'll see that there is a piece of celery, a glass of water, and some food coloring at each station. Remember that celery is a stem vegetable, and that stems help the plant to stand strong. A plant's stem also helps to transport water and nutrients throughout the plant.

Allow students to gather around their work stations. These can be desks or tables. Each station should have 1 clear jar with water, 1 piece of celery, and 1 vial of red food coloring. Red food coloring is preferable, so that students can better see the dye within the celery.

The celery stalks should have leaves on them. The jars should have enough water to cover the bottom 2-3 inches of the celery. Do not fill the water to the top of the jar. Red food coloring vials can be shared between tables, as needed. You will need about 1/3 of a standard food coloring vial (0.25 oz per vial) per work station.

For older grades, you can conduct this activity as an experiment. To do so, reserve a few stalks of celery (at least 2), which will NOT be placed in the red food coloring. One celery stalk can be placed in a glass of water, WITHOUT food coloring. The other celery stalk can be placed on the table (i.e. NOT in a glass of water, with or without food coloring). Have students predict what will happen, over the next few days, with each of the three types of celery stalks. The celery stalks in water should remain relatively rigid, since the plants' cells will stay filled with water. The leaves of celery in colored water will change color. Those in plain water will not. Celery stalks out of water will go limp, as cells deflate in the absence of water.

One person from each team is going to add 10 drops of red food coloring to your jar of water. The other people in each team are going to help count the drops. Count to 10, to make sure your team member adds 10 drops of red food coloring into the glass.

Allow time to add in the food coloring.

We're going to let the celery sit for a few days. You will check the celery over the next few days, to see what happens. If the celery takes up the water with the dye, we should be able to see colored celery leaves in a few days.

Allow the celery to sit for a few days, until you can see the leaves turn the same color as the dye. At this time, you or the Classroom Teacher can return to this activity, asking students a series of questions.

- *Why does the celery in the jars with food coloring have colored leaves?*
- *Did the celery take the water up?*
- *What happens when you eat the celery, will you get that water in your body?*
- *Will you get the nutrients the water was carrying in your body?*

- *What happened when the celery didn't have water?*

Remind the students that the Roots, Stems and Leaves song mentions an elevator. Like an elevator, the stem helps to move water all around the plant, just as our blood vessels help to move our blood through our bodies.

Activity 5: Food Adventurer Adjectives, Celery with Quick and Easy Bean Dips Recipe

Celery is a stem vegetable. It is a good source of fiber, and also contains vitamins that we need to stay healthy. We're going to taste our celery with three different bean dips. Beans belong to both the vegetables and the protein group on MyPlate. Beans are another good source of fiber. Fiber in our diet helps to keep us healthy.

Point to the vegetables and protein groups on the MyPlate Garden Poster when talking about celery and beans.

We're going to be Food Adventurers, and try our snack using our sense of sight, touch, smell and taste. We're going to practice using our adjectives to describe how our snack looks, feels, smells and tastes. Refer back to Lesson 2, Activity 4, for spoken prompts and directions associated with a Food Adventurer Adjectives recipe activity.

As resources (including time) allow, you may make one or all three of the bean dips. Serve with celery, to reinforce this lesson's focus on stem vegetables. In the chunky black bean dip, there are edible plant seeds (black beans), fruits (tomato, bell pepper), and leaves (onion and garlic are bulbs, and bulbs are specialized leaves that store energy for the plant). In the smoky pinto bean dip, there are edible plant seeds (pinto beans) and fruits (jalapeno peppers). In the lemony garbanzo bean dip, there are edible plant seeds (garbanzo beans) and leaves (garlic). You may want to refer to the Plant Part Poster to point out the different plant parts that are in this recipe.

Activity 6A: Mural Garden Option - Adding the stems

In the last few weeks, students prepared the garden, planted seeds in the mural and added in the roots of the seedlings. Last week, students added water to their garden. Today, ask students to add in the stems on their plants. You can give students leeway to add the stems as they like, but may direct them to add the stems above ground. As you continue through *Growing Healthy Kids* lessons, you can add more detail to the garden mural.

Activity 6B: Indoor or Outdoor Garden Options

As necessary, review the list of garden rules that were generated in Lesson 1. These may be written on the board, or displayed on a piece of paper which is hanging on a wall.

Choose one or more of the options listed below.

Harvest: If there are stem vegetables near maturity in an established outdoor garden, you can have students harvest, wash and taste the stem vegetables.

Garden Journal: If students are keeping a garden journal, you can have them measure the height of the plants that they sowed from seeds, or draw their observations. Have students draw vegetables they see in the garden, and note how they look similar to or different from these same vegetables in the grocery store or at home. You may want to use your GHK flash cards for reference.

Garden and Grocery Comparison: Ask the students to review the seeds that they previously planted (in the indoor or outdoor garden) from the flip chart list. Ask the students if any of these are stem vegetables. As the students look at the plants, ask them if the seedlings that have emerged look similar to or different from the plants that they eat. For example, if you planted celery, you can hold the celery card from the GHK flash cards next to the celery seedlings for comparison. If they planted radishes, you can hold the radishes flash card next to the radish seedlings.

Do this for two or three different plants at various stages of development, to remind students that (1) we eat many different plant parts, (2) these healthy and nutritious foods come from plants, and (3) it is easy to grow a variety of healthy foods in a garden.

Propagating Stems: With the help of a Master Gardener volunteer, the students can start new edible plants (propagate a plant) from a stem cutting. New plants can be started by taking cuttings of soft stem herbs that are easy to root. Examples of what can be used include mint, basil or lemon balm. If these are growing in the garden, propagation from stem cuttings can be demonstrated.

Cut a 4 to 6-inch long piece of the herb from the garden and remove the bottom leaves. Place the cuttings in a jar of water. Place the jar in a semi-shaded location and change the water every day or two. The cuttings should start setting roots in a few days and will be able to be transplanted into the garden within 7-12 days.

Before ending the day's lesson, have students wash their hands. Remind students about proper handwashing technique, and the importance of washing their hands after working in the garden.

Before we end today's lesson, we need to wash our hands. We want to make sure that we keep our hands clean. This will help to keep us healthy.

Closure

Today, we learned about stem vegetables. Celery, rhubarb and asparagus are all stem vegetables we can eat. Stems are the skeleton of a plant. We were physically active, to help our skeletons stay strong. We set up an activity that will show us how stems move water up and around the plant like blood vessels move blood through our body. You will check on your celery over the next few days. We sang a song to teach us about stem vegetables. We are continuing to watch the plants in our garden grow. We will soon harvest and taste the vegetables and fruits we have grown. The next time we are together we will learn more about physical activity.

Point to kids being active on the MyPlate Garden Poster, if it is posted.

Food Adventurers: before we go, I want to give you another mission. Your mission is to find and to try a stem vegetable. You can find the stem vegetable at home or in the cafeteria. You can try it with your eyes, nose, hands or your mouth. Food Adventurers - do you accept this mission?

Allow students to answer.

Wonderful. I can't wait to hear your mission reports, the next time we meet.

I've given your teacher an envelope that you can bring home to your family. In the envelope is a letter that describes what we did today. There is also a fun activity for you, and a recipe for your family. Before you take it home, your teacher will let you draw a picture of a stem vegetable. Make sure to share the envelope with your family, and to tell them about the stem vegetable that you drew.

Supplementary activities

These activities are for the Classroom Teacher to do with the students before you return for the next lesson. Or, you can do these with the students during the lesson if time allows.

- **Supplementary Activity 1 - Family Envelope Drawing** - Students draw a picture of a stem vegetable on the front of the family letter envelope. These are sent home with the students to be given to their family.
- **Supplementary Activity 2 - Storybook and Discussion and Journal** - Read the storybook to children and then lead a discussion on key points that connect the book to GHK messages and activities. Sample discussion questions can be found on the next page. Children then write or color about what they learned on a journal sheet. Journal sheets are collected and will be combined into a book after the final lesson.

Storybook Option: *How Groundhog's Garden Grew*, by Lynne Cherry

- **Supplementary Activity 3 - Art Exhibit** - Discuss Lesson 5 coloring sheet message and caricature drawing, and how it is connected to the messages and activities in Lesson 5. Allow children to color the sheet. Allow children to display the colored sheet on their desk/table and invite them to walk around to see everyone's art. Coloring sheets are collected and will be combined into a book after the final lesson.

Supplementary Storybook Activity: Sample Discussion Questions and Journal Sheet Ideas***How Groundhog's Garden Grew*, by Lynne Cherry**Discussion Questions

- On the inside cover pages name the edible/eatable plant parts. Use the Plant Part Poster to illustrate:
 - potato (also a tuber) – stem
 - pepper – fruit
 - chard – leaf
 - radish – root
 - pumpkin and sunflower – seeds
- *Did you see any stems in the story?* Turn to page with asparagus growing or in the meal at the end.
- *What did the animals do with the seeds they collected from the fruits and veggies in the fall?* (dried them in the sun and then planted them to grow food in the spring – on the page showing this there are asparagus seeds which can be pointed out)
- *Are the animals Food Adventurers? Why?*

Journal Sheet Idea

- Draw a picture of an animal picking stem vegetables in the garden. If students can spell, have them label the names of their different stem vegetables.

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Lesson 6: Energy In, Energy Out

Lesson overview

There are six activities available for Lesson 6.

1. Food Adventurer, Mission Accomplished: Students will report on the new stem vegetable they tried, as part of the Food Adventurer mission that was given to them in Lesson 5.
2. Physical Activity and MyPlate Garden Poster: Students will discuss and demonstrate some of their favorite forms of physical activity.
3. Simon Says Energy In, Energy Out: Students will play a non-elimination game, where they are challenged to say their favorite healthy food (Energy In) and favorite physical activity (Energy Out), on command.
4. Energy In, Energy Out Cards: Students will make their own Energy In, Energy Out flash cards, depicting their favorite healthy food and their favorite physical activity.
5. Food Adventure Adjectives, Very Berry Muesli Recipe: Students will help make and will be offered an opportunity to try a healthy recipe.
6. Garden Options: Students will continue to work on their mural, indoor or outdoor garden. Choose Activity 6A or 6B.

What you will need

General Materials and Supplies

- Pocket folders (one per student). These are optional, but recommended for collecting student materials throughout the class.

Activity 1, Food Adventurer, Mission Accomplished

- GHK Food Adventurer stickers (one per student)

Activity 2, Physical Activity and MyPlate Garden Poster

- MyPlate Garden Poster
- Flip chart or chalkboard (to make list of favorite and/or demonstrated physical activities)

Activity 3, Simon Says Energy In, Energy Out

- Photo-coded Energy In and Energy Out cards

Activity 4, Energy In, Energy Out cards

- Index cards
- Markers, crayons or other drawing materials

Activity 5, Food Adventurer Adjectives, Very Berry Muesli Recipe

- Access to soap, sink and paper towels to wash hands
- Food Adventurer Adjectives worksheet (Appendix H, one per student)
- Plant Part Poster

- Very Berry Muesli recipe sheets (one per group). Recipes may be found in Section 3 of this curriculum, as well as on the Oregon State University Food Hero website (<https://www.foodhero.org>).
- Very Berry Muesli ingredients (refer to recipe)
- Measuring cup (at least 2/3 cup) to demonstrate recommended serving size

Activity 6A, Mural Garden Option - Adding physical activity

- Garden mural, from previous lessons
- Art supplies and clip art (Appendix M) for adding elements to the garden mural

Activity 6B, Indoor or Outdoor Garden Options

- List of garden rules and seeds planted (from Lesson 1)
- Access to soap, sink and paper towels to wash hands
- Garden journal pages, pencils or pens

Take Home Materials

- GHK family letters, recipe sheets and envelopes for Lesson 6 (one set per student)

Supplementary Materials (as needed)

- Crayons, storybook, journal and/or coloring sheet

Preparation

Activity 1, Food Adventurer, Mission Accomplished

- None.

Activity 2, Physical Activity and MyPlate Garden Poster

- Display MyPlate Garden Poster.
- Prepare flip chart or chalkboard with title “Physical Activity.”
- Talk to the Classroom Teacher about the physical activities children may demonstrate, and decide on an appropriate level of noise for the site.

Activity 3, Simon Says Energy In, Energy Out

- Prepare flip chart or chalkboard with title “Energy In and Energy Out.”
- Talk to the Classroom Teacher about the physical activities children may demonstrate, and decide on an appropriate level of noise for the site.

Activity 4, Energy In, Energy Out Cards

- Prepare flip chart or chalkboard with title “Energy In and Energy Out.”

Activity 5, Food Adventurer Adjectives, Very Berry Muesli Recipe

- Set up flip chart or arrange for space on chalkboard to compile the list of Food Adventurer adjectives.
- Gather ingredients and supplies for making recipe.
- Decide how much preparation you will do beforehand, versus having the students assist.

- Photocopy Food Adventurer Adjectives worksheet.

Activity 6A, Mural Garden Option - Adding physical activity

- Prepare mural garden activity.

Activity 6B, Indoor or Outdoor Garden Options

- Decide which indoor or outdoor gardening activities you will do with the class. Refer to activity description, for list of supplies needed.

Take Home Materials

- Stuff family envelopes with a letter and recipe.

Supplementary Activities (as needed)

- Talk to the Classroom Teacher about Lesson 6 supplementary activities.

Teaching outline

Activity 1: Food Adventurer, Mission Accomplished

The last time we met, I gave all of you Food Adventurers a mission. Does anyone remember what your mission was?

Allow the students to raise hands and answer.

Your mission was to try a new stem vegetable. Remember, Food Adventurers can try new foods in many different ways. We can use our eyes to see, or our noses to smell. We can use our hands to touch, or we can use our mouths to taste.

Point to your eyes, nose, hands and mouth as you speak.

Would any of you Food Adventurers like to tell me about your mission?

Call on students who have raised their hands. Ask them questions about their Food Adventurer experience.

- *Was it easy to find a new stem vegetable? Or, did you have trouble finding a new stem vegetable?*
- *Did you try a new stem vegetable?*
- *Which stem vegetable did you try?*
- *Did you try it with your nose/eyes/hands/mouth? What did your eyes tell you? What did your nose tell you? How did it feel? How did it taste?*
- *Where did you try this stem vegetable? Was it at home, in the cafeteria or some other site?*
- *How did you like it? Would you try it again?*

Great job, Food Adventurers! Remember to be on the lookout for new fruits or vegetables in the cafeteria, or at home. Some of these foods will be new to you, like the (repeat names of foods that were new to the class). Some of these foods will be ones you really like, such as (repeat names of foods that the class liked). Some will be ones that you may not have liked in the past. Please wear this sticker, to let everyone know that you tried a new food, as part of your Food Adventurer mission.

Pass out GHK Food Adventurer stickers, and allow students to attach them to their shirt or sweater.

Activity 2: Physical Activity and MyPlate Garden Poster

Have students work in pairs or small groups for this next activity. Refer to the MyPlate Garden Poster.

What do you see on this poster?

Allow students time to talk to their partner or group before answering. Some examples that the students may provide include: kids gardening, kids composting, kids eating vegetables and fruits, MyPlate, food groups.

Gardening, pushing a wheelbarrow and picking apples are all types of physical activity. We can be physically active with play, exercise, gardening and other types of activity. What kinds of physical activity do you see kids doing on this poster? Are there other physical activities you like to do?

Allow time for discussion. Have each group of students decide on and demonstrate a favorite physical activity. If a flip chart or a board is available, make a list of the physical activities discussed and demonstrated.

Why is physical activity good for you? Why is physical activity fun? Make sure to discuss how it benefits our bodies physically, makes us feel happy, and is a good way to be social.

Everyone, stand up! We are going to be physically active.!

Have the students participate in a fun, physical activity. Possibilities include:

Option #1, My Bonnie: Have students stand in front of a chair. Perform a group sing along to the folk song “My Bonnie Lies Over the Ocean”. The lyrics to the song are:

My Bonnie lies over the ocean
My Bonnie lies over the sea
My Bonnie lies over the ocean
Oh, bring back my Bonnie to me

REFRAIN:

Bring back, bring back
 Bring back my Bonnie to me, to me
 Bring back, bring back
 Bring back my Bonnie to me

Each time the group sings a word that starts with a “B”, have students quickly sit down in their chair, and then quickly stand back up. Sing it more than once, getting faster with subsequent performances. If chairs are not available, students can alternate between bending their knees and standing up straight, each time the group sings a word that starts with a “B”.

Option #2, Wishy Washy Washer Woman: This song is sung as a “repeat after me” song. You sing a line from the song, and then the children echo you. Dance and use exaggerated hand motions when singing the song, so that students can also echo your physical activity. The lyrics to the song are:

Way down in the valley where nobody goes
 There’s a wishy washy washer woman washin’ her clothes
 She goes “ooh ah” (wash motions)
 She goes “ooh ah” (wash motions)
 She goes “ooh ah” (wash motions)
 She goes “ooh ah” (wash motions)
 That’s how the wishy washy washer woman washes her clothes

Way down in the valley where nobody goes
 There’s a wishy washy washer woman dryin’ her clothes
 She goes “ooh ah” (blow puffs of air)
 She goes “ooh ah” (blow puffs of air)
 She goes “ooh ah” (blow puffs of air)
 She goes “ooh ah” (blow puffs of air)
 That’s how the wishy washy washer woman dries her clothes

Way down in the valley where nobody goes
 There’s a wishy washy washer woman foldin’ her clothes
 She goes (clap your hands)
 She goes (clap your hands)
 She goes (clap your hands)
 She goes (clap your hands)
 That’s how the wishy washy washer woman folds her clothes

Option #3, Stomp Pattern: Teach the students a three-count stomp pattern, that you can do as a class. The three-count pattern goes 1 . . . 2 . . . 3, stomp . . . stomp . . . clap . . . stomp . . . stomp . . . clap. Next, teach the students a four-count stomp. The four-count pattern goes 1 . . . 2 . . . 3 . . . 4, stomp . . . stomp . . . stomp . . . clap . . . stomp . . . stomp . . . stomp . . . clap. Be creative with new stop patterns, or have students create their own stomp pattern that the class can imitate.

How do you feel now that you've been physically active? What is different from when you were sitting before?

Have students share physical as well as emotional reactions. Some examples may include: heart is beating faster, they feel warm, their pulse is beating, they feel sweaty, they are breathing deeply, they feel excited/happy/energized. Share your own positive observations. For example, *I saw smiling faces; I heard laughing; I heard breathing.*

When you are physically active with exercise and play, what happens? Allow time for students to answer. Make sure you discuss answers such as: becoming thirsty, breathing deeply, feeling relaxed, energized, sweaty, warm.

Activity 3: Simon Says Energy In, Energy Out

Any time you're active, your body uses energy to keep going. Any time you move, or think, or breathe, your body uses energy. As you increase the intensity of your physical activity, through play or exercise, your body uses even more energy to keep going. Your body is like a car when it uses fuel. The fuel is energy that helps to keep the car going. When you use energy, we can call this Energy Out.

Hold up the color-coded Energy Out card.

When a car is almost out of fuel or energy, we go to the gas station to fill up the tank. This is called Energy In. When your body is low on energy, what can you do to refuel or put Energy In?

Hold up the color-coded Energy In card and allow time for answers. Students' answers may include: eat, drink, sleep, rest, take a deep breath, nap.

Our bodies use food, water and oxygen to produce energy. This is our Energy In.

Hold up the color-coded Energy In card.

The foods we eat and put into our bodies are important sources of fuel for our bodies. Choose healthy foods from all of the food groups. Make it a goal to fill half of your plate with vegetables and fruits. Who can name some vegetables and fruits that you can put on your plate?

Allow students to answer.

Whole grains are a good source of fiber. Make it a goal to make half of your grains whole grains. Who can name some whole grain foods?

Unless students have already had lessons on whole grains, they may not be able to name whole grain foods. Examples of whole grains include:

- Oatmeal
- Whole wheat bread

- Brown rice

Filling half of our plate with vegetables and fruits and making half of our grains whole grains helps us make sure that our Energy In is good fuel for our bodies. These foods provide high quality fuel to power our Energy Out playtime, sports activities and other physical activities.

Once again, hold up the color-coded Energy In and Energy Out cards as you say these terms.

Who knows how to play Simon Says?

Allow students to answer.

Today, we're going to play a game called Simon Says Energy In, Energy Out. When I hold up the Energy Out card, I want you to be physically active. You can dance, do jumping jacks, swing your arms, or another physical activity that you can do in place. Let's practice. Hold up the Energy Out card while you say "Simon Says Energy Out."

Give students 10-15 seconds to be physically active.

Great! Those were good examples of Energy Out. Now, when I hold up the Energy In card, I want you to say your favorite, healthy food. What are some of your favorite, healthy foods? Hold up the Energy In card while you say "Simon Says Energy In."

Allow students to answer. Highlight those answers that are healthy as being especially good examples.

Those are all good examples of healthy choices for Energy In. Now, let's play. When I show the Energy Out card, I want you to be physically active. When I show the Energy In card, I want you to say your favorite, healthy food. Let's practice.

You may need to practice a few times, until younger students get the hang of things. Go through a few rounds, occasionally mixing up the order of the cards. Ideally, this activity should be conducted as a non-elimination game, since research shows that children spend more time being physically active, and experience greater self-efficacy, with non-elimination games than with elimination games. However, research also suggests enjoyment tends to be higher with elimination games, compared to non-elimination games, so make sure to make the game as fun and engaging as possible.

Activity 4: Energy In, Energy Out Cards

Today we are going to talk more about Energy In and Energy Out. Hold up the color coded Energy In and Energy Out cards as you say these terms.

Hand out an index card to each student. Have students who are able to read and write label one side "Energy Out" and the other "Energy In."

Today, you are going to make an Energy In, Energy Out card. Using crayons, markers or colored pencils, draw yourself participating in your favorite physical activity on the Energy Out side of the card.

Hold up the color-coded Energy Out card.

Physical activity can be a fun way to burn energy. When we're physically active, our bodies might feel warm or sweaty. We might breathe heavier and feel our chest rising and falling. We can feel our heart beating faster. Remember the physical activities that we discussed (demonstrated) earlier?

Allow students to draw themselves participating in a physical activity. If available, refer to the flip chart or board where you earlier made a list of the physical activities (Activity 1, this lesson). If necessary, have the students brainstorm and list their favorite physical activities, apart from those they listed earlier. You can add these activities to the list. You can ask students (or one or more student volunteers) to share their physical activity, and to lead the class in 30-60 seconds of physical activity.

Now that you have drawn yourself burning energy with your favorite physical activity, flip your card over. We drew a picture showing Energy Out on one side. On the other side of the card, draw a healthy food that can help you get Energy In.

Hold up the color-coded Energy In card.

Remember, healthy sources of energy include foods from all of the food groups. These healthy foods help us to refuel the energy we burn with physical activity.

Allow students to draw an Energy In healthy food and write its food group. Students who cannot write the names of the food groups can draw a wedge from the MyPlate icon, colored in the appropriate food group color. You can ask students to share their favorite Energy In food.

Great job, Food Adventurers!

Activity 5: Food Adventurer Adjectives, Very Berry Muesli Recipe

Today, we're going to make and try a muesli. Muesli is a fantastic source of Energy In. Our muesli contains oats. Oats are whole grains. Point to the grains section of the MyPlate Garden Poster. *Choosing whole grains is one way to make sure that our Energy In is high quality fuel!*

Our muesli also contains yogurt and low fat-milk. Point to the dairy section of the MyPlate Garden Poster. *Choosing low fat milk is another way to make sure that our Energy In is high quality fuel!*

Our muesli contains dried fruit, apples, and blueberries. Point to the fruits section of the MyPlate Garden Poster. *Filling half of our plate with vegetables and fruits is another way to make sure that our Energy In is high quality fuel!*

Our muesli contains walnuts. Point to the protein section of the MyPlate Garden Poster. Nuts and seeds are good sources of Energy In, that come in a small package.

Muesli makes a delicious breakfast, and is a healthy source of energy for starting the day. Today, we'll be tasting muesli as a small snack. At home, you can power up with a breakfast of muesli. Avoid portions that are too big. One serving of muesli is 2/3 of a cup, which looks like this.

Measure out a 2/3 cup serving, and allow kids to see the recommended serving size for this food.

We're going to be Food Adventurers, and try our snack using our sense of sight, touch, smell and taste. We're going to practice using our adjectives to describe how our snack looks, feels, smells and tastes.

In this recipe, there are seeds (walnuts) and fruits (dried fruit, apple, blueberries). In addition to referring to the MyPlate Garden Poster, you may want to refer to the Plant Part Poster to point out the different plant parts that are in this recipe. Muesli makes a delicious breakfast, and offers students a healthy source of energy for starting their day.

When it is time to taste the snack, remind students of their Food Adventurer mission. Refer back to Lesson 2, Activity 4, for spoken prompts and directions associated with a Food Adventurer Adjectives Recipe activity.

Activity 6A: Mural Garden Option - Adding physical activity

Review all that has gone on the mural garden so far and have students add in elements of physical activity (Energy Out) such as bikes, bike racks, walking paths, soccer field, basketball hoops. Point out that we are growing Energy In foods in our garden. *In the next lesson, we will add the leaves on our garden plants.*

Activity 6B: Indoor or Outdoor Garden Options

As needed, refer to the list of garden rules, which were generated in Lesson 1.

If safety or car traffic are concerns, you may want to have students walk to and from the garden. Otherwise, you may want to encourage students to skip or jog or dance to and from the garden, to provide an opportunity for more vigorous physical activity.

Have students visit their growing plants. Make sure their plants are receiving plenty of water. If needed, you can add fertilizer and/or compost to the soil. Discuss the analogies between what plants need to be healthy and what people need to be healthy.

Just like people, plants need energy. Our garden plants are using sunlight, water, air and the nutrients in the soil to grow. This is just like when we eat Energy In foods from the MyPlate food groups so that we can grow.

Ask students what they observe about their garden plants. They may not have grown much since the last time they visited the garden. Students in older grades can continue to measure (with a ruler) and track (on a graph) the growth of their garden plants.

Ask the students questions about their growing plants. *Are your plants growing? Who sees a shoot above the soil?* Allow students to make observations about their plants.

What do your plants need to grow? Allow students to answer.

What do your bodies need to grow? Allow students to answer.

If some seeds have not germinated or some plants have not grown, ask, “*Why do you think this seed/plant has not grown? Is there something it needs?*” If the soil is dry, the plants may need more water. If the plants are in a shaded or cold area, they may need sunlight and warmth. Allow students to make recommendations for caring for their plants and carry them out if possible.

Closure

Today we learned that your bodies use energy by exercising and playing and get energy, or refuel, by eating healthy foods. Aim to fill half of your plate with vegetables and fruits. Can you name a fruit or a vegetable that you like to eat?

Allow students to answer.

Aim to make half of your grains whole grains. Can you name some foods made with whole grains?

Allow students to answer. If they haven’t been introduced to whole grains in prior nutrition education classes, you may have to provide a few examples. *When making a sandwich, use whole wheat bread. Whole wheat bread is an example of a food made with whole grains. For breakfast, you can eat oatmeal, or muesli with oats. Oats and oatmeal are both whole grains.*

These are some of the steps we can take to make sure our Energy In is good energy.

It’s also good to get some good Energy Out time! Active play, sports and exercise are all great ways to get your Energy Out time. Remember to drink water when you’re physically active, as well as throughout the day, to keep from getting dehydrated.

The next time we are together we will learn about the leaves of the plant. Point to the leaves on the MyPlate Garden Poster or the leaves on the Plant Part Poster if it is displayed.

I’ve given your teacher an envelope that you can bring home to your family. In the envelope is a letter that describes what we did today. There is also a fun activity for you and a recipe for your family. Before you take it home your teacher will let you draw a picture of your favorite physical

activity on the envelope. Make sure to share the envelope with your family, and to talk about your favorite physical activity.

Supplementary activities

These activities are for the Classroom Teacher to do with the students before you return for the next lesson. Or, you can do these with the students during the lesson if time allows.

- **Supplementary Activity 1 - Family Envelope Drawing** - Students draw a picture of their favorite physical activity on the front of the family letter envelope, before bringing it home.
- **Supplementary Activity 2 - Storybook and Discussion and Journal** - Read the storybook to children and then lead a discussion on key points that connect the book to GHK messages and activities. Sample discussion questions can be found on the next page. Children then write or color about what they learned on a journal sheet. Journal sheets are collected and will be combined into a book after the final lesson.

Storybook Options: *Grandma Lena's Big Ol' Turnip*, by Denia Hester or *Apples, Apples, Apples*, by Nancy Elizabeth Wallace

- **Supplementary Activity 3 - Art Exhibit** - Discuss Lesson 6 coloring sheet message and caricature drawing, and how it is connected to the messages and activities in Lesson 6. Allow children to color the sheet. Allow children to display the colored sheet on their desk/table and invite them to walk around to see everyone's art. Coloring sheets are collected and will be combined into a book after the final lesson.

Supplementary Storybook Activity: Sample Discussion Questions and Journal Sheet Ideas***Grandma Lena's Big Ol' Turnip*, by Denia Hester**Discussion Questions

- *How did Grandma Lena, her family, and dog Rascal get Energy Out?* (planting, watering and weeding the plants and yanking, jerking and tugging the turnip out of the ground and then filling the hole with dirt)
- *How did Grandma Lena, her family, friends, and neighbors get Energy In?* (eating the turnip dishes – casseroles, fries, pickles, stew, and also corn bread muffins)
- *What edible plant parts did Grandma Lena cook from the turnip?* (use the plant part poster to illustrate) (root and leaves)
- *Is Grandma Lena a Food Adventurer? Why?*

Journal Sheet Idea

- Draw Grandma Lena getting Energy In or Energy Out. If appropriate, label what Grandma Lena is doing.

***Apples, Apples, Apples*, by Nancy Elizabeth Wallace**Discussion Questions

- *How did the bunny family get Energy Out?* (picking the apples)
- *How did the bunny family get Energy In?* (eating an apple snack and then eating the surprise recipe of applesauce)
- *Are apples the leaves, stems, roots or fruits of an apple tree?* (use the plant part poster to illustrate) (fruit)
- *Sing the Apples song!*
- *Are Minna, Pip, Mom and Dad Food Adventurers? Why?*

Journal Sheet Idea

- Draw a bunny getting Energy In or Energy Out. If appropriate, label what the bunny is doing.

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Lesson 7 Leaves and Fun in the Sun

Lesson overview

There are five activities available for Lesson 7.

1. Stretch and Balance: Students will participate in a physical activity that reinforces healthy messages.
2. Roots, Stems and Leaves Song, Continued: Students will learn about leaf functions and leafy green vegetables, by singing the chorus and the verse about leaves.
3. Plant Pantomime Party: Students will participate in a physical activity that reinforces the function of leaves on a plant.
4. Food Adventurer Adjectives, Crunchy Baked Kale Chips Recipe: Students will help make and will be offered an opportunity to try a healthy recipe.
5. Garden Options: Students will continue work on their mural, indoor or outdoor garden.

What you will need

General Materials and Supplies

- Pocket folders (one per student). These are optional, but recommended for collecting student materials throughout the class.

Activity 1, Stretch and Balance

- MyPlate Garden Poster

Activity 2, Roots, Stems and Leaves Song, Continued

- Roots, Stems and Leaves song materials: CD, CD player, lyrics sheets
- Plant Part Poster

Activity 3, Plant Pantomime Party

- Plant Part Poster

Activity 4, Food Adventurer Adjectives, Crunchy Baked Kale Chips Recipe

- Access to soap, sink and paper towels to wash hands
- Flip chart paper (from Lesson 1) of Food Adventurer adjectives
- Food Adventurer Adjectives worksheets (one per student)
- Crunchy Baked Kale Chips recipe sheets (one per student). Recipes may be found in Section 3 of this curriculum, as well as on the Oregon State University Food Hero website (<https://www.foodhero.org>).
- Crunchy Baked Kale Chips ingredients (refer to recipe)

Activity 5A, Mural Garden Option—Adding the leaves

- Art supplies for adding to elements to the garden mural

Activity 5B, Indoor or Outdoor Garden Options (Specific supplies used depend on activities chosen. Please refer to teaching outline for more details.)

- Flip chart paper or chalkboard space, with list of garden rules and seeds planted (from Lesson 1)
- GHK flash cards of vegetables and fruits whose seeds are planted
- Access to soap, sink and paper towels to wash hands
- Garden journal pages, pencils or pens
- Clear plastic bottles (labels removed), bottle caps with 3 holes poked in the top, cotton, black construction paper or fabric, lettuce seeds

Take Home Materials

- GHK family letters, recipe sheets and envelopes for Lesson 7

Supplementary Materials (as needed)

- Crayons, storybook, journal and/or coloring sheet

Preparation

Activity 1, Stretch and Balance

- Hang MyPlate Garden Poster in the classroom.
- Discuss with the Classroom Teacher the appropriate volume for students to call out the names of vegetables and fruits, and recite MyPlate messages.

Activity 2, Roots, Stems and Leaves Song, Continued

- Set up CD player or other music device.
- Discuss with the Classroom Teacher the appropriate volume for playing the song, singing and dancing at the educational site.
- Gather edible leaves from the garden (lettuce, chard, spinach) and inedible leaves from the schoolyard trees or shrubs
- Hang Plant Part Poster in the classroom.

Activity 3, Plant Pantomime Party

- Hang Plant Part Poster in the classroom.

Activity 4, Food Adventurer Adjectives, Crunchy Baked Kale Chips Recipe

- Set up flip chart or arrange for space on chalkboard to compile the list of Food Adventurer adjectives.
- Gather ingredients for the recipe. If available, gather kale from the garden.
- Decide whether you will demonstrate how to prepare the recipe in class, or if you will prepare the recipe beforehand. To prepare this recipe in class, you will need access to an oven.
- If you will be preparing the recipe in class, use safe food handling technique to wash, cut, tear and dry the kale leaves for quick and easy recipe assembly. In addition, you will need to occupy students for 10-15 minutes, while the kale chips are baking.
- Photocopy Food Adventurer Adjectives Worksheet

Activity 5A, Mural Garden Option - Adding the leaves

- Prepare mural garden activity.

Activity 5B, Indoor or Outdoor Garden Options

- Choose the specific gardening activities you will do with the students, and gather supplies needed.
- If you will be doing the sunny side up option, have a Master Gardener volunteer set up the bottles with cotton and lettuce seeds, so that seeds have already germinated by class time.

Take Home Materials

- Stuff family envelopes with a letter and recipe.

Supplementary Activities (as needed)

- Talk to the Classroom Teacher about Lesson 7 supplementary activities.

Teaching outline

Activity 1: Stretch and Balance

Today, we're going to begin class by stretching our bodies. Raise your hand if you've ever stretched your body. Can you demonstrate your favorite stretches?

Allow students to answer or demonstrate.

We're going to do the Growing Healthy Kids stretch. Our movements and stretches will remind us to eat healthy. Let's get started!

Have children stand up, with their hands at their sides.

Our first exercise is called the Food Adventurer! Stand up straight and tall. Raise your hands high over your head, like a Food Adventurer superhero. We're Food Adventurer superheroes, flying through the air in search of new vegetables and fruits to try. What new vegetables and fruits do you want to try?

Allow children to answer.

Let's turn right. Bend slightly at the waist and lean your arms to the right. Now let's turn left. Bend slightly at the waist and lean your arms to the left. Now let's fly back down to the ground to try some new root vegetables. What new root vegetables do you want to try?

Allow children to answer. If they can't think of any root vegetables, you can prompt them with 'carrots, parsnips, radishes, beets.' Repeat this exercise by having students reach high towards a fruit tree to try some new fruits, or to fly back down to the garden, to harvest stem vegetables.

Great job Food Adventurers! Remember to be on the lookout for vegetables and fruits that you can eat for snacks and at mealtimes. Food Adventurers can complete missions at home, at school, or anywhere vegetables and fruits can be found.

Our second exercise is called the MyPlate Balance. What does MyPlate remind us to do?

Point to the MyPlate Garden Poster. Allow students to answer.

MyPlate is a picture that reminds us to eat healthy. The vegetables and fruits groups on MyPlate remind us to fill half of our plate with vegetables and fruits. The grains group reminds us to make half of our grains whole grains.

Point to the fruits, vegetables and grains groups on MyPlate. Give examples of whole grains, such as oatmeal and whole wheat bread.

The MyPlate Balance is an exercise that reminds us to eat healthy. Balance on your right leg and say, "Fill half my plate with vegetables and fruits!" Balance on your left leg and say "Make half my grains whole grains!"

Allow children to practice balancing on one leg, and then the other.

As children are balancing, have them repeat MyPlate messages as well as name different fruits, vegetables and whole grains. You can add challenging elements to this exercise, if children are able, by having children lift their hands above their head as they balance, or by having them hop on one foot.

Great job! You've been Food Adventurer superheroes, searching for new vegetables and fruits to try. You've practiced your balance. You've named vegetables and fruits that you can eat for healthy snacks or meals. You've stretched and moved your bodies. You burned Energy Out, and named healthy choices for Energy In.

Activity 2: Roots, Stems and Leaves Song

Today, we're going to learn about leafy vegetables. Let's sing the Roots, Stems, Leaves song to remind us of the six plant parts that we eat, and to learn more about leafy vegetables.

Put on the CD of the Roots, Stems, Leaves song. Sing the chorus and the verse about leaves.

In the song, there are clues about what leaves do for a plant. Leaves make food for the plant. Leaves are like the kitchen of the plant. Leaves make food by catching sunlight. The sunlight is used as energy to power the leaf kitchen. Air is an ingredient that the leaf kitchen makes into food for the entire plant.

Have the students sing the verse again, to emphasize the function of leaves.

Today, we will be learning more about leaf vegetables.

Point to the leaf portion of the sunflower on the Plant Part Poster.

Stretch out your arms and spread the fingers on your hands to catch sunlight. Give each other room, so that we can all stretch out our arms. Wiggle your hands and fingers if you can name a leaf vegetable that we eat.

Call on students who are wiggling their hands and fingers. Acceptable answers include: lettuce, kale, chard, spinach, cabbage, collard greens, radicchio, basil. If students have a hard time coming up with answers on their own, you can tell and/or show them examples of leaf vegetables that we eat using the GHK flash cards. Or, if some of these items are available from the garden, you can use actual leafy green vegetables or herbs.

We eat leaf vegetables in salads and on sandwiches. Leaf vegetables are tasty and nutritious additions to stir fries and tacos. We use the leaves from many herbs to flavor our food. Leaves we eat are tender and smooth. This makes them easy for our mouths to chew and for our stomachs to digest. Not all leaves are chewable, or tender and smooth. Some, like the leaf of a sunflower, are tough and hairy. Eating these types of leaves can make us sick.

Point to the leaf portion of the sunflower on the Plant Part Poster.

A Master Gardener or other volunteer can explain the previous section on leaves we eat versus leaves we don't eat. If available, gather leaves from the garden and schoolyard, and allow children to feel the difference between some leaves that we eat (lettuce or spinach) and leaves that we don't eat (oak leaves or tomato leaves). It is important to avoid giving the impression that all leaves are safe and nutritious to eat.

Lettuce is a leaf vegetable that we can eat. Spinach is another leafy green that we can eat. Cabbage is also a leaf vegetable. Leafy green vegetables are often full of nutrients. That's why we say that adding leafy green vegetables to our sandwiches or salads is nutritious!

Hold up GHK flash cards or samples (from the garden or grocery store) of these vegetables as you speak. Hand out a GHK flash card of a leaf vegetable to each student.

GHK flash cards have photos of foods on the front. On the back, you will find a healthy message, a cooking tip, and a gardening tip.

Leaf lettuce and spinach are good choices for new gardeners and Food Adventurers. We can grow leaf lettuce or spinach in pots, or in the ground. Since they can be grown in pots, leafy green vegetables are great choices for growing food in an apartment or other places without a garden. We can plant lettuce and spinach seeds throughout the gardening season. Planting seeds several times during the gardening season lets us harvest leafy greens all season long. We can harvest the leaves when they're young. We call these 'baby greens' or 'baby spinach'. We can also wait, and harvest the leaves when they grow larger.

We need to make sure that we harvest leafy green vegetables before the plant starts to flower.

Once a leafy green vegetable starts to flower, the leaves get tough and bitter. Many leafy greens, like leaf lettuce and spinach, grow best in the cool temperatures of the spring and early summer. Leafy green vegetables start to flower when the temperature gets too warm.

Activity 3: Plant Pantomime Party

Talk the students through a modified plant pantomime. Make sure students are at least arms-length apart, before starting this exercise.

In an earlier GHK lesson, we came up with a fun way to remember the six plant parts. We used different parts of our body to represent the different parts of a plant.

Point to the Plant Part poster, and remind students about the different hand and body movements that they learned in Lesson 2 (Six Yummy Plant Parts), as a way to remember the different plant parts.

Roots – Wiggle your feet.

Stem – Bend your legs at the knees.

Leaves – Shake your hands out to the side.

Flower – Raise your arms above your head, to form a “V”.

Fruit – Clasp your hands above your head, to form a circle with your arms.

Seeds – Wiggle your fingers and move your hands down to the ground.

We are going to get some fun physical activity pretending we’re leafy green vegetables! Stretch out your arms, and spread the fingers on your hands. Which leafy green vegetable are you going to be? Wiggle your hands and fingers if you would like to answer.

Call on students to answer.

Leaves need sunlight to make food for the rest of the plant. Keep your arms spread wide and out to your sides, so that you make a ‘T’ with your body and your arms. Rotate your hands, so that your palms face up. Wiggle your fingers to catch the sun. Once you catch the sun, rotate your hands, so that your palms are facing behind you.

Demonstrate, by rotating your arms at the shoulder, so that your palms face up and then behind you.

Your leaf kitchen needs more energy. Turn your hand, so that your palms are facing up again.

Repeat three or four times, ending with students’ palms facing up.

Air is an ingredient our leaf kitchens need to make food! I’m going to count to four. While I count to four, I want you to slowly take one big breath in. Then I’ll count to six, and we’ll all slowly breath out.

Demonstrate this breathing technique to students, and then recite a four-count for breaths in and

a six-count for breaths out. Repeat two or three times.

Our leaf kitchens also need water and nutrients from the soil. Water and soil nutrients are other ingredients that leaves use to make food. Can you use your feet as roots, to get water and nutrients from the soil? Stand up tall on your toes. Rock back on your heels, so that your feet are flat on the ground. Wiggle your toes to pull water and nutrients up and into your plant roots.

Demonstrate calf raises to students, and have them repeat this exercise three or four times.

Our plants need to stand strong, even when it's windy. Do you have a strong stem? Keep your arms out to your sides, and bend at the waist. Now bend to the other side. Stems must be strong, but flexible. You bend, but you don't break.

Demonstrate side bends to students, with arms spread out to your sides. Have students repeat this exercise three or four times.

Now we need to catch more sunlight to power our leaf kitchens. Turn your hands, so that your palms face up. Wiggle your fingers to catch the sun. Boy, it's starting to get warm! Turn your hands, so that your palms face behind you. This will keep our plants cool. We don't want to flower, just yet. Gardeners harvest leafy greens before they flower. This is when leafy greens taste best.

Demonstrate shoulder rotations before moving to the final exercise. In the final exercise, students can be 'harvested' or allowed to 'go to seed.' Students who are 'harvested' will be asked to name their favorite leafy green vegetable, and to pantomime making a snack with the vegetable they named. Students who 'go to seed' will be asked to shake out their hair, to plant more seeds in the garden.

I need to harvest some leafy greens to make a salad or to add to a sandwich. I will 'pick' some of you before you start to flower. Others, I'm going to let flower and make seeds. We'll use these seeds to plant more leafy greens in our garden. Who wants to be harvested now? Who wants to flower and make seeds?

Allow students to answer. Circulate among the students, and 'harvest' those who want to be harvested. As you harvest, ask students to name the leafy green they were pretending to be. Ask them if they want to go into the salad, or in a sandwich. Have these students pretend to make a salad, sandwich or other snack with leafy green vegetables.

For my leafy greens that are still growing in the garden! We're moving from cool, spring weather to warm, summer weather. Many leafy greens start to flower when the temperature gets too warm. Hold your head up tall, as you start to flower. The flowers of plants eventually turn into seeds.

Point to your head (flower) and hold out your hair (seeds), as you speak.

Let's plant our seeds in our garden, so we can grow even more leafy green vegetables.

Bend at the waist, and use your hands to shake out your hair. At the end of the activity, students may sit back down.

Great job, everyone! Now, I have a few questions for you. Raise your hand if you would like to answer.

- *What was the energy that you used to power your leaf kitchen?(sunlight)*
- *What does a plant make in its leaf kitchen? (food for the rest of the plant)*
- *Was air an ingredient that your leaf kitchen used to make food? (yes)*
- *Can you name one more ingredient that you used? (water or nutrients from the soil)*
- *When do leafy green vegetables start to flower in the garden? (when it gets warm)*
- *Where do the seeds of a leafy green vegetable come from? (the flowers)*

Plants, including leafy green vegetables, grow because of energy they get from the sun. Leafy green vegetables also need soil nutrients, air and water to grow. In our garden, we can easily grow leafy greens and other vegetables. We just need to make sure: to choose a sunny spot for our garden; to plant our vegetables in good soils that have the nutrients our vegetables need; to water our vegetable plants regularly.

Even if you don't have a garden at home, you can grow leafy green vegetables in pots. You can place the pots in a sunny window in the winter, or on a porch or patio in the summer.

Activity 4: Food Adventurer Adjectives, Crunchy Baked Kale Chips Recipe

Pass out Food Adventurer Adjective worksheets (Appendix H).

We're going to be Food Adventurers, and try a healthy snack made from kale. Kale is a leafy green vegetable. Eating leafy greens, like kale, is a great way to vary our veggies. This kale has been baked into a crunchy veggie chip. The kale was lightly coated in olive oil and sprinkled with seasoned salt.

If necessary, remind students about proper handwashing technique (Appendix B).

But first, before handling, preparing or eating food, we need to wash our hands! We want to make sure that we keep our hands clean. This will help to keep us healthy.

Remind students of their Food Adventurer mission. Refer back to Lesson 2, Activity 4, for the full script of spoken prompts and directions associated with a Food Adventurer Adjectives recipe activity.

Remember, Food Adventurers try new fruits or vegetables with one or more of their senses. You can try the chips with you eyes, your fingers, your nose or your mouth.

Activity 5A: Mural Garden Option - Adding the leaves

In the last few weeks, students prepared the garden, planted seeds in the mural and added in the roots and stems of their growing plants. Students also added in the soil and sun, sources of water, and examples of physical activity. Today, ask students to add in the leaves on their plants. You can remind them that leaves are the “kitchen” where plants make food. You can give students leeway to add the leaves as they like, but may direct students to add the leaves so that they come out from the stem.

Activity 5B: Indoor or Outdoor Garden Options

The last time we met, we checked on our garden plants. Can anyone remember the name of a veggie plant growing in our garden? We also recorded what we observed about our plants (by drawing or writing) in our garden journal. Would anyone like to share something they wrote or drew in their garden journal?

Allow students to respond, and share what they last recorded in their garden journal.

Today we're going to check on our garden plants. Before we go out into the garden (or go to the indoor garden), who can tell me our garden rules?

Call on students, referring to the list of garden rules that were developed in Lesson 1. These rules may be written on the board, or displayed on a piece of paper which is hanging on a wall.

Choose one or more of the options listed below.

Harvest: If there are leafy green vegetables near maturity in an established indoor or outdoor garden, you can have students harvest, wash and taste the leafy greens. If students are washing and tasting the leafy greens, make sure that they practice good handwashing technique when handling and tasting food.

Seed Saving: Lettuce seeds are easy to save, and the seeds will remain viable for several years. Lettuce plants like cool weather. When temperatures rise and days get longer, the plant is more likely to bolt (send up a flower stalk). Once a lettuce plant has bolted, the leaves will turn bitter and are no longer appetizing to eat. Allow the lettuce to flower and set seeds. As the flowers mature into seeds, they will begin to look like dandelion heads (white, fluffy seeds) or will be contained in seed pods that look like miniature French green beans. For fluffy seeds, you can separate the seeds from the chafe by rubbing them together with your fingers. For seed pods, wait until the pods start to dry. Once they start to dry, you can cut whole seed stalks (containing several pods), and place them in a paper bag. The seed pods will pop open, leaving the tiny black seed in the bottom of the bag. Store seeds in a sealed container in a cool, dry area.

Garden Journal: If students are keeping a garden journal, you can have them measure the height of the plants that they sowed from seeds, or draw their observations. If they have measured their plants in the past, they can compare this week's observations with those of previous weeks.

Another option is to have students draw vegetables in the garden, and note how they look similar to or different from these same vegetables, as they might remember them from home or the

grocery store. Use the GHK flash cards as needed.

Garden and Grocery Comparison: Ask the students to review the seeds they previously planted (in the indoor or outdoor garden) on the flip chart list from Lesson 1. Ask students if any of these are leafy green vegetables.

Ask the students to look at the plants, ask them if the plants that are growing in the garden look similar to or different from the plants that they eat. For example, if you planted lettuce, you can have lettuce from the Flash Cards for comparison. If they planted radishes, you can have radishes from the Flash Cards next to the radish seedlings. Do this for 2-3 different plants at various stages of development, to remind students that (1) we eat many different plant parts, (2) these healthy and nutritious foods come from plants, and (3) it is easy to grow a variety of healthy foods in a garden.

Sunny Side Up: Leaves grow towards the sun. To demonstrate this in the classroom, you can set up a simple experiment. Take two plants that are growing in pots. Turn the plants on their side, so that the plants are parallel to the floor. Over time, the stems and leaves of the plants will ‘turn’, so that they are oriented vertically, towards the sun. This demonstration will work best with fast growing plants.

Alternatively, you can germinate plants from seed, and manipulate how they grow in a soda bottle “growth chamber.” To do so, use a pencil or wooden dowel to push cotton into the bottom of two clear, plastic soda bottles. Drip water into the bottles, so that the cotton is moist and not soggy. Drop 5-10 lettuce seeds into the bottle. Shake the bottles, to separate the seeds on the cotton. Place both bottles near a light source (i.e. a sunny window or an artificial light bank). Once the seeds germinate (5-10 days), completely cover one bottle with black construction paper or fabric. Leave the other bottle uncovered. Screw the caps (with holes punched in them) onto each bottle.

To save time, ask a Master Gardener volunteer to set up the bottles, so that seeds are already germinated on the day of the class. This way, you can show the students the seedlings in each bottle, and proceed to cover one bottle, while leaving the other uncovered. Remember to lay each bottle on its side, rather than standing them upright.

Ask the students to guess what they think will happen in each bottle. In what direction will the leaves grow? Students can record their hypotheses (in words or drawings) in their garden journal.

The students will compare their hypotheses to what really happened, one week later. The lettuce seedlings in the uncovered bottle will turn vertically, towards the light. The lettuce seedlings in the covered bottle will also grow towards the light. However, since their light source is coming from the side (the holes punched in the bottle cap), they will grow horizontally, towards the cap.

Closure

Today we learned about leafy green vegetables. Spinach, lettuce, kale and chard are all leafy

green vegetables that are part of a healthy and balanced diet. We learned that leaves are the kitchen of the plant. We can harvest leafy green vegetables when they're young (for baby greens or baby spinach), or when they get bigger. If we let our leafy greens grow too long, they may flower and make seeds. We might even see this happen in our garden. The next time we are together we will learn more about flowers that we eat.

Point to the flowers on the Plant Part Poster.

Please take this envelope home to your family. Your family can read about what we did today. The recipe for the kale chips is also included. You will also find a fun activity for you. Before you take the envelope home, your teacher will let you draw a picture of your favorite leaf vegetable on the front. Make sure to share your drawing with your family, and to tell them about leaf vegetables that you like to eat.

Supplementary activities

These activities are for the Classroom Teacher to do with the students before you return for the next lesson. Or, you can do these with the students during the lesson if time allows.

- **Supplementary Activity 1 - Family Envelope Drawing** - Students draw a picture of their favorite leafy green vegetable on the front of the family letter envelope. These are sent home with the students to be given to their family.
- **Supplementary Activity 2 - Storybook and Discussion and Journal** - Read the storybook to children and then lead a discussion on key points that connect the book to GHK messages and activities. Sample discussion questions can be found on the next page. Children then write or color about what they learned on a journal sheet. Journal sheets are collected and will be combined into a book after the final lesson.

Storybook Option: *The Cabbage Soup Solution*, by Erika Oller

- **Supplementary Activity 3 - Art Exhibit** - Discuss Lesson 7 coloring sheet message and caricature drawing, and how it is connected to the messages and activities in Lesson 7. Allow children to color the sheet. Allow children to display the colored sheet on their desk/table and invite them to walk around to see everyone's art. Coloring sheets are collected and will be combined into a book after the final lesson.

Supplementary Storybook Activity: Sample Discussion Questions and Journal Sheet Ideas

***The Cabbage Soup Solution*, by Erika Oller**

Discussion Questions

- *What edible/eatable plant part did Elsie grow?* (cabbage - leaves)
- *What did Elsie cook from her edible/eatable plant part?* (soup)
- *Turn to page with many veggies on the doorstep. How many colors of veggies do you see?* (four – brown, red, green, orange. This is an example of VARIETY!)
- *Did Elsie get any physical activity in the book?* (planting, picking and loading her truck with cabbages)
- *Is Elsie a Food Adventurer? Why?*

Journal Sheet Idea

- Draw a picture of a cabbage from Elsie's garden. If appropriate, students can label what edible/eatable plant part it is.

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Lesson 8 Flowers, Bees and Broccoli

Lesson overview

There are five activities available for Lesson 8.

1. Plant Part Poster and GHK Flash Cards: Students will learn about edible flowers.
2. Physical Activity – Be the Bee (and Butterfly, and Fly!): Students will be physically active, as a way to learn about insect pollinators in the garden.
3. Analyzing Advertisements: Students will practice interpreting the marketing and nutrition information on cereal boxes, as a way to make healthier decisions.
4. Food Adventurer Adjectives, Veggies with Cilantro Yogurt Dip Recipe: Students will help make and will be offered an opportunity to try a healthy recipe.
5. Garden Options: Students will continue work on their mural, indoor or outdoor garden.

What you will need

General Materials and Supplies

- Pocket folders (one per student). These are optional, but recommended for collecting student materials throughout the class.

Activity 1, Plant Part Poster and GHK Flash Cards

- Plant Part Poster
- GHK flash cards to demonstrate the different plant parts that we eat
- Roots, Stems and Leaves song materials: CD, CD player, lyrics sheets (Appendix F)

Activity 2, Physical Activity – Be the Bee (and Butterfly, and Fly!)

- GHK flash cards for flowers
- Cotton ball, yellow corn starch, brown paper towels

Activity 3, Analyzing Advertisements

- Photos of skunk cabbage and/or a bee orchid (optional)
- Flowers that have visible nectar guides, such as lilies, foxglove, iris or geranium.
- Measuring cups, to demonstrate serving size.
- Empty boxes from two or more breakfast cereals (one set per group).
- Enough cereal (the same kind of cereal that you give to groups) to measure out one serving.
- Paper clips (to count out grams of sugar)
- MyPlate Garden Poster

Activity 4, Food Adventurer Adjectives, Broccoli and Cauliflower Crudites with Cilantro Yogurt Dip Recipe

- Access to soap, sink and paper towels to wash hands
- Flip chart paper (from Lesson 1) of Food Adventurer adjectives

- Food Adventurer Adjectives worksheets (one per student)
- Paper cups (one per student)
- Veggies with Cilantro Yogurt Dip recipe sheets (one per group). Recipes may be found in Section 3 of this curriculum, as well as on the Oregon State University Food Hero website (<https://www.foodhero.org>).
- Veggies with Cilantro Yogurt Dip ingredients (refer to recipe)

Activity 5A, Mural Garden Option – Adding the flowers

- Art supplies for adding flower elements to the garden mural

Activity 5B, Indoor or Outdoor Garden Options

- Flip chart paper or board space, with list of garden rules and seeds planted (from Lesson 1)
- GHK flash cards of vegetables and fruits whose seeds are planted
- Access to soap, sink and paper towels to wash hands
- Garden journal pages, pencils or pens

Take Home Materials

- GHK family letters, recipe sheets and envelopes for Lesson 8

Supplementary Materials (as needed)

- Crayons, storybook, journal and/or coloring sheet

Preparation

Activity 1, Plant Part Poster and GHK Flash Cards

- Hang Plant Part Poster in classroom
- Photocopy Roots, Stems and Leaves song lyrics sheet (Appendix F, one per student). To save paper and time, you can instead transfer lyrics to an overhead transparency or use a document camera to project the lyrics for the entire class to read.
- Set up CD player or other music device.
- Discuss with the Classroom Teacher the appropriate volume for playing the song, singing and dancing at the educational site.
- Arrange for chalkboard space, or hang flip chart paper, to write down the functions of flowers.

Activity 2, Physical Activity – Be the Bee (and Butterfly, and Fly!)

- Set up pollination demonstration.

Activity 3, Analyzing Advertisements

- Take cuttings of flowers with nectar guides from the school garden. You may also ask a Master Gardener or other garden volunteer to cut flowers with nectar guides from their own garden or the school garden.

- Purchase or gather cereal boxes for the activity. One of the cereals should be relatively low in grams of sugar (about 3g or lower) and high in grams of fiber (about 3g or higher) per serving.

Activity 4, Food Adventurer Adjectives, Broccoli and Cauliflower Crudites with Cilantro Yogurt Dip Recipe

- Set up flip chart or arrange for space on chalkboard to compile the list of Food Adventurer adjectives.
- Gather ingredients for the recipe. If available, gather broccoli, cauliflower and cilantro from the garden.
- Using safe food handling techniques, prepare the recipe ingredients for quick and easy recipe assembly. Complete any food preparation tasks that you do not want students to complete.

Activity 5A, Mural Garden Option – Adding the flowers

- Prepare mural garden activity.

Activity 5B, Indoor or Outdoor Garden Options

- Choose the specific gardening activities you will do with the students, and gather supplies needed.
- If you will be doing the bolting vegetables option, have a Master Gardener volunteer scout for root vegetables or leafy green vegetables that have gone to seed.

Take Home Materials

- Stuff family envelopes with a letter and recipe.

Supplementary Activities (as needed)

- Talk to the Classroom Teacher about Lesson 8 supplementary activities.

Teaching outline

Activity 1: Plant Part Poster and GHK Flash Cards

Refer to the Plant Part Poster as you review roots, stems and leaves that we eat. You can also refer back to the body parts that were presented as analogous to plant parts in Lesson 2.

During the Growing Healthy Kids program, we've learned about roots that we eat. Can anyone name a root vegetable?

Allow students to answer. As necessary, remind them that carrots, parsnips and beets are all roots that we eat. Hold up the GHK flash cards for these vegetables, if available.

We've also learned about stems that we eat. Who can name a stem vegetable?

Allow students to answer. As necessary, remind them that celery, rhubarb and asparagus are all stems that we eat. Hold up the GHK flash cards for these vegetables, if available.

We've also learned about leafy green vegetables. Can you name a leaf vegetable?

Allow students to answer. As necessary, remind them that lettuce, cabbage, spinach and kale are all leaf vegetables. Hold up the GHK flash cards for these vegetables, if available.

We sang the Roots, Stems and Leaves song to help us learn about these plant parts that we eat. Today, we will be learning about flowers. The crowns of broccoli and cauliflower plants are flowers that we eat. The crowns of broccoli and cauliflower plants contain lots of tiny, edible flower buds. If we wait too long to harvest broccoli from our garden, the buds will open, and we would see lots of little flowers on the plant.

Nasturtiums, calendula and lavender blossoms are also edible flowers. You can use them to decorate and flavor foods.

Hold up the GHK flash cards for these flowers, if available.

Let's review the six plant parts by singing the Roots, Stems and Leaves song. Since we're learning about flowers, we will also sing the verse about flowers.

Lead the students in song, and dance around while you're singing. Have the students dance, as well.

Refer to the Roots, Stems and Leaves song lyrics sheet (Appendix F) and sing the Chorus and verse about flowers.

Activity 2: Physical Activity – Be the Bee (and Butterfly, and Fly!)

Today, we're going to be learning about flowers. In the song, there are clues about what flowers do for a plant. "Flowers are dressed so colorfully, They hold the pollen and attract the bees."

Flowering plants use their bright colors and sweet smells to attract bees, butterflies, or even flies! Insects that visit flowers are called pollinators because they help move pollen from one flower to another. Pollinators get lots of physical activity. It takes a lot of energy to fly from flower to flower!

Pollinators help flowering plants make fruit and seeds.

Demonstrate how pollination works, with cotton balls and corn starch. You may want to pull on the cotton ball, to tease some of the cotton fibers out of the ball. This will help the corn starch to better adhere to the cotton ball.

Touch one cotton ball to a small pile of yellow cornstarch that is sitting on top of a brown paper towel. The grains of the corn starch should adhere to the cotton fibers, the same way that pollen adheres to a bees' body. Touch the cotton ball to a clean, brown paper towel. Some of the grains will come off of the cotton ball, the same way that pollen transfers from a bees' body to a new flower.

Pollen is a powder inside of a flower. When a bee visits one flower, the hairy body of the bee picks up some pollen. When it visits another flower, some of the pollen rubs off of its body, and onto the new flower. Bees move pollen from one flower to another.

Display the GHK flash cards for cauliflower, broccoli, and other flowers that we eat.

The song also says "Because cauliflower is a flower that I eat." How many of you have ever eaten cauliflower? How many of you have ever eaten broccoli? Did you know that both broccoli and cauliflower are flowers?

Display the GHK flash cards for cucumber, squash, pumpkin, apples, melons, blueberries, strawberries, blackberries, and/or other fruits.

Without pollinators to move pollen between flowers, there would be no watermelons, zucchini, cucumbers, or cantaloupe. We wouldn't have almonds, or even chocolate! Blueberries, strawberries, blackberries, apples and many other fruits need pollinators to visit the flowers of these plants.

I want you to get ready to be REALLY active. Pretend you're a pollinator. You can be a bee, and flap your wings very fast (move arms up and down very fast. Bees wiggle their entire body when pollinating a flower. All you bees, flap your wings very fast, and wiggle your body!

Demonstrate, and allow children time to pretend they're a bee.

Now you're a butterfly. We're going to slow things down just a bit, but we're still going to be physically active. Butterflies move their wings slower than bees, but they move them all the way up and all the way down. Butterflies move far, with each flap of their wings.

Demonstrate by moving your arms slowly up and down, and taking long, lunging steps forward. Allow the children time to pretend they're a butterfly.

Now we're going to speed up our physical activity. Pretend you're a fly. Flies flap their wings in fast, little circles, so that they can fly up and down and sideways and every which way.

Make small arm circles, moving forward, backwards and side to side. Allow the children time to pretend they're a fly.

Activity 3: Analyzing Advertisements

Flowers attract bees, butterflies and flies by advertising the fact that they have sweet nectar and protein-rich pollen that pollinators need to stay healthy. Does anyone know what the word advertise means?

Allow students to answer.

The bright colors and sweet smells of many flowers are actually advertisements. The flower is trying to catch the attention of a bee or butterfly, to let them know that they can find sweet nectar and protein rich pollen within the flower. Some flowers even have nectar guides. These nectar guides are like traffic control lines that say to the bee "Land right here! Land right here!"

Pantomime the gestures of a traffic control cop when discussing nectar guides. Pass around different flowers, to let students examine the nectar guides on the petals or to smell the sweet smell of the flower.

Just like flowers catch the attention of pollinators by advertising their nectar and pollen, food sellers try to get our attention too. However, pollinators have to be careful about the flowers that they visit. Some flowers are fakers, with bright colors and attractive smells, but no nectar or pollen for the pollinators. This is very bad for the pollinators. They waste their Energy Out, without getting any Energy In.

Skunk cabbage is a common example of a "faker flower." The skunk cabbage smells bad, which attracts flies. The flies visit the skunk cabbage to lay their eggs on the skunk cabbage, perhaps mistaking the smell of the skunk cabbage for a dead animal. The fly thus wastes its eggs, which will not be able to develop on the cabbage, but pollinates the skunk cabbage in the process.

A lovelier yet more risqué example of a "faker flower" is the bee orchid. The petals look like a bee, which attracts bees looking for a mate. The bee wastes energy in a fake reproductive encounter, but the orchid gets pollinated.

You may want to show photos of these flowers and describe how they trick bees into wasting their energy out, without providing anything in return.

Sometimes we can get tricked by advertising. An advertisement might lead us to think that a food is healthy, when it is really a “sometimes” food. Food packaging is one form of advertising.

Hold up a cereal box and ask students to identify characteristics of the box that might stand out to them if they were walking down the cereal aisle at the grocery store.

How many of you have ever gone grocery shopping with your family? Have you ever helped to pick out breakfast cereals? What types of things make you want to choose one breakfast cereal over another?

Allow children to answer. Some answers might include: bright colors, fun game, cute mascot, coupon or a free prize.

Do you know anything about the nutrition of your breakfast cereal? Where can we look to find out the nutrition facts of this food? Can we learn more about the nutrition by reading the back of the box? Can we learn more by reading the bottom of the box?

Allow students to answer, and point out the Nutrition Facts label on the side of the cereal box.

We can find the nutrition facts on the Nutrition Facts label!

If this is the first time the students have gone over a Nutrition Facts label, take the time to point out and define:

- **Serving size:** *A serving is an amount you actually eat at one time. You wouldn't eat an entire box of cereal for breakfast, but you would eat one serving. For a breakfast cereal, the serving size might be 1 cup, or it might be ½ a cup. All of the other things we want to know about a food are based on the serving size. So pay attention to the serving size. When serving yourself, ask yourself, "How many servings do I have?"*
- **Calories per serving:** *The calories are given as a number. This number represents the amount of energy you get from one serving of this food. It is a measure of our Energy In. Healthy sources of energy in give you nutrients with your calories. “Sometimes” foods tend to have lots of calories, but few nutrients. Make sure to choose healthy sources of Energy In and to balance Energy In, the food you eat, with Energy Out, or physical activity.*
- **Grams of sugar:** *Lists the amount of sugar, in grams. A gram is measure of an item's weight. A small paperclip weighs about 1 gram. One paperclip doesn't weigh that much, but if you add more and more paperclips, it can amount to quite a bit of weight. It's the same with sugar. Most of us don't need more sugars in our diet. When choosing foods, look at the Nutrition Facts label and choose the one with a lower number of grams of sugar.*
- **Grams of fiber:** *Lists the amount of fiber, in grams. Most of us don't get enough fiber in our diet. Fiber helps to keep our digestive systems healthy. Fiber helps us feel full, so*

that we don't eat too much. Fruits, vegetables and whole grains are all good sources of fiber.

We're going to look at the boxes of different breakfast cereals. Some of these might be "every day" foods and some might be "sometimes" foods. We'll work together to look at the advertisements on the boxes. We'll talk about how the ads might influence your choices or your parents' choices. We'll look at the Nutrition Facts label, to find the serving size. We'll look at calories, grams of sugar and grams of fiber per serving.

Allow students to work in groups of two or four. Pass out the first cereal box to each group. All groups should have the same cereal box as each other, and as you. This way, the class can work together on this activity to answer the questions, below:

You're with your family at the grocery store. When you walk down the cereal aisle, what parts of this cereal box might catch your attention? How might the location of the cereal box, on a grocery store shelf, catch your attention?

Point out some of the aspects on the box that may catch the students' attention. Some examples might be advertisements of a prize inside; link to popular movie or television characters; cartoon mascot; games or trivia; bright colors; offer of free movie tickets. Also ask students to consider how the location of the cereal box on a shelf (middle, top or bottom shelf; number of boxes facing the student) might influence how cereal boxes catch their attention.

These things might catch your attention, but you also need to make sure that the food that you eat is a healthy source of Energy In. Breakfast is your first chance to Power Up with a healthy meal. You want to make sure that you give your body the healthy fuel it needs to think and play throughout the day. Where can we look to find out more about the nutrition of this cereal?

Allow students to answer.

Great job! The Nutrition Facts label! I want everyone to look at the Nutrition Facts label. Can you find where the serving size is listed? How much is one serving of this cereal?

Lead students through the Nutrition Facts label, or have a volunteer assist the groups. Allow students to answer. Measure out one serving of the cereal, and show to students.

This is one serving size of this cereal. All of the other nutrition information listed on the label is based upon a serving of cereal this big.

How many calories (a measure of Energy In!) are in one serving?

Allow students to answer. Point out that there is a calorie measure for the dry cereal, as well as one for cereal eaten with half a cup of skim milk.

The calories are listed for both the dry cereal, as well as for cereal eaten with half a cup of skim milk. Choose fat free (skim) or low fat (1%) milk, or soymilk or rice milk with your breakfast

cereal. This keeps the calories in check, while giving us lots of calcium, which we need for strong bones and bodies.

Measure out half a cup of skim milk (if available) or water, so that you can show students the serving size.

A healthy breakfast cereal is low in sugar. How many grams of sugar are in one serving?

Allow children to answer. Have groups count out paperclips, as a measure of the number of grams of sugar in the cereal. Remind students that one paperclip weighs roughly one gram.

Remember, one paperclip doesn't weigh that much, but if you add more and more paperclips, it can amount to quite a bit of weight. It's the same with sugar. Most of us don't need more sugars in our diet. Choosing breakfast cereals with less sugar is one way to make sure you Power Up with a healthy breakfast.

A healthy breakfast cereal is a good source of fiber. How many grams of fiber are in one serving?

Allow children to answer.

Fiber helps to keep our digestive systems healthy. Fiber helps us feel full, so that we don't eat too much. Whole grain breakfast cereals are one way to get lots of fiber. That's why we want to make half our grains whole grains.

You can also add fresh or dried fruit to your cereal. Vegetables and fruits are another way to get fiber in our diet. The added fruit will increase the sugar, but because fruit comes with lots of fiber and nutrients, it is a healthy choice for adding color and flavor to breakfast cereals.

Have the students repeat this activity for one or two additional breakfast cereals. When they are through working through the calories, serving size, sugar and fiber, ask them to line the boxes up from least sugar to most sugar. Remind students that most of us don't need extra sugars in our diet.

Next, have students line up the boxes from least to most fiber. Remind students that fiber helps to keep our digestive systems healthy. Making half of our grains whole grains is one way to make sure we're getting enough fiber in our diet.

When students finish the activity, ask them what they think about this breakfast cereal. Is it a "sometimes" food or a good choice for a healthy breakfast? Why or why not?

Some foods are healthier choices than others. Some foods are "every day" foods and some are "sometimes" foods. We need to look past the advertisements to make healthy choices. The Nutrition Facts label is a great place to start. We might learn even more about that food if we look at the ingredient list.

Just as some flowers can fool insects into visiting them, but not provide anything in return, some food advertisements might trick us into thinking we're eating something that is good for us when it is instead a "sometimes food."

If you discussed the skunk cabbage or bee orchid earlier in this activity, you may want to bring up this example once more.

Each of us might choose to eat different foods. That's okay. What's important is to learn what tools we have to make healthy choices. The Nutrition Facts label is one tool you can use to help you and your family make healthy choices.

Activity 4: Food Adventurer Adjectives, Broccoli and Cauliflower Crudités with Cilantro Yogurt Dip Recipe

Prior to preparing the recipe, have students wash their hands.

We're going to prepare a snack with edible flowers. We'll then be able to taste this healthy snack. But first, before handling, preparing or eating food, we need to wash our hands! We want to make sure that we keep our hands clean. This will help to keep us healthy.

As necessary, remind students about proper handwashing technique (Appendix B).

Broccoli and cauliflower are flowers that we eat. When eaten raw, these vegetables are sometimes called crudités. That's a French word that means "raw." We're going to prepare and taste our veggie crudités with a quick and savory yogurt dip. Broccoli and cauliflower are in the vegetables group on MyPlate. Yogurt is in the dairy group. Just as non-fat (skim) or low-fat (1%) milk is a healthy choice from the dairy group, non-fat or low-fat yogurt is another healthy choice of Energy In from the dairy group.

Point to the vegetables group on the MyPlate Garden Poster when talking about broccoli and cauliflower. Point to the dairy group when talking about the yogurt.

Prepare the recipe. Divide the students into teams. Assign each team one task: measure, cut, mix, clean. Volunteers can assist the students with these tasks.

This recipe includes two types of plant parts that we eat: flowers (broccoli and cauliflower) and the leaves and stems of an herb (cilantro).

Refer to the Plant Part Poster to point out the different plant parts that are in this recipe.

We're going to be Food Adventurers, and try our snack using our sense of sight, touch, smell and taste. We're going to practice using our adjectives to describe how our snack looks, feels, smells and tastes.

Refer back to Lesson 2, Activity 4, for spoken prompts and directions associated with a Food Adventurer Adjectives recipe activity.

Activity 5A: Mural Garden Option – Adding the flowers

Review all that has gone on the mural garden so far and have students add the flowers to their growing plants. Tell them that, in the next lesson, they will add the fruits.

Activity 5B: Indoor or Outdoor Garden Options

Choose one or two of the options listed below.

Find the Flowers, Be the Bee: Have students find and record (in their gardening journal) which garden plants are flowering. Are there bees, flies or other pollinators visiting the garden flowers?

Throughout the gardening season, students are likely to observe cabbage white butterflies in the garden. If nasturtiums, broccoli, kale, cabbage, or mustard greens are growing in the garden, you can search these for the cabbage white eggs. A Master Gardener can point out the eggs, discuss how the caterpillars feed on these plants, and talk about how caterpillars (often pests in a garden) will eventually turn into butterflies (often pollinators in a garden).

In the late spring to early summer, melons, zucchini and cucumbers may start to flower. It is not unusual for these plants to need help, especially early in the gardening season, with pollination. A Master Gardener or other experienced gardener can show students how to hand pollinate these plants. Female flowers can be ‘tagged’ with colored string, yarn, or something similar, so that students can revisit these same flowers and record (in their gardening journal) how they change as they develop from flowers into fruits.

Bolting Vegetables: As the weather warms up, some cool season vegetables may bolt. *Bolting* is a term that describes when a plant quickly grows a flowering stalk. A Master Gardener or other volunteer can point out plants that are bolting. Lettuces, beets, carrots and onions look very different, once they start to bolt. This is because the plant is sending all of its energy to the flowers, so that it can produce seeds. You can dig up the root vegetables that have started to bolt, and note how the roots are small, woody and fibrous. Once root vegetables or lettuce starts to flower, they’re not very tasty to eat.

Students can collect seed from lettuce that has bolted, and save them to grow more vegetables. To save lettuce seed, cut the seed stalks from the plant, before the seed pods have fully dried. Seeds will fall off the stalk and be lost, or encourage “volunteer” lettuce plants if allowed to mature on the plant.

Spread collected seeds out on a tray or aluminum pie pan to dry in the sun for several days to a week. Seeds should be completely dry before storing! When seed pods and seeds have fully dried, the tiny lettuce seeds can be collected and stored in a cool dry environment.

Put seeds in a labeled, dated envelope and store the seed envelopes in a sealed jar. Moisture can cause the seeds to deteriorate more quickly. To ensure the seeds stay dry and increase seed viability, place a small amount of freshly opened powdered milk or silica gel in the jar beneath the seed packets. Close the jar tightly and store on the kitchen counter until no moisture condenses inside the jar. Then place the jar in the refrigerator until planting time.

If cilantro has gone to seeds in the garden, students can pick and taste the cilantro seeds. These seeds are also known as coriander. Coriander is a spice that is used in cooking.

Harvest: If broccoli or cauliflower is near maturity, or if nasturtium flowers or pea blossoms are available, you can have students harvest, wash and taste these different flowers. Make sure that the plants have not recently been sprayed with pesticides prior to tasting. If plants have been sprayed, make sure that the preharvest interval (i.e. the amount of time that must pass between when a plant is sprayed and when it is harvested) has passed. Many students are surprised at the peppery flavor of nasturtiums or the sweet flavor of pea blossoms. If several edible flowers are available in the garden, you may want to have students work through the Food Adventurer Adjectives worksheet.

Garden Journal: If students are keeping a garden journal, you can have them measure the height of the plants that they sowed from seeds, or to draw their observations. Have students draw vegetables they see in the garden, and note how they look similar to or different from these same vegetables in the grocery store or at home. You may want to use your GHK flash cards for reference.

Students can also describe or draw how lettuce, carrots, or other garden plants look before and after they start to flower.

Before ending the day's lesson, have students wash their hands. Remind students about proper handwashing technique, and the importance of washing their hands after working in the garden.

Before we end today's lesson, we need to wash our hands. We want to make sure that we keep our hands clean. This will help to keep us healthy.

Closure

Thank you for a great class today. I have another Food Adventurer mission for you. Who remembers what it means to be a Food Adventurer?

Allow students to answer.

Food Adventurers try new fruits or vegetables by looking with our eyes, touching with our hands, smelling with our noses, or tasting with our mouths.

Point to your eyes, hands, nose and mouth as you speak.

Food Adventurers -I have a Mission for you to complete! The first part of your mission is to FIND a flower that you can eat. Can you name flowers that we eat?

Allow students to answer. Broccoli and cauliflower are the options that will be most available to students.

The second part of the mission is to TRY, with your eyes, your hands, your nose—and maybe even with your mouth. Try the food with all of your senses, and taste it if you like. Food Adventurers, do you accept this mission? If so, shout out YES!

Allow students to answer.

Great! You can tell me how the Mission went, the next time we meet. Next time, we'll learn about fruits.

I've given your teacher an envelope that you can bring home to your family. In the envelope is a letter that describes what we did today. There is also a fun activity for you, and the cilantro yogurt dip recipe for your family. Before you take it home, your teacher will let you draw a picture of a flower and a pollinator. Make sure to share the envelope with your family, and to tell them about your drawing.

Supplementary activities

These activities are for the Classroom Teacher to do with the students before you return for next lesson. Or, you can do these with the students during the lesson if time allows.

Supplementary Activity 1 - Family Envelope Drawing - Students draw a picture of their favorite flower and their favorite pollinator on the front of the family letter envelope, before bringing the envelope home.

Supplementary Activity 2 - Writing Activity - Students write a creative story about the life of a bee in a garden. Encourage the students to focus on how the bee helps the plant produce the food that we eat.

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Lesson 9: Bunches of Variety

Lesson overview

There are five activities available for Lesson 9.

1. Food Adventurer, Mission Accomplished and What I Ate Worksheet: Students will report on the new vegetables and fruits they tried, as part of the Food Adventurer mission that was given to them in Lesson 8. Students will be given a new Food Adventurer mission, to record all of the vegetables and fruits they eat in a day.
2. Plant Part Poster and Roots, Stems Leaves Song: Students will learn about the function of fruits on a plant, and about fruits that we eat, by singing the chorus and the verse about roots.
3. Variety and Rainbow Mural: Students will draw and color their favorite fruit, and as a class, create a rainbow mural of healthy foods.
4. Food Adventurer Adjectives, Creamy Rainbow Fruit Salad Recipe: Students will prepare a healthy snack. They'll try this snack with at least one of their senses, and will report their experience using adjectives.
5. Garden Options: Students will continue work on their mural, indoor or outdoor garden. Choose Activity 5A or 5B.

What you will need

General Materials and Supplies

- Pocket folders (one per student). These are optional, but recommended for collecting student materials throughout the class.

Activity 1, Food Adventurer, Mission Accomplished and What I Ate Worksheet

- GHK Food Adventurer stickers (one per student)
- What I Ate worksheet (Appendix J, one per student)

Activity 2, Plant Part Review and Roots, Stems and Leaves Song

- Roots, Stems and Leaves song materials: CD, CD player, lyrics sheets

Activity 3, Variety and Rainbow Mural

- GHK flash cards for apples, squash, zucchini, pears, cucumbers, pumpkins or various berries
- Index cards and markers or crayons (for students to draw their favorite fruit)
- Butcher block paper and paint/markers/crayons/construction paper (to make rainbow mural)

Activity 4, Food Adventurer Adjectives, Creamy Rainbow Fruit Salad Recipe

- Access to soap, sink and paper towels to wash hands
- Food Adventurer Adjectives worksheet (one per student)
- Plant Part Poster

- MyPlate Garden Poster
- Creamy Rainbow Fruit Salad recipe sheets (one per group). Recipes may be found in Section 3 of this curriculum, as well as on the Oregon State University Food Hero website (<https://www.foodhero.org>).
- Creamy Rainbow Fruit Salad ingredients (refer to recipe)
- Measuring cup (at least 1/2 cup) to demonstrate recommended serving size

Activity 5A, Mural Garden Option - Adding the fruit

- Garden mural, from previous lessons
- Art supplies and clip art (Appendix M) for adding elements to the garden mural

Activity 5B, Indoor or Outdoor Garden Options

- Flip chart paper or board space, with list of garden rules and seeds planted (from Lesson 1)
- Access to soap, sink and paper towels to wash hands
- Garden journal pages, pencils or pens

Take Home Materials

- GHK family letters, recipe sheets and envelopes for Lesson 9 (one set per student)

Supplementary Materials (as needed)

- Crayons, storybook, journal and/or coloring sheet

Preparation

Activity 1, Food Adventurer, Mission Accomplished and What I Ate Worksheet

- Photocopy What I Ate worksheet (Appendix J).

Activity 2, Plant Part Review and Roots, Stems and Leaves Song

- Set up CD player or other music device.
- Discuss with the Classroom Teacher the appropriate volume for playing the song, singing and dancing at the educational site.

Activity 3, Variety and Rainbow Mural

- Draw and color in a rainbow on butcher block paper.

Activity 4, Food Adventurer Adjectives, Creamy Rainbow Fruit Salad Recipe

- Prior to the class, decide on the specific fruits you will include in the creamy rainbow fruit salad.
- Gather ingredients for recipe.
- Display the Plant Part Poster.
- Display MyPlate Garden Poster.

Activity 5A, Mural Garden Option - Adding the fruit

- Prepare mural garden activity.

Activity 5B, Indoor or Outdoor Garden Options

- Choose the specific gardening activities you will do with the students, and gather supplies needed.

Take Home Materials

- Stuff family envelopes with a letter and recipe.

Supplementary Activities (as needed)

- Talk to the Classroom Teacher about Lesson 9 supplementary activities.

Teaching outline

Activity 1: Food Adventurer, Mission Accomplished and What I Ate Worksheet

Welcome back, Food Adventurers. Does anyone remember what it means to be a Food Adventurer? Raise your hand if you would like to answer.

Allow students to raise their hands and suggest answers.

Food Adventurers explore new fruits or vegetables. We can use our eyes to look, our hands to touch, our noses to smell, or our mouths to taste.

Point to your eyes, hands, nose and mouth as you speak.

The last time we met, I gave you a mission. Does anyone remember your Food Adventurer mission? Raise your hand if you remember.

Allow student volunteers to recall last week's mission.

The first part of your mission was to find a flower that we can eat. Raise your hand if you found an edible flower.

Allow students to raise their hands. Call on one or more students to share the edible flower that they found.

Great job, Food Adventurers! Remember to be on the lookout for new fruits or vegetables in the cafeteria, or at home.

The second part of the mission was to try the edible flower. Remember, you could have tried it with your eyes, your hands, your nose—and maybe even with your mouth. How many of you Food Adventurers completed this mission? Raise your hand if you tried an edible flower.

Call on students who have raised their hands. Ask them questions about their Food Adventurer experience.

- *Which edible flower did you try?*
- *Did you try it with your nose/eyes/hands/mouth?*
- *Where did you try this edible flower? Was it at home, in the cafeteria or some other place?*
- *Did you taste it? If so, did you like it? Would you try it again?*

Well done, Food Adventurers! Remember to be on the lookout for new vegetables and fruits, at home or in the cafeteria. Even seeing the new fruit or vegetable completes your Food Adventurer mission. You can also use your sense of touch, smell or taste to try a new food.

Pass out GHK Food Adventurer stickers.

When eating a meal or snack, try to fill half your plate with vegetables and fruits. This is one way to make healthy food choices. The more we try new vegetables and fruits, the easier and more exciting it will be to fill half of our plate with vegetables and fruits.

Who is ready for a new Food Adventurer mission? Allow students to answer.

This week, your mission is to pick one day. For that one day, I want you to draw all of the vegetables and fruits that you eat.

You can draw vegetables and fruits that you eat on the What I Ate worksheet that I will pass out at the end of the lesson.

Remember, pick one day. Draw all of the vegetables and fruits that you eat on that day. Please bring back the worksheet for our next lesson.

One adaptation of this activity is to ask students to draw all of the vegetables and fruits that they eat in the cafeteria, on one day. This may be useful for students who are not practiced with homework assignments, or where it may be easier to restrict the activity to an in-school activity.

Food Adventurers, do you accept your mission? Allow students to answer.

Great job, Food Adventurers! Remember to be on the lookout for new fruits or vegetables in the cafeteria, or at home. Remember to draw all of the vegetables and fruits you eat, for just one day, on your What I Ate worksheet.

Activity 2: Plant Part Review and Roots, Stems and Leaves Song

Refer to the Plant Part Poster as you review roots, stems and leaves that we eat. You can also refer back to the body parts that were presented as analogous to plant parts in Lesson 2.

During the Growing Healthy Kids program, we've learned about roots that we eat. Can anyone name a root vegetable?

Allow students to answer. As necessary, remind them that carrots, parsnips and beets are all roots that we eat. Hold up the GHK flash cards for these vegetables, if available.

We've also learned about stems that we eat. Who can name a stem vegetable?

Allow students to answer. As necessary, remind them that celery, rhubarb and asparagus are all stems that we eat. Hold up the GHK flash cards for these vegetables, if available.

We've also learned about leafy green vegetables. Can you name a leaf vegetable?

Allow students to answer. As necessary, remind them that lettuce, cabbage, spinach and kale are all leaf vegetables. Hold up the GHK flash cards for these vegetables, if available.

We even learned about edible flowers. Can you name a flower that we eat?

Allow students to answer. As necessary, remind them that cabbage, cauliflower and nasturtiums are flowers that we eat. Hold up the GHK flash cards for these, if available.

We sang the Roots, Stems and Leaves song to help us learn about these plant parts that we eat. Today, we will be learning about fruits.

Let's review the six plant parts by singing the Roots, Stems and Leaves song. Since we're learning about fruits, we will sing the verse about fruits.

Lead the students in song, and dance around while you're singing.
Refer to the Roots, Stems and Leaves song lyrics sheet and sing the Chorus and verse about fruits.

Activity 3: Variety and Rainbow Mural

Today, we're going to be learning about fruits. The fruit of a plant usually has the shape of a circle or an oval. Or the shape might include both a circle and an oval.

Display the GHK flash cards for apples, squash, zucchini or pears.

Fruits are usually fleshy (juicy, soft and moist tissue like biting into a ripe pear). You can usually find the seeds inside of the flesh of a fruit. When you cut a cucumber, you can find the seeds inside. When you carve a pumpkin, you scoop out the flesh of this giant fruit, and take out the seeds.

Display the flash cards for cucumbers or pumpkins.

Often, fruits taste very sweet. Berries, like raspberries, blueberries and strawberries are all deliciously sweet.

Display the flash cards for berries.

Students will probably not ask, but in case they do (or, if you're curious), about the seeds of these fruits: blueberries have a soft seed (or *pit*) inside their fruit; raspberry seeds are small, harder pits inside of the raspberry; what appear to be strawberry seeds on the outside of the strawberry are actually *achenes* or dried fruits, and the strawberry seeds are inside the achenes.

Would anyone like to share the name of a fruit that you like to eat?

When students answer, ask them to also name the color of that fruit.

*Today we are going to talk about the word **variety**. The word **variety** means many different kinds. Fruits come in many different colors - reds, blue, purple, orange, brown, white and even green! (Kiwi is a green fruit). The root, stem and leaf vegetables that we've learned about also come in many different colors. If you eat a variety of these vegetables and fruits, you will get lots of nutrients.*

Foods from MyPlate are like a rainbow. Each section of the rainbow only gives you one color of the rainbow. All the colors together make a complete rainbow. In the same way, eating all the colors of MyPlate give you a healthy diet.

Point to the rainbow mural and MyPlate Garden Poster as you speak.

*Rainbows have a **variety** of color. We are going to fill this rainbow with vegetables and fruits that are all different colors. The colors vegetables and fruits come in are those on this rainbow.*

Hand out index cards (maybe 2-3 per student). *You are going to draw ONE fruit or vegetable on an index card. You can color it, and then tape it on the rainbow section that has the same color.*

*Purple grapes go to the purple section of the rainbow. Red strawberries go to the red section of the rainbow. If you have time, you can pick another fruit or vegetable, color it, and place it on the rainbow.**

*Be aware that some students may be color-blind. You may have to write the names of the colors on the rainbow and help students who do not see color well.

After the rainbow mural is complete, review all the vegetables and fruits that were drawn. Note the variety of colors represented, and reiterate that eating a variety of vegetables and fruits is one way to make sure that you get all of the nutrients that a growing kid needs.

Activity 4: Food Adventurer Adjectives, Creamy Rainbow Fruit Salad Recipe

Prior to preparing the recipe, have students wash their hands.

We're going to prepare a rainbow fruit salad. Our fruit salad has a variety of different colors, just like our rainbow mural. We'll then be able to taste this healthy snack. But first, before handling, preparing or eating food, we need to wash our hands! We want to make sure that we keep our hands clean. This will help to keep us healthy.

If necessary, remind students about proper handwashing technique (Appendix B).

Prepare the recipe. Divide the students into teams. Assign each team one task: measure, cut, mix, clean. Volunteers can assist the students with these tasks.

In this recipe, there are four different types of fruit (pineapple, apple, banana, orange). Different fruits may be substituted, as availability or taste dictates. Refer to the Plant Part Poster, to show students that these foods are plant fruits. This recipe also contains yogurt. Refer to the MyPlate Garden Poster, to point out that this recipe contains foods in the Fruits and Dairy group.

When it is time to taste the snack, remind students of their Food Adventurer mission. Refer back to Lesson 2, Activity 4, for spoken prompts and directions associated with a Food Adventurer Adjectives recipe activity.

Activity 5A: Mural Garden Option - Adding the fruit

In the last few weeks, students prepared the garden, planted seeds in the mural and drew in roots and stems of their growing plants. Today, ask students to draw in the fruits.

Remind the students of the seeds they planted in their mural garden, many weeks ago. If it is available, refer to the list of vegetables and fruits that you made as a class, in Lesson 2. This may help to inform the shape and color of the fruits that they draw on the plants. However, you can also give students room to be creative in their drawings.

In the next lesson, we are going to add active insects and healthy snacks into the mural.

Activity 5B: Indoor or Outdoor Garden Options

As necessary, refer to the list of garden rules generated in Lesson 1. These may be written on the board, or displayed on a piece of paper which is hanging on a wall.

Choose one or more of the options, listed below.

Harvest: If there are fruits ready to harvest in an established outdoor garden, you can have students pick and wash the fruits. You or a volunteer can prepare the fruits for tasting by peeling or cutting them, as necessary. If students are washing and tasting, make sure that they practice good handwashing technique when handling and tasting food.

Garden Journal: If students are keeping a garden journal, you can have them measure the height of the plants that they sowed from seeds, or to draw their observations. If they have measured their plants in the past, they can compare this week's observations with those of previous weeks.

Another option is to have students find different colors in the garden. Students can record these different colors in their gardening journal.

Garden and Grocery Comparison: Ask the students to review the seeds that they previously planted (in the indoor or outdoor garden), on the flip chart page from Lesson 1. Ask the students if any of these plants have or will develop edible fruits. (Remember, cucumbers, squash and other items that are referred to as culinary vegetables are botanical fruits).

Have students draw fruits or vegetables in the garden, and note how they look similar to or different from these same fruits or vegetables, as they might remember them from home or the grocery store. Use the GHK flash cards as needed. Do this for 2-3 different plants at various stages of development, to remind students that (1) we eat many different plant parts, (2) these healthy and nutritious foods come from plants, and (3) it is easy to grow a variety of healthy foods in a garden.

Before ending the day's lesson, have students wash their hands.

Before we end today's lesson, we need to wash our hands. We want to make sure that we keep our hands clean. This will help to keep us healthy.

As needed, remind students about proper handwashing technique.

Closure

Today we learned that our bodies need to eat a variety of vegetables and fruits. Remember your Food Adventurer mission! Today's mission is to pick one day and list (or draw) all the vegetables and fruits you eat on the What I Ate worksheet that I'm handing out. Please bring back for the next lesson. Food Adventurers, do you accept this mission?

Allow students to answer.

The next time we are together, I'll ask you about your Food Adventurer mission. We'll also learn about insects in the garden. Who has seen an insect in our garden? Who can name one type of insect?

Allow students to answer.

Great job! I've given your teacher an envelope that you can bring home to your family. In the envelope is a letter that describes what we did today. There is also a fun activity for you and a recipe for your family. Before you take it home your teacher will let you draw a picture of your favorite fruit or vegetable on the envelope. Make sure to share the envelope with your family, and to talk about what you drew.

Supplementary activities

These activities are for the Classroom Teacher to do with the students before you return for next lesson. Or, you can do these with the students during the lesson if time allows.

- **Supplementary Activity 1 - Family Envelope Drawing** - Students draw a picture of their favorite fruit or vegetable on the front of the family letter envelope, before bringing it home.
- **Supplementary Activity 2 - Storybook and Discussion and Journal** - Read the storybook to children and then lead a discussion on key points that connect the book to GHK messages and activities. Sample discussion questions can be found on the next page. Children then write or color about what they learned on a journal sheet. Journal sheets are collected and will be combined into a book after the final lesson.

Storybook Option: *Growing Vegetable Soup*, by Lois Ehlert

- **Supplementary Activity 3 - Art Exhibit** - Discuss Lesson 9 coloring sheet message and caricature drawing, and how it is connected to the activities in Lesson 9. Allow children to color the sheet. Allow children to display the colored sheet on their desk/table and invite them to walk around to see everyone's art. Coloring sheets are collected and will be combined into a book after the final lesson.
- **Supplement Activity 4 - MyPlate Puzzle** - Create a puzzle out of MyPlate Garden Posters, but gluing the poster onto cardstock, and cutting the poster into puzzle pieces. Allow the students to put the puzzle together, to reinforce how the variety of foods from MyPlate helps to build a total picture of health.

Supplementary Storybook Activity: Sample Discussion Questions and Journal Sheet Ideas***Growing Vegetable Soup*, by Lois Ehlert**Discussion Questions

- Go to the pages with the labeled soup ingredients and pot. Ask students *How many colors do you see?* Explain that this is an example of VARIETY.
- On the same page look for edible/eatable plant parts. *How many edible / eatable plant parts do you see?*
 - Root – carrot
 - Seed – corn, bean, pea
 - Fruit – zucchini, tomato, pepper
 - Leaf – cabbage, onion (the edible portion of onion is predominantly swollen leaves, with a bit of stem)
 - Flower – broccoli
 - Stem – potato (tuber),

Journal Sheet Idea

- Draw one vegetable you would put into the soup pot. If appropriate write down the name of the vegetable and what color it is and what edible plant part it is.

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Lesson 10: Insect Olympics

Lesson overview

There are five activities available for Lesson 10.

1. Food Adventurer, Mission Accomplished: Students will report on the vegetables and fruits that they ate and recorded on their What I Ate worksheet, as part of the Food Adventurer mission that was given to them in Lesson 9.
2. Insect Olympics: Students will learn about different insects, through a fun physical activity.
3. Plant Part Review and Roots, Stems and Leaves Song: Students will sing and dance to a song that reinforces the concept of edible plant parts.
4. Food Adventure Adjectives, Plant Part Insect Art: Students will help make and will be offered an opportunity to try insect snacks, made from different plant parts.
5. Garden Options: Students will continue to work on their mural, indoor or outdoor garden. Choose Activity 5A or 5B.

What you will need

General Materials and Supplies

- Pocket folders (one per student). These are optional, but recommended for collecting student materials throughout the class.

Activity 1, Food Adventurer, Mission Accomplished

- GHK Food Adventurer stickers (one per student)

Activity 2, Insect Olympics

- None

Activity 3, Plant Part Review and Roots, Stems and Leaves Song

- Roots, Stems and Leaves song materials: CD, CD player, lyrics sheets

Activity 4, Food Adventurer Adjectives, Plant Part Insect Art

- Access to soap, sink and paper towels to wash hands
- Food Adventurer Adjectives worksheet (one per student)
- MyPlate Garden Poster and Plant Part Poster
- Plant Parts Insect Art photo card (Appendix K)
- Various plant part foods that can be used to make plant part insect snacks. Plant parts to consider using include:
 - Roots: carrots
 - Stems: celery, rhubarb
 - Leaves, lettuce, radicchio
 - Flower: broccoli, nasturtium
 - Fruit: cherry tomatoes, prunes, canned peaches, oranges
 - Seeds: sunflower seeds, peas

- Foods that can be used as “glue” to hold the plant parts together. Foods to consider include:
 - Cream cheese, nut butters, hummus
- Toothpicks

Activity 5A, Mural Garden Option - Adding Active Insects and Snacks

- Garden mural, from previous lessons
- Art supplies and clip art (Appendix M) for adding elements to the garden mural

Activity 5B, Indoor or Outdoor Garden Options

- Flip chart paper or board space, with list of garden rules and seeds planted (from Lesson 1)
- Access to soap, sink and paper towels to wash hands
- Garden journal pages, pencils or pens
- Magnifying glasses, insect loupes, forceps, collecting jars or bags, if collecting insects or other specimens from the garden.

Take Home Materials

- GHK family letters, recipe sheets and envelopes for Lesson 10 (one set per student)

Supplementary Materials (as needed)

- Crayons, storybook, journal and/or coloring sheet

Preparation

Activity 1, Food Adventurer, Mission Accomplished

- Ask the classroom teacher to remind students to bring their What I Ate worksheets to their GHK class.

Activity 2, Insect Olympics

- Display MyPlate Garden Poster.
- Prepare flip chart or chalkboard with title “Physical Activity.”
- Talk to the Classroom Teacher about the physical activities children may demonstrate, and decide on an appropriate level of noise for the site.

Activity 3, Plant Part Review and Roots, Stems and Leaves Song

- Display GHK Plant Part Poster.
- Set up CD player or other music device.
- Discuss with the Classroom Teacher the appropriate volume for playing the song, singing and dancing at the educational site.

Activity 4, Food Adventurer Adjectives, Plant Part Insect Art

- Gather ingredients and supplies for making Plant Part Insect Snacks from the garden and/or grocery store.
- Display Plant Part Insect Art photo card.
- Display MyPlate Garden Poster and Plant Part Poster.

Activity 5A, Mural Garden Option – Adding Active Insects and Snacks

- Prepare mural garden activity.

Activity 5B, Indoor or Outdoor Garden Options

- Decide which indoor or outdoor gardening activities you will do with the class (i.e. Garden Detectives, BioBlitz). Refer to activity description for list of supplies needed.

Take Home Materials

- Stuff family envelopes with a letter and recipe.

Supplementary Activities (as needed)

- Talk to the Classroom Teacher about Lesson 10 supplementary activities.

Teaching outline

Activity 1: Food Adventurer, Mission Accomplished

The last time we met, I gave all of you Food Adventurers a mission. Does anyone remember what it means to be a Food Adventurer? Raise your hand if you would like to answer.

Allow the students to raise their hand, and suggest answers.

Food Adventurers explore new fruits or vegetables. We can use our eyes to look, our hands to touch, our noses to smell, or our mouths to taste.

Point to your eyes, hands, nose and mouth as you speak.

Does anyone remember your Food Adventurer mission? Raise your hand if you remember.

Allow volunteers to recall the What I Ate worksheet.

Your assignment was to pick one day, or one visit to the cafeteria, and write down or draw all the vegetables and fruits you ate on the What I Ate worksheet. Who has their What I Ate worksheet with them?

Allow students to raise their hands.

Who would like to share what they wrote or drew on their worksheet?

Call on students who have raised their hands. Ask them questions about the foods they drew on their What I Ate worksheet.

- *Which fruits/vegetables did you try? Was it new to you, or had you tried it before?*
- *Where did you try this fruit/vegetable? Was it at home, in the cafeteria or some other site?*
- *Did you like the way that it tasted? Would you want to try this fruit/vegetable again?*

Wonderful job, Food Adventurers! Remember to be on the lookout for healthy fruits or vegetables in the cafeteria, or at home. Some of these foods will be new to you, like the (repeat names of foods that were new to the class). Some of these foods will be ones you really like, such as (repeat names of foods that the class liked). Some will be ones that you may not have liked in the past. Please wear this sticker, to let everyone know that you tried a new food, as part of your Food Adventurer mission.

Pass out GHK Food Adventurer stickers, and allow students to attach them to their shirt or sweater.

Activity 2: Insect Olympics

This next paragraph, about garden insects, can be presented by a Master Gardener or other volunteer. If you have the opportunity to conduct this exercise outside, it may provide you with more space for the Insect Olympics.

Today we are going to learn about insects in our garden. When we see insects in the garden, it is usually a sign of a healthy garden. Some insects, like ladybugs and lacewings, help to keep pests off of our plants. Some insects, like bees and butterflies, help plants make the vegetables and fruits that we love to eat. We learned that these insects are called pollinators. Other insects like to munch on garden vegetables and fruits. We want to keep our eyes out for these insects, and make sure that they don't eat more than their fair share. If they eat too much of our garden, we won't have vegetables and fruits to enjoy for ourselves!

Students should stand at their desks, or should stand arms' length apart from their neighbor. They will do all of their Olympic activities in place.

Some insects are very active and athletic. We're going to learn about some of these insects, and have our very own Insect Olympics. For example, fleas can jump up to 13 inches. This is about 200 times their body length. If you were to jump as far as a flea, you would be able to jump over 6 football fields! Can you jump like a flea, as high as you can?

Allow students to do their best flea imitation - jumping as high as they can. Repeat, as needed.

Honey bees are great dancers. They dance to tell their fellow bees where to find flowers. They flap their wings, and waggle their behinds, and walk in a figure 8 pattern. Their fellow bees can tell how far the flowers are, and how good the nectar tastes, by how fast the bees flap their arms and waggle their behinds. The faster they flap and waggle, the better the treat! Can you dance like a bee? Flap your wings, and waggle your behind. Walk in a figure 8.

Allow the students to do their best honey bee imitation.

Ants are strong. Ants can lift ten times their own body weight, which helps them to move large stores of food into their nest. Can you lift your hands above your head, like you're lifting a weight?

Allow the students to lift and lower their arms ten times.

Dragonflies can speed through the air at 24 miles per hour. Cars go that fast! If you were a dragonfly, how would you fly through the air? Hold your arms out to your sides and pump them up and down, very fast!

Allow the students to pretend that they're flying, like dragonflies, by pumping their arms up and down.

Roaches are fast runners! Some roaches can run 3 miles per hour! That doesn't sound fast, but the roach is very small! In fact, in 1 second, they can go 50 body lengths. This would be equal

to you running completely across 1 football field, and then halfway across another football field, in only 1 second! At your desk (or in your spot), can you run in place very fast, like a roach?

Allow the students to run in place. After this activity, allow the students to cool down and rest.

How do you feel now that you've been physically active? What feels different?

Have students share physical as well as emotional reactions. Some examples may include: heart is beating faster, they feel warm, their pulse is beating, they feel sweaty, they are breathing deeply, they feel excited, happy, energized. Share your own positive observations, for instance, *I saw smiling faces. I heard laughing. I heard breathing.*

Who remembers what happens when you are physically active, with exercise and play? Allow time for students to answer.

Make sure you discuss answers such as: becoming thirsty, breathing deeply, feeling relaxed, energized, sweaty, warm.

Remember, as you play or exercise, you burn fuel or energy. You may remember me describing Energy In and Energy Out as a car needing gas. A car burns energy as it runs. We burn calories, or energy, as we exercise or play. This is our Energy Out. When a car runs low on energy, we go to the gas station to fill up on gas. As you run low on energy, what can you do?

Answers may include: sleep, rest, eat, drink, take a deep breath, nap.

Remember, our bodies use food, water and oxygen to refuel our energy. The foods we eat are important sources Energy In. Choose healthy foods from all of the food groups on MyPlate. This helps us make sure that our Energy In is really good fuel for our bodies. Good fuels help our bodies work in tip top condition!

Activity 3: Plant Part Review and Roots, Stems and Leaves Song

In our GHK lessons, we've been learning about the six plant parts that we eat. Today, we're going to make snacks that look like insects. We'll use the six different parts of a plant to make our snacks.

But first, let's review the six plant parts by singing the Roots, Stems and Leaves song, to remind of the different plant parts we can use to make our Plant Part Insect Snacks.

Pass out lyrics sheet (Appendix F). Lead the students in song, and dance around while you're singing. Have the students dance, as well.

Activity 4: Food Adventure Adjectives, Plant Part Insect Art recipe

Now that we've reminded ourselves of the different plant parts that we eat, we're going to use plant parts to make healthy art that looks like insects. We're going to make edible (eatable) art!

Point to the Insect Snacks photo card, which displays different examples of Plant Part Insect Art.

Working with a partner, you're going to imagine and then make any insect you like, using these ingredients.

Refer to the ingredients that are available for this activity. For each fruit or vegetable, note the plant part that it represents. For all ingredients (including any nut butters, cream cheese, hummus), note its appropriate MyPlate Group.

We're going to be Food Adventurers, and try our edible art using our sense of sight, touch, smell and taste. We're going to practice using our adjectives to describe how our snack looks, feels, smells and tastes.

Refer back to Lesson 2, Activity 4, for spoken prompts and directions associated with a Food Adventurer Adjectives recipe activity. At the end of this activity, call on student groups to share what type of insect they made, the ingredients they used, and their sensory evaluation of their snack, with the rest of the class.

Activity 5A: Mural Garden Option - Adding active insects and snacks

In the previous week, students drew in the fruits of their growing plants. Today, ask students to draw in insects, earthworms, birds and other garden creatures. Students can draw any insects that they like, but you may want to remind them about bees, butterflies, ladybugs and other garden insects that pollinate our garden plants or help to keep our plants healthy. Healthy plants lead to a healthy harvest of lots of vegetables and fruits. Hummingbirds also pollinate our plants!

Also have the students draw in healthy snacks on the mural.

Activity 5B: Indoor or Outdoor Garden Options

As necessary, remind students of the rules for working in the indoor or outdoor garden (generated in GHK Lesson 1).

Once in the garden, choose one or more of the options listed below.

Garden Detectives: Take the students outside for a nature walk. Divide students into teams, and have them look for insects in the garden or signs of insect damage. Signs of insect damage include holes or bites in the middle or on the edges of leaves; small white spots on leaves; shiny sap on the leaf or stem surface. Magnifying glasses or insect loupes can be helpful for looking at insects and signs of their damage.

If appropriate, students can collect insects they find in small jars. Make sure the students understand the rules for catching and handling unknown garden insects and other animals in the garden. Students can point out the insects and other animals. However, students should not catch and handle the something until an adult identifies it and says that it is safe to handle.

If students are new to insect collecting, or are learning about garden insects for the first time, have them work with a Master Gardener or other volunteer. They can help the kids find the insects, and can help the kids to understand the role of the insects in the garden.

At the end of the activity, have the different groups share what they found and what they learned with the rest of the class. Ask the students to discuss how different insects might help or hinder plant health, and their ability to harvest lots of vegetables and fruits.

Garden BioBlitz: Scientists use a BioBlitz as a way to work with the community to inventory all of the species in an area. Usually, BioBlitzes occur over 24 hours. Set a timer for 5-15 minutes. Have the students record all of the different types of plants and animals that they find in the garden. Students can record the different garden plants, grasses, and trees. Students can note any insects or birds that they see. When the timer goes off, have students come together as a class, and share their list of plants and animals with each other. Keep a running count of the number of different plants and animals in the garden, as a measure of garden biodiversity.

Students can record their findings in their garden journal.

At the end of the activity, have the different groups share what they found with the rest of the class. Ask the students to discuss how different plants might help or hinder the health of crop plants in the garden. For example, weeds compete with crop plants for water and nutrients. Trees provide shade which can help cool-season crops, such as lettuce and spinach, but may slow development in warm season crops such as tomatoes and cucumbers. Some birds may eat fruits from caneberry plants. Caneberries include blackberries and raspberries. They're called "caneberries" because they are berries that grow on a woody stem that is known as a "cane". Other birds, such as hummingbirds, help to pollinate garden plants.

Harvest: If there are fruits or vegetables ready to harvest in an established outdoor garden, you can have students pick and wash the produce. You or a volunteer can prepare the produce for tasting by peeling or cutting them, as necessary. If students are washing and tasting, make sure that they practice good handwashing technique when handling food. Use harvested vegetables for Activity 4, Plant Part Insect Snacks.

Garden Journal: If students are keeping a garden journal, you can have them record any garden creatures they find (e.g. birds, insects, earthworms) by drawing or writing. The students can make notes about what they saw the creature doing (e.g. sitting, flying, crawling, and jumping).

At the end of the activity, have students share what they found with the rest of the class. Ask them to lead the rest of the class in physical activity, where the movements are based upon what they saw the creatures doing in the garden.

Garden and Grocery Comparison: Ask the kids to review the seeds they previously planted (in the indoor, outdoor or mural garden) from the Lesson 1 flip chart paper. Ask the kids if any of these are plant fruits. As the kids look at the plants, ask them if the plants that are growing in the garden look similar to or different from the plants that they eat. For example, if you planted tomatoes, you can have tomatoes from the grocery store next to the tomatoes from the garden for comparison. Do this for 2-3 different plants at various stages of development, to remind students that (1) we eat many different plant parts, (2) these healthy and nutritious foods come from plants, and (3) it is easy to grow a variety of healthy foods in a garden.

Closure

Today we participated in the Insect Olympics and then had a healthy and artistic snack. We burned energy, and discussed healthy foods that can fuel exercise and play. Next lesson we will learn about breakfast - for kids and for soil.

The last thing I am going to do for our lesson is to give your teacher a special letter for your family about what we did today. There is also a really fun activity for you in here and a recipe. Before you take it home your teacher will let you draw on the front a picture of an insect doing a fun physical activity so you can share that with your family.

Supplementary activities

These activities are for the Classroom Teacher to do with the students before you return for the next lesson. Or, you can do these with the students during the lesson if time allows.

- **Supplementary Activity 1 - Family Envelope Drawing** - Students draw a picture of their favorite physical activity on the front of the family letter envelope, before bringing it home.
- **Supplementary Activity 2 - Storybook and Discussion and Journal** - Read the storybook to children and then lead a discussion on key points that connect the book to GHK messages and activities. Sample discussion questions can be found on the next page. Children then write or color about what they learned on a journal sheet. Journal sheets are collected and will be combined into a book after the final lesson.

Storybook Options: *Up, Down and Around*, by Katherine Ayres or *Our Community Garden*, by Barbara Pollak

- **Supplementary Activity 3 - Art Exhibit** - Discuss Lesson 10 coloring sheet message and caricature drawing, and how it is connected to the messages and activities in Lesson 10. Allow children to color the sheet. Allow children to display the colored sheet on their desk/table and invite them to walk around to see everyone's art. Coloring sheets are collected and will be combined into a book after the final lesson.

Supplementary Storybook Activity: Sample Discussion Questions and Journal Sheet Ideas***Up, Down, and Around*, by Katherine Ayres**Discussion Questions

- *What are some helper insects found in the garden?* (point out the insects as you read the book: bee, butterfly, ladybug)
- *Did you see any edible/eatable plant part veggies?* (refer to the plant part poster if available)
 - Seed – corn, beans
 - Root – carrot, beets
 - Leaf – onion (the edible portion of onion is predominantly swollen leaves, with a bit of stem)
 - Fruit – zucchini, pepper, pumpkin, tomato, okra, cucumber
 - Stem – potato (also a tuber)
 - Flower – broccoli
- *How did the family cook their edible/eatable plant parts?* (corn on the cob, stew, salad, pickled, pie, sandwich)

Journal Sheet Idea

- Draw one veggie you would like to pick for lunch and an insect helping it grow. If appropriate write the name of the veggie and insect.

***Our Community Garden*, by Barbara Pollak**Discussion Questions

- *What are some of the edible plant parts in the story?*
 - Seeds – sunflower, beans, corn
 - Roots – carrots, beets
 - Leaves – greens, garlic (the edible portion of garlic is predominantly swollen leaves, with a bit of stem)
 - Fruit – tomatoes, eggplant, tomatillos, cucumber
 - Flower – broccoli, artichoke
 - Stem – asparagus, garlic (the edible portion of garlic is predominantly swollen leaves, with a bit of stem)
- *What are some foods the community kids made with their edible/eatable plant parts?* (salsa, stir-fry, eggplant stew, potato pie, carrot cake, corn on the cob).
- *Did you see any insects in the story? Are insects good or bad for your garden?* (some good and some bad)
- *Did the kids get any physical activity in the garden?* (watering, digging, playing, weeding, dancing, harvesting).
- *Are the kids Food Adventurers? Why?*

Journal Sheet Idea

- Draw a food you would cook with the vegetables you grew for a harvest dinner with your friends. If appropriate write down the name of the food.

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Lesson 11: Breakfast for Kids and Soils

Lesson overview

There are six activities available for Lesson 11.

1. **Stretch and Balance:** Students review MyPlate messages, by participating in a physical activity.
2. **Power Up with a Healthy Breakfast:** Students play a game, where they can choose different foods among the MyPlate groups, to create a healthy breakfast.
3. **Nutrients for People and Plants:** Students learn about how calcium and magnesium are important to both human and plant health.
4. **How Does Your Garden Grow?** Students examine the different components of soils, and create simple hypotheses about whether garden vegetables might be able to grow in a single soil component.
5. **Food Adventure Adjectives, Super Sundae Recipe:** Students will help make and will be offered an opportunity to try a healthy recipe.
6. **Garden Options:** Students will continue to work on their mural, indoor or outdoor garden. Choose Activity 6A or 6B.

What you will need

General Materials and Supplies

- Pocket folders (one per student). These are optional, but recommended for collecting student materials throughout the class.

Activity 1, Stretch and Balance

- MyPlate Garden Poster

Activity 2, Power Up with a Healthy Breakfast

- GHK Flashcards
- Dairy Council Food model
- Smart Start Eating and Reading cards
- MyPlate Garden Poster

Activity 3, Nutrients for People and Plants

- Jar of soil (with organic matter)
- Jar of dirt (without organic matter)
- GHK flash cards of spinach, chard and bok choy
- Photo-coded Energy In and Energy Out cards (from GHK Lesson 6)

Activity 4, How Does Your Garden Grow?

- Six plastic baggies per group. One bag, each, is filled with: air, water, rocks, sand, clay or compost.

Activity 5, Food Adventurer Adjectives, Super Sundae Recipe

- Access to soap, sink and paper towels to wash hands
- Food Adventurer Adjectives worksheet (Appendix H, one per student)
- Plant Part Poster
- Super Sundae recipe sheets (one per group). Recipes may be found in Section 3 of this curriculum, as well as on the Oregon State University Food Hero website (<https://www.foodhero.org>).
- Super Sundae ingredients (refer to recipe)
- Measuring cup (at least 2/3 cup) to demonstrate recommended serving size

Activity 6A, Mural Garden Option - Adding compost

- Garden mural, from previous lessons
- Art supplies and clip art (Appendix M) for adding elements to the garden mural

Activity 6B, Indoor or Outdoor Garden Options

- Flip chart paper or board space, with list of garden rules and seeds planted (from Lesson 1)
- Access to soap, sink and paper towels to wash hands
- Garden journal pages, pencils or pens

Take Home Materials

- GHK family letters, recipe sheets and envelopes for Lesson 11 (one set per student)

Supplementary Materials (as needed)

- Crayons, storybook, journal and/or coloring sheet

Preparation

Activity 1, Stretch and Balance

- Display MyPlate Garden Poster.

Activity 2, Power Up with a Healthy Breakfast

- Display MyPlate Garden Poster.

Activity 3, Nutrients for People and Plants

- Label two clear jars with the words *soil* and *dirt*.
- Have a Master Gardener or other volunteer bring a jar of soil (with organic matter) and a jar of dirt (without organic matter) to class.

Activity 4, How Does Your Garden Grow

- Prepare flip chart or chalkboard with title “Energy In and Energy Out.”

Activity 5, Food Adventurer Adjectives, Super Sundae Recipe

- Gather ingredients and supplies for making recipe.

- Decide how much preparation you will do beforehand, versus having the students assist with the recipe.
- Photocopy Food Adventurer Adjectives worksheets.

Activity 6A, Mural Garden Option - Adding compost

- Prepare mural garden activity.

Activity 6B, Indoor or Outdoor Garden Options

- Choose the specific gardening activities you will do with the students, and gather supplies needed.

Take Home Materials

- Stuff family envelopes with a letter and recipe.

Supplementary Materials (as needed)

- Talk to the Classroom Teacher about Lesson 11 supplementary activities.

Teaching outline

Activity 1: Stretch and Balance

Before starting our lesson for the day, let's stretch our bodies and be physically active by doing the Growing Healthy Kids stretch. Stretching is a physical activity that helps keep our bodies flexible. Who remembers the GHK stretch?

Allow students to demonstrate, or model by standing up straight with your arms above your head.

Raise your hands high over your head, like a Food Adventurer superhero. We're Food Adventurer superheroes, flying through the air in search of new vegetables and fruits to try. What new vegetables and fruits do you want to try?

Allow children to answer.

Let's turn right. Bend slightly at the waist and lean your arms to the right. Now let's turn left. Bend slightly at the waist and lean your arms to the left. Now let's fly back down to the ground to try some root vegetables. What root vegetables do you want to try?

Allow children to answer. If they can't think of root vegetables, prompt them. Repeat the activity, by having children reach high towards the sky to pick fruits, or to stand up straight with a tight core, to simulate stem vegetables.

Now let's practice our MyPlate Balance. Who remembers the MyPlate icon?

Allow children to answer, and refer to MyPlate Garden Poster.

MyPlate is a picture that reminds us to eat healthy. Balance on your right leg and say, “Fill half my plate with vegetables and fruits!” Balance on your left leg and say “Make half my grains whole grains!”

As children are balancing on one, and then the other leg, have them repeat MyPlate messages, as well as name different fruits, vegetables and whole grains. You can add challenging elements to this exercise, if children are able, by having children lift their hands above their head as they balance, or by having them hop one foot.

Great job, Food Adventurers!

Activity 2: Power Up with a Healthy Breakfast

Today, we’re going to talk about breakfast. What kinds of foods do you eat for breakfast?

Allow students to answer. Write their answers on the board or on a flip chart.

It’s important to eat nutritious foods for breakfast. By the time you wake up and eat your breakfast, it has probably been 10-12 hours since you last ate. That’s probably a lot longer than you go between any other meals. That’s why breakfast is such an important meal. It fuels your body when you get going in the morning. You Power Up your day by eating a healthy breakfast. This Energy-In gives you the energy you need to learn, play, stay alert and be physically active.

From the answers that students gave, circle those that could be part of a balanced and healthy breakfast. Give students tips for getting the most out of their breakfast:

- *Avoid breakfast foods that are high in sugar or fat, like sugar-coated cereals, doughnuts, pastries and fried foods.*
- *Choose foods with less sugar and fat, like unsweetened cereals, bagels, pancakes with fruit topping, fresh fruit and non-fat or low-fat milk.*
- *If you don’t like traditional breakfast foods, choose any nutritious foods you like for breakfast. There’s no rule that says breakfast has to be eggs or cereal. Just make sure it’s healthy.*

Refer to the MyPlate Garden Poster.

MyPlate reminds us to eat healthy. Try to choose foods from three or more of the MyPlate food groups, when planning your breakfast. Examples of foods to consider include:

Dairy	Protein	Grains	Fruits	Vegetables
<ul style="list-style-type: none"> • Lowfat or skim milk, soymilk or rice milk • Lowfat or nonfat Yogurt • Lowfat cheeses 	<ul style="list-style-type: none"> • Eggs • Peanut butter • Nuts • Black Beans • Pinto Beans • Garbanzo Beans 	<ul style="list-style-type: none"> • Oatmeal • Whole Wheat Bread, Tortilla or Waffle • Whole Grain Breakfast Cereal • Lowfat granola • Muesli 	<ul style="list-style-type: none"> • Blueberries • Banana • Orange Juice • Strawberries • Raspberries • Apple 	<ul style="list-style-type: none"> • Spinach • Tomatoes • Broccoli

Point to the appropriate MyPlate group, as you go over the different breakfast foods.

Let's plan some healthy breakfasts we can eat. To do so, we're going to play a game.

Hold up envelope containing food models.

This envelope contains several foods that would be part of a healthy breakfast. It also contains foods that are treats, or "sometimes" foods. It contains foods that you might not normally have for breakfast.

In this game, I'm going to choose one person to come up to the front of the class. This person close their eyes, reach into the envelope, and choose three food models. As a class, we'll look at these foods, and create a meal from them. We'll vote on whether or not we would like to eat that for breakfast. We'll discuss ways that we might modify the meal to make it a healthy and appealing breakfast. Once we have created a meal that we agree is a healthy breakfast we would like to eat, we'll celebrate by standing up and saying "Power Up with Breakfast!"

Allow the class to vote on a few different meals. If the three foods chosen are not appealing breakfast foods, or are not healthy breakfast options, encourage the class to work together to plan out different breakfast options. Use the food models to create several meal options. Each of the three foods in the healthy breakfast meal should come from a different group on MyPlate. Examples of meals include:

- Whole grain toast + peanut butter + banana
- Black beans + whole grain tortilla + lowfat cheese
- Yogurt + blueberries + whole grain breakfast cereal
- Oatmeal + orange juice + lowfat milk
- Eggs + spinach + whole grain toast

Activity 3: Nutrients for People and Plants

A Master Gardener or other volunteer can lead the part of the activity that contrasts soil with dirt.

Just as eating a healthy breakfast gives us the healthy fuel we need for the day, plants need to have healthy soils in order to grow and stay healthy. We're going to learn more about garden soils, and how they help our garden plants produce a healthy harvest of vegetables and fruits.

Soil consists of living and nonliving things. The non-living things in soils include compost, clay, rock, sand, silt, dead plants, dead insects, dead worms, and other dead animals. The living things include insects, millipedes, pill bugs, worms, fungi, bacteria and other soil critters.

Pass around or hold up the jar of soil and the jar of dirt. Allow students to observe the difference between the two. The jar of soil has organic matter (compost, plant roots, dead plant parts, living insects and arthropods, living microbes). The jar of dirt does not have organic matter. It only has the mineral elements of soil.

The living things contribute nutrients to the soil, help dig tunnels that create air spaces for roots, and help to break down the dead plants and animals in the soil. The non-living parts of the soil also contribute nutrients to the soil – but not until they are broken down by the soil critters. Soil nutrients help plants to grow, fight off disease, stay healthy and produce the vegetables and fruits that we eat. Healthy soils make nutritious vegetables and fruits.

Plants need nutrients. We need nutrients, too. When we eat fruits and veggies, we absorb the nutrients from the plants into our bodies to keep us healthy, just as nutrients keep plants healthy. There are many important nutrients that plants and people need. We're going to focus on two different nutrients today.

For each example, hold up a GHK flash card, or hold up actual food samples. If the foods have been washed and prepared, you can offer students a chance to taste these foods.

Calcium is a nutrient that humans need to help build strong bones and teeth. Calcium helps keeps our skeletons strong. In plants, calcium keeps the plant strong. It is important for the structure of the plant. Bok choy and spinach are two vegetables that are good sources of calcium. Low fat or non-fat foods in the dairy group are also good sources of calcium.

Hold up the GHK flash cards for bok choy and spinach, or hold up actual food samples. If the foods have been washed and prepared, you can offer students a chance to taste.

Remember that stems are like the skeleton of a plant. They help our garden plants stand straight and strong. If the stem of a plant were to break, the plant may not be able to grow.

Our bones make up our skeleton. Our bones help us stand up straight and strong. But in addition to being strong, it's also important to be flexible. Like a tree in the wind, we want to be able to bend, but not break.

Pantomime a tree, with arms extended upwards for branches. Sway back and forth to demonstrate the strong, flexible analogy of bending but not breaking.

Magnesium is a nutrient that our bodies need to turn our food into energy. Magnesium helps turn our Energy In into Energy Out, so we can play and be physically active. In plants, magnesium helps the leaves turn sun energy into the plant's food. Magnesium keeps the plant kitchen running. Spinach and chard are good sources of magnesium.

Hold up the GHK flash cards for spinach and chard, or hold up actual food samples. If the foods have been washed and prepared, you can offer students a chance to taste.

Who remembers the game, Simon Says Energy In, Energy Out?

This game was first introduced in GHK Lesson 5, Energy In, Energy Out. Review the general rules with students, as necessary.

When I hold up the Energy Out card, I want you to be physically active. You can dance, do jumping jacks, swing your arms, or another physical activity that you can do in place. Let's practice. Hold up the Energy Out card, while saying, “Simon Says Energy Out.”

Give students 10-15 seconds to be physically active.

Great! Those were good examples of Energy Out. Without the nutrient, magnesium, it would have been harder for you to do such a great job being physically active. Remember, spinach and chard are both good sources of magnesium.

When I hold up the Energy In card, I want you to say your favorite, healthy food. What are some of your favorite, healthy foods? Hold up the Energy In card, while saying, “Simon Says Energy In.”

Allow students to answer. Highlight those answers that are healthy as being especially good examples. Repeat the game a few times, allowing children to be physically active, and to state their favorite, healthy foods.

Activity 4: How Does Your Garden Grow?

A Master Gardener or other volunteer can lead students in this activity. Divide students into groups of two to four. Hand out one plastic sandwich bag (filled with air, water, rocks, sand, clay or compost) to each group.

We're going to talk about what plants need in soils, in order for them to grow. I've handed out a baggie to each group. Don't open the bag, but pass it around and let each group member look at it. I want you to think about whether or not we could grow a garden vegetable, in just the contents of the bag. Talk to your group members, and see what they think.

Let each group investigate each baggie sample (or baggies) for one minute each and talk in their groups about what is in the bag. Switch after one minute so that each group can investigate all of the items.

Go down the list on the board and ask each group to hold up their samples and share their hypotheses.

For the air-filled bag: *Could we plant a vegetable in the air? Can we grow vegetables in just air?*

Allow students to answer.

Air is important to plants. Plants use air as an ingredient in their leaf kitchens, to make their food so that they can grow. In the soil, plants need air spaces for their roots to grow and stay healthy. Worms, the roots of other plants, and other living things help to make the tunnels in the soil, so that plants' roots have air. Air is important to plants, but we can't grow our vegetables and fruits in air alone.

For the water-filled bag:

Could we plant a vegetable in water?

Allow students to answer.

Plants need water to stay healthy – just like we need to drink water throughout the day. Without water, a plant will wilt and die. With too much water, the plants' roots won't get enough air. Plant roots drown if they get too much water. So, water is important to plants, but we generally can't grow our vegetables and fruits in water, alone.

For the bag filled with rocks: *Could we grow garden vegetables in rocks?* Allow students to answer.

Rocks don't do a good job of storing the nutrients. Rocks don't hold the water and air that plants need to grow. The roots of our garden plants would have a hard time growing through rock. Even if the roots could bust through the rock, our plants wouldn't find the nutrients, air and water that they need to grow. So, our garden vegetables couldn't grow on just rocks.

For the bag filled with sand: *Could we grow garden vegetables in sand? How does the sand feel between your fingers?*

Allow students to answer.

Sand feels gritty. It helps soils to drain water. If you pour water through sand, it runs right through. We can grow garden vegetables in sand, but it would take a lot of work. We would have to water the plants all of the time, since sand doesn't hold water. We would have to fertilize the plants all of the time, since sand doesn't hold nutrients. They all get washed away.

But, sand is an important part of garden soils. Sand helps create air pockets in the soil, so that the roots can get air. By itself, we couldn't easily grow healthy garden vegetables on sand. But, sand is an important part of healthy soils, and healthy soils are what are needed to grow nutritious vegetables.

For the bag filled with clay: *Could we grow garden vegetables in clay? How does the clay feel between your fingers?* Allow students to answer.

Like sand, clay is an important part of healthy garden soils. However, clay is like the opposite of sand. Sand feels gritty. Clay feels smooth and a little sticky. Besides sand and clay, silt is another type of soil particle. One particle of silt is smaller than a grain of sand, but larger than a particle of clay. Silt feels like flour.

Water drains through sand. Clay holds onto water. Nutrients wash out of sand. Clay holds onto nutrients. Sandy soils have air pockets. Clay soils don't leave a lot of room for air. Silt is the middle ground for soils. Silt particles have some of the properties of sand and some of the properties of clay.

Together, clay, sand and silt, as well as other soil components, help to make healthy garden soils so that we can grow nutritious vegetables. By itself, we couldn't easily grow healthy garden vegetables in clay. But clay is an important part of healthy soils, and healthy soils help to grow nutritious vegetables.

For the bag filled with compost:

What about compost? How does it smell? How does it feel? Could we grow garden vegetables in just compost?

Allow students to answer.

Compost is a very important component of soils. Compost is made of bits and pieces of plants and animals that used to be alive, but that have been transformed by soil insects, fungi and bacteria into compost. Compost helps soils to hold water. Compost provides plants with nutrients. Compost helps to fill the soil with air. We could grow our garden vegetables and fruits in compost, but our garden vegetables and fruits will grow much, much better if compost is mixed in with the other parts of our soil.

Summarize the students' observations and findings.

Today, we learned that healthy soils are needed to grow nutritious vegetables. Healthy soils are made up of a variety of living and non-living things: pieces of rock, clay, sand, compost, insects, worms, bacteria and fungi. Together, these living and non-living parts of the soil provide our plants with nutrients. When we eat garden vegetables and plants, we benefit from the nutrients within the vegetables and fruits.

Activity 5: Food Adventure Adjectives, Super Sundae Recipe

Today, we're going to make a Super Sundae. This Sundae is Super, because it helps us Power Up our breakfast, so that we have energy throughout the day.

Our sundae contains granola. This granola is made from whole grain oats. Point to the grains section of the MyPlate Garden Poster. MyPlate reminds us to make half of our grains whole grains. Choosing whole grains is one way to make sure that our Energy In is high quality fuel!

Our sundae also contains yogurt. Point to the dairy section of the MyPlate Garden Poster. Low fat yogurt is a good source of calcium. Calcium helps to keep our bones and teeth strong. With strong bones, we can stand strong like a tree – bending, but not breaking.

Repeat the pantomime of a tree, with arms extended upwards for branches. Sway back and forth to demonstrate the strong, flexible analogy of bending but not breaking.

Choosing low fat yogurt is another way to make sure that our Energy In is high quality fuel!

Our sundae contains blueberries and peaches. Point to the fruits section of the MyPlate Garden Poster. Filling half of our plate with vegetables and fruits is another way to make sure that our Energy In is high quality fuel!

This super sundae makes a delicious breakfast, and is a healthy source of energy for starting the day. Today, we'll taste the sundae as a small snack. At home, you can power up with a super sundae breakfast. Avoid portions that are too big. One serving is about 1 cup, which looks like this.

Measure out a 1 cup serving, and allow kids to see the recommended serving size for this food.

We're going to be Food Adventurers, and try our snack using our sense of sight, touch, smell and taste. We're going to practice using our adjectives to describe how our snack looks, feels, smells and tastes.

In this recipe, there are fruits (blueberries and peaches). In addition to referring to the MyPlate Garden Poster, you may want to refer to the Plant Part Poster to point out the different plant parts that are in this recipe.

When it is time to taste the snack, remind students of their Food Adventurer mission. Refer back to Lesson 2, Activity 4, for spoken prompts and directions associated with a Food Adventurer Adjectives recipe activity.

Activity 6A: Mural Garden Option - Adding compost

Review all that has gone on the mural garden so far and have students add compost, soil organisms, compost bins, and other items associated with soils and compost to the mural garden.

In the next lesson, we will harvest our vegetables and fruits! We will celebrate our harvest and our graduation from the Growing Healthy Kids program!

Activity 6B: Indoor or Outdoor Garden Options

As necessary, refer to the list of garden rules that was generated in Lesson 1.

Choose one or more of the options below.

Hot or Cold Composting: Have students visit the garden. If there is a compost bin on site, visit the compost bin. If there is a hot composting pile on site, students can take the temperature of the compost. Warm temperatures (100-140 °F) indicate that microbes are active decomposing the contents of the compost pile. If cold composting bins are on site, students can help to turn the compost piles. Make sure to use turning tools safely.

Compost Critters: Students can sift through the compost pile, looking for soil organisms. Worms and millipedes can be handled safely by students who would like to touch or hold them. Centipedes should not be handled by students (or teachers!), as these arthropods can bite and sting. Have students record their observations in their garden journal, by drawing or writing. Students should wash their hands after handling the compost.

Making Compost: Students can collect garden waste and add it to the compost pile. Dropped fruits, dying stems and leaves, pruned twigs and other organic materials can be added to the compost pile. If you need assistance starting or troubleshooting a compost pile, please consult your local Master Gardener program.

Garden Maintenance and Harvest: Continue caring for plants, harvesting and tasting those that are ready. Have students note how their plants have changed over the past few weeks. Students can record observations in their journal.

Garden Soil Texture: Fill a mason jar half full of soil from your schoolyard. Remove the organic material (i.e. bark chips, compost, mulch) from the sample. Fill the rest of the jar with water, leaving the top quarter of the jar empty (makes it easier to shake). Add one small drop of dish soap to the water. Cover the jar and shake vigorously. Allow the jar to sit for 24-48 hours. Sand is the heaviest particle, and will settle out almost immediately, constituting the bottom layer of the sample. Silt is next heaviest. It will settle out within a few hours, constituting the middle layer of the sample. Clay is the lightest particle. It will settle out in one to two days, constituting the top layer of the sample. Use a ruler to measure the size of each layer.

You can enter in the measurements into the soil texture calculator:
http://www.tulsamastergardeners.org/blackbox/soil_clas_calc.htm

What is the texture of your soil? Discuss the results. How might soils full of clay impact your vegetable garden? How might soils full of sand impact your gardening efforts?

Good soils for gardening are about 40% silt, 40% sand and 20% clay (loamy soils). However, you can garden in just about any soil type if you understand its limitations and work to add organic matter to the soil.

Closure

Thank you for a great class today. We talked about the importance of eating a healthy breakfast. We learned how nutrients are important to our bodies. We get our nutrients from the food we eat. We learned that nutrients help plants grow nutritious vegetables and fruits. Plants get their nutrients from the soil. I'm going to give your teacher a special letter for your family. This letter tells your family what we did today. In here (hold up family letter envelope), there is also a really fun activity for you, and a recipe for your family. Before you take it home, your teacher will let you draw on the front a picture of your favorite fruit or veggie, so you can share that with your family.

Supplementary activities

These activities are for the Classroom Teacher to do with the students before you return for next lesson. Or, you can do these with the students during the lesson if time allows.

- **Supplementary Activity 1 - Family Envelope Drawing** - Students draw a picture of their favorite physical activity on the front of the family letter envelope, before bringing it home.
- **Supplementary Activity 2 - Storybook and Discussion and Journal** - Read the storybook to children and then lead a discussion on key points that connect the book to GHK messages and activities. Sample discussion questions can be found on the next page. Children then write or color about what they learned on a journal sheet. Journal sheets are collected and will be combined into a book after the final lesson.

Storybook options: *Water, Weed and Wait*, by Edith Fine and Angela Halpin

- **Supplementary Activity 3 - Art Exhibit** - Discuss Lesson 11 coloring sheet message and caricature drawing, and how it is connected to the activities in Lesson 11. Allow children to color the sheet. Allow children to display the colored sheet on their desk/table and invite them to walk around to see everyone's art. Coloring sheets are collected and will be combined into a book after the final lesson.
- **Supplementary Activity 4 – Creative Storytelling Activity** - Students write or recite a creative story about a vegetable seed germinating and growing through garden soils. Imagine the small seedling's roots and stem trying to push its way through the soil, as it grows bigger and bigger.

Supplementary Storybook Activity: Sample Discussion Questions and Journal Sheet Ideas***Water, Weed and Wait*, by Edith Fine and Angela Halpin**Discussion Questions

- *Did the kids get physical activity in making the garden? How?* (raking, digging, weeding, planting, watering)
- *What insects did Miss Marigold bring to the garden?* (ladybugs) *Did you see other insects in the garden?* (butterflies, ant, beetle, bee)
- *What other living creature did she bring to help the garden grow well?* (worms)
- *What kinds of seeds did they plant in the garden and what plant part were they?*
 - Peppers -fruit
 - Zucchini - fruit
 - Snow peas - seeds
 - Beans - seeds
 - Tomatoes - fruit
 - Carrots - roots
 - Radishes - roots
 - Cucumbers - fruit
- *How many colors can you find in their garden?*
- *Are they Food Adventurers? Why?*

Journal Sheet Idea

- Draw what you think a garden looks like, beneath the soil. Include the compost, worms, insects, pebbles, roots, water, soil particles and other things that help to create healthy garden soils.

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Lesson 12: Healthy Harvest Celebration

Lesson overview

There are five activities available for Lesson 12.

1. Healthy Meal Activity: Students will work with a partner to create a healthy meal, by drawing foods from the MyPlate Garden Poster on a paper plate.
2. Roots, Stems and Leaves Song: Students will sing and dance to a song that reinforces the concept of edible plant parts.
3. Food Adventurer Adjectives, Plant Part Salad Recipe: Students will help make and will be offered an opportunity to try a healthy recipe. They'll try this snack with at least one of their senses, and will report their experience using adjectives.
4. Food Adventurer Mission: Students reflect on what they have learned in the Growing Healthy Kids program, and receive a wristband with a healthy message.
5. GHK Graduation: Students' completion of the GHK program is celebrated, and they are given reinforcements (a button) to reinforce the healthy messages from the GHK program.

What you will need

General Materials and Supplies

- Pocket folders (one per student). These are optional, but recommended for collecting student materials throughout the class.

Activity 1, Healthy Meal Activity

- MyPlate Garden Poster
- Paper plates
- Crayons or markers
- GHK flash cards (various)
- Plant Part Poster
- Mural garden (if available)
- Access to a large table, to display the healthy meals

Activity 2, Plant Part Dance Party

- Roots, Stems and Leaves song materials: CD, CD player, lyrics sheets (Appendix F)

Activity 3, Food Adventurer Adjectives, Plant Part Salad Recipe

- Access to soap, sink and paper towels to wash hands
- Food Adventurer Adjectives worksheet (one per student)
- Plant Part Poster
- Plant Part Salad recipe sheets (one per group). Recipes may be found in Section 3 of this curriculum, as well as on the Oregon State University Food Hero website (<https://www.foodhero.org>).
- Plant Part Salad ingredients (refer to recipe)

- Basic Food Preparation Kit for preparing and serving the salad.

Activity 4, Food Adventurer Mission

- Food Adventurer wristbands (Appendix L, one per student)

Activity 5, GHK Graduation

- GHK buttons or stickers (one per student)
- GHK certificates (one per student)
- Crayons or markers, so that students can personalize their certificate.

Take Home Materials

- GHK family letters, recipe sheets and envelopes for Lesson 12 (one set per student)

Supplementary Materials (as needed)

- Crayons, storybook, journal and/or coloring sheet
- Hole puncher and yarn to bind journals and coloring sheets together into a book

Preparation

Activity 1, Healthy Meal Activity

- Hang MyPlate Garden Poster, Plant Part Poster and mural garden (if available).
- Decide whether or not you will prepare paper plates, by dividing the plate into the different MyPlate groups. Prepare plates, as necessary.
- Arrange for access to a large table or other display space, for students to display the healthy meals they created.

Activity 2, Roots, Stems and Leaves Song

- Photocopy Roots, Stems and Leaves song lyrics sheet (Appendix F, one per student).
- Set up CD player or other music device.
- Discuss with the Classroom Teacher the appropriate volume for playing the song, singing and dancing at the educational site.

Activity 3, Food Adventurer Adjectives, Plant Part Salad Recipe

- Gather ingredients and supplies for making plant part salad.
- Decide how much preparation you will do beforehand, versus having the students assist with the recipe. Prepare ingredients, accordingly.

Activity 4, Food Adventurer Mission

- Photocopy Food Adventurer wristbands.

Activity 5, GHK Graduation

- Decide where you will hold the graduation ceremony (in garden, in classroom or in auditorium).
- Invite principle, parents and other guests to attend the graduation.
- Ask classroom teacher whether buttons can be distributed at the graduation ceremony, or if

they should be held by the teacher until the end of the day.

Take Home Materials

- Stuff family envelopes with a letter and recipe.

Supplementary Activities (as needed)

- Talk to the Classroom Teacher about Lesson 12 supplementary activities.

Teaching outline

Activity 1: Healthy Meal Activity

During our Growing Healthy Kids program, we have learned that it is important to eat a variety of healthy foods. Who remembers why it is important to eat a variety of foods from MyPlate?

Allow students to answer. You can offer the rainbow or jigsaw puzzle analogy. Each color of the rainbow or each puzzle piece gives only part of the picture. Together, the colors of the rainbow or the pieces of the puzzle give you the entire picture. In the same way, a variety of foods from MyPlate helps to build a healthy body.

What is one way you can make sure you're eating a variety of vegetables and fruits?

Allow students to answer. You can remind them that eating vegetables and fruits that are different colors, or including a rainbow of vegetables and fruits in their diet, is one way to ensure they are getting the variety of nutrients that their bodies need. Recall (or show) the rainbow created in Lesson 9. You can also remind them that variety may mean eating different plant parts.

What about for the other foods from MyPlate? How can you make sure that you are eating a variety of foods?

Allow students to answer.

One way we can make sure to get a variety of healthy foods in our diet is to choose foods from each of the different food groups in MyPlate.

For this next section, you can have children work with a partner, team or a volunteer, if it would be easier to manage, logistically. Or, each child can work to create their own healthy meal.

You [and your team or partner] are going to create a meal together. You are going to draw your meal on a paper plate. Include at least one food from each of the MyPlate food groups in your meal. What are the different food groups on MyPlate?

Allow students to answer: grains, vegetables, fruits, dairy, proteins. Point to the food groups on the MyPlate Garden Poster as the students answer.

When you're putting your meal together, you can use the GHK flash cards for ideas. You can use the MyPlate Garden Poster or Plant Part Poster for ideas. You can use our garden/garden mural for ideas.

Distribute GHK flash cards to students.

If you have prepared the plates prior to the lesson, so that there are discrete areas for each of the food groups (such as color coding areas per food group), please go over this with the students. Pass out the markers/crayons, and circulate among the room to help students. When the students are done, you can ask for volunteers who would like to share their meal idea with the class. As students share their paper plate meal, you can ask them questions.

Which food is from the grains group on MyPlate? Which food is a vegetable? Which is from the fruits group?

Why did you pick this particular food for your meal?

If you have a large table, display all of the “meals.” Allow students time to gallery walk and look at other students' meals. Encourage them to ask their classmates questions regarding what foods they chose or their favorite fruit or vegetable.

Thank you all for creating great examples of variety on your plates!

Activity 2: Plant Part Dance Party

Throughout Growing Healthy Kids program, we've been learning about a variety of vegetables and fruits that we can eat. For this section you can allow students to use the GHK flash cards for reference.

We've learned about roots that we eat. Can anyone name root vegetables that we eat? Allow students to answer. Carrots, parsnips, beets, jicama and radishes are all examples of root vegetables.

We've learned about stem vegetables that we eat. Can anyone name a stem vegetable that we eat? Allow students to answer. Celery, rhubarb and asparagus are all examples of stem vegetables.

We've learned about leaf vegetables that we eat. Can anyone name a leaf vegetable that we eat? Allow students to answer. Lettuce, spinach, cabbage, radicchio, chard and kale are all examples of leaf vegetables.

We've learned about fruits from the garden. Can anyone name fruits that we eat? Allow students to answer. Squash, cucumbers, apples, pears, berries, tomatoes, pumpkin and melon are all examples of plant fruits.

Students may ask why squash, cucumbers and other foods are considered the fruits of a plant. You can remind them about the difference between culinary fruits and botanical fruits. The foods that we call fruits are often sweet and juicy. However, botanically, the fruit of a plant is usually fleshy and holds the plant's seeds. The scientists who created MyPlate grouped fruits and veggies according to their nutrient content, not where their seeds are. Do not focus too much on this difference, but be prepared to provide a brief answer if students ask.

We've even planted some of these root vegetables, stem vegetables, leaf vegetables and fruits in our garden/mural garden. You can remind students about the seeds that they have planted in their school or mural garden.

To remind you of the six parts of the plant, we are going to sing and dance to the Roots, Stems, Leaves song one last time.

The full version of the song is rather long. The shortened version of the song includes just the chorus. Depending upon the time you have available, and the attention span of your class, you may want to use the chorus plus one or two verses (so there is a healthy message), rather than the entire song.

Play the song on a CD player, or sing the song for the students. Have the students sing along. Students can also dance and you may want to refer back to Lesson 2 when plant parts and body parts were aligned for a portion of the dance.

Activity 3: Food Adventurer Adjectives, Plant Parts Salad Recipe

Today is our last Growing Healthy Kids lesson. We've worked very hard to learn about healthy foods from MyPlate. We've grown many of these foods in our garden/mural garden.

There are many healthy ways to eat plant parts. We have tasted plant parts a few different ways during Growing Healthy Kids. Can you remember what they were?

Salad, veggies and dip, veggie chips, smoothie, sundae, muesli, food art.

Today to celebrate the healthy foods we've grown, we're going to make a Plant Part Salad.

Items in the Plant Part Salad can come from the garden. Make sure that produce harvested from the garden is thoroughly washed before it is prepared. For those classes using a mural garden, purchase the foods planted in the mural garden at the grocery store.

Before we can prepare our salad, we need to make sure that our hands are clean.

Remind students about proper handwashing technique, as necessary.

Now we're ready to prepare our salad. I'm going to divide our class into teams. Each team will work on a different part of the recipe. In this way, we're working together to make our Plant Part Salad, and to celebrate our healthy garden harvest.

Divide students into six or seven teams. Assign each team one task in the recipe. Each task corresponds to a different plant part. If desired, students assigned the seeds can also prepare the dressing (for six teams) or these two tasks can be completed by separate teams (for seven teams). Have students prepare their plant part, according to the recipe handout. Each recipe handout should have the group's assignment (e.g. Leaf, Root, Fruit, Seeds, Stems) highlighted. Volunteers can assist teams.

After teams have completed their tasks, serve the salad to students.

- Option A: Each group can put their ingredient in a bowl with a plant part label and then students can serve themselves salad-bar style with tongs.
- Option B: Combine the plant parts and dressing together in one large bowl for the whole class to serve from.

We're going to be Food Adventurers, and try our salad using our sense of sight, touch, smell and taste. We're going to practice using our adjectives to describe how our snack looks, feels, smells and tastes.

Refer back to Lesson 2, Activity 4, for a spoken prompts and directions associated with a Food Adventurer Adjectives recipe activity.

Activity 4: Food Adventurer Mission

How did you like the plant part salad? Did you like tasting the food that you grew in the garden? Was it exciting to eat food that you grew from a seed?

Ask the students questions, as appropriate. If the ingredients of the plant part salad came mostly from the grocery store, you can explain the connection with eating food that they've grown.

During the Growing Healthy Kids program, we've learned about the importance of eating foods from all the different MyPlate food groups. We've learned it is important to eat a variety of vegetables and fruits. One way to get variety is in colors and another is to eat different plant parts. We've learned that drinking water prevents us from getting dehydrated and we have water bottles to remind us of this. We've been physically active by stretching, dancing and participating in the Insect Olympics. We were Food Adventurers, who accepted and completed our missions. We've tasted healthy snacks, and [for indoor or outdoor garden options] grew our own food! What was your favorite part of the Growing Healthy Kids program?

Allow students to answer.

I'd like you to remember what we have learned in Growing Healthy Kids. You can share what you've learned with your friends and family. One way to share what you've learned is to wear a Growing Healthy Kids wristband.

Allow each student to select which message wristband they want of the four choices. Display and read the four different messages on the wristbands.

Then pick one wristband that has the message you would most like to be reminded of. The message you choose might be different from the one your friend or neighbor chooses!

Distribute the wristbands to the students. Read them the message they choose. Secure the wristband on their arm, using tape. Or you can let student partners help each other to read the message and secure the wristband.

Once the wristbands are on, ask the students to read what their wristband says to a partner. Students can name one or more ways they can accomplish their goal.

Food Adventurers, your mission for today is to make sure to share what your wristband says with others. Do you accept this mission?

Allow students to answer. End the class with a big cheer or round of applause for all of the students' hard work on the Food Adventurer missions.

Activity 5: GHK Graduation

Have the graduation in the garden if possible (outdoor, or in front of the indoor or mural garden) and invite guests such as the school principal.

Ask the Classroom Teacher beforehand if handing out reinforcements during school time is appropriate. Teachers might see them as a distraction and prefer to give them to the kids later when they leave school, or to have you come later in the day for this lesson.

Thank all the students and the Classroom Teacher for participating in the Growing Healthy Kids program and tell them how much fun you had learning with them and watching the healthy foods grow!

We've learned so much about healthy foods and healthy habits during our GHK lessons. You are all 'Food Adventurers', who have set and met healthy goals. Each of you has earned a GHK graduation certificate. On the certificate, I want you to personalize it with your name, as well as with one healthy habit that you achieved during the GHK program, or one healthy habit that is a goal.

Pass out certificates, and allow each student time to personalize the certificate with their name and a healthy habit they've achieved or that they have as a goal.

To help you remember all the messages from GHK I/we are going to present you with some special graduation a button to encourage you to continue to be Food Adventurers.

Have each student come forward and give them a button. Thank them for participating in the program. The Classroom Teacher and the principal can help with graduation if possible. If the series used the mural garden option, have each student sign their name (or initials) on the mural garden as they graduate.

If the school or site is able to keep the mural garden hung in a hallway, acknowledge that. If the site will continue caring for the plants the students planted, acknowledge that.

The last thing I am going to do for GHK is to give your teacher a special letter for your family about what we did today. There is also a really fun activity for you in here (hold up a family letter envelope) and a recipe. And you can also put your GHK flash cards in the envelope to show your family all your cards. Before you take it home your teacher will let you draw a picture of something you learned about in Growing Healthy Kids so you can share that with your family.

Closure

Thank you for a great program! I've loved working with you on the Growing Healthy Kids program, and learning about different ways we can be healthy. I had a lot of fun, and hope that you did too. I hope that we can work together again, and you can tell me all about the new vegetables and fruits you enjoy.

Ask the adults in attendance (volunteers parents, teachers, administrators) to recognize the students with a round of applause. Ask students to take a bow, for all of their hard work during the GHK program.

Supplementary activities

These activities are for the Classroom Teacher to do with the students. Or, you can do these with the students during the lesson if time allows.

- **Supplementary Activity 1 - Family Envelope Drawing** - Students draw a picture of that represents something they learned in the GHK program on the front of the family letter envelope, before bringing it home.
- **Supplementary Activity 2 - Storybook and Discussion and Journal** - Read the storybook to children and then lead a discussion on key points that connect the book to GHK messages and activities. Sample discussion questions can be found on the next page. Children then write or color about what they learned on a journal sheet. Journal sheets are collected and will be combined into a book after the final lesson.

Storybook Options: *The Surprise Garden*, by Zoe Hall or *The Ugly Vegetable* by Grace Lin

- **Supplementary Activity 3 - Art Exhibit** - Discuss Lesson 12 coloring sheet message and caricature drawing, and how it is connected to the activities in Lesson 12. Allow children to color the sheet. Allow children to display the colored sheet on their desk/table and invite them to walk around to see everyone's art.
- **Supplementary Activity 4 – Seed Saving** – If students will be harvesting lettuce, tomatoes, peppers, beans or peas, they can collect and save the seed for next season's garden. Work with an experienced gardener, who can provide instruction on seed saving, or refer to Oregon State University Extension publication FS220, "Collecting and Storing Seeds from your Garden", by Duane Hatch. This activity may work particularly well, if you collaborate with Master Food Preservers to make salsa from garden tomatoes. Seeds are often spooned out of tomatoes prior to making salsa. These seeds can be spread out on a paper towel, and allowed to dry. Once seeds are fully dry, store them in a labeled envelope, noting the crop and the date the seed was collected. Seed packets can be given out to students, so that they can take them home and plant them in their own garden. Or, they can be saved and planted next season, in the school garden. Store seeds in a cool, dry place until you are ready to plant.

Supplementary Storybook Activity: Sample Discussion Questions and Journal Sheet Ideas***The Ugly Vegetable*, by Grace Lin**Discussion Questions

- *Did you see any insects in the story? Are insects good or bad for your garden?* (some good and some bad)
- *Did the kids get any physical activity in the garden or yard?* (digging, planting, watering, tree house, sprinkler, picking, basketball, football)
- *What food did they make with their edible plant parts?* (Chinese vegetable soup)
- *Are the mom and girl Food Adventurers? Why?*

Journal Sheet Idea

- Draw a new vegetable you have never tried that you would grow in your garden and cook in soup. If appropriate write down the name of the vegetable.

***The Surprise Garden*, by Zoe Hall**Discussion Questions

- *What seeds did mom give to grow in the surprise garden and what edible/eatable plant part were they* (refer to last page of book)?
 - Seeds – sunflower, bean, pea
 - Roots – radish, carrot
 - Leaves – lettuce, spinach
 - Fruit – watermelon, squash
 - Flower – cauliflower, broccoli
- *Did you see any insects in the story? Are insects good or bad for your garden?* (some good and some bad)
- *How did the kids eat their edible/eatable plant parts?* (watermelon slices and salad, sunflower seeds).
- *How many colors can you find in their meal?* This is an example of VARIETY.
- *Are the kids Food Adventurers? Why?*

Journal Sheet Idea

- Draw a meal with your friends tasting edible/eatable plant parts. If appropriate list the foods you are eating.

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