

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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