



Lesson 3: Water for People and Plants

Lesson Objective

Students will . . .

- Try (with at least one of four senses) flavored water in the classroom.
- Report completing **Lesson 2** Food Adventurer mission of trying a new root vegetable at home or in the cafeteria.
- Consume plain water to relieve thirst outside of the classroom.

Lesson Overview

There are five activities for Lesson 3.

- 1. Food Adventurer, Mission Accomplished** (5 minutes)
Students will report on the results of their Food Adventurer mission from Lesson 2.
- 2. Root Watchers Review** (10 minutes)
Students will view the growth of radish seeds that were planted in root containers, from Lesson 2.
- 3. Drinking, Dehydration and Physical Activity** (5 minutes)
Students will participate in a physical activity and will discuss the importance of drinking water to prevent dehydration.
- 4. Food Adventurer Adjectives, Flavored Waters Recipe** (5 minutes)
Students will try waters flavored with herbs, edible flowers or fruits with at least one of their senses, and will report their experience using adjectives.
- 5. Garden Options** (20 minutes)
Students will continue work on their mural, or indoor or outdoor garden. **Choose Activity 5A or 5B.**

What you will need

General Materials and Supplies

- Food Adventurer Mission Log (one per student).
- Pocket folders (optional, one per student) to collect additional student materials.
- Basic Educator Kit - Class/Garden/Food Prep (Appendix C)
- Food Adventurer Definition (Appendix A, page 1 of Mission Log)
- Fruit and Vegetable Flashcards (Appendix L)

Activity 1, Food Adventurer, Mission Accomplished

- Food Adventurer Mission 2 worksheet (page 9 of Mission Log)
- Food Adventurer stickers - one per student (Appendix I)

Activity 2, Root Watchers Review

- GHK flash card of radish
- Root containers from Lesson 2
- Plant Observation Journal (find free versions of this worksheet by searching “Plant Observation Journal” online)

Activity 3, Drinking, Dehydration and Physical Activity

- MyPlate Garden Poster (Appendix E)
- Flip chart and marker, chalkboard and chalk, or whiteboard and expo marker.

Activity 4, Food Adventurer Adjectives, Flavored Waters Recipe

- List of Food Adventurer adjectives (from Lesson 1, page 3 of Mission Log)
- Food Adventurer stickers (one per student)
- Pitchers to hold water
- Cups for tasting
- Refrigerator for storing flavored waters (optional)
- Plant Part Poster (Appendix D)
- Flavored Water ingredients (refer to recipe in Appendix Q). In this recipe, a variety of fruits, leaves (herbs) and edible 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 5A, Mural Garden Option - Adding water for healthy plants and people

- Garden mural, from previous lessons
- Art supplies for adding water to the garden mural
- Garden journal pages (Appendix F), pencils or pens, clipboards

Activity 5B, 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 (page 10 of Mission Log), pencils or pens, clipboards

Take Home Materials

- Flavored water recipe/GHK (Appendix Q)

Supplementary Materials (as needed)

- Crayons, storybook, journal and/or coloring sheet

Preparation

Activity 1, Food Adventurer, Mission Accomplished

- None.

Activity 2, Root Review

- Make sure that radish root growth can be observed by students.
- Photocopy a Plant Observation Journal worksheet (there are many free options online)

Activity 3, Drinking, Dehydration and Physical Activity

- Prepare flip chart page or board area with the title: “Ways We Use Water.”

Activity 4, 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 5A, 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 or watering can be added to the mural.

Activity 5B, 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

- Flavored water recipe/GHK (Appendix Q)

Supplementary Activities (as needed)

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

Teaching outline

Activity 1: Food Adventurer, Mission Accomplished

Pass out Food Adventurer Mission Logs.

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. Instruct students to turn to **page 9** of their Mission Logs and fill out the worksheet for **Mission 2**. Read each direction aloud, and have students fill in their answers. Call on students who have raised their hands.

- (Read) *Since the last lesson, did you try a new root vegetable? What did you try?*
- (Follow-up) *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?*
- (Read) *Where did you try it? Was it at home, in the cafeteria or somewhere else?*
- *Did you like it? Would you try it again?*

Good work, Food Adventurers! Remember to be on the lookout for new fruits and 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 put them in FA mission booklet, or attach them to their shirts or sweaters.

Activity 2: Root Watchers Review

Last week we planted seeds in special containers. These containers allow us to see the roots growing below 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 radish containers. Ask students questions about their seeds and seedlings and allow students to draw any observations they make about the root growth in their Plant Observation Journal worksheet.

- *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.

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 brains to think well. Water helps our bodies 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 hearts and even our skin need water. We want to make sure that we give all of the parts of our bodies enough water throughout the day.

Because water is such an important part of your body, you should try to drink whenever you are thirsty. You can carry around a water bottle to help you remember to drink water. 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).

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 water 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*
- *Light headedness*
- *Feeling thirsty*

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! However, not all flowers are not edible and some can even be poisonous and make you very sick.

Activity 4: Food Adventurer Adjectives, Flavored Waters Recipe

In this recipe, a variety of fruits, leaves (herbs) and edible 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 1, Activity 2 for the spoken prompts and directions associated with a Food Adventurer Adjectives recipe activity. After students try flavored water, ask students to share food adventurer adjectives as a class.

You have practiced being a Food Adventurer, and you can practice using your Food Adventurer adjectives.

Activity 5A: Mural Garden Option - Adding water for healthy plants and people

We need to drink water to stay alive, and so do plants. Who remembers what it means to be dehydrated? Raise your hand if you would like to answer.

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

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

Today, we are going to water the 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 and 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 and 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 have water too, we can add 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 5B: 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.)

Our growing garden gets water from rain, a garden hose, and/or a water car. Our bodies can receive water from drinking fountains, coolers, and water bottles.

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 sticking your index finger in to the soil up to your 2nd joint.

If the soil does not feel wet, the soil is too dry. The plant needs more water. If the soil feels wet, 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. Or, if time allows, have students complete the supplemental journal sheet activity of drawing what they think the garden looks like beneath the soil (see Supplementary activities section on the next page).

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 hand washing technique. Allow time for hand washing.

Closure

Today you learned about the importance of water. We use water to wash our hands. We drink water to keep our bodies 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.

*Food Adventurers: before we go, I want to give you another mission. Your mission is to **drink water when you are thirsty**. Food Adventurers - do you accept this mission? If so, shout out YES! 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. 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.



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Supplementary activities

These activities are for the Classroom Teacher to do with the students before you return for the next lesson.

- **Supplementary Activity 1 - 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 below. Children then write or color about what they learned on a journal sheet. Journal sheets will be collected and compiled into a book after the final lesson.

Storybook Option: *Water, Weed, and Wait*, by Edith Hope Fine and Angela Demos Halpin.

- **Supplementary Activity 2 – Coloring Sheets** - 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 sheets on their desks/tables and invite them to walk around to see others' art. Coloring sheets will be collected and compiled into a book after the final lesson.

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.