



LiveWell Kids Nutrition and Garden Grade: Kindergarten Module 4: Winter Harvest & Water

Objectives

Grade Level Learning Objectives:

- Learn about the importance of water and its benefits to living things
- Identify foods grown in the garden
- Harvest and taste cool season crops

Lesson Supplies:

Nutrition Supplies:

- Visual Aid: Water Cycle
- Visual Aid: Water in the Environment

Garden Supplies:

- Peas, carrots, kale, and watermelon radish (will harvest from the garden)
- 2 large bowls (for collecting peas and kale)
- 1 Washing bin
- 1 Vegetable scrubber
- Hand Soap
- Paper towels
- 1 small bowl (for compost scraps)
- Plastic wrap (to cover bowls)
- Sanitizing wipes
- 2 Colanders
- Folding table from shed

Food Sample

Food Tasting Supplies:

- 1 Apple
- 1 Lemon
- Olive oil
- Honey
- Food handling gloves
- Cutting board
- Knife
- Grater
- Juice squeezer
- 4 small bowls (for carrots, radish and one for carrot and radish top and one for salad dressing)
- 1 serving utensil
- Salt and pepper
- Paper food trays (1 per child)
- Plastic forks (1 per child)
- Paper towels (1 per child)

Preparation and servings:

For a class of 30, the Kale Salad recipe calls for:

- Apple – 1 per class
- Kale – 1 leaf per child
- Peas – one pea pod per child
- Watermelon radish – 1 per class
- Carrot – 1 per class

Dressing:

- Lemon – 1 juiced
- Olive oil – 1-2 tbsp.
- Honey – 1 tsp.
- Salt and pepper to taste

Food Allergen

Please check with the teacher for any known food allergy and provide appropriate substitute.

LESSON PREPARATION

Stations Set Up

****Please allow at least 45 minutes for set-up and prep before the lesson****

Prior to Lesson

- Check your garden bed ahead of time to ensure that you have enough veggies for the recipe to harvest during the lesson.
- Pick a watermelon radish and a carrot before the lesson to prep for the salad ahead of time. (*Docents will harvest the watermelon radish and carrots prior to lesson while students will harvest the kale and peas during the lesson*).

Harvesting Station

- Set the 2 large bowls next to the garden bed.
- See *Food Prep and Tasting Station* section below on how to prep the vegetables. After you prep the food place the small bowl with the tops of the watermelon radish and the carrot next to the garden bed.

Washing Station

- Take the wash bin, vegetable scrub brush, hand soap, and paper towels from the shed.
- Set up a washing station near the sink by filling the tub halfway with water, and setting the vegetable scrubbers in it.
- Place the 2 colanders next to the wash bin.
- Set the hand soap and paper towels at the sink.

Food Prep and Tasting Station

- Go to the LiveWell Kids refrigerator and retrieve 1 lemon and 1 apple. Retrieve the blue ice pack from the freezer of the LiveWell Kids refrigerator. Bring items to the garden and place in the small cooler (from the shed). Set by the Food Prep Station.
- Bring remaining items to the Food Prep Station.
- Scrub the radish and carrot at the sink with the vegetable scrubber and pat them dry with paper towels.
- Wash your hands and put on food handling gloves.
- Bring the radish and carrot to the Food Prep Station.
- Grate most of the radish and carrot into a small bowl. **Leave a portion of them unfinished with the leafy stems attached so that you can use it for your demonstration. Place in another small bowl, cover with plastic wrap, and put next to the garden bed.**
- Cover the bowl with the grated vegetables using plastic wrap and place it in the cooler.
- Wipe the storage bin clean with sanitizing wipes.
- Place paper plates and plastic forks in storage bin and put next to tasting station.
- Place a recycling bin next to the trashcan, leaving them both open so they are accessible from the tasting station.

LESSON DELIVERY

1. Mindful Breathing (1 Minute)

Say: Hi everyone. My name is _____ and welcome to another LiveWell Kids Nutrition and Garden Education lesson. First, we will start with a mindful breathing exercise.

Do:

- Ask the students to sit quietly at their desks and place their hands on their bellies. Tell students to turn on their “mindful bodies”. Remember “mindful bodies” are still and relaxed.
- Explain to your class that you will ring the chime and they will close their eyes and take several slow, deep breaths in through their noses and then slowly let the breath out through their mouths. During this time they should focus on their breath and feel it rise and fall in their bodies.
- Tell them that after 30 seconds you will then ring the chime again and they are to keep their eyes closed until they can no longer hear the sound of the chime. When they can’t hear the sound of the chime, they will then open their eyes. Repeat 1 – 2 times if needed.
- Ring the chime and practice mindful breathing with the students for approximately 30 seconds by taking slow deep breaths.
- At the end of the 30 seconds, ring the chime again to end the exercise. Tell the students to slowly open their eyes when they no longer hear the chime. Ask the students how they feel. Choose a couple of students to share their experience.

2. Walk to Garden (2-5 Minutes, depending on class location)

Do:

- Ask the students to line up to get ready to walk to the garden. Solicit the teacher’s help to get the student lined up if necessary.

Say:

Boys and girls, while we are walking to the garden, let’s practice our mindful listening. Listen as we walk and really pay attention to all of the sounds, loud or soft, around you. Maybe you will hear other children talking, or birds chirping, or the sound of the breeze in the trees. Ok, let’s go.

Do:

- Walk with the children and watch to see if they are practicing mindful behavior. Provide them with cues of what to listen for as you walk.
- At the end of the walk, point out something that you heard and then ask a couple of students what they heard.

3. Review Garden Rules & Prior Lesson (2 Minutes)

Do:

- Ask the class who remembers what the last lesson was about. (*Processed foods, minimally processed foods, and composting.*)
- Remind the class why it is important to eat whole foods and why these foods are good for our bodies
- Ask students if they can remember what composting is, and any of its benefits.
- Point out the “Garden Rules” sign.
 - Always walk when in the garden
 - Stay on the paths
 - Always ask before using any tool or picking any crop
 - Respect each other, as well as all living creatures in the garden

4. Garden & Nutrition Education (30 Minutes Total)

Say:

Today we are going to learn a bit about **where water comes from and the positive role it plays in the environment, in plants, and in our bodies.** After that we'll learn more about harvesting our plants in the garden. Then we are going to mindfully taste the food that we grew!

Do:

- Ask students if they remember what season they planted the garden and what kind of crops they planted. (**Late Fall/Winter, planted cool weather crops.**)
- Ask students what plants need to grow. (**Soil, sun, and water.**)

Nutrition Section: (About 10 minutes)

Do:

- Use the **Visual Aid: Water Cycle** and describe the process water circulates between the oceans, air and ground.

Say:

Plants need water to grow; in fact all living things need water including us. Water is all over the earth. It is in rivers, lakes, and oceans. When the sun heats the water in the rivers, lakes, and oceans, the water turns into clouds. The clouds you see in the sky are made up of millions of water droplets. When the water droplets become big and heavy, they fall from the clouds to the earth. When the rain or snow falls on the earth, it waters the trees and plants and fills in the rivers, lakes, and oceans. All animals and plants need water to survive and grow.

Do:

- Use the **Visual Aid: Water in the Environment** and review the different areas where water is abundant and scarce. Ask students why water is important. Remind the class that they should get at least 5 glasses of water a day depending on your level of physical activity.
- Emphasize to students that they should drink water **instead of** sugar sweetened beverages (e.g. Gatorade, soda, juices, etc.)
- Ask students the following questions:
 - What would happen to a fish in an aquarium if you took out all of the water?
 - What would happen if you forgot to water the plants in our garden?
 - What happens when you forget to drink water?
- Explain that plants in the garden have different amounts of water in them. Foods like kale, apples, cucumbers, tomatoes, etc., have a lot of water in them. Eating fruits and vegetables is a good way for us to get more water.
- Tell them today they are going to harvest vegetables to make a salad.

Say:

Plants drink water to grow. Just like plants we are living beings and water is important for us to grow and stay healthy. All of the vegetables have water in them and are healthy for our bodies.

Garden Section: (About 20 minutes)

Harvesting Vegetables

(For this activity, the class will be at the garden bed).

Harvesting Carrot and Radish

Do:

- Show them the radish and carrot in the bowls, explaining that you already harvested them for the salad.
- Point out the shape of the radish and carrot, noting that they are the root of the plant.
- Show the students the carrots and radishes that are still growing underground. Tell them the part that we eat is the root; we refer to it as a **root vegetable**. Let them know that the roots grow down in the soil to find nutrients to help it grow.

Harvesting Kale (See “Washing the Vegetables” sections below.)

Say:

This is kale and it is a leafy green, like lettuce. It doesn't form a head, but rather loose, open leaves. If picked from correctly, it can produce leaves over a longer period of time, allowing for continual salads! Find a large leaf, and carefully trace it with your fingers down to where it attaches to the plant. Pinch the leaf with their fingernail to “cut” the leaf off.

Do:

- Demonstrate this by picking a leaf and putting it in one of the large bowls.
- Have several students approach the bed to harvest their leaf, and then add it to the bowl with yours as they move away from the bed.
- Have the next few come forward and repeat.
- Make sure that the plants you harvest from are left with no less than 3 leaves on them. If you strip the plant of its leaves, it cannot continue to grow.

Harvesting Peas (See “Washing the Vegetables” sections below.)

Say:

Peas, like beans, are **legumes**. Since peas are vining plants, they need a support structure for optimal growth (point out the stakes and twine). The peas that we pick off of the plant and eat are referred to as **pod fruit**.

Do:

- To harvest the pea, explain to the students that the connection between the pea pod and the plant is strong, so we need to use fingernails again to “cut” the pea off the vine.
- A good technique is to pinch the vine with two fingers from one hand (where it attaches to the pea) to hold it stable.
- Using their other hand, they will use their fingernails to cut the pea off.
- Demonstrate this and put your pea in the other bowl – not the kale bowl.
- Have a few students at a time approach the vines to pick their pea, and drop it in the bowl with yours, as they walk away from the bed.
- After the students have all picked a pea, take the class and both bowls to the washing station.
- Set the bowls next to the wash bin.
- Retrieve the small bowl with the radish and carrot top, and place at the Food Prep Station.

Washing the Vegetables

(For this activity, the class is at the Washing Station. Docent Note: Use your teacher/helper to monitor this station as a line will most likely form. A few students can wash at the plastic bin at the same time. They should be able to move quickly but might need some prompting).

Do:

- Have the class stand back to allow enough space around the work area.
- Instruct a few students at a time to come forward and take a kale leaf and a pea from the colanders, and swish around in the wash bin water to rinse off any surface dirt (there shouldn't really be much at all).
- They then will put their washed leaf in one colander, and their washed pea in the other.
- *(The hand soap is at the sink just in case someone needs to wash their hands again.)*
- Send them to the Tasting Station where the docent is waiting for them.
- After the last kids have finished washing, the parent helper will take the colanders of washed vegetables and one of the empty bowls to the Food Prep Station and give it to the docent.
- The parent helper will wash the other bowl and give it to the docent so that it can be used for the salad.
- The parent helper will retrieve the paper towels from the sink area and take to the Tasting Station.

Preparing the Kale Salad

(For this activity, the class is at the Food Prep/Tasting Station).

PLEASE HAVE STUDENTS WASH THEIR HANDS AND PUT ON FOOD HANDLING GLOVES IF THEY ARE GOING TO ASSIST WITH THE FOOD PREP, INCLUDING PASSING OUT FORKS AND BOWLS.

- Have your parent helper help you shake the water out through the colanders, and gently pat the kale dry with paper towels.
- Take the bowl of pre-grated carrot and radish out of the cooler and set at your Food Prep station. Put on the food prep gloves.
- Wait to start the demo until all the students are together at the Food Prep Station/Tasting Station and ready to listen. *Depending on your class, use your discretion about which parts of this activity you will involve the students.*
- Explain to the class that you are now going to make the Kale Salad. Let them know that one of the large bowls is for the salad (the washed one), while the other is for compost.
- Beginning with the grated carrot and radish, show them that you've already prepared both and explain how you did it. Demonstrate by grating a little bit of the carrot or radish onto the cutting board so they can watch. Point out to that you're being careful to keep your fingers protected. The newly grated pieces, the leafy tops and root tips can all go into the other bowl for composting.
- Pat kale dry. Hold up a leaf to show the size. Tear into bite sized pieces, and add to the large bowl. Have either the parent helper or the students finish tearing the rest of the leaves, and add to the bowl.
- Hold up a pea (remember, you picked one too). Point out the bumps, letting them know that these are the peas inside. Open it up to show them the peas inside, and pick the peas off. Let them know that they will each get a pea and they can choose to take the seeds out or eat it whole. Leave the peas in the colander for passing out later.
- Show the students the bowl of cut apples. Explain that you cut it into small pieces. Add the apple to the bowl with the other ingredients.
- For the dressing, measure out 1-2 tablespoons of olive oil (drizzle the oil 1-2 times around a separate bowl). Remove the lemon from the cooler and cut it in half. Use the squeezer to squeeze the juice into the dressing bowl. Add 1 tsp of honey (one small squirt) and salt and pepper to taste. Mix with a fork and pour over the salad and toss.
- Put the lemon peels and any other plant scraps in the compost bowl.
- Have the parent helper assist you by taking the food trays and forks out of the storage bin.

- Place 2 tablespoons of the salad on each plate, while the bowl of peas is being passed around. Each child can take one pea and can tear it into pieces or take the peas out of the pod and add it to their salad or they can eat the pea separately.
- Pass the plates/forks out to the students.

5. Mindful Tasting Experience (5 Minutes)

Say:

Now that we've worked up an appetite by being active in the garden, let's enjoy the food we've grown!

As we talked about earlier, we get water into our bodies in a bunch of different ways. We can drink water or other drinks, and many of the foods we eat have water in them too. The fruit and vegetables that are in our salad actually have a lot of water in them so we are getting water from our food too.

Do:

Advise students it is time for their mindful tasting. Remind them that being mindful is to:

- Be respectful to the food: don't throw it on the ground.
- Please don't say "yuck" or "gross." So you don't yuck someone else's yum!
- Be willing to explore and use all of your senses.
- Try to take a bite.

Start with a mindful breathing exercise:

- Sit comfortably and relax the shoulders.
- Close your eyes, breathe in slowly through your nose, filling up your chest and belly and slowly breathe out through the mouth.

Do:

- Have students interact with the food using all of their senses. Engage them with the following questions:

Say:

Look:

What is the food's name? How is it grown? On a tree, bush, vine, or underground? Notice the size, shape, and color.

Smell:

Slowly smell the food. Does the scent remind of you a place, a person or experience? How would you describe this scent? Does it smell sweet, strong, or spicy?

Touch (If doing "Touch" have students wash hands, if not, please skip.)

Use your finger and touch the food; does it feel soft, spongy, hard, or slippery? How does it feel in your hand; heavy or light?

Taste and Hear (Have students wait until after they swallow to share their experiences.)

Take a bite of the food and let it sit on your tongue. What do you feel in your mouth? Bite slowly and chew just a few times but don't swallow, notice the flavors. Is it sour, bitter, sweet, or salty? Do you hear anything? Is the food crunchy or squishy? Is it making any noise when you chew? Keep chewing slowly several times but do not swallow. Does the taste change at all? When you're ready to swallow, feel the food traveling into your stomach. How do you feel?

Do:

- Have students share their experiences. Thumbs up if they liked it. Thumbs sideways if they're not sure.

- Thank students for their attention and remind them to mindfully eat at their next meal and to show their families how to mindfully taste their food.

6. Walk back to the Classroom (2-5 Minutes, depending on class location)

Say:

Now we are going to walk back to the classroom. See if you hear anything different as you walk back to your classroom.

Do:

- Walk with the children and watch to see if they are practicing mindful behavior. Provide them with cues of what to listen for as you walk.
- At the end of your walk, point out something that you heard and then ask a couple of students to share their experiences.

7. Workbook Activity (8 Minutes)

The workbook activity can be done during this lesson or later in the week with the teacher. Please connect with the teacher to determine when the activity will be completed and who will facilitate it. If the workbook activity will be delivered during the week by the teacher, please skip to the “Reflection” section.

Say:

Okay everyone, now we are going to have a seat and do an activity in our workbooks. For this, you will need crayons.

Do:

Read through the directions for the activity. Students will be circling which things need water to live. For the second activity, students will color in the number of glasses of water they are supposed to drink each day (5 glasses).

8. Reflection (2 Minutes)

Say:

Thank you, class. I hope you enjoyed your lesson today! As I clean up, I would like you to take out your workbooks and turn to the reflection page. Either write or draw something that you learned today. You will have a couple of minutes to complete this.

Do:

- Once students are finished writing their reflections, collect all the workbooks and place in the bin in the classroom.
- Thank the students, teacher and classroom aide (if applicable) for their time.
- Return all materials to your school’s LiveWell area.

Glossary:

- Mindfulness¹ (Noun): The practice of maintaining a nonjudgmental state of heightened or complete awareness of one's thoughts, emotions, or experiences on a moment-to-moment basis; also: such a state of awareness.

Did You Know?

- Water is the nutrient your body needs in the greatest amount. Our blood is about 83% water, lean muscle about 73% water, and body fat about 25% water. ²
- On average, a human's body weight is 45-75% water (or about 10-12 gallons) ³
- Sugar sweetened drinks were the single-largest source of calories in the American diet in 2010, providing an average of about seven percent of total calories per person.⁴
- 71% of Earth's surface is covered in water. And the oceans hold about 96.5% of all Earth's water⁵
- The Pacific Ocean is the world's largest ocean covering approximately 59 million square miles.⁶
- Estimates vary, but each person uses about 80-100 gallons of water per day.⁷
- Check for leaks and save hundreds of gallons of water a day because California is in a drought.⁸
- We can save water by turning off the faucet when brushing our teeth.⁹
- Always rinse your produce under water to clean it.¹⁰
- Vitamin K in kale promotes healthy blood and may help keep your bones strong.
- Kale contains antioxidants that help prevent cell damage and may also help protect against cancer.
- Carrots are not always orange and can also be found in purple, white, red or yellow.¹¹
- You know that you can eat the green parts of radishes? These leafy greens are best cooked, and have a rich, spicy flavor.¹²
- Peas are a good low calorie source of protein.¹³
- There are over 1,000 types of peas in existence.¹⁴

Education Standards

- LiveWell Kids applies California Health Education and Common Core standards in each lesson. For more information please visit our website.

¹ <http://www.merriam-webster.com/dictionary/mindfulness>

² American Dietetic Association Complete Food & Nutrition Guide 4th Edition

³ American Dietetic Association Complete Food & Nutrition Guide 4th Edition

⁴ HHS/USDA. (2010). Dietary Guidelines for Americans, Washington DC: U.S. Government Printing Office

⁵ <http://water.usgs.gov/edu/earthhowmuch.html>

⁶ <http://oceanservice.noaa.gov/facts/biggestocean.html>

⁷ <http://water.usgs.gov/edu/qa-home-percapita.html>

⁸ <http://ca.gov/drought/>

⁹ <http://water.usgs.gov/edu/qa-home-percapita.html>

¹⁰ http://www.nytimes.com/2010/10/05/health/05real.html?_r=0

¹¹ <http://www.fruitsandveggiesmorematters.org/carrots>

¹² <http://www.unce.unr.edu/blogs/lyon-county/files/2015/09/FFVPWatermelonRadishLyon2015.pdf>

¹³ https://cals.arizona.edu/fps/sites/cals.arizona.edu.fps/files/cotw/Sugar_Snap_Peas.pdf

¹⁴ https://cals.arizona.edu/fps/sites/cals.arizona.edu.fps/files/cotw/Sugar_Snap_Peas.pdf