LiveWell Kids
Garden and Nutrition Program

Lesson 6: Water & Planting Warm-Season Crops

OBJECTIVES

By the end of this lesson, students will:

- Learn about warm season crops and seasonal planting. (K-5th)
- Understand how to prepare soil for planting. (K-5th)
- Learn and experience proper seed planting procedures. (K-5th)
- Appreciate that all living things, including people, animals, and plants, need water to thrive and survive. (K-5th)
- Recognize the benefits of drinking water. (K-5th)
- Increase knowledge related to alternative sources of water for consumption. (K-5th)
- Increase knowledge of the water cycle (2nd)
- Identify ways in which our body loses water. (3rd)
- Increase awareness of water-wise practices (4th)
- Be mindful and know how to identify sugar-sweetened beverages. (5th)

SUPPLIES

Supplies to bring from the classroom to the garden – *arrange with teacher ahead of time*:

- Paper – one piece per student
- Writing tools – such as crayons, colored pencils, or markers

Supplies to bring from the shed to the garden:

- Planting Activity:
  - 2 laminates of 2 specific seed packets for your grade level
  - 1 brown paper bag containing your seeds and plant labels
  - 2 sharpies
  - Cultivators
  - Rake
  - Compost bucket and scooper (only if your bed doesn't have a bag of soil leaning on it)
  - Watering cans
  - 2 popsicle sticks
  - Ruler
  - Row-planting guide tool (or yarn, 2 more popsicle sticks, and scissors, if one doesn't exist yet)
  - 6 kneelers
  - Optional: Gloves
- Water Activity:
  - Water pitcher (K-5th)

- Cling Wrap (K-5th)
- Paper cups (K-5th)
- Scissor (K-5th)
- Whiteboard
- Dry-erase markers (4th)
- Laminates:
  - *Recipes to Make Water More Fun* (K-5th)
  - *Eat Your Water* (K-5th)
  - Book – *I Am Water* (K)
  - *Water Use* (K)
  - *Water Tracker* (1st, 3rd, 5th)
  - *Benefits of Drinking Water* (1st, 3rd)
  - *The Water Cycle* (2nd)
  - *Losing Water* (3rd)
  - *Sugar Word Cloud* (5th)
  - *Nutrition Facts: Sugar* (5th)

PREPARATION

- Refer to the LiveWell Kids Volunteer Manual on the LiveWell Kids webpage for details about preparing for the lesson one week prior and the day of. The information can also be found on the inside of the shed door.
- Allow **30 minutes** for set-up and preparation on the day of the lesson.

SET-UP INSTRUCTIONS

1. SET UP PLANTING ACTIVITIES:

   - If you DON'T have a bag of soil leaning on your bed, use the compost scooper to scoop compost from the compost bin into the compost bucket. You will see a sign in the compost bin telling you which line to fill to, either line "A" or line "B." The line is labeled on the inside of the bucket.
   - Set the following items at the garden bed to be used for *"Soil Prepping Activity":*
     - Cultivators
     - Kneelers
     - Rake
     - Bag of soil OR compost bucket with compost
     - Optional: gloves (Note: Not all students may be comfortable with gloves.)
     - Grades 3rd-5th only: your largest container or wheelbarrow
   - If a 'row-planting guide tool' hasn't already been created by another class, make this tool by cutting a piece of yarn to be longer than your bed's length and tying a popsicle stick to each end.
     - **If someone has already made one, check to make sure it fits your bed.** If the beds are the same size, you can **reuse it**. If you need to make one, leave it with the lesson supplies for others to reuse**.**
   - Set the following supplies near (but not right next to) the garden bed to be used for *"Planting Activity"* at the end of the lesson:
     - Ruler
     - 2 popsicle sticks
     - Yarn/popsicle sticks row-planting guide tool
     - Bag of seeds and labels
     - 2 sharpies
     - Watering cans, filled halfway
     - 2 seed packet laminates

- Remove the irrigation lines from the garden bed (following the instructional video on the website under "Lesson 2") and lay them on a nearby bed or the ground, away from where the kids will be working.

2. SET UP WATER ACTIVITY:

Place the following items at the picnic table area:

All grades: Fill the water pitcher at either one of the hydration stations or the teacher's lounge for fresh filtered water. Bring this to the garden.

- Kindergarten: Filled water pitcher (covered with cling wrap), paper cups, scissor, *Water Use*, Book - *I Am Water*, *Recipes to Make Water More Fun, Eat Your Water*
- 1st grade: Filled water pitcher (covered with cling wrap), paper cups, scissor, *Benefits of Drinking Water*, *Water Tracker, Recipes to Make Water More Fun, Eat Your Water*
- 2nd grade: Filled water pitcher (covered with cling wrap), paper cups, scissor, *The Water Cycle, Recipes to Make Water More Fun, Eat Your Water*
- 3rd grade: Filled water pitcher (covered with cling wrap), paper cups, scissor, *Benefits of Drinking Water*, *Water Tracker*, *Losing Water, Recipes to Make Water More Fun, Eat Your Water*
- 4th grade: Filled water pitcher (covered with cling wrap), paper cups, scissor, whiteboard, dry-erase markers, *Recipes to Make Water More Fun, Eat Your Water*
- 5th grade: Filled water pitcher (covered with cling wrap), paper cups, scissor, *Water Tracker, Sugar Word Cloud, Nutrition Facts: Sugar, Recipes to Make Water More Fun, Eat Your Water*

INTRODUCTION & MINDFUL BREATHING

(ALL GRADES: 1 MINUTE)

- Greet the class and introduce any new volunteers.
- Guide students through a mindful breathing exercise.
- Explain the purpose of this lesson is to:
  - Plant warm-season crops.
  - Learn about water, one of Earth's most valuable resources, and enjoy a tasting of naturally flavored water.

Divide Class into Two Groups

Split the students into two groups. Keep one group at the garden bed for the *Soil Prepping Activity*. Send the other group with your co-volunteer to the *Water Discussion & Activity*. Both activities will run

simultaneously. After both groups have completed the water activity and the first part of the planting activity, both groups will come back together at the garden bed and finish the lesson by planting, labeling, and watering the seeds.

WATER DISCUSSION & ACTIVITY: *(10 MINUTES for K – 2nd, 13 MINUTES for 3rd – 5th)*

The water activity has three parts:

1. Prep infused water BEFORE discussion to allow time for flavors to meld.
2. Engage students in grade-specific water discussion.
3. Serve infused water for tasting while discussing Creative & Hidden Ways to Get More Water.

PREP INFUSED WATER

K - 5th	**Prep for Infused Water** Supplies – Filled water pitcher, scissors
Activity	• Say: Today we are going to taste naturally flavored water by adding fresh herbs from the school garden to our water. • Take the scissors and walk the group to the herb section of the garden and identify the herbs for them by reading the plant labels out loud. • Allow students to choose which herb they'd like to try via voting. • Using the scissors, cut a few sprigs of the herb. Send the students back to the table while you rinse the herbs at the sink before adding them to the pitcher of water on the table. • For best flavoring, allow the water to sit during the class discussion.

WATER DISCUSSION

K	**All Living Things Need Water** Supplies: (1) *Water Use*, (2) Book - *I Am Water*

Discussion	Use the book, *I Am Water*, to help illustrate the discussion.
	
	• Water is an important part of our life.
	• All living things need water!
	  ○ People, animals and plants can't live without water.
	  ○ People and animals need to drink water to stay healthy and feel good.
	  ▪ It's important that you drink enough water.
	  ▪ At your age, this would be about 5 cups each day.[1]
	  ○ People also get water from eating fruits, vegetables and other foods that contain a lot of water.
	  ○ Plants need water too. They get water from rain or if people water them.
	• Ask: What are some ways we use water?
	  ○ People and animals use water to bathe and keep clean.
	  ○ In the morning, while you are getting ready for school, you use water to wash your hands and face and brush your teeth. You can't flush a toilet without water!

	○ We use water for cooking food, like spaghetti, and for washing our clothes, cars, dishes, and many other things that need cleaning. ○ We have fun with water. ▪ Ask: How many of you like to swim in the ocean or pool? Or how about playing with water toys? • Water is one of Earth's most valuable resources, so we must not waste it! • Ask: What are some things we can do to save water? ○ Turn off the water when you're done washing your hands and brushing your teeth. ○ Taking shorter baths and showers. (Showers often use less water than baths.) ○ Finish the water in your cup or water bottle before asking for more. ○ Use a watering can instead of a hose when you water the plants. ○ Fix leaky faucets, running toilets and broken sprinklers.

1st Grade	**Water in Your Body** Supplies: (1) *Benefits of Drinking Water*, (2) *Water Tracker*
Discussion	Use the laminate, *Benefits of Drinking Water*, to illustrate the discussion. • Ask: What do you have in common with trees and animals? ○ Answer: You need water just like they do! All living things, including humans, animals and plants, need water to survive. • Ask: Do you know that your body is mostly made up of water? ○ In fact, your body is made up of more than 60% water! [2] ○ Your brain, heart, lungs, skin, muscles, bones, blood and more are all made up of lots of water. • We need to drink water every day for our bodies to work properly. [3] ○ If you are 6 to 7 years old, then try to drink at least 6 to 7 cups of water each day. ○ If it's hot outside, or if you are playing hard and sweating, then you will need to drink more water. • Consider using a water tracker to keep track of how much water you drink. ○ Show laminate, *Water Tracker*. • Water does many things to keep us healthy and to keep our bodies working well[4]. For example: 1. Water <u>forms saliva</u>. ▪ Do you know where we find saliva in our body? If yes point to that body part. Saliva is spit, the clear liquid in your mouth. Saliva helps to clean out your mouth and throat. 2. Water helps to <u>keep our bodies cool</u>. ▪ Let's stand up and jump up and down 10 times. If you keep going, you will start to notice water on your body. This is sweat. When we sweat, water from inside our body moves to the outside of our body. We can look at our skin and see small droplets of water. When the air blows over these small drops of water on our skin, it makes our skin feel cool. That's how water

	helps our body stay at the right temperature. It prevents our body from getting too hot. 3. Drinking water keeps us washed out and clean by helping food move through our digestive tract and get rid of waste through urine (pee) and poop. 4. Water helps to move nutrients from the foods we eat to other parts of our body. ▪ We get nutrients through our blood. Our blood is a liquid and contains a lot of water. Our bodies pick up nutrients from the food we eat and our blood carries the nutrients to all different parts of our body. 5. Water helps our muscles work. ▪ Everyone flex your arm muscle like this. (Volunteer, demonstrate flexing your muscle.) When you move your body - whether playing a sport, during recess or simply walking around school - you are using your muscles. Your muscles work better when they have enough water. 6. Water helps your eyes stay moist so you can blink. Show me how you blink your eyes. 7. Water helps to lubricate our skin and joints, like how a car engine needs oil to prevent it from getting rusty and squeaky.

2nd Grade	**The Water Cycle** Supplies: Laminate - *The Water Cycle*
Discussion	**The Cycle**[5,6] Use the laminate, *The Water Cycle*, to illustrate the discussion. • Ask: Did you know the water we drink is older than the dinosaurs? This is because earth's finite amount of water is continuously recycled through a system called the ***Water Cycle***. This cycle is important since it's how all living things get water to survive! *The Water Cycle* laminate is 2-sided; one side has labels, and the other does not. Use the side with labels to explain the following: 1. ***Evaporation***: Water changes from liquid to vapor. o The sun heats the earth and causes the water in the oceans and lakes to evaporate into the air. 2. ***Condensation***: Water changes from vapor to liquid. o The water in the air cools as it rises and condenses into clouds. High currents push the clouds around in the sky. 3. ***Precipitation***: Water changes from liquid to solid. o Once the clouds become too heavy, the water droplets fall to the earth as rain. If it's really cold, it can freeze as it leaves the clouds and fall as snow or hail. o As the rain lands on the earth: ▪ Some of it is absorbed into the soil, nourishing plants through their roots and even seeping deep down to become ground water. ▪ Some of it lands on plants and evaporates back into the air. ▪ Some of it lands on surfaces in cold climates and becomes ice or snowpack. When this happens, water changes from liquid to solid.

	▪ Some of it lands in oceans and lakes adding to the volume. ▪ Some of it lands on higher places and gravity causes it to run down to lower places. This is called ***runoff.*** 4. As water flows back down into lakes and oceans through rivers and streams, the cycle starts over. **Water as a Limited Resource[7]** • Most of the water that we have cycling through the earth and its atmosphere is NOT available for us to drink since much of it is either: o Part of the salty ocean o Stored in the soil o Frozen • Ask: Can anyone guess how much of all the earth's water is available for us to drink? o Answer: Since we drink ***fresh water***, rather than salt water, only about 1% of ALL the earth's water is available to us as drinking water! o Our drinking water comes from rivers, streams, lakes and ground water. • As our earth becomes populated with more and more people, we need to be sure that we don't waste fresh water so there will always be enough for everyone. Use the other side of *The Water Cycle* laminate (without labels) to review, pointing to each of the blank label boxes this time. • Ask: Who can tell me what is happening here?

3rd Grade	**Hydration & Dehydration** Supplies – (1) *Benefits of Drinking Water,* (2) *Water Tracker*, (3) *Losing Water*
Discussion	• Ask: What do all of us have in common with trees and animals? o Answer: We all need water! o All living things, including humans, animals and plants, need water to survive. • Not only do we need water, but our bodies are made up of more than 60% water. [8] • In fact, water makes up: (Show laminate, *Benefits of Drinking Water*) o 83% of your lungs o 73% of your brain and heart o 79% of your muscles and kidneys o 64% of your skin o 31% of your bones • Since we are mostly made of water, water plays many important roles within our body to make it work properly and function at its best. Here are some examples:[9] o Keeps body temperature normal. o Removes waste (poop and urine (pee). o Protects and cushions your organs and joints. o Helps carry nutrients and oxygen to your cells. o Moistens oxygen for breathing. o Helps convert food to energy.

	○ Helps your body absorb nutrients. • As you can see, we need to drink water every day for our bodies to work properly.[10] ○ Hydrate means to add water. When you drink water, you hydrate your body. ○ If you are 8 years or older, then try to drink at least 8 cups of water each day. ○ If it's hot outside, or if you are playing hard and sweating, then you will need to drink more water. • Consider using a water tracker to keep track of how much water you drink. ○ Show laminate, *Water Tracker*. • Now I would like each of you to breathe in and out. ○ Even though you couldn't see it, you lost a little water by breathing. • Use the laminate, *Losing Water*, to brainstorm with the class some other ways in which we lose water. ○ When we are physically active and sweat ○ When we use the restroom ○ When we sneeze ○ When we cry • Dehydration is what happens to your body when you don't have enough water. • When you feel thirsty, that is your body's way of telling you it needs more water. • Ask: What are other signs of dehydration? ○ Headache ○ Feeling of tiredness ○ Muscle cramps ○ Lightheaded/dizziness ○ Nausea (sick to your stomach) ○ Decreased urination • Ask: Does anyone know what your body does once it uses the water it needs? ○ Answer: Your body lets the water go in the toilet! • One way you can tell if you are getting enough water is to look at the color of your pee in the toilet. ○ If it looks clear, like lemonade, or lighter, then you have enough water in your body. ○ If it looks darker in color, like apple juice, then you need more water.

4th Grade	**Water-Wise Practices** Supplies: Whiteboard and dry-erase markers
Discussion	• All living things need water to survive, but not just ANY water. Humans, like a lot of living things, require ***fresh water***, or water which is not salty, for drinking, washing and watering plants. • Did you know that only about 1% of all the earth's water is fresh water? The rest is salt water, or frozen in polar ice caps, or contained within the soil.[11] • Since fresh water is such a limited resource, we need to be careful to use it wisely and not waste it – especially as the earth's population grows to contain more and more people.[12]

	Use the dry-erase markers to write the student answers to the following question on the whiteboard:
	• Ask: Can you tell me some ways that we use fresh water?
	  ○ Some possible answers:
	  ▪ Bathing
	  ▪ Brushing Teeth
	  ▪ Washing Dishes
	  ▪ Watering Plants
	  ▪ Prepping food
	  ▪ Washing the car
	  ▪ Washing the dog
	• Now that we listed some ways that we use water, let's break into small groups (of 2, 3 or 4) and discuss ways that you can use water more wisely doing any of these activities. After a couple of minutes, each group will share their best idea and I'll write it on the whiteboard.
	Break students into small groups to discuss. Help guide discussions as needed. Allow a few minutes before bringing the group together to share their ideas. Write down each group's best idea for all to see. Take a photo to share with the teacher and BCHD. Request that the teacher email the photo to the class parents so students can use at home.

5th Grade	**Sugar in Our Drinks** Supplies – (1) *Water Tracker*, (2) *Sugar Word Cloud*, (3) *Nutrition Facts: Sugar*

Discussion	• All living things, including humans, animals and plants, need water to survive.
	• We need to drink water every day for our bodies to work properly. [13]
	  ○ If you are 8 years or older, then try to drink at least 8 cups of water each day.
	  ○ If it's hot outside, or if you are playing hard and sweating, then you will need to drink more water.
	• Consider using a water tracker to keep track of how much water you drink.
	  ○ Show laminate, *Water Tracker*.
	• Besides drinking pure water, we can also get water from drinking milk and eating fruits and vegetables. We'll talk more about this shortly.
	• Other liquids have water in them that are okay to drink sometimes but should be chosen less often because they have additional ingredients, such as added sugars and food coloring. For example:
	  ○ 100% fruit juices have vitamins but also contain sugar, whether natural or added. Some juices also have artificial flavors and colors added to them.
	  ○ Sodas contain sugar or artificial sweeteners and sometimes caffeine.
	  ○ Milk has lactose, a natural sugar. However, most flavored milks like chocolate, vanilla and strawberry, have extra sugars added.
	  ○ Sports drinks contain added sugars and colors, sodium and flavoring.
	• As you learned in a previous lesson, the Nutrition Facts label lists the ingredients (what's inside) your food and drink so you know what is going into your body.
	• Understanding the Nutrition Facts label can help you make healthy food choices.

	○ You can find out if there is added sugar in your drink by reading the Nutrition Facts label. • First, you need to be familiar with the different words for sugar. ○ Ask: Do you know any other words for sugar? ○ Use the laminate, *Sugar Word Cloud*, to familiarize students with the different words that are used in sugar-sweetened beverages. • On a Nutrition Facts label, you will see the amount of sugar listed in grams. • Children ages 2 and older should aim for less than 25 grams (about 6 teaspoons) of added sugar per day.[14] • Show the laminate, *Nutrition Facts: Sugar*. ○ Let's look at these sample Nutrition Facts labels for a sports drink and soda. • Ask: Do you see any of the words from the *Sugar Word Cloud*? (Volunteer, Since the print is small, you will need to read the ingredients aloud.) ○ Answer: High fructose corn syrup is in the cola and sports drink. • Ask: How much sugar is in these items? ○ The cola has 39 grams of sugar. This is a lot more than the recommended amount of sugar you should have in an entire day! ○ The sports drink has 21 grams of sugar, nearly the recommended daily limit for children your age.

WATER TASTING

K - 5th	**Creative & Hidden Ways to Get More Water** Supplies – (1) *Recipes to Make Water More* Fun, (2) Eat *Your Water*
Discussion	• In addition to drinking water, there are other ways to reach individual water goals.[15] ○ Drink other beverages in moderation. (Skip for 5th grade since they already discussed) ▪ Fruit juices, such as orange juice or apple juice, are another way to obtain water. However, since they have natural and/or added sugars, they should be consumed in moderation. ○ Eat your water. ▪ Show laminate: *Eat Your Water* ▪ Fruits and vegetables contain large amounts of water. ○ Make fun recipes. ▪ Show laminate: *Recipes to Make Water More Fun* ▪ Add flavor to water with slices of fresh lemon, cucumber, berries or watermelon. ▪ You could also use herbs, such as mint, or spices like ginger. ○ Keep water handy. ▪ Pick out a water bottle you like and take it with you. ○ Use frozen fruit in place of ice cubes. ○ Try using a "fun" straw or cup to make drinking water more entertaining. • Option: Ask students to brainstorm water recipes or come up with ways to make drinking water more enjoyable.

Activity	• For this activity, you will need your herb-infused water pitcher, cups, and an optional tray for serving. • Pour into cups and allow students to try.

Switch groups after 10 minutes for K – 2nd and 13 minutes for 3rd – 5th

SOIL PREPPING ACTIVITY: *(10 MINUTES for K – 2nd, 13 MINUTES for 3rd – 5th)*

**Happening at the same time as the water activity, while the class is divided into 2 groups. **
Prepare the soil for planting warm season crops by cultivating and amending the soil.

Grades	Activity: Preparing the Soil for Planting *While soil prepping, review the importance of each task, which students learned about in Lesson 2. Assist students with jobs as needed.*

K – 5th	• Standing at the opposite side of the garden bed from the students, explain that they will be prepping the soil for planting.
	• If you share a bed with another class, point to where they will be working.
	• Ask: Who remembers what it means to "amend" the soil? *To amend soil is to add and mix in nutrients, usually in the form of compost, to the soil that is already there.*[16]
	• Ask: Who remembers WHY we amend soil? *We amend soil because the previous plants that grew in the same place already took the nutrients, leaving the soil depleted (without enough nutrients) for the new plants.*[17]
	• **K:** The Garden Angel volunteers already removed the plants from these beds.
	• **1st – 5th:** Students will remove the old plants before amending the bed with compost (or bag of amended soil.)
	• **All** students will cultivate the soil.
	  ○ Ask: Who can tell us what it means to "cultivate" the soil? *Cultivating (fluffing up) the soil aerates it, creating air spaces throughout the soil.*
	  ○ Ask: Who remembers WHY we aerate the soil? *Cultivating soil breaks up soil that has become hard and compacted over time because:*
	  ▪ *Decomposers living in the soil need air spaces so that they can breathe and move around.*
	  ▪ *Fragile seedlings need soil to be light and fluffy for pushing their hair-like roots through.*
	  ▪ *Water needs soil to be soft and loose so that it can soak in and reach the deeper layers.*[18]

K - 1st	• All students will cultivate the soil. • For each group: ○ Pass out the cultivators, kneelers and optional gloves to the students.

	○ Have the students spread out around the bed and cultivate the soil as deeply as they can. ○ Add either ½ of the amended bagged soil or compost after 3-4 minutes. ○ Resume cultivating to incorporate amendment. ○ Switch groups and repeat. • Gently rake the soil surface until it is level.
2nd – 5th	<u>Group 1 – Remove Old Plants</u> • Allow students to take turns removing the plants in the bed. • Instruct them to GENTLY shake or brush off the soil from the roots of each plant so that it falls back into the garden bed. • Place the removed plants in the wheelbarrow or large container. • Switch groups. <u>Group 2 - Cultivate the Soil</u> • Pass out the cultivators, kneelers and optional gloves to the students. • Instruct the students to spread out around the bed and cultivate as deeply as they can. • Give students 3-4 minutes before adding either amended bagged soil or compost: ○ *<u>If you have a bag of soil resting against your bed, this means that your soil level is low. Have the students cultivate the soil for 3 minutes before tearing the bag open and spreading the contents over the soil. Resume cultivating to thoroughly mix the new soil with the existing soil.</u>* ○ *<u>If you don't have a bag of soil resting against your bed, use the small bucket with the "A" and "B" markings on the inside. A sign inside the composter will let you know to either fill your bucket to the "A" line or the "B" line.</u>* • Resume cultivating to incorporate amended soil or compost. • Gently rake the soil surface until it is level.

<u>Bring the entire class back together at the garden bed.</u>

<u>PLANTING ACTIVITY:</u> ***(8 MINUTES for K – 2nd, 14 MINUTES for 3rd – 5th)***

Refer to the Planting Guide to show you where to plant within the beds.

Grades	**What You're Planting**
K – 5th	• Each grade will plant two different warm-season crops. • These plants love the long, intensely warm summer days. • If we were to plant them in the winter, they wouldn't grow as well as they do in the warmer months. • They like warmer air and soil and longer periods of sunlight compared to cool-season plants.[19]
K – 1st	Will plant Squash and Beans.

	• Squash grows on a vine and requires lots of room to sprawl on the ground. It can also be staked.[20] • Beans grow on either a vine or a bush. These are bush beans.[21]
2nd – 3rd	Will plant Peppers and Tomatoes. • Peppers grow as a small bush.[22] • Tomatoes grow on either a vine or a bush. These are bush tomatoes.[23]
4th	Will plant Basil and Eggplant. • Basil grows as a small bush.[24] • Eggplant also grows as a small bush.[25]
5th	Will plant Sunflowers and Pumpkins. • Sunflowers come in many varieties, reaching various heights, but all have a stalk with one or multiple inflorescences, which is a cluster of flowers.[26] • There are many different kinds of pumpkins with some of the smaller varieties growing on a small bush. These pumpkins will grow on a vine."[27]

Grades	**Create Rows for Planting**
K – 5th	• Use the row-planting guide tool and ruler to create rows for planting. • Remind them how to use this tool to create four equally spaced rows in the bed. • Select 2 students to come forward and use the tool to create a guide for the first row of seeds (a few inches away from the edge of the bed). • Have them stretch it across the bed and secure it in the soil so the yarn is taut. • Remind them that when planting different plants in the same bed, it's best to understand how each plant grows so we can create the optimal growing situation for them – "tall plants in the back."[28]

Grades	**Measure Soil Depth**
K – 5th	• Using the seed packet laminates, remind students that we read the instructions to learn the specifics about the seeds we're planting. o Call attention to the ***depth*** highlighted in yellow. • Demonstrate how to measure the depth on their finger with the ruler, starting at the tip of their index finger. • Hand off the ruler to your helper to assist them with measuring the depth on their fingers.

Grades	**Place Seeds in Soil**
K – 5th	• Ask students to form two lines in front of the bed for planting. Then you will give them their seeds. • Tell them to cover their seeds with their other hand to avoid losing them. • Instruct students to approach the box two at a time and follow the yarn guideline to plant their seed beneath, making a straight row.

	• Direct them to poke a small hole, according to the depth they measured on their finger and drop in the seed. • Have them put the popsicle stick in the soil "above" their seed to mark the spot. • Have them pinch the soil to cover their seed with soil, leaving it fluffy and not patting the dirt down. • The next student approaching the box can see where the last seed was planted as indicated by the popsicle stick and determine where to plant their own seed. They will then move the popsicle stick to mark their own spot.

Grades	**Continue Planting**

K – 5th	• Instruct the students to move to the back of the line to receive another seed. Wait to give students seeds at this point, making sure that only 2 rows of each type of seed are planted.
	• When the second row of the first seed is completed, begin distributing the other seed type until 2 rows of each seed type are planted.
	• Have the last students that planted in each row move the row-planting guide tool to start a new row.
	• If students are capable, select a different student to come forward to label each row.
	  ○ Give them a Sharpie and a plant label.
	  ○ Have them write the date on one side of the label and the plant name on the other.
	  ○ Instruct them to insert the label at the end of the row.
	  ▪ Each row gets one plant label.
	  ○ If students are too young, have your helper write the label and give it to the students to put into the soil.
	• At completion, you should have two rows of each seed type planted (four rows total).

WATERING *(3 MINUTES)*

Grades 3rd – 5th Only

Grades	**Watering the New Seeds** ***Note: Now that the seeds are in the ground, they will remain in a dormant state until they are watered. Water stimulates the seeds to burst open, reach their root downward and sprout upward. The sprout is the baby stage of the new plant. The root is both the sprout's anchor and its source for obtaining nutrients.*[29]
K – 2nd	• Tell students that you'll give their seeds a thorough watering while they go back to class.
3rd – 5th	• Have your co-volunteer retrieve the half-filled watering cans and set them down in front of the bed. • Instruct students to form a line behind each watering can so they can take a turn watering.

	• Demonstrate how to lightly distribute the water by constantly moving the can side to side over the newly planted seeds, pausing as needed to avoid flooding.
	  ○ Inform them that we always use a sprinkle top watering can for new seeds. It is designed for gentle watering that simulates rain by distributing the water widely, allowing it to soak into the soil.
	  ○ We don't use watering cans with a stream spout for new seeds because the seeds would get pushed out of place from the big blast of water that would come out. This would happen because new seeds don't have roots to anchor them in place.
	• Allow each student to have a 5-second turn before passing the can to the next student.
	• Once they finish their turn, have them return to the co-volunteer for "Did You Know? Fun Facts."

CLOSING

(ALL GRADES: 1 MINUTE)

- Bring students together to close the lesson and recap what they learned.
- Tell them that the crops will be ready to harvest in the middle of summer and volunteers will harvest and donate the produce to food banks to help feed others.
- Let them know that the volunteers will also plant seeds for them. When they return in the fall, the garden should have new warm-season crops growing.
- If time allows, have students draw/write a "Reflection Page" after the lesson, either in the garden or with the teacher when they return to class.
- Thank the other volunteers and teacher.
- Thank the students for joining you today and all year in the garden.
- Dismiss them.

***Don't forget to report your lesson as delivered with the online form!**

Scan this QR code with your phone for scheduling and reporting lessons as delivered:

From the computer, click the link that was emailed to you by your Lead Volunteer:

LWK Tracking Links 2023-24

Resources

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