

Local Root Veggies

Carrots, Beets, Potatoes

GRADE K-1

Month: December

Time Required: 30 minutes

Tasting: Available local root veggies (Carrots, Beets, or Potatoes)

Lesson Goals

- Students will increase their knowledge of fruits and vegetables.
- Students will learn to try new fruits and vegetables and increase their preference for them.
- Students will learn that their peers like to eat fruits and vegetables.
- Students will learn how to ask their parents/caregivers for the fruits and vegetables tasted in class.

Lesson Objectives

- Students will be able to measure and space seeds.
- Students will be able to identify the needs of roots, including space.

Materials

- Seed tape supplies:
 - 2 inch strips of biodegradable paper, 1 strip per table group (ex: brown paper towel, toilet paper, newspaper)
 - Carrot seeds
 - Paper plates for seeds, 1 per table group
 - Glue (standard craft glue or homemade using flour and water)
 - Pencils
 - 2 inch cardboard spacers, 1 per table group
- Water bottle, flashlight, and piece of cardboard for Engage Activity
- Root vegetable image (included in lesson)
- Locally-grown root veggies of your choosing: carrots, beets, or potatoes store well into December.

Preparation

- Prepare seed tape supplies. Cut paper into strips: 2 inches wide, 3 feet long. Make thick paste from flour and water.
- Prepare tasting. Consider serving root vegetables raw (chopped, or shredded into a simple salad) or cooked (mashed, roasted).

Recommended Books

(Send book suggestions to suzy.wilson@idph.iowa.gov.)

Standards Connection

This lesson supports the following Iowa Core standards.

Health Education

[Standards 1, 2, 3, 4, 5, 7, 8](#)

Science

Kindergarten - [K-LS1-1](#).

LS1.C: Plant survival needs

First grade - [1-LS1-1](#).

LS1.A: Structure and function

Lesson Checklist

- Physical Activity
- Tasting
- Voting
- "Asking" Discussion
- Newsletters, Bingo cards, Stickers, Incentives
- Science Connection: Things plants need (K) & Parts of a plant (1st)

Engage

1. Introduction: 2 minutes

The “Introduction” section is a time to introduce yourself, recap previous lessons, establish norms, or introduce the day's lesson.

2. Engage Activity: 6 minutes

The “Engage Activity” section has two purposes: 1) to activate students' prior knowledge and 2) to engage every student.

Role-Playing Seed Spacing (adapted from FoodCorps lesson, [Seed Tape](#))

Gather students in a big circle. Say, *All living things need space. In your head, think of an activity you like to do that you need space to do. For example (share a personal example of something you need space for). Say it out loud on the count of three. 1-2-3.* Students share their answers. Recall a few answers for the whole group to hear.

Thanks for sharing. I want everyone to scoot in so we're all really close together. Now, let's try stretching. Lift your arms and stretch out carefully. What happens when you try to stretch? Is it comfortable stretching when we are sitting this close? What do you need to be able to stretch like you want to? Plants are like us in this way. They can't grow as big and healthy as they'd like to if they don't have enough space from other plants around them. Ask everyone to take three steps back and try to stretch and grow, now pretending they're a plant. Ask, Does that feel better?

We can really stretch out now and get all the things plants need to grow!

- *A plant's roots need space so that they can spread out underground. Reach down and touch your roots. Wiggle your roots into the soil. A plant's roots also need water from the soil. Lightly mist (or pretend to mist) students feet with a spray bottle of water.*
- *Now reach your leaves up and touch the sky. A plant's leaves need space so it can access light. Wave your leaves around to get the sunlight. Shine a flashlight on student's hands.*
- *A plant needs space for air circulation. Lean over as far as you can to the right and to the left. Fan a piece of cardboard around the circle for students to feel the air.*

Great stretching, plants!

Explore

3. Experiential Learning: 12 minutes

This is a time for students to familiarize themselves with what you'll be tasting. The best way to do this is through a hands-on or exploratory activity.

Transition students to their desks. Opportunity for three deep breaths.

All living things need space. Show an image of root vegetables growing underground (example included in this lesson). When plants grow too close together, they have to compete for these resources: sun, soil, water, and air. When they have enough space, some plants grow into big delicious roots that we can eat. These plants are called root vegetables. What are they called? Choral response: ("root vegetables!") Carrots are one kind of root vegetable. What are carrots? Choral response: ("a root vegetable!") We're going to taste some carrots today after we explore their seeds.

Make Room for Roots with Seed Tape! ([click here for demo from ISU Extension](#))

Show students your seed tape sample and say, We're going to make seed tape to give these carrot seeds space right from the start. In the spring, when it's time to plant outdoors, we can plant our carrot seed tape in the ground for perfectly spaced root vegetables, and our carrots will have plenty of room to grow!

Using the doc-cam, demonstrate how to use the spacer to mark the strip of paper with a pencil every two inches in the middle of the strip. *We'll measure how far apart our seeds should be, and we'll paste the seeds onto our paper.* Show them how to put a dot of paste on each mark, and put a carrot seed on each glue dot. Note how tiny the carrot seeds are! Show them how to fold the paper in half over the seed.

Pass out a paper strip, spacers, and pencils to each table group. Groups should share dishes of paste and dishes of seeds. Move through the room, checking in with students and providing guidance where needed. Remind students to fold the paper over and gently press to secure it. Show students where to put their tape to dry. If you intend to plant in the school garden in the spring with these students, let the seed tape dry, roll it up, and store it in a sealed container.

4. Tasting Activity: 5 minutes

The "Tasting Activity" section is when students get to try the fruit or vegetable. Don't forget to review your food tasting norms (for example, "don't yuck my yum").

Root Veggie Taste Test Ideas:

1. Offer classrooms 2 versions of root veggies (ex: carrot, beet) - raw or as a shredded salad.
2. Offer classrooms different types of the same root veggie (ex: two carrot varieties, rainbow carrots).
3. Use all 5 senses to compare and contrast the samples.
4. Discuss flavors, textures, colors, etc., as a class.

Before you taste any samples, be sure to share your brave tasting rules (for example, don't yuck my yum, we all try together, etc.). As students taste their root veggie samples, talk the class through some descriptive words to describe the different root veggie flavors.

Local Food Facts! *If you're tasting local food, be sure to share information about where it came from: Iowa farm/farmer, location, distance from the school (a map is a great visual here!), when it was harvested, how did you get it, etc.*

Reflect

5. Voting Activity: 2 minutes

This is a time for students to give their opinion on what they tried!

As students taste the local root veggies, have them vote with their thumbs. Observe their voting and offer positive reinforcement regarding the Brave Taster Rules. If a student dislikes the tasting, perhaps ask what they would change about it.

6. Reflection: 3 minutes

Reflection is one of the most important processes for students to process and retain new information or experiences. Give students an opportunity to reflect on what they've learned or tried in your lesson. This is an excellent place for students to practice the "Asking Discussion."

Choral Response:

I'm going to ask a question and you're going to quietly think to yourself. When I say "go," you can say your answer aloud. Let's practice...

- *What month is it? (December)*
- *What kind of vegetable grows underground? (Root vegetables)*
- *What root vegetable did we taste today? (Carrots, beets, radish, etc.)*
- *What's one thing that all plants need to grow? (Space, sun, soil, water, air)*

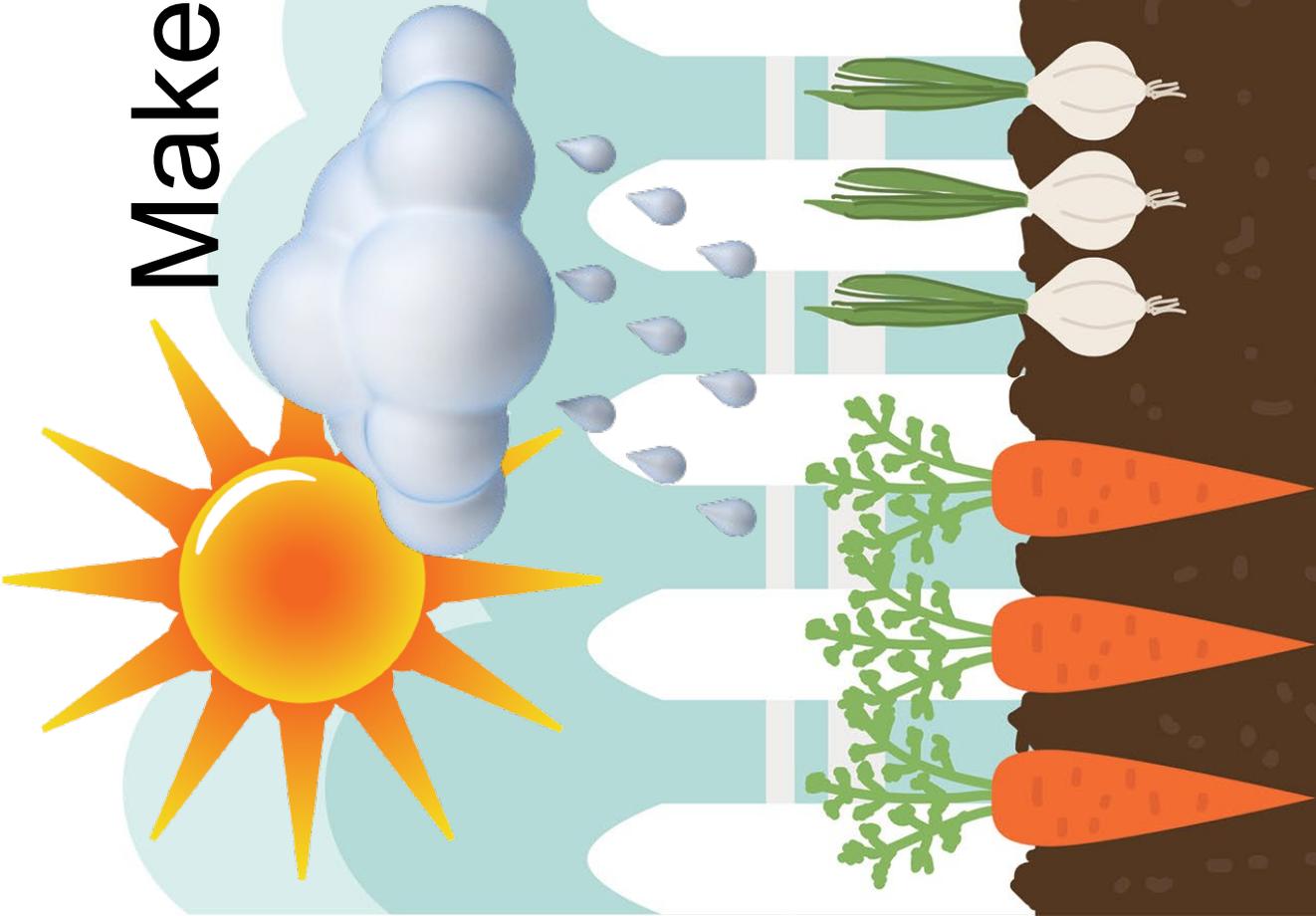
Asking Discussion:

Raise your hand if you're excited to go home and tell your family about tasting local root vegetables.

- *Will someone share what they liked or loved about the local root vegetables? Select a couple students to share.*
- *Will someone share what they would change about the local root vegetables? Select students to share.*
- *Ask a student with a raised hand: if you wanted to try local root vegetables at home, how might you ask your grown-ups?*
- *You might also ask additional questions like, where could you find carrots or other kinds of local root vegetables? What else do you know about root vegetables?*

*Leave newsletters, incentives, stickers, and BINGO sheets with the teachers to pass out.

Make Room for Roots!



Additional Materials

Physical Activity

Choose a physical activity to incorporate into the lesson. Ideas for physical activities are available at <https://idph.iowa.gov/inn/play-your-way/brain-breaks>.

What You Need to Know About Root Veggies

- Look for carrots that are bright orange (most commonly), firm, and smooth.
- Carrots can be refrigerated for up to 2 weeks in a plastic bag with the tops removed. Rinse under cool water before eating.
- Look for beets that are dark, round, firm, and smooth.
- Remove the beet leaves and store in the refrigerator in a plastic bag for up to 3 weeks. Scrub with a vegetable brush under cool water before eating.
- Both beets and carrots can be eaten cooked or raw.
- Look for firm, smooth potatoes without dents. Avoid green potatoes or those with soft spots or sprouts.
- Potatoes can be stored for 3-4 weeks in a dark, cool, well ventilated place. Scrub with a vegetable brush under cool water before cutting or cooking.

Facts About Root Veggies

- Carrots are in season June - October; beets are in season June - November. Many potatoes are in season year-round, but the peak season for most potatoes is June - October.
- Carrots are the root part of the plant, growing underground, and come in orange, yellow, white, red, and purple varieties.
- Carrots are a part of the Apiaceae plant family, which also includes parsley.
- Beets also grow underground as the root part of the plant. Beets can be long or globular in shape and range from purple-red to white.
- Potatoes are technically tubers (underground stems), but included in the “root veggies” because they grow underground. They are part of the nightshade plant family. They’re a major crop all around the world.
- Potatoes come in a variety of colors including yellow, brown, and even purple!

Health Connection

- Carrots are an excellent source of vitamin A and the antioxidant lutein, both of which are good for our eyes!
- Beets provide antioxidants (from their rich color), vitamin C, and fiber.
- Potatoes provide potassium and vitamin C. Keep the skin on for some extra fiber!
- Potassium helps keep our hearts and muscles healthy.
- Vitamin C helps heal our skin and helps our bodies fight off illness!

References and Resources

<https://spendsmart.extension.iastate.edu/cook/produce-basics/>

<https://fcs-hes.ca.uky.edu/piukp-recipes>

<https://bit.ly/3xlZKzc>

<https://www.britannica.com>

<https://www.fns.usda.gov/usda-foods/household-product-information-sheets-and-recipes>

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