

Local Root Veggies

Carrots, Beets, Potatoes

GRADE
2-3

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 give examples of adaptation by plants and people.
- Students will be able to describe the process of cold-sweetening in root vegetables.

Materials

- Locally-grown root veggies of your choosing: Carrots, beets, or potatoes store well into December.
- “Cold Roots are Sweet Roots!” half-sheet, one per student

Preparation

- Print “Cold Roots are Sweet Roots!” half-sheets and cut one per student.
- Prepare root veggie tasting. Ideas include:
 - Sourcing and sampling a cold-sweetened local root vegetable (ex: carrots or beets). Sample a local cold-sweetened root veggie and one from the store to really taste the difference!
 - Offer classrooms 2 versions of root veggies (ex: carrot, beet) - raw or as a shredded salad.
 - Offer classrooms different types of the same root veggie (ex: two carrot varieties; rainbow carrots).

Standards Connection

This lesson supports the following Iowa Core standards.

Health Education

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

Science

Second grade - [2-LS4-1](#).
LS4.D: Biodiversity

Third grade - [3-LS4-3](#).
LS4.B: Adaptation

Lesson Checklist

- Physical Activity
- Tasting
- Voting
- “Asking” Discussion
- Newsletters, Bingo cards, Stickers, Incentives
- Science Connection: Biodiversity (2nd) & Plant adaptations (3rd)

Recommended Books

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

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.

*Today, we're going to learn about how plants **adapt** to cold weather. Note new vocabulary word: write out, repeat and define. An adaptation is a special skill that helps a living thing survive by adjusting to change. People use adaptation to adjust to different seasons and weather. I'd like to know, what is something you do to stay warm in the winter when it's cold outside. As an example, share something that helps you stay warm in the winter.*

Think-pair-share:

- *Think to yourself quietly.* Students can close their eyes, put their fingers to their temples, and think real hard.
- Ensure all students have a partner. Then, have students turn to a partner and share their response.
- After a couple minutes, bring the class back together and select students to share out. If you use “pick a stick,” this is a good way to randomly select students to share.

***Alternate activity: pass an object around the circle, indicating that a student is invited to share with the rest of the class when they are holding the object. Play music while students pass the object. Then stop the music and whoever has the object will share.*

These are excellent adaptations! In the winter, we keep our bodies warm by... (recap students' specific examples which may include bundling up in warm clothes and coats, being warm indoors, eating and drinking warm foods and drinks). We can also move our bodies around to stay warm. Let's try it! Instruct students to move with you. To stay warm, we can:

- *Run in place*
- *Jump up and down*
- *Dance*
- *Do jumping jacks*
- If time allows, have students share some physical activities

Explore

3. Experiential Learning: 8 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.

Explain, *Just like people, plants use adaptation to adjust to changing weather and seasons. While many plants can't grow in cold weather, some plants - like root vegetables - use adaptation to keep growing even when it's cold. So what do root vegetables do to adapt in cold weather? We know they can't drink hot cocoa or do jumping jacks to stay warm like we can! On the doc-cam is a picture of root vegetables growing in the winter and a clue that says, "Cold Roots are Sweet Roots."* Read the clue together as a class. *In your table groups, discuss some ideas you have for how root vegetables change when it's cold. After a few minutes, ask a few tables to share their ideas out loud. These are great ideas!*

Adapt the following explanation to build on students' responses. *Let's read our clue again.* Read the clue together as a class: *"Cold Roots are Sweet Roots." What's something that's sweet? (sugar*) Explain, Root vegetables adapt to cold weather by making sugar. The sugar inside the root keeps it from freezing. This is called cold-sweetening. Let's say it together: "cold-sweetening." Not only does the sugar keep the root vegetable from freezing, but they taste sweeter, too. Once it gets very cold outside, we can harvest and eat cold-sweetened root vegetables - like beets, carrots and potatoes - which we are going to taste today!*

(*Note to educators: Eating foods with naturally occurring sugar, like fruits and vegetables, is not a concern since the amount of sugar is small, and the fruits and vegetables provide a lot of vitamins, minerals and other nutrients. Alternatively, foods with a high amount of added sugar are often lacking in nutrients and high in calories. Eating too much added sugar contributes to poor health.)

4. Tasting Activity: 6 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. Source and sample a cold-sweetened local root vegetables (ex: carrots or beets). Sample a local cold-sweetened root veggie and one from the store to really taste the difference!
2. Offer classrooms 2 versions of root veggies (ex: carrot, beet) - raw or as a shredded salad.
3. Offer classrooms different types of the same root veggie (ex: two carrot varieties; rainbow carrots).
4. Use all 5 senses to compare and contrast the samples.
5. 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: 6 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 do people and plants use to adjust and survive in changing weather? (Adaptation)
- What's inside cold-sweetened root veggies that keeps them from freezing? (Sugar)
- What root vegetable did we taste today? (Carrots and/or beets)

Cold Roots Are Sweet Roots worksheet: Students can use this half-sheet to draw a picture or write about how root vegetables use adaptation to stay warm in the winter.

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.

Cold Roots are Sweet Roots!



Cold Roots are Sweet Roots!

Draw a picture or write about how root vegetables use **adaptation** to stay warm in the winter.

Draw a picture or write about how you use **adaptation** to stay warm in the winter!

This institution is an equal opportunity provider.
This material was funded by USDA's Supplemental Nutrition Assistance Program – SNAP. It was developed by the Iowa Department of Public Health in partnership with the Iowa Department of Human Services. August 2021



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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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