

Local Leafy Greens

Microgreens, Arugula, Lettuce

GRADE
K-1

Month: April

Time Required: 30 minutes

Tasting: Available local leafy greens

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 demonstrate the difference of fast and slow.
- Students will be able to identify leafy greens as fast growing plants.

Materials

- Green, yellow, red cards (images for doc-cam or use construction paper)
- Planting materials: a variety of microgreen seeds, potting soil, 4 or more shallow containers (ex: clean take-out containers, shallow cups, empty clamshells), container labels, squeeze bottle filled with water, sticky notes
- Leafy greens for tasting, such as:
 - Multiple types of microgreens (ex: kale, arugula, collard, mustard).
 - 2+ types of leafy greens (ex: microgreens, arugula, lettuce, spinach).

Preparation

- Consider what type of microgreens or leafy greens you want to offer for tasting and grow with your classrooms.
 - Some of the fastest growing microgreens include kale, arugula, collard and mustard.
 - Some of the easiest types of microgreens to grow are lettuce, broccoli, cauliflower, Napa cabbage, mustard, chia, radish, turnip, bok choy, sesame, cress, sunflower or buckwheat.
- Consider pre-filling containers with soil and labeling the containers with the varieties of microgreens your classrooms will be planting.

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 plant (1st)

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.

This April lesson is a great opportunity to take the learning outdoors! Is there a school garden space or open green space area where classrooms can meet you? If you have access to a school garden or indoor growing space, consider planting some fast growing greens (arugula, microgreens, leaf lettuce) to harvest for this month's lessons. Or, during the planting activity, have students plant leafy greens in the garden space.

Use a table to prepare the planting materials. Keep them organized and accessible for the planting activity.

2. Engage Activity: 6 minutes

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

Fast - Slow - Freeze!

Today, we're going to explore fast and slow. I'm going to say an action and show a color on the doc-cam. Green means do the action fast. Yellow means do the action slow. And red means freeze. You will stay in your spot and move in place. For example, if I say “run” and show a green card, you will run in place fast. When I change it to yellow, you will run slowly. When I change it to red, you will freeze. Ready?*

- *Jump! Show green card, yellow card, and red card. Freeze!*
- *Clap! Show yellow card, green card, and red card. Freeze!*
- *Jumping jacks! Show green card, yellow card, and red card. Freeze!*
- *Dance! Show yellow card, green card, and red card. Freeze!*
- *Think of something you like to do very fast. Ready? Show green card, then red card. Freeze!*
- *Think of something you like to do very slowly. Ready? Show yellow card, then red card. Freeze!*
- *Repeat with more moves. Alternate the order of the colors. End on “Freeze!”*

Thanks for showing us your fast and slow! The food we'll be tasting today is a vegetable that grows very fast.

**If outdoors, use 3 sheets of construction paper for this activity.*

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.

Have students sit (opportunity for 3 deep breaths). *Some foods grow very slowly. Once planted, we have to wait a long time before they are ready to eat. Some foods can grow very fast. Leafy greens, like microgreens, grow fast! Let's watch a video to see how fast microgreens grow.*

[Time lapse video of microgreens growing](#): Play video up to 1:15.

Note and count the passing days (visible in the upper left corner). Narrate the process of growth from seed to microgreen. Point out the parts of the plant. *When the seeds begin to grow, the roots grow first, then the stem, then the leaves - the part of leafy greens we eat.*

**If outdoors, consider having students act out a fast and slow version of a seed growing into a plant.

Planting Instructions (adapted from [Choose Iowa Food of the Month: Grow your Own Microgreens!](#))

Microgreens can be ready to eat in just about a week! We're going to work together in groups to plant some microgreens and watch them grow in your classroom. Split students into four or more small groups. Each group will plant one tray of microgreens. Share instructions while you and the teacher pass out materials.

1. Give each group one labeled container filled with potting soil, at least 1-inch deep. If outdoors, consider having small groups fill their own containers.
2. Give each group a cup of seeds that corresponds to the label on their container. Instruct students to spread the seeds over the soil evenly.
3. *Plants need water and sunlight.* Mist water over the seeds to moisten them using a squeeze bottle. Place the containers in the sun. A south-facing window is ideal.
4. *In your small groups, make a guess: how fast will they grow?* Have students predict how long it will take for their microgreens to be ready to eat. They can write their guess on a sticky note and attach it to their 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").

Before you pass out any samples, be sure to share your brave tasting rules (for example, don't yuck my yum, we all try together, etc.). As students receive their samples, talk the class through using their senses to explore the tasting.

Leafy Greens Taste Test Ideas:

1. Offer classrooms multiple types of microgreens (ex: kale, arugula, collard, mustard).
2. Offer classrooms 2 or more types of leafy greens (ex: microgreens, arugula, lettuce, spinach).
3. Use all 5 senses to compare and contrast the leafy greens.
4. Discuss flavors, textures, colors, seed shapes, etc., as a class.

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 leafy greens, 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.

- *What kind of vegetable did we taste today? (Microgreens, leafy greens)*
- *What kind of vegetable did we plant today? (Microgreens, leafy greens)*
- *Do leafy greens grow fast or slow? (Fast)*
- *How fast will your microgreens grow? (Students say their predictions aloud)*
- *What do microgreens need to grow? (Water, sunlight, soil or growing material)*

Asking Discussion:

Raise your hand if you're excited to go home and tell your family about tasting leafy greens.

- *Ask a student with a raised hand: if you wanted to try leafy greens at home, how might you ask your grown-ups?*
- *You might also ask additional questions like, where could you buy microgreens or other types of leafy greens? What else do you know about microgreens or leafy greens?*

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

Leave these instructions for the classroom: Lightly water the trays at the beginning and the end of the day to keep the soil moist. Use scissors to harvest microgreens when they have developed one or two sets of leaves. Cut the stems right above the soil. Wash and enjoy another classroom taste test!

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 Leafy Greens

- Look for greens, such as microgreens and spinach, with a deep green color, crisp leaves, and thin stems. Avoid leafy greens that are yellow or wilted.
- Greens can be stored 3-5 days in a plastic bag with a paper towel in the refrigerator. Rinse greens under cool water until the water runs clear (several times) right before eating.
- Look for dark green kale with lots of leaves and thin stems. Avoid kale that has a strong smell.
- Store fresh, dry kale in a plastic bag in the produce drawer of the refrigerator for up to 5 days. Do not wash before storing.

Facts About Leafy Greens

- Kale is in season May - June and September - November. It's a cruciferous vegetable in the Brassica family, the same plant family as cabbage, broccoli, and Brussels sprouts.
- Kale comes in a variety of colors including blue-green, light green, purple, and red. Baby kale is a milder alternative to regular (curly) kale.
- Spinach is in season May - October. Spinach is the leaf of the plant and grows just above the ground. It is part of the amaranth plant family.
- California, Texas, New Jersey, and Arizona are the top spinach-producing states.
- Spinach is usually green in color, but there is also a purple variety.
- Microgreens are in season year-round since they can be grown indoors or outdoors. They only need about 4 hours of sunlight a day.
- Microgreens are immature plants harvested at less than a month old.
- Common varieties of microgreens include broccoli, cauliflower, mustard, lettuce, chia, bok choy, turnip, cress, and sunflower.

Health Connection

- Dark leafy greens, like kale and spinach, provide vitamin C, Vitamin A, vitamin K, calcium, iron, fiber and many other nutrients.
- Microgreens often have the same amount or more nutrients than mature greens.
- Calcium helps keep our bones strong. Iron helps our blood transport the oxygen we breathe, and vitamin K is good for our hearts.
- Vitamin C helps heal our skin and helps our bodies fight off illness. Vitamin A is important for eyesight and keeps our skin healthy. Fiber is good for our digestive systems and our hearts.

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.iowafarmtoschoolearlycare.org/choose-iowa-campaign>
<https://www.britannica.com>
<https://www.agmrc.org/commodities-products/vegetables/spinach>
<https://hortnews.extension.iastate.edu/2019/03/grow-your-own-microgreens>
<https://www.fns.usda.gov/usda-foods/household-product-information-sheets-and-recipes>

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