Local Summer Crops
Tomatoes, Eggplant, Cucumbers

GRADE 2-3

Month: September
Time Required: 30 minutes
Tastings: Tomatoes, Eggplant, Cucumbers

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 list conditions for growing summer crops.
- ❑ Students will be able to identify tomatoes, eggplant and/or cucumbers as summer crops.

Materials

- ❑ 4 prepared “healthy habit” signs to post in the room; tape
- ❑ Image of tomato plant and sun (included in lesson)
- ❑ Locally-grown summer crop of your choosing: Tomatoes (fun varieties like cherry, sungold, roma, heirloom), cucumber, or eggplant
- ❑ Knife (for educator to demonstrate cutting)
- ❑ Napkins or paper plates

Preparation

- ❑ Write or draw on 4 pieces of paper to create “healthy habit” signs.
- ❑ If using, print Healthy Habit All Star coloring page or activity sheet.
  - Coloring Sheet: Print page 2, Healthy Habit All Stars Coloring Book, Glen with his tomato plant
  - Activity Sheet: Print, Healthy Habit All Stars Awesome Activity Guide

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
Second grade - 2-LS4-1.
LS4.D: Biodiversity

Third grade - 3-LS4-3.
LS4.C: Adaptation

Lesson Checklist

- ❑ Physical Activity
- ❑ Tasting
- ❑ Voting
- ❑ “Asking” Discussion
- ❑ Newsletters, Bingo cards, Stickers, Incentives
- ❑ Science Connection: Biodiversity (2nd) & the Effect of weather on plants (3rd)

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.

In each of the four corners of the room, post a paper sign, denoting each of the themes related to 5-2-1-0 Healthy Choices Count.

1. Eating fruits and vegetables
2. Drinking water
3. Playing and moving my body
4. Limiting recreational screen time. Choose to read or play.

If this is your first lesson of the year, introduce yourself to the class and to Pick A Better Snack. Share with students, *When I come to your classroom every month, we're going to have fun trying foods together and learning about each other. So let's start today with an activity.*

2. Engage Activity: 10 *minutes*
The "Engage Activity" section has two purposes: 1) to activate students' prior knowledge and 2) to engage every student.

4 Corners Activity:
Around the room, there are four examples of things we can do to help our bodies grow and stay healthy. Maybe you did some of these things this summer! Pointing to each sign and location in the room, say, *To help our bodies grow and stay healthy, we can 1) eat fruits and vegetables, 2) drink water, 3) play and move our body, and 4) limit recreational screen time (read or play instead).*

Think in your head - which one of these did you do this summer? Did you eat fruits and vegetables? Did you drink plenty of water? Did you play outside and move your body? Did you find things to do that didn't involve a screen? When I say the magic word, "tomato," I want you to quietly walk to the spot of your choice. When you get to your spot, take turns sharing what you did to help your body grow and stay healthy this summer. For example, I [share a personal example and show which spot you would move to].

- Give students time to think and make a decision; instruct them to move to their preference and pair-share with others in their group.
- Remind students to make the decision for themselves and to not be swayed by where others stand.

After students have had time to share in their group, say, *We're going to watch a video about a kid named Hannah who learns about ways to help her body grow and stay healthy. At the end of the video, we're going to have a dance party. Ready?*

Watch 5-2-1-0 Video (5-minutes)
Link here: Hannah Stays Healthy, "Screen Time: How much it too much?"

Explore

3. Experiential Learning: *5 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 return to their desks (opportunity for 3 deep breaths). *The Healthy Habit All Stars and all of you shared about some ways you helped your bodies grow and stay strong this summer. Hannah learned that screen time is ok, just not too much, and Glen grew a tomato plant to eat. Today, we're going to taste a vegetable that grew this summer in Iowa - tomatoes!*

Vegetables that grow during the summer are called warm-season crops. Tomatoes, cucumbers, eggplant - these are some examples of warm-season crops. To grow, they need special things that only happen in the warm season. Summer crops need warm soil, lots of sunlight, and high temperatures to grow. Show image of tomato plant and sun (below in this document) on the doc cam. Read the words on the image together as a class. *These three things make summer crops grow.* Demonstrate cutting open a tomato (using doc-camera), showing students the skin, seeds, and inside.

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").

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 tomato - a practice that you'll encourage every month during PABS lesson time.

Summer Crops Taste Test Ideas:

1. Offer classrooms 2 types of tomatoes to sample (ex: different sizes, varieties, colors).
2. Offer classrooms 2 types of summer crops (ex: cucumber and tomato - a summer crop salad!)
3. Use all 5 senses to compare and contrast the tomatoes or different summer crops.
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: *3 minutes*
This is a time for students to give their opinion on what they tried!

Introduce the tradition of voting with your thumb. As students taste the summer crop(s), 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.

Reflect (cont'd)

6. Reflection: *4 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 our magic word, "tomato," you can say your answer aloud. Let's practice…

- *What month is it? (September)*
- *Whose class am I in?*
- *What vegetable did we try today? (Tomatoes)*
- *What season do warm-season crops, like tomatoes, grow during? (Summer)*
- *Where can tomatoes grow well in the summer? (places with hot weather like Iowa)*

Asking Discussion:

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

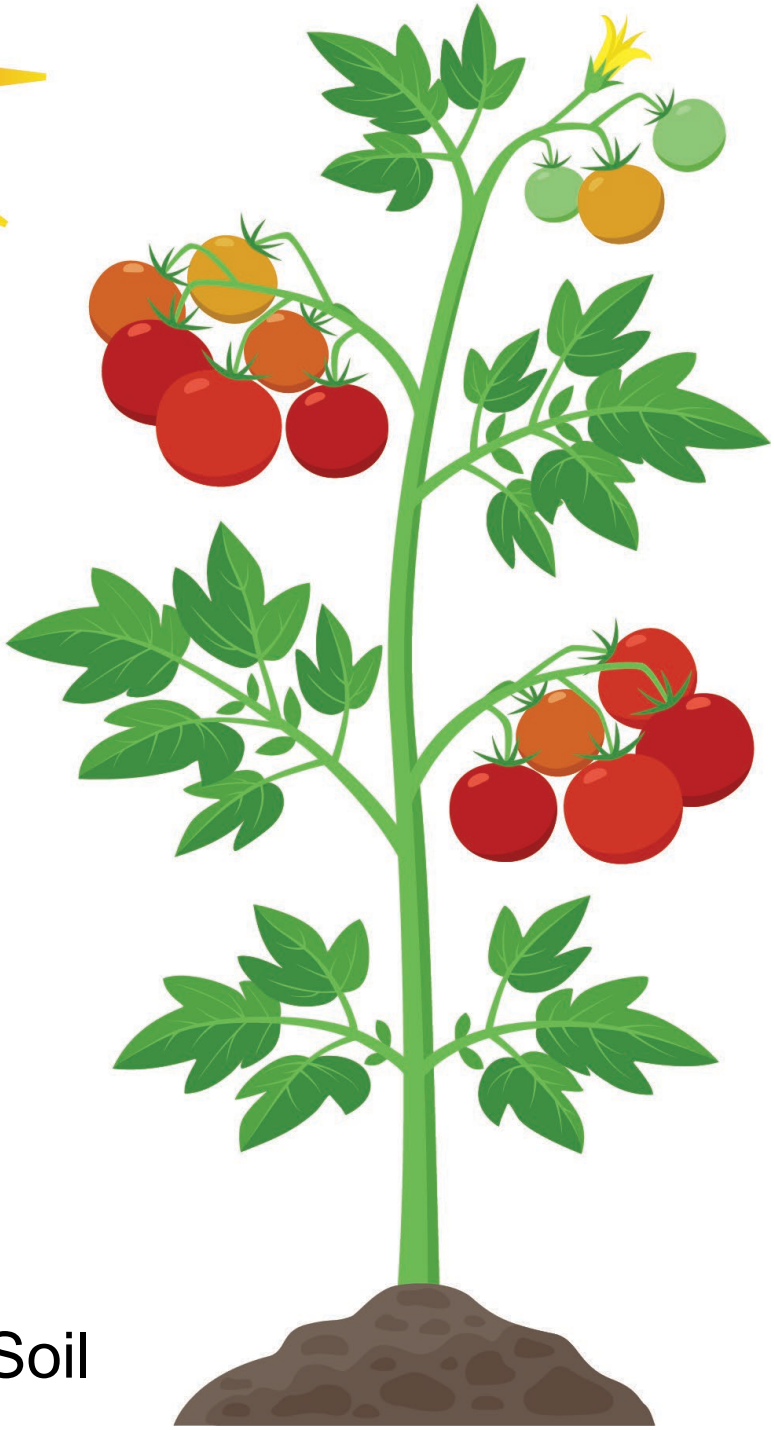
- Ask a student with a raised hand: *if you wanted to try this at home, how might you ask your grown-ups?*
- You might also ask additional questions like, *where could you buy tomatoes? What else do you know about tomatoes?*

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

Summer crops need:

Lots of Sunlight

High Temperatures



Warm Soil

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 Summer Crops

- Look for firm and fully-colored tomatoes and avoid those that are brown or wrinkled.
- Store tomatoes out of direct sunlight at room-temperature and rinse under cool water before preparing. Use within 1 week of purchase.
- Look for cucumbers that are small in size, firm, and dark green and avoid those that are soft or have yellow spots.
- Cucumbers can be stored in the refrigerator for up to 1 week. Rinse under cool water and trim off the ends before eating.
- Look for eggplants that are firm, glossy, and heavy with no breaks in the skin.
- Eggplants can be stored whole in the refrigerator for 1 week or 3-5 days if cooked. Rinse under cool water prior to cooking.
- The skins of tomatoes, cucumbers, and eggplants are edible!

Facts About Summer Crops

- Tomatoes are in season in Iowa July-September.
- Common varieties of tomatoes include heirloom, beefsteak, roma, cherry, and grape, and tomatoes come in every color of the rainbow.
- Tomatoes grow on a vine and are the fruit part of the plant; however, they are considered a vegetable when eaten.
- Cucumbers are in season in Iowa July-August.
- Cucumbers are in the gourd plant family, which also contains squash and melons.
- Cucumbers are about 96% water, and the phrase “cool as a cucumber” is based on the fact that the inside of a cucumber is 20º cooler than the outside!
- Eggplants are in season in Iowa August-September.
- Different varieties of eggplants include Japanese, Chinese, and the globe or American eggplant.
- Eggplants belong to the nightshade family and are classified as the berry part of the plant.

Health Connection

- Tomatoes provide vitamin C, vitamin A, and potassium. Tomatoes also contain the antioxidant lycopene, which helps keep our eyes and heart healthy!
- Cucumbers provide vitamin C and are a great source of fiber.
- Eggplants are a good source of fiber.
- Vitamin C helps heal our skin and helps our bodies fight off illness! Fiber is good for our digestive systems and our hearts.

References and Resources

https://spendsmart.extension.iastate.edu/cook/produce-basics/
https://iowaagriculture.gov/sites/default/files/ag-diversification/Specialty%20Crops/FINAL3281IowaFVmagnet.pdf
https://www.iowafarmtoschoolearlycare.org/choose-iowa-campaign
https://www.fns.usda.gov/usda-foods/household-product-information-sheets-and-recipes
https://snaped.fns.usda.gov/seasonal-produce-guide

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Pick a better snack™

IDPH Iowa Department of Public Health

Local Fall Fruit
Apples, Pears, Melons

GRADE 2-3

Month: October
Time Required: 30 minutes
Tasting: Local fall fruit, such as apples, pears or melons

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 identify apples, pears and/or melons as fall fruit.
- ❑ Students will be able to define and give examples of interdependence.

Materials

- ❑ 6 Plant Part Puzzles, one of each
- ❑ Image of apple true (included in lesson)
- ❑ Tasting materials: napkins or paper plates
- ❑ Locally-sourced fall fruit (apples, pears, or melons). Ideas include:
  - 2 fall fruits to sample (ex: apple and pear)
  - Different types of the same fall fruit (ex: 2 apple varieties)

Preparation

- ❑ Prepare Plant Part Puzzles: print 6 plant part puzzle pages, and cut the pages into pieces using the grid provided. Consider laminating the pages for reuse. Put each plant part puzzle in a baggie.
- ❑ Prepare fall fruit for tasting: Decide if you will chop the fruit before or during the lesson. Can you give students larger pieces for them to chop themselves? If so, add plastic knives to your materials and discuss knife safety before passing them out.

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
Second grade - 2-LS2-2.
LS2.A: Interdependent relationships

Third grade - 3-LS1-1.
LS1.B: Growth and development

Lesson Checklist

- ❑ Physical Activity
- ❑ Tasting
- ❑ Voting
- ❑ “Asking” Discussion
- ❑ Newsletters, Bingo cards, Stickers, Incentives
- ❑ Science Connection: Parts of a plant (2nd) & Plant growth and development (3rd)

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.

Think about how you go through a day. At some point, you probably depend on your parents/caregivers for things like food, clothing, and shelter. You may also go to school and depend on your teacher to help you learn. What are other people and things you depend on?

2. Engage Activity: 10 *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 **interdependence**. Interdependence is simply how living and non-living things need each other, or depend on each other. To start, we're going to play a game that practices interdependence.* The following activity demonstrates and develops verbal communication, cooperation, strategic thinking and problem solving skills. Consider options for playing this game that fit safely within the classroom arrangement.

People Puzzle! *(adapted from Playworks, All Tangled Up)*

Divide the classroom into two groups and have them form two tight circles. Instruct students, saying, *First, put out one hand and grab the hand of anyone in the circle except for the people standing next to you. Now, put your other hand out and grab the hand of someone else in the circle. Here's the challenge! Get untangled without letting go of each other's hands! Your team will depend on everyone in the circle to successfully complete the challenge.*

- Emphasize that getting untangled requires a lot of communication, cooperation, and interdependence. *You can't get untangled unless other people in your group are untangled, too. Be gentle! Be safe!*
- Make the groups smaller after each round: 2 circles, then 4 circles, then 6 circles. The people puzzle will become easier to complete with fewer people in the group.
- Consider adding restrictions to their communication methods as the groups get smaller.
- End in 6 groups around the room, or at table groups if the classroom arrangement allows for this.

Once all groups have completed the activity, ask a couple of students to share about how they worked together as a group to solve the people puzzle. *How did you depend on your team to complete the challenge and become untangled? How did you communicate with each other? Did friends in your circle help you? Did you help others, too?* Celebrate their teamwork! *Great job practicing interdependence.*

Plant Part Puzzle!

Use these 6 groups to work on the Plant Part Puzzle together (one group per plant part). Give a plant part puzzle to each group. Share, *Each group has a new puzzle to solve - a plant part puzzle. As a team, work together to fit the pieces of the puzzle together. Once your group has solved the puzzle, talk about the picture of the plant part. What does it do? What does it need? Do any other plant parts need it? When you know, move quietly back to your desk and take three deep breaths.* Give students a few minutes to complete their plant part puzzles. Move around the room to assist groups as needed.

Once all groups have completed the activity and are at their desks, ask a couple of students to share about how they worked together as a group to solve their puzzle. Celebrate their teamwork! Say, *Just like we worked together to solve our people puzzle and these plant part puzzles, plant parts are interdependent and work together to make plants grow!*

Explore

3. Experiential Learning: *10 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.

Explain to students, *The 6 parts of a plant are interdependent.* While displaying the complete image of the apple tree (included in the lesson), ask groups to recap what they talked about - the function of each plant part, what it needs, what plant parts need it.

- Roots: soak up water and keep the plant in the ground; roots **depend** on healthy soil and water.
- Stem: brings water up and food down; **a stem and roots are interdependent**
- Leaves: help the plant make food from sunlight, leaves grow from and **depend** on stems and roots
- Flowers: make flowers, pollen and fruit; flowers depend on bees for pollination - **flowers and bees are interdependent**
- Fruit: holds and protects seeds; fruit **depends** on flowers (and bees!)
- Seeds: make new plants; seeds grow inside of and **depend** on fruit

The plant part we eat from an apple tree is the (choral response- *"fruit!"*). *In the fall, the fruit on an apple tree is ready to harvest and eat. In which season are apples ready to eat?* (Choral response- *"in the fall!"*) *For our tasting today, we're going to explore and taste some fall fruit.* Pass out samples with the classroom teacher's support.

Explain to students, *we're going to use our senses to explore the fall fruit today before we taste it.* While passing out samples, have students discuss, *how do we depend on our senses? We're going to take a really long time to eat because we're going to explore everything we can about the fall fruit using our 5 senses.* Lead students through a five senses exploration.

- **Touch:** Students can close their eyes and feel the fall fruit with their fingers. What does it feel like?
- **See:** Have students carefully examine the fall fruit. What details do they see? Are there any other plant parts in their tasting (seeds, stem, evidence of where the flower was)?
- **Smell:** Have students bring the fall fruit to their noses and inhale. Ask them to describe the smell.
- **Hear:** Using their fingers, have students snap the fall fruit in half. Everyone should be very quiet to listen for any sounds.

Fall Fruit Taste Test Ideas:

1. Offer classrooms 2 versions of fall fruit to sample (ex: apple and pear)
2. Offer classrooms different types of the same fall fruit (ex: 2 apple varieties)
3. Use all 5 senses to compare and contrast the samples.
4. Discuss flavors, textures, colors, etc., as a class.

4. Tasting Activity: *3 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 pear/apple/or melon samples, talk the class through using their senses to explore the tasting.

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 (cont'd)

5. Voting Activity: *2 minutes*
This is a time for students to give their opinion on what they tried!

As students taste the fall fruit, 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."

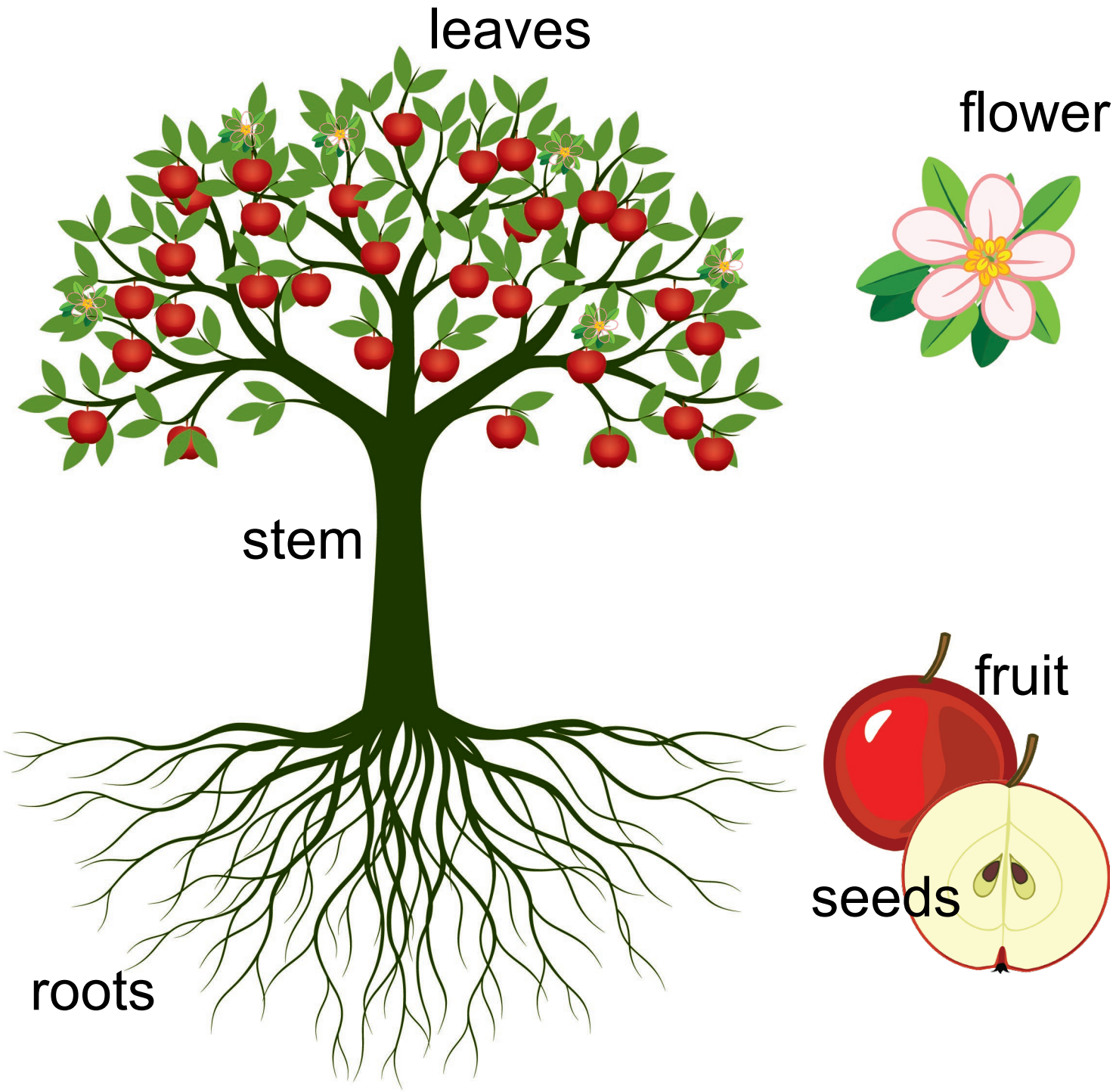
Choral Response:
I'm going to ask a question and you're going to quietly think to yourself. When I say our magic word, "go," you can say your answer aloud. Let's practice…

- *What month is it? (October)*
- *Whose class am I in?*
- *What plant part did we try today? (fruit)*
- *In what season can we harvest and eat fruit like pears, apples, and/or melons? (Fall)*
- *Fill in the word: when two things (like people or plant parts) need each other, or depend on each other, this is _____ (interdependence)*
- *Who is someone you depend on? Who is someone who depends on you?*

Asking Discussion:
Raise your hand if you're excited to go home and tell your family about tasting fall fruit.

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

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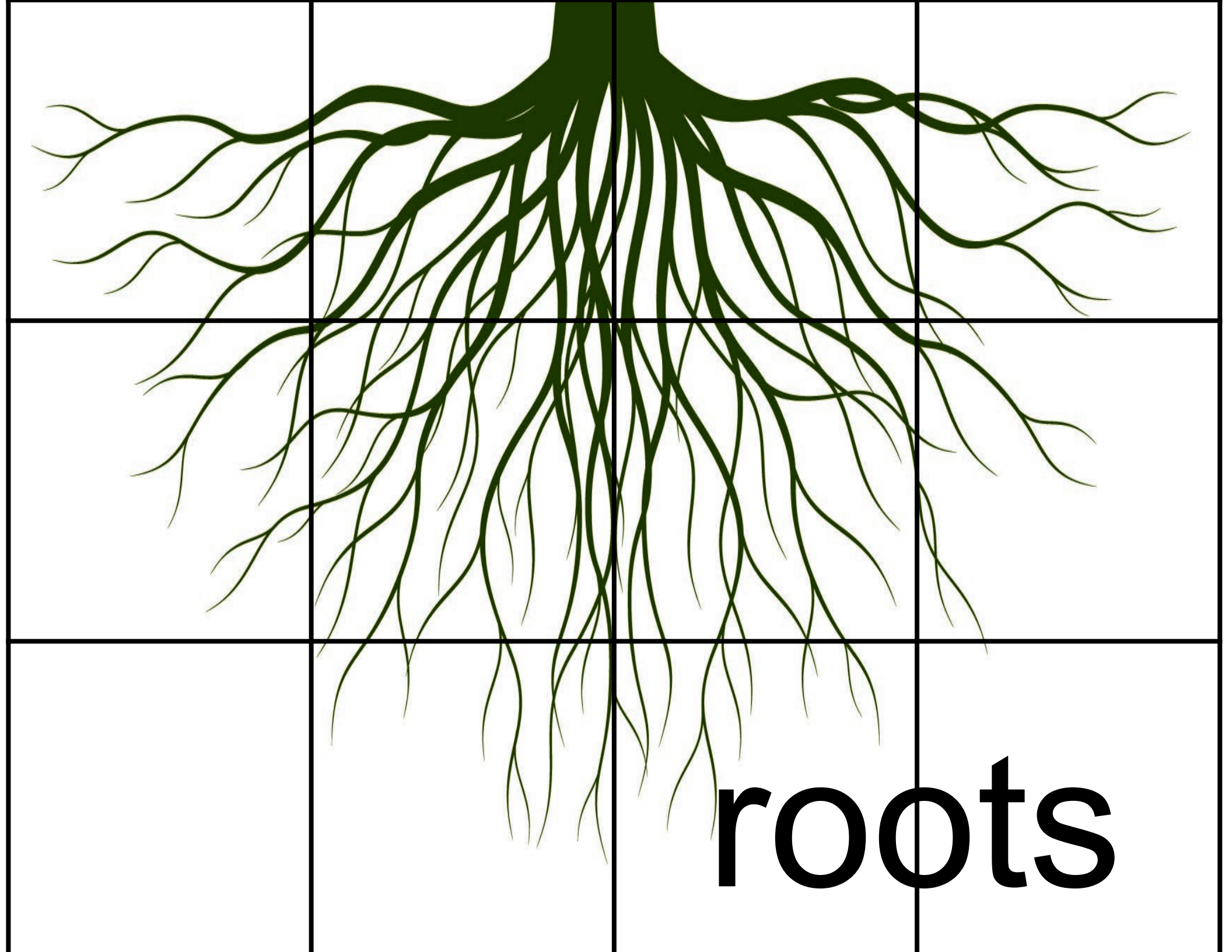
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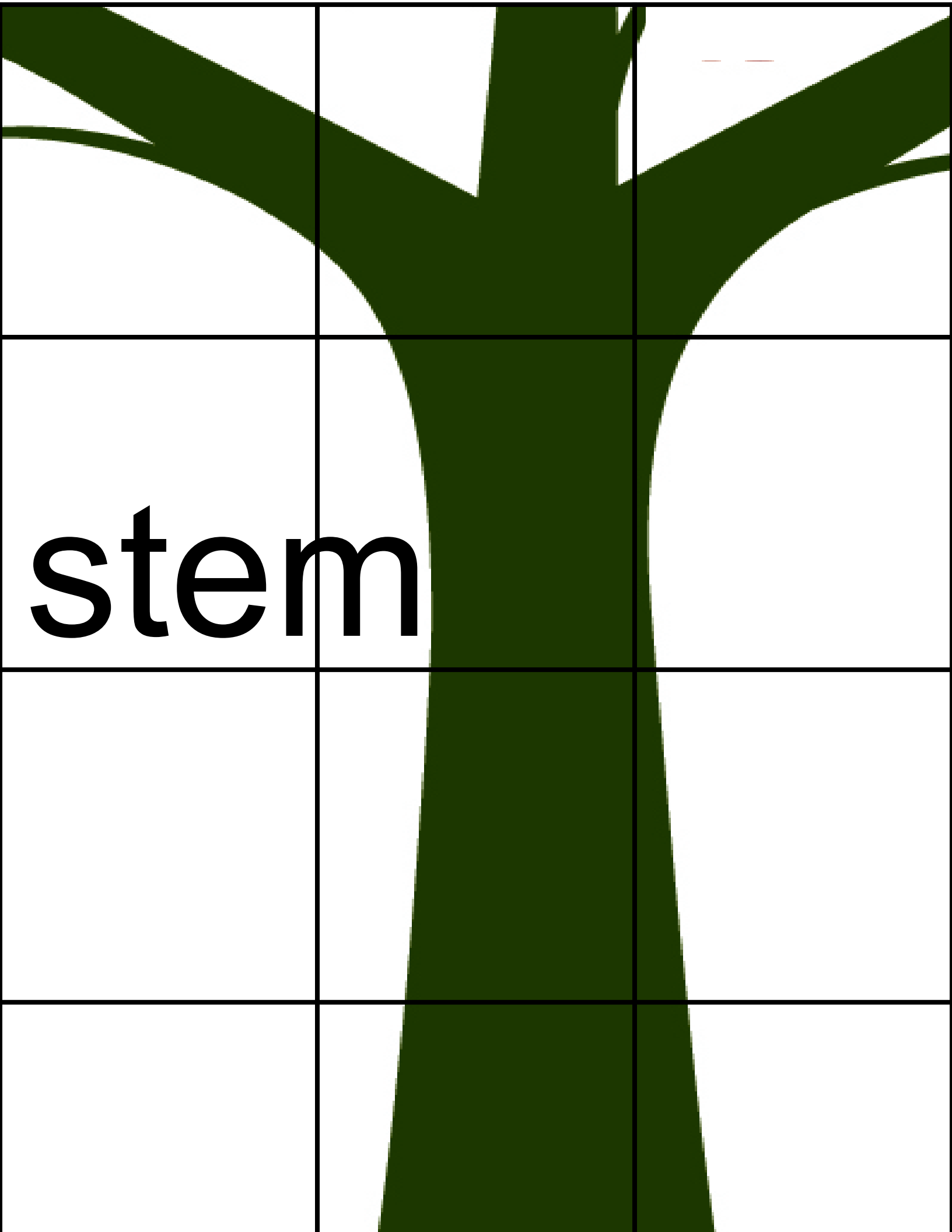
stem

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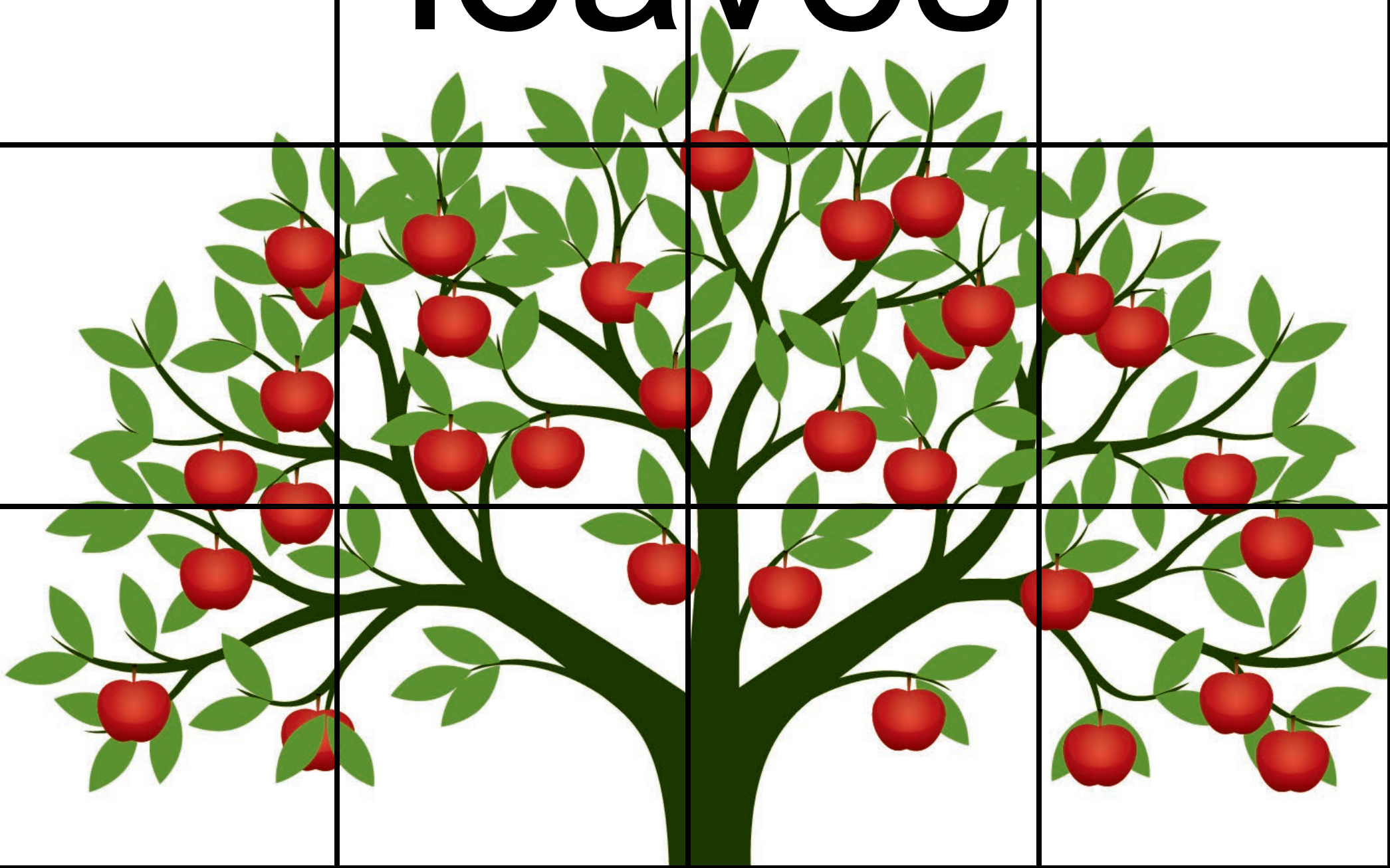

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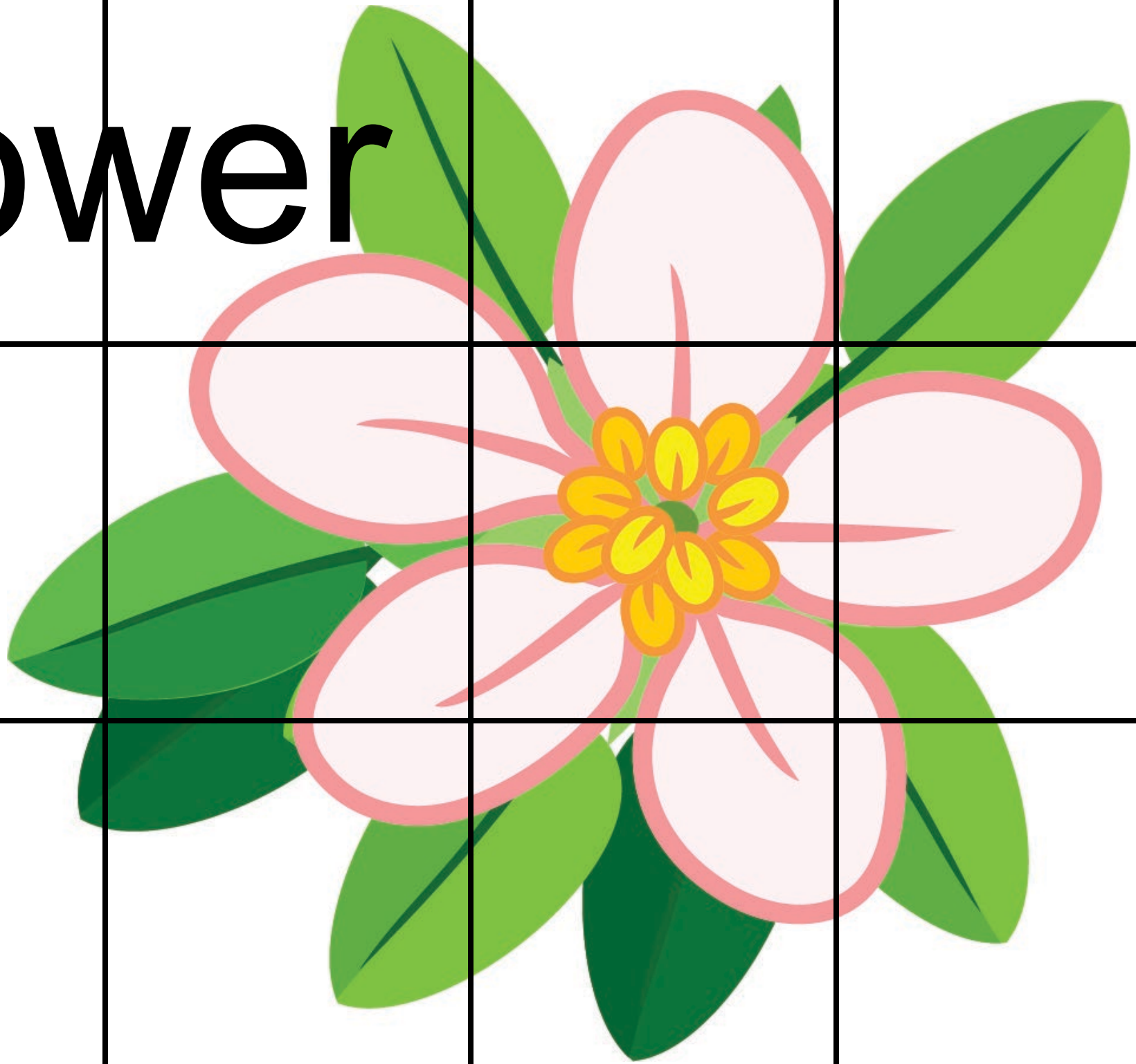
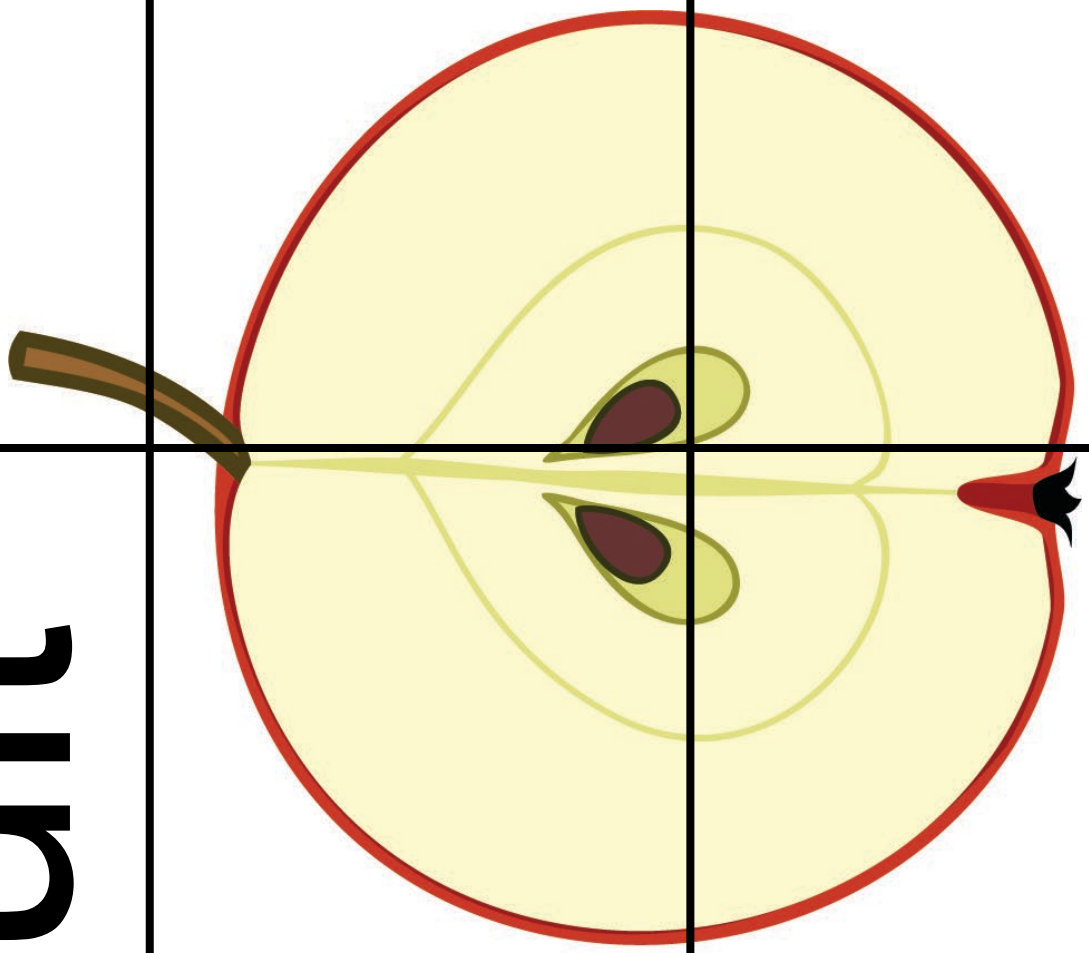
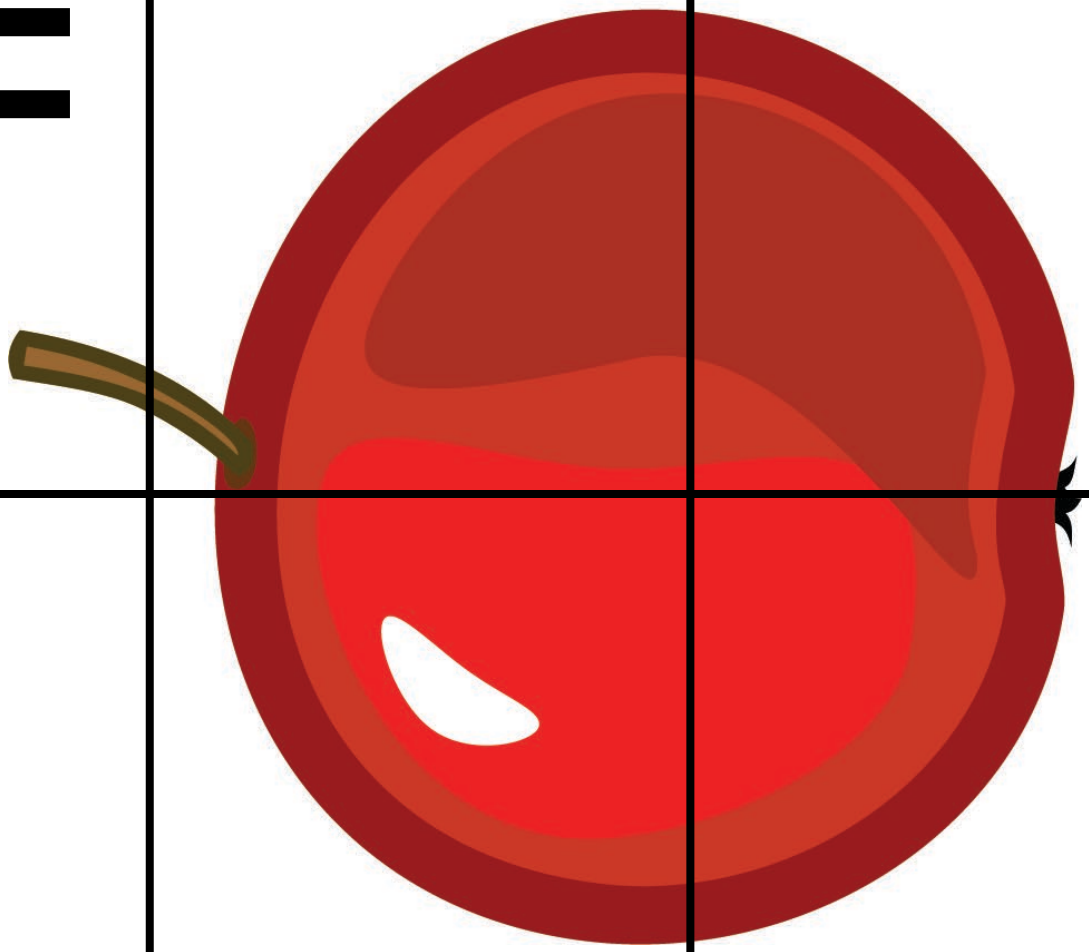
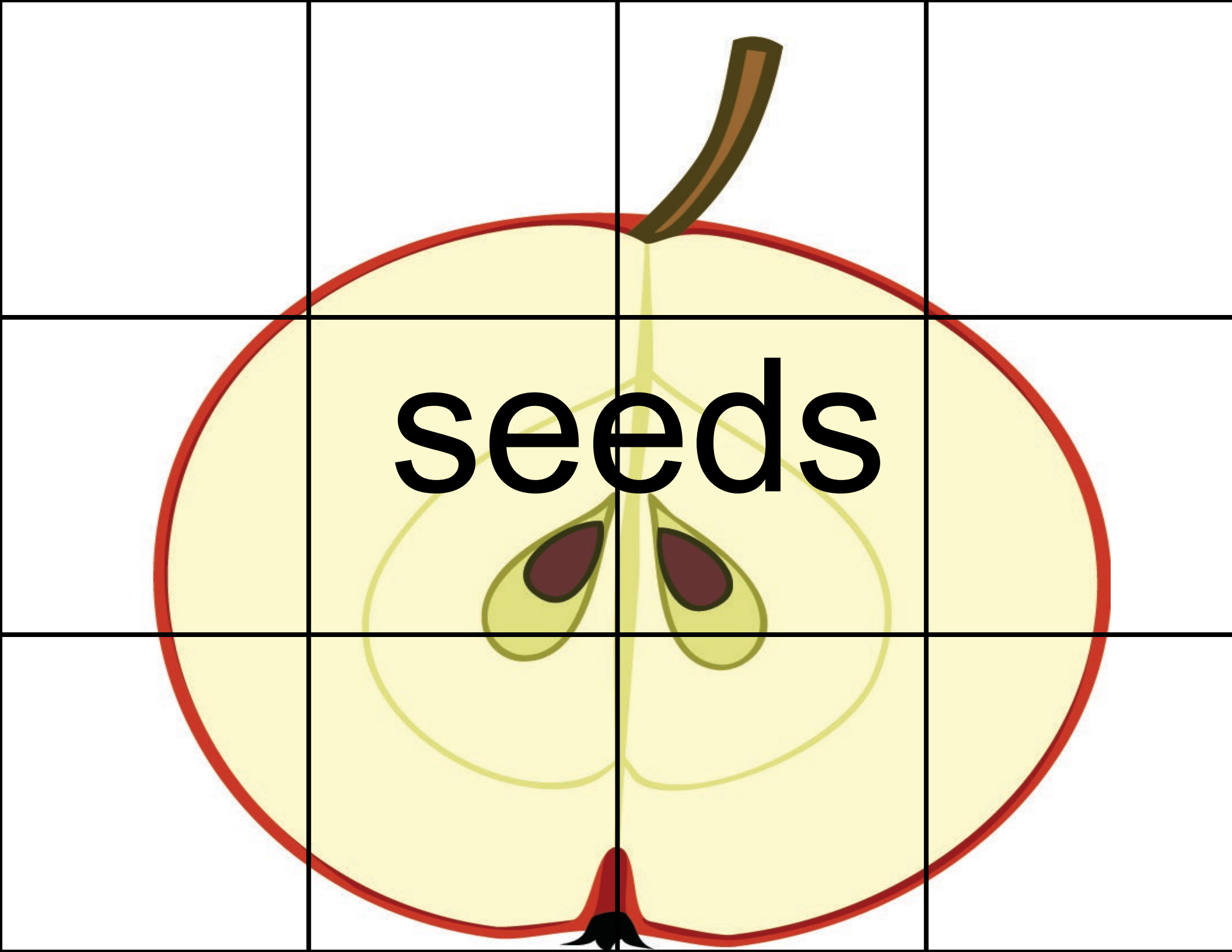


fruit






seeds

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 Fall Fruits

- Look for firm, smooth apples and avoid those that are soft or bruised.
- Seal apples in a plastic bag and store in the refrigerator for up to 3 weeks. Avoid placing them next to strong smelling foods such as onions.
- Prior to eating, rinse apples and pears under cool water. Both apple and pear skins are edible.
- Look for firm, un-bruised pears that give a little when pressed near the stem.
- To ripen pears, store them in a paper bag at room temperature. Once ripe, they can be stored in the refrigerator for 4 days.
- Look for honeydew melons that are creamy or yellow colored, heavy, and have a pleasant smell. Look for watermelons that are symmetrical in shape, heavy, and have yellow undersides.
- Uncut melons can be stored for 1 week at room temperature. Cut melons should be stored in an airtight container in the refrigerator for up to 5 days.
- Scrub melons with a vegetable brush under cool water before cutting. Remove the center cluster of seeds, if it has them, and remove the rind (outer portion) before eating.

Facts About Fall Fruits

- In Iowa, apples are in season July-October, and pears are in season August–September. Melons are in season August-October.
- In the U.S. alone, there are over 2,500 varieties of apples. Some popular ones include Granny Smith, McIntosh, Honeycrisp, and Red Delicious.
- Apples and pears grow on trees and are in the pome (fleshy) fruit family with a core holding several small seeds.
- There are many varieties of pears including Cactus, Bartlett, Bosc, Asian, and Anjou.
- Some varieties of melons include Cantaloupe, Watermelon, Honeydew, Crenshaw, Casaba, and Canary. Cantaloupes are also sometimes called rockmelons or muskmellons!
- Melons grow on vines on the ground and are a part of the gourd plant family.

Health Connection

- Apples and pears provide fiber, vitamin C, and potassium. Eat the skin for the most fiber!
- Melons provide vitamin A, vitamin C, potassium, and fiber. Potassium helps keep our hearts and muscles healthy!
- Watermelon contains the antioxidant lycopene, which helps keep our eyes and heart healthy!
- Vitamin A is important for eyesight and keeps our skin 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://iowaagriculture.gov/sites/default/files/ag-diversification/Specialty%20Crops/FINAL3281IowaFVmagnet.pdf
https://eatfresh.org/discover-foods/fruit
https://www.iowafarmtoschoolearlycare.org/choose-iowa-campaign
https://www.fns.usda.gov/usda-foods/household-product-information-sheets-and-recipes

This institution is an equal opportunity provider.
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Pick a better snack™

IDPH Iowa Department of Public Health

Local Brassicas

Brussels Sprouts, Cabbage, Kohlrabi

GRADE 2-3

Month: November
Time Required: 30 minutes
Tasting: Locally available Brassicas, including Brussels sprouts, cabbage, or kohlrabi

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 describe the concept of a plant family.
- ❑ Students will be able to recognize Brussels sprouts as a member of the Brassica family.

Materials

- ❑ Images of Brassicas for Brussels Sprout Shout activity (included in lesson)
- ❑ Optional and so cool if you can get it: whole stalk of Brussels sprouts!
- ❑ Printed compare and contrast worksheets, one per student pair or table group
- ❑ For in-class cooking: cooler, antibacterial wipes, electric skillet or air fryer, plastic tote (to transport electric skillet), spatula, power strip (with long cord), water bottle with water, rags, plastic food storage bags, halved Brussels sprouts for cooking (depending on class size), olive oil, salt, pepper, preferred spices (garlic, cumin, etc.)
- ❑ Tasting materials (plates, napkins, etc.)

Preparation

- ❑ Food preparation:
  - Prepare Brussels sprouts for tasting: if using air fryer or electric skillet, cut Brussels sprouts into halves. If making a salad, shred the Brussels sprouts.
  - Portion Brussels sprouts into food storage bags (one per lesson).
  - Add olive oil and spices to the bag.
- ❑ Chop/shred the Brussels sprouts no more than two days in advance of your lesson, and store them in an airtight container in the refrigerator

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
Second grade - 2-LS4-1.
LS4.D: Biodiversity

Third grade - 3-LS3-1.
LS3.B: Variation of traits

Lesson Checklist

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

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.

*If you're planning on cooking your Brassicas in an electric skillet or air fryer, you may want to start preheating your cooking instruments as soon as you arrive in the class. Alert students and teachers to the hot skillet or air fryer. If using a skillet, heat a couple tablespoons of olive oil over medium heat, leaving uncovered.

2. Engage Activity: *10 minutes*

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

Gather students in a circle. Share, *Today, we're going to be tasting Brussels sprouts, and we're going to learn about families.* If you're cooking, show your students your container of prepared Brussels sprouts. Before you add the Brussels to the preheated electric skillet or air fryer, ask students to listen very carefully for the "sizzle" noises. Add the Brussels. If using a skillet, leave uncovered, stir occasionally and cook for 10 minutes or until tender over medium or heat.

Families are special groups of people. Sometimes, people in our family are similar to us - maybe they look like us, live in the same place as us, enjoy the same foods or activities, talk like us. Sometimes, people in our family are different from us - maybe they look different from us, are a different age than us, live in different places, or like eating different foods than we do.

Think-pair-share: *I'd like you to talk with a partner and share about a special person in your family. How are they the similar or different from you?* As an example, share something special about a person in your family.

- *Think to yourself quietly.* Have students 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 about their family member.
- 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.

Thank you for sharing about the special people in your families. I can tell you care for them. We're going to play a game where we will work together as a classroom family and practice care for each other!

Play "Crooked Circle," a collaborative game from Playworks

- Have students stand in the circle and number off by 1's and 2's (or "Brussels" and "sprouts")
- Explain that the game is a challenge; give examples of how to care for each other while playing.
    - Examples: holding hands firmly and carefully, paying attention to instructions, etc.
- Designate a signal to start.
- Make sure students are holding hands and remember their numbers.
- The students hold hands and when you give the signal, the 1's lean forward and the 2's lean backward. The challenge is to keep holding hands while maintaining balance once half the group is leaning back and the other half is leaning forward.
- Once the group has managed to balance, bring them back to center and change roles.
- If the group has switched roles successfully, challenge them to do it with their eyes shut.
- Discuss how caring for each other played a role in the game.

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.

Seat students at their desks. Opportunity for 3 deep breaths.

Just like people have families, plants have families, too! Explain, *A plant family is a group of plants that share similar features or traits.* Show image via doc-cam. *One plant family is called the Brassica family. Let's say that together: "Brassica family." There are many vegetables in the Brassica family. Just like in our human families, each member of the Brassica family is special.*

Brassica Family: Compare and Contrast
Using doc-cam, share images of vegetables in the Brassica family (images included in lesson). Pass out The Brassica Family: Compare and Contrast worksheets, one per pair of students or table group. Share these instructions for the activity: *We're going to look at the many different members of the Brassica family and examine how their traits are the same and how they are different. With your partner (or table group), pick 2 Brassicas to compare and contrast, using the worksheet. Write the ways they are different on the outside circles, and write the ways they are the same in the inside circle.* Share an example slide if helpful. Give students several minutes to complete the activity in groups, moving around the room to offer support as needed. Ask a couple of groups to share aloud.

The Brassica we are about to sample is called Brussels sprouts. Share slide showing how Brussels sprouts grow on a stalk. Consider opportunities for additional small group discussion with these questions:

- Do you think all members of the Brassica family taste the same?
- Can you think of other plants that might be in the same family?
- Have you ever tasted any of these Brassicas?

**Activity alternate: instead of pictures, bring in fresh Brassicas for students to compare and contrast.

4. Tasting Activity: *4 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.

Below are some ideas for sampling Brussel sprouts:

Raw: Make a shredded Brussel sprout salad. A number of simple recipes can be found online.

Air fryer: Before the lesson, chop Brussels sprouts into smaller pieces. During the lesson, toss in an air fryer with olive oil and spice options (ex: garlic, pepper, paprika). You can also use an oven or fry in a skillet.

Electric Skillet: Before the lesson, chop Brussels sprouts into smaller pieces. During the lesson, heat 2 tablespoons olive oil over medium heat, leaving uncovered. Add your Brussels sprouts to the hot skillet and season with optional spices (ex: salt, garlic, pepper, paprika).

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 Brassicas, 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: *4 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 our magic word, "Brussels sprouts," you can say your answer aloud. Let's practice…

- What month is it? (November)
- People have families. Do plants have families, too? (yes!)
- What plant family did we learn about today? (the Brassica family)
- What member of the Brassica family did we taste today? (Brussels sprouts)
- What is one way members of Brassica family are similar? What is one way they are different?
- What's another kind of Brassica that you would like to try? (can show the images from the Brussels Sprout Shout activity to help students remember names of other kinds of Brassicas.)

Asking Discussion:
Raise your hand if you're excited to go home and tell your family about tasting Brassicas.

- Ask a student with a raised hand: *if you wanted to try Brassicas like Brussels sprouts at home, how might you ask your grown-ups?*
- You might also ask additional questions like, *where could you buy Brassicas like Brussels sprouts? What else do you remember about Brassicas?*

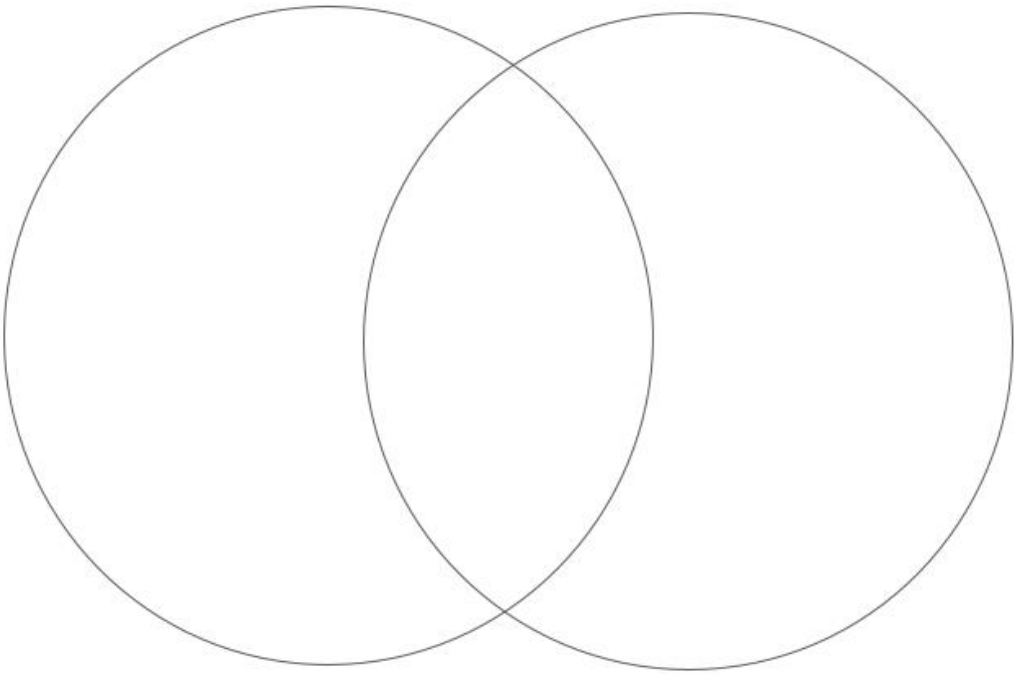
*Leave newsletters, incentives, stickers, and BINGO sheets with the teachers to pass out.

Pick 2 Brassicas from the Brassica family.

Compare: On the inside circle, share their similarities.

Contrast: On the outside circles, share their differences.

The Brassica Family: Compare and Contrast



Name of Brassica #1: _____

Name of Brassica #2: _____

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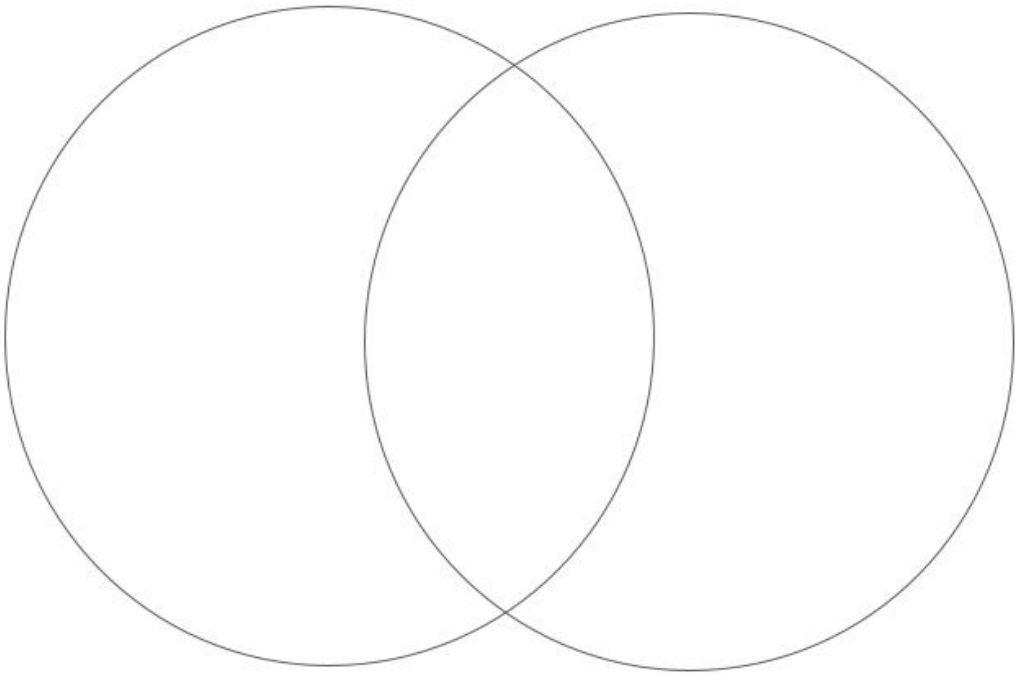
Pick a **better** snack™ Lesson

Pick 2 Brassicas from the Brassica family.

Compare: On the inside circle, share their similarities.

Contrast: On the outside circles, share their differences.

The Brassica Family: Compare and Contrast



Name of Brassica #1: _____

Name of Brassica #2: _____

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Broccoli

Cauliflower

Brussels sprouts

Cabbage

Radish

Napa cabbage

Kale

Rutabaga

Kohlrabi

Mustard greens

Collard greens

Turnips

Additional Materials

Physical Activity

More ideas for physical activity are available at https://idph.iowa.gov/inn/play-your-way/brain-breaks.

What You Need to Know About Brassicas

- Look for Brussels sprouts that are bright green, firm, and compact; they're best if still on the stalk.
- Store Brussels sprouts in a plastic bag in the refrigerator for up to 1 week. Rinse under cool water and cut off the stalk portion (or stem portion if not on the stock) before eating.
- Look for cabbage that is crisp, heavy, and firmly packed with no loose leaves.
- Tightly wrap cabbage in plastic and store in the refrigerator for up to 1 week.
- Remove the outer leaves of cabbage and rinse under cool water before preparing. Remove the core before chopping.
- Look for firm, heavy kohlrabi globes without cracks or bruises, ideally 2 inches across in size.
- Trim off kohlrabi leaves, wrap kohlrabi in paper towels, and store in a plastic bag in the refrigerator for up to 4 days.
- Kohlrabi greens should be rinsed under cool water and blotted dry right before using. Kohlrabi globes should be scrubbed with a veggie brush under cool water and peeled before using. Small bulbs do not usually need to be peeled.

Facts About Brassicas

- Cabbage is in season mid-June-October; kohlrabi is in season mid-August-October; Brussels sprouts are in season June-November.
- Cabbage, kohlrabi, and Brussels sprouts are in the Brassicas plant family and grow right on top of the ground. They are also called cruciferous vegetables due to the cross formation of their flower petals.
- 78% of cabbage in the U.S. is grown in Texas, New York, Florida, California, or Wisconsin.
- Cabbage heads have various shapes including flat, pointed, or globular and are colored green, grey-green, or red.
- The word "Kohlrabi" is a German word meaning "cabbage turnip" and is the stem part of the plant. Kohlrabi comes in white (green) and purple varieties.
- First grown in Belgium around the year 1200, Brussels sprouts are buds along the plant stem that come in both green and red varieties.

Health Connection

- Cabbage provides vitamin C and anti-cancer phytochemicals.
- Kohlrabi provides vitamin C and fiber.
- Brussels sprouts provide vitamin C, vitamin K, potassium, and fiber.
- Vitamin K is good for our bones and blood. Potassium is good for our hearts. Vitamin A is important for eyesight and keeps our skin 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://fruitsandveggies.org/fruits-and-veggies/
https://bit.ly/3xlZKzc
https://www.britannica.com
https://www.agmrc.org/commodities-products/vegetables/cabbage
https://dpi.wi.gov/sites/default/files/imce/school-nutrition/pdf/fact-sheet-kohlrabi.pdf
https://www.fns.usda.gov/usda-foods/household-product-information-sheets-and-recipes

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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!

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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!

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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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Pick a better snack™

IDPH Iowa Department of Public Health

Winter Squash
Butternut, Buttercup

GRADE 2-3

Month: January
Time Required: 30 minutes
Tasting: Local winter squash (ex.: butternut, buttercup, pumpkin)

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 define diversity.
- ❑ Students will be able to describe differences in winter squash varieties.

Materials

- ❑ Image of many varieties of winter squash (included in lesson)
- ❑ All Kinds of Squash Cards: pictures and descriptions
- ❑ Whole, raw butternut squash (or other local varieties)
- ❑ *For in-class cooking:* cooler, antibacterial wipes, electric skillet, plastic tote (to transport electric skillet), spatula, power strip (with long cord), water bottle with water, rags, plastic food storage bags, winter squash for cooking (depending on class size), olive oil, salt, pepper, preferred spices (garlic, cumin, etc.)
- ❑ Tasting materials (plates, napkins, etc.)

Preparation

- ❑ Print the squash images and descriptions for All Kinds of Squash Matching Game based on class size (1 card per student – or 1 card per pair of students.) There are 10 different images and 10 different descriptions; a student will get either an image or description card. Cut apart the cards. You may want to laminate the cards so you can reuse them.
- ❑ Prepare simple slideshow of prompts used in the opening “Engage” activity
- ❑ Food preparation:
  - Prepare winter squash for tasting: peel and chop raw butternut squash in ½ inch cubes.
  - Portion squash into food storage bags (one per lesson).
  - Add olive oil and spices to the bag.

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-LS3-1.
LS3.B: Variation of traits

Lesson Checklist

- ❑ Physical Activity
- ❑ Tasting
- ❑ Voting
- ❑ “Asking” Discussion
- ❑ Newsletters, Bingo cards, Stickers, Incentives
- ❑ Science Connection: Plant diversity (2nd) & (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.

*You may want to preheat your electric skillet for the cooking activity and alert students to the hot skillet. Preheat to medium, depending on the skillet.

****Cooking Tips:*

- *Feel free to delegate responsibilities with the teacher. Have them stir the squash, while you work with the class. Or vice versa.*
- *Email the teacher ahead of time to let them know you plan on using a heat source and will need a table close to an outlet, if possible.*

If you notice students getting distracted by the noise, smells, or sights of cooking, use that as a teaching moment. Pause and ask students to smell the air together. Or listen very quietly for any sizzling noises. These are good interruptions!

2. Engage Activity: *8 minutes*

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

Gather students in a circle. Share, *Today we are going to celebrate diversity.* Note new vocabulary word: ***diversity***. Write out, define and repeat the word. *Diversity means differences. What does diversity mean?* Choral response: *"differences." To celebrate diversity in our classroom, we're going to play a game. I'm going to play a song. While the music is playing, move calmly around the room. When the music stops turn to a friend standing closest to you and take turns answering the question on the board. If you have the same answer, touch your toes together. If you have different answers, touch your elbows together. For example* (use an example about hair color with a student near you and demo the activity). *Ready?*

Play some fun music! Idea: So Many Colors, So Many Shapes, Diversity Song, from The Singing Walrus
Pause the music. Students find a partner. Display the following prompts one at a time via doc-cam using a simple slideshow. Remind students, *take turns answering the question on the board. If you have the same answer, touch your toes together. If you have different answers, touch your elbows together.* Display as many prompts as time will allow.

- What is your favorite color?
- What is your favorite food?
- What letter does your name start with?
- How old are you?
- What is your favorite book?
- How many people are in your family?
- How do you get to school in the morning?
- Do you have any siblings?
- What is your favorite thing to learn about at school?
- What is your favorite game?

Excellent job! It's important to celebrate all of our differences - the diversity - that makes up our classroom. Sometimes we like different things, sometimes we look different, we have different families. Diversity is beautiful in people and in 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.

Seat students in a circle. Opportunity for three deep breaths.

Show an image of many varieties of winter squash (image in the lesson plan). Explain, *Winter squash is one kind of plant with lots of diversity. There are many different varieties of winter squash. Each kind of winter squash looks very different from others and also tastes different. However, they are all the same species of plant. Winter squash grow in the summer, but we can store it and eat it in the winter.*

Show the bag of prepared butternut squash and explain how you'll be cooking it. Before you add the squash to the preheated electric skillet, ask students to listen very carefully for the "sizzle" noises. Add the squash to the skillet. Leave uncovered. Stir occasionally. Cook for 10 minutes or until tender.

All Kinds of Squash Matching Game*
Introduce the 10 kinds of squash featured in the game using the pictures on the cards (available below), or using actual examples of the squash. Then, hand each student (or pair of students) a card from the matching game – either a picture or a description – and have them find their match. Students will match the description of the squash with the picture on the card. After students have done it once or twice, you can start timing it and make it a fun race, or use music again.
*Activity adapted from Vermont Harvest of the Month, Winter Squash

****Cooking tips:*
- *While students are doing this activity, check in on the squash. While students continue working, start prepping samples to be passed out once the activity is done.*
- *Have another lesson and don't have time to wash the skillet? Simply squirt water into the hot skillet to cool it down, then wipe it clean with a rag. Do not wait more than 4 hours before washing with soap.*

4. Tasting Activity: *3 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 squash samples, talk the class through using their senses to explore the tasting.

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 winter squash, 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.

Reflect (cont'd)

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."

Asking Discussion:

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

- *Will someone share what they liked or loved about the winter squash?* Select a couple students to share.
- *Will someone share what they would change about the winter squash?* Select a couple students to share.
- *Will someone share one way varieties of squash are different from each other?* Select a couple students to share.
- Ask a student with a raised hand: *if you wanted to try winter squash at home, how might you ask your grown-ups?*
- You might also ask additional questions like, *where could you buy butternut squash or other kinds of winter squash? What else do you know about winter squash?*

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

Acorn Squash

Butternut Squash

Tetsukabuto

Delicata

Kabocha

Red Kuri

Spaghetti Squash

Blue Hubbard

Sweet Dumpling

Pumpkin

Blue Hubbard

I have very thick, bumpy, blue-grey skin that keeps me from rotting. My skin is SO thick, that you need an axe to cut me open - a knife just won't work. It is worth the effort to prepare me because my light orange insides are very sweet and have lots of Vitamin A, which helps your eyes.

Kabocha

I am a dark green squash with pale green speckles. I am shaped sort of like a pumpkin, but flattened - I am a squat cylinder. I am very popular in Japan; kabocha is a Japanese word.

Tetsukabuto

I am the strongest, longest lasting squash, a mix between a butternut and kabocha. My skin is deep green, bumpy and very thick. Inside, I'm bright yellow!

Sweet Dumpling

I am a winter squash with orange and green spots and stripes - I almost look like I have polka dots! I am the smallest winter squash. I have the shape of a small bowl. I taste kind of like a sweet potato.

Pumpkin

I am the most popular of all the winter squashes. I am delicious not only in pies and desserts, but also on top of oatmeal, mixed into yogurt and in smoothies. I have tons of Vitamin A, which helps your eyes.

Delicata Squash

I am shaped long and thin. I am a light-yellow in color with orange and dark green stripes. My skin is so thin that you can eat it! You don't have to peel me, but I don't last as long because of my thin skin. My insides are a light orange and I have a mild, sweet flavor.

Spaghetti Squash

I have bright yellow skin and my insides are a lighter yellow. I have an oval shape - kind of like a watermelon. The really cool thing about me is that after you bake me in the oven, you can scoop out my insides and they look just like spaghetti! You can even pretend they are spaghetti and put tomato sauce on top when you eat me!

Butternut Squash

I am shaped like a giant pear! I have a long thick neck and a round bottom. My skin is a light brown color, but inside I am bright orange! I have TONS of Vitamin A, which is great for your eyes - one serving of me gives you almost 300% of what you need each day. My rich creamy flavor is great in soups!

Acorn Squash

I am shaped like an acorn! I have dark green skin, except for one yellow or orange spot on the part of me that was resting on the ground. Inside, I am a deep yellow color. I don't have a lot of Vitamin A in me, but I do have a lot of potassium, which is good for your muscles, and Vitamin C, which keeps you from getting sick.

Red Kuri

I am also called red kabocha squash - I am a type of kabocha squash but instead of having dark green skin, I have bright red skin! I am also sweeter inside than my green cousin. I have the same squat, flattened shape as the green kabocha squash.

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 Winter Squash

- Look for squash with a full stem that is heavy and firm with no bruises or soft spots.
- Squash can be stored for up to 1 month in a cool, dark place. Once cut, cover and refrigerate squash for 2-4 days.
- Rinse squash under cool water and dry before preparing.
- Unlike summer squash, winter squash rinds (outer skin) should not be eaten.

Facts About Winter Squash

- Squash are in season August - October.
- They grow on vines on the ground and have prickly stems and big leaves.
- Squashes are a part of the gourd plant family.
- The flowers and seeds of squash are also edible. Roasted pumpkin seeds are a great snack!
- Acorn squash varies in shape from cylindrical to spherical and can be green, yellow, orange, or white.
- Pumpkins come in a variety of sizes and colors including orange, yellow, green, white, red, tan, and even blue!
- The largest pumpkin ever grown was over 2,000 pounds!
- The Halloween tradition of carving pumpkins began in Ireland where they originally carved turnips or potatoes! Once the custom traveled to the U.S., pumpkins were used instead.
- Florida, California, Georgia, and Michigan are the top squash-producing states.

Health Connection

- Winter squash contains both vitamin A and vitamin C.
- Butternut, acorn, and spaghetti squash provide the antioxidant lutein, which is good for our eyes!
- Pumpkin provides vitamin A, vitamin C, potassium, and fiber.
- Vitamin A is important for eyesight and keeps our skin healthy.
- 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://bit.ly/3xlZKzc
https://www.iowafarmtoschoolearlycare.org/choose-iowa-campaign
https://www.britannica.com
https://www.agmrc.org/commodities-products/vegetables/squash
https://www.fns.usda.gov/usda-foods/household-product-information-sheets-and-recipes
https://snaped.fns.usda.gov/seasonal-produce-guide/winter-squash

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IDPH Iowa Department of Public Health

Local Food Preservation
Pickled, Frozen, Dried

GRADE 2-3

Month: February
Time Required: 30 minutes
Tasting: Preserved fruit or veggie

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 recall a food memory.
- ❑ Students will be able to define preservation.

Materials

- ❑ Images or tangible examples of preserved foods
  - Dried (beans, apples)
  - Frozen (peas, berries)
  - Pickled (jars of pickled vegetables)
- ❑ Tasting options of your choosing. Some ideas offered here!
  - 2 types preserved foods (ex: dried apples and pickled cucumber).
  - 2 types of pickled foods (ex: cucumbers, sauerkraut, curtido).
  - One food in two forms (ex: fresh cucumber, pickled cucumber)

Preparation

- ❑ Print “Food Memories are Preserved!” sheets for students.
- ❑ Decide what tasting you would like to offer based on the lesson length.

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
Second grade - 2-LS4-1.
LS4.D: Biodiversity

Third grade - 3-LS1-1.
LS1.B: Growth and development

Lesson Checklist

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

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.

Count students off into two equal groups. At an open space in the room, have students stand in two concentric circles. Students on the inside and the outside circles should face one another so that each student is standing across from a partner. If there isn't room to make two circles, have students stand in two lines facing one another.

2. Engage Activity: *8 minutes*

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

Share with students, *Today, we're going to learn about **preserving** food.* Note new vocabulary word: preserve. Define, write out, and have the class repeat the word "preserve." *Preserving means to make something last longer. Our brains do this by making memories! When something happens in our life, when we learn something, or when we taste something, our brain preserves that experience, and it is saved as a memory. We're going to take turns sharing some food memories with each other.*

<u>Food Memories Movement</u>

I'm going to ask a question, and you and your partner - the person across from you - will take turns sharing. Hold up a high-five with your partner so we can make sure everyone is paired up. Great, now hands to your sides. You'll each have a few seconds to share, and then we'll rotate partners. Consider using a call-back that students are familiar with to progress instructions and facilitate taking turns.

1. *Outside circle, tell your partner about something tasty you ate at school last week.* After a few seconds, get students' attention (call-back). *Inside circle, it's your turn! Tell your partner about something tasty you ate at school last week.*

2. *Inside circle, move two spots to the right so you are now facing a new partner. Inside circle, tell your new partner about your favorite snack to eat at home.* After a few seconds, get students' attention (call-back). *Outside circle, it's your turn! Tell your partner about your favorite snack to eat at home.*

3. *Outside circle, move two spots to the right so you are now facing a new partner. Outside circle, tell your partner about something you liked to eat when you were a baby.* After a few seconds, get students' attention (call-back). *Inside circle, it's your turn! Tell your partner about something you liked to eat when you were a baby.*

Thanks for sharing with your partners. Your brains have preserved some very special food memories!

Explore

3. Experiential Learning: *6 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 return to their desks (opportunity for 3 deep breaths).

Explain, *For as long as humans have been eating food, they've found ways to preserve it. What does preserving mean?* (Reference and read posted definition together) *To make something last longer. When we preserve food, we turn a fresh food into a food that is saved to eat later. Preserving foods first began as a way to save foods from the summer harvest. Think about about a plant's life cycle, how they grow from tiny seedlings to fruits with new seeds. After they are harvested, fruits and vegetables only last a short time unless they are preserved. Let's explore three ways to preserve food.*

1. *Dried foods are preserved by removing water.* Show images of dried apples, beans, raisins. Point out the stage of the life cycle (for example, apples are fruits that contain seeds).
2. *Frozen foods are preserved by making the food very cold.* Show images of frozen peas, berries. Point out the stage of the life cycle (for example, berries are fruits that contain seeds).
3. *Pickled foods are preserved by adding vinegar or salt.* Show images of jars of pickles. Point out the stage of the life cycle (for example, cucumbers are fruits that contain seeds).

Just like we have a large variety of fruits and vegetables to harvest, we have a variety of ways to preserve them.

**If you have more than 30 minutes, check out this FoodCorps lesson, "Quick, Pickle That!" and consider making pickles as a classroom during the extended lesson.

4. Tasting Activity: *8 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.

Preserved Foods Taste Test Ideas:

1. Offer classrooms 2 types preserved foods to sample (ex: dried apples and pickled cucumber).
2. Offer classrooms 2 types of pickled foods to sample (ex: pickled cucumber, sauerkraut, curtido).
3. Offer classrooms one food in two forms, fresh and preserved (ex: fresh cucumber, pickled cucumber)
4. Use all 5 senses to compare and contrast the preserved foods.
5. 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: *3 minutes*
This is a time for students to give their opinion on what they tried!

As students taste the preserved foods, 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.

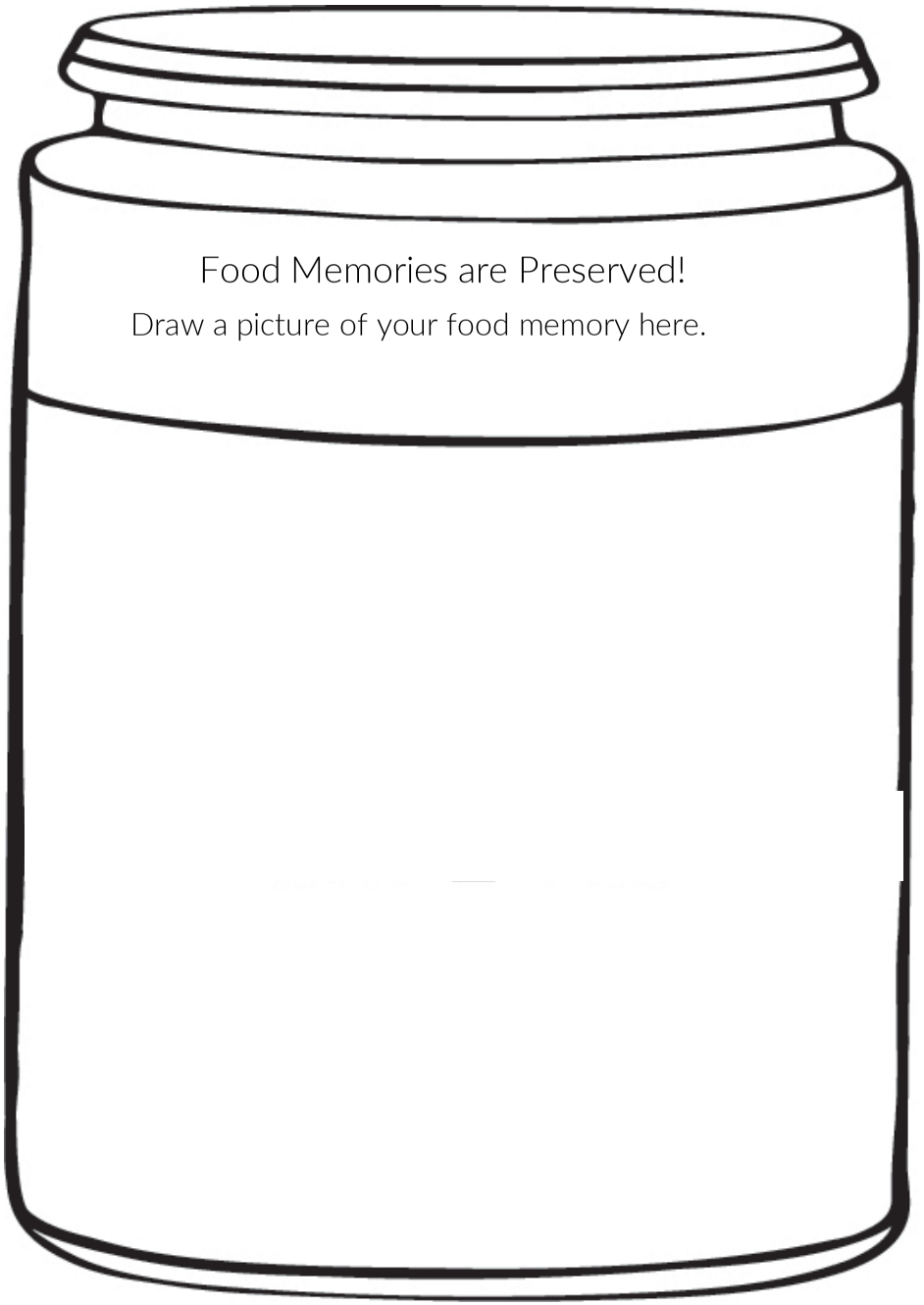
6. Reflection: *3 minutes*
Reflection is one of the most important processes for students to process and retain new information or experiences. Give students an opportunity to reflect on what they've learned or tried in your lesson. This is an excellent place for students to practice the "Asking Discussion."

Pass out "Food Memories are Preserved!" sheets. Ask students to draw a picture of a food memory!

Asking Discussion:
Raise your hand if you're excited to go home and tell your family about tasting pickles.

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

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



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August 2021

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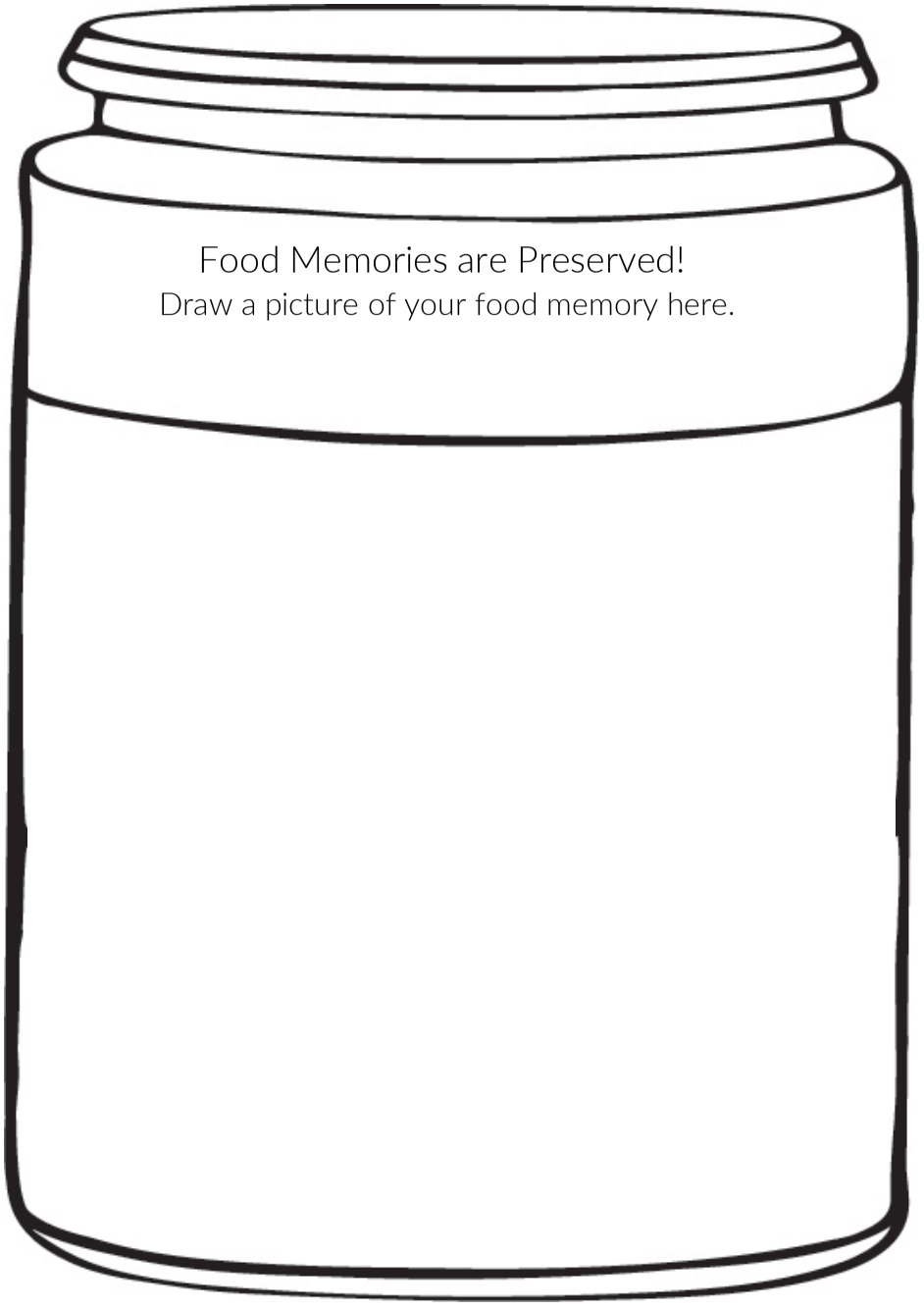

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Additional Materials

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 Preserved Fruits and Veggies

- Preserved fruits and veggies include those that are dried, canned, frozen or fermented. They're a healthy option when fresh fruit and vegetables are hard to find or too expensive.
- Some advantages of preserved fruits and veggies include greater convenience, more variety of foods available, and great taste. Canned fruits and veggies are usually ready to eat, so they do not require as much preparation as fresh ones.
- Some frozen fruits and vegetables contain added preservatives or sauces, so always check the ingredient list on the back of the package.
- Look for canned and frozen fruits and vegetables that say "reduced/low sodium" or "no added salt" with no added sugar. Look for fruits canned in water or 100% fruit juice instead of syrup.
- Look for cans that are clean with no dents, cracks, bulges, or leaking.
- Dried fruits and veggies have a crunchy or chewy texture and are a convenient way to eat healthy on the go. Look for dried fruits and veggies with no added sugar and low salt, if possible.

Facts About Preserved Fruits and Veggies

- Pickled vegetables are preserved with a brine (salt and water) and an added acid, like vinegar.
- Fermented vegetables are preserved with a brine and a good bacteria or yeast (which creates its own acid). Different types of fermented foods include kimchi (cabbage and other vegetables), miso (soybeans), and sauerkraut (cabbage). Fermentation has been used to preserve food for centuries.
- Freezing food greatly slows down the growth of bacteria, allowing food to stay fresh for weeks to months.
- Canned foods are heated before canning, killing harmful bacteria and helping with preservation. Canned foods can generally be stored for 1-5 years!
- Store frozen foods at 0ºF or below in an airtight container. Keep the freezer temperature consistent for the best quality.

Health Connection

- Look at the Daily Value percentage next to sodium on the nutrition label to determine if a food is low or high in sodium (salt). If it is ≤5%, that food is low in sodium. If it is ≥20%, that food is high in sodium. Make sure you check the serving size to see how much of the food contains that amount of sodium. Try to choose preserved fruits and veggies that are low in sodium.
- The same Daily Value recommendation applies to added sugars. Look for preserved fruits and veggies that have ≤5% of the Daily Value for added sugars for the healthiest options.

References and Resources

https://store.extension.iastate.edu/product/4369
https://frozenadvantage.org/advantage/?slide=0
https://kidsgardening.org/digging-deeper-fermentation/?mc_cid=e0802d633a&mc_eid=22ee43239e
https://www.eatright.org/food/vitamins-and-supplements/nutrient-rich-foods/are-canned-foods-nutritious-for-my-family
https://medlineplus.gov/foodlabeling.html
ISU's Spend Smart Eat Smart educational videos on reading food labels: sodium and sugar

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Local Seeds

Frozen Corn, Dried Beans

GRADE 2-3

Month: March
Time Required: 30 minutes
Tasting: Locally grown and preserved sweet corn or black beans

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 staple foods.
- ❑ Students will be able to identify corn as a seed and staple food.

Materials

- ❑ 1-2 copies of ingredient cards for “From Soil to Staple Food” activity
- ❑ Tasting materials (plates, napkins, etc.)
- ❑ Seedy Sweet Corn Salsa with corn tortillas or tortilla chips
- ❑ Printed recipe cards

Preparation

- ❑ Print 1-2 sets of ingredient cards for “From Soil to Staple Food” activity and cut into cards (13 cards per set/sheet, print number of cards depending on class size).
- ❑ Prepared Salsa: make 1-2 days prior to your lesson using the Seedy Sweet Corn Salsa recipe attached - adapt it or use your own!
- ❑ Print recipe cards, 1 per student.
- ❑ Review image slideshow linked within this lesson plan.

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
Second grade - 2-LS2-1.
LS2.A: Interdependent relationships

Third grade - 3-LS1-1.
LS1.B: Growth and development

Lesson Checklist

- ❑ Physical Activity
- ❑ Tasting
- ❑ Voting
- ❑ “Asking” Discussion
- ❑ Newsletters, Bingo cards, Stickers, Incentives
- ❑ Science Connection: plants depend on soil, water, air, and sun (2nd) & seeds and plant life cycles (3rd)

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.

Gather students in a circle. *We're going to start today learning about **staple foods**. Staple foods are foods that we eat often because they can be stored for a long time and eaten all year. Different kinds of staple foods are eaten in different parts of the world.*

Tell students, *Think about a food that you eat with your family often. When you see a picture of a staple food you eat with your family, stand up.* Flip through images of staple foods and have students stand when they see a food that their family eats. Do students have other examples from their families that are not pictured on the slides?

Stand Up for Staple Foods: Link to Image Slideshow (use slides 2-6)
Examples include:

- Beans (dried beans, baked beans, edamame, lentils)
- Rice (brown rice, white rice, rice flour)
- Wheat (bread, noodles, dumplings, naan)
- Potatoes (roasted, baked, mashed, boiled, fried, sweet potatoes)
- Corn (tortillas, chips, cornbread, corn kernels (on the cob, frozen, canned)

All around the world, people eat staple foods in many different forms. We'll taste some of these today, but first, let's explore where staple foods come from.

Explore

3. Experiential Learning: *10 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.

From Soil to Staple Food: Link to Image Slideshow (use slides 7-14)
With all students seated at the carpet, explain, *It takes a lot of ingredients to make it happen, but all of these staple foods - our noodles, lentils, tortillas - all come from the soil. Let's figure out how it works by using tortillas as an example.*

With the teacher's help, pass out an ingredient card to each student (or 1 card per pair of students). Tell students, *Look at the ingredient on your card and decide where it fits. Is the ingredient on your card needed to make soil? Does it go into making corn? Or does it go into making tortillas?* After students have had time to think or discuss, advance slides on the doc-cam to talk through the ingredients needed for soil, corn and tortillas.

- Starting with soil - ask students who think their ingredient goes into soil to stand up and share the ingredient on their card. Show soil ingredient list (rocks, worms and bugs, trees, water, wind and air). Seat students.
- Next, ask students who think their ingredient goes into corn to stand up and share the ingredient on their card. Show ingredient list (soil, corn seeds, sun, air, water). Explain that a corn seed grows into a stalk that holds the corn cob. We need soil to grow corn. Seat students.
- Lastly, ask students who think their ingredient goes into corn tortillas to stand up and share the ingredient on their card. Show tortilla ingredient list [corn (Masa Harina is corn flour), salt, water]. We need corn to make tortillas. Seat students.

Excellent! So we can see how corn tortillas come from the soil with the help of lots of other ingredients-like corn. If time allows, some interesting follow-up questions might ask if anyone had an ingredient that was used more than once, or where would a farmer or chef come into the process?

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").

Seedy Sweet Corn Salsa
For our tasting today, we're going to try sweet corn. Corn is a seed. What is corn? (choral response - *"a seed"*) *Seeds are the plant part that can grow a new plant. Sweet corn grows in the summer in Iowa, and this corn has been frozen to preserve it since then* (recall last months vocab word: preserve!). *We're going to taste sweet corn in a recipe called seedy sweet corn salsa. We'll taste it with a tortilla* (or tortilla chip). The recipe on the card attached to this lesson plan can be adapted to your needs (if using local black beans, be sure to note that they are also seeds!)

As you pass out samples, explain to students that *we're going to taste a bite of just the sweet corn first. Then we'll try it all together!* Be sure to review your brave tasting rules (for example, don't yuck my yum, we all try together, etc.). Ask students to use their senses while they wait until the entire class is ready to taste the salsa together.

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 salsa, 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: *5 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."

Recipe Card: Seedy Sweet Corn Salsa
As students are tasting their salsa, pass out recipe cards and instruct them to fill in the blanks. *You can take this recipe card home and make Seedy Sweet Corn Salsa with your family.*

Asking Discussion:
Raise your hand if you're excited to go home and tell your family about tasting local seeds!

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

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

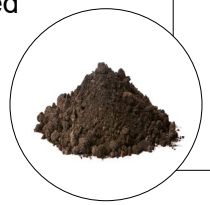
Educator, copy 1-2 sets of these ingredient cards depending on the class size. Cut into single cards, one per student or pair of students. Note, the ingredients for soil are in the first column, the ingredients for corn are in the second column, and the ingredients for tortillas are in the third column.

Rocks	Soil	Corn (called Masa Harina)
Worms and bugs	Corn Seeds	Salt
Trees	Sun	Water
Water	Water	
Wind and air	Air	

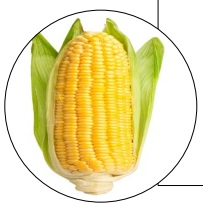
Seedy Sweet Corn Salsa

Ingredients (makes 4 cups):
- 3 cups sweet corn
- 1 cup of cooked or canned black beans, rinsed and drained
- ¼ cup fresh cilantro, chopped
- ¼ cup lime juice (about 2 limes)
- ¼ cup red onion, chopped
- salt to taste

Directions:
- In a bowl, combine all of the ingredients.
- For the best flavor, allow the salsa to sit for 20 minutes before eating.
- The salsa keeps well in the refrigerator, covered, for 3-4 days.
- Eat with corn tortillas, tortilla chips, tacos, etc.



List the ingredients that are needed for soil.



List the ingredients that are needed for corn.

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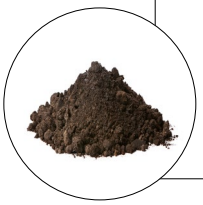
Pick a **better** snack™ Lesson

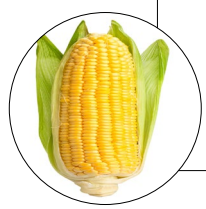
Seedy Sweet Corn Salsa

Ingredients (makes 4 cups):
- 3 cups sweet corn
- 1 cup of cooked or canned black beans, rinsed and drained
- ¼ cup fresh cilantro, chopped
- ¼ cup lime juice (about 2 limes)
- ¼ cup red onion, chopped
- salt to taste

Directions:
- In a bowl, combine all of the ingredients.
- For the best flavor, allow the salsa to sit for 20 minutes before eating.
- The salsa keeps well in the refrigerator, covered, for 3-4 days.
- Eat with corn tortillas, tortilla chips, tacos, etc.



List the ingredients that are needed for soil.



List the ingredients that are needed for corn.

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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 Seeds We Eat

- Look for corn on the cob with a bright green husk (outer leaves) and evenly spaced, plump kernels.
- Store corn in the refrigerator with the husk on or wrapped in plastic for 3-4 days.
- Break off the corn stalk, remove the husk and silky strings, and rinse under cool water before preparing.
- Look for canned corn or beans with reduced sodium or no sodium added.
- Look for dried beans that are clean, dry, and firm. Avoid beans that are irregularly colored or shriveled. One cup of dried beans becomes 2-3 cups when cooked.
- Store unopened dried and canned beans at room temperature. Refrigerate canned beans once opened and use them within 2-3 days.
- Rinse beans under cool water before cooking and eating. Dried beans must be soaked in water and cooked before they are edible.

Facts About Seeds We Eat

- Corn is in season July - September. It is a seed and a member of the grass plant family. It grows on stalks above the ground encased in husks.
- The first corn crop began in Mexico about 10,000 years ago. It is now a staple crop in many countries around the world. Corn is the #1 produced crop in Iowa!
- Depending on when corn is harvested, its use and nutritional value varies. Corn harvested with soft kernels full of liquid is a vegetable (corn on the cob, frozen corn, canned corn). Corn harvested at full maturity is dry and is processed as a grain (corn flour, corn meal). Popcorn is considered a whole grain.
- Corn comes in a variety of colors including yellow, white, red, pink, black, blue, and even striped!
- Beans are in season June - September. They are in the Fabaceae (pea) family and can grow on a bush or climbing plant. Beans are the seeds of plants, and grow in pods.
- There are many different varieties of beans including black, navy, pinto, white, kidney, soybeans, and chickpeas! Beans come in a variety of shapes too.
- Soybeans are the 2nd largest produced crop in Iowa!

Health Connection

- Corn provides the antioxidant lutein, which is good for our eyes. It also provides fiber and B vitamins. B vitamins help our bodies use the energy we get from food!
- Beans are high in protein and fiber. Fiber is good for our digestive systems and our hearts!

References and Resources

https://spendsmart.extension.iastate.edu/produce-item/corn-on-the-cob/
https://spendsmart.extension.iastate.edu/pantry-picks/beans/
https://fruitsandveggies.org/fruits-and-veggies/
https://bit.ly/3xlZKzc
https://www.iowafarmtoschoolearlycare.org/choose-iowa-campaign
https://www.britannica.com
https://www.nass.usda.gov/Quick_Stats/Ag_Overview/stateOverview.php?state=IOWA
https://www.fns.usda.gov/usda-foods/household-product-information-sheets-and-recipes
https://ask.usda.gov/s/article/Is-corn-a-grain-or-a-vegetable

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Pick a better snack™

IDPH Iowa Department of Public Health

Local Leafy Greens
Microgreens, Arugula, Lettuce

GRADE 2-3

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 differing rates of plant growth.
- ❑ Students will be able to identify microgreens as a type of leafy green.

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 (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
Second grade - 2-LS4-1.
LS4.D: Biodiversity

Third grade - 3-LS1-1.
LS1.B: Growth and development

Lesson Checklist

- ❑ Physical Activity
- ❑ Tasting
- ❑ Voting
- ❑ “Asking” Discussion
- ❑ Newsletters, Bingo cards, Stickers, Incentives
- ❑ Science Connection: Biodiversity (2nd) & Plant life cycles (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.

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: *8 minutes*

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

Moving to the Music: A Plant Dance Party!

Today, we're going to learn about and taste a fast growing plant. But first, let's dance. I'm going to play a recording of some different songs. As you hear the songs, show us how the music makes you want to move. When you hear a pause between songs, freeze! Play this musical recording demonstrating fast and slow instrumental songs (3:26). If it's in your skillset, consider making a compilation or playlist of fast and slow songs that your students know and love!

Great moves! Just like we can move and dance at different speeds, plants can grow at different speeds. Let's listen to the music again, this time pretending to be plants that grow from little seeds (crouch down to the ground) into bigger plants (grow up and reach into the air). The music will tell us to grow fast or slow. When you hear a pause between songs, become a seed again. Play the recording of songs one more time.

Thanks for being in the plant dance party! The food we'll be tasting today is a vegetable that grows very fast.

**If outdoors, use a speaker to play the music.

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). *When seeds respond to sunlight, water, and air, they grow; leafy greens are a fast growing plant. Different sizes of plants have different names.* Show visual on the doc-cam. *Sometimes we eat plants as seeds, sometime we eat plants as sprouts right after they germinate, and if we let them grow a little longer they become* seedlings, also called *microgreens. Let's say that word together: microgreens. Microgreens are harvested after they have formed their first pair of leaves. Let's watch a video to see how 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. *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, students can follow your lead and act out being a seed, sprout, and microgreen.

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. Mist water over the seeds to moisten them using a squeeze bottle.
4. Place the containers in the sun. A south-facing window is ideal.
5. *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 leafy green did you plant today?* (Microgreen, or specific name of seed)
- *How many leaves do microgreens have when they are ready to be eaten?* (2 leaves, 1 pair)
- *How fast will your microgreens grow?* (Students say their predictions aloud)

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?*

*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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Pick a better snack™

IDPH Iowa Department of Public Health

Local Spring Veggies
Turnips, Radishes

GRADE 2-3

Month: May
Time Required: 30 minutes
Tasting: Turnips, Radishes

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 identify spring crops like turnips and radishes.
- ❑ Students will be able to describe how to build brain power.

Materials

- ❑ Prepared image of PABS tastings (example included)
- ❑ Tasting materials: Consider the multiple options for exploring and sampling local spring crops! Two described within the lesson are making Spring Crop Crackers and Spring Rolls.

Preparation

- ❑ Use familiar images of fruits and vegetables from PABS lessons throughout the year to create a colorful image for the memory game.
- ❑ If planning to make Spring Crop Crackers or Spring Rolls, pre-chop an assortment of local spring veggies, including turnips and radishes.

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
Second grade - 2-LS4-1.
LS4.D: Biodiversity

Third grade - 3-LS4-3.
LS4.C: Adaptation

Lesson Checklist

- ❑ Physical Activity
- ❑ Tasting
- ❑ Voting
- ❑ “Asking” Discussion
- ❑ Newsletters, Bingo cards, stickers, Incentives
- ❑ Science Connection: Biodiversity (2nd) & the effect of weather on plants (3rd)

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.

If leading any hands-on cooking, assemble your materials so that they are organized and accessible for you and the students.

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 were going to learn about building brain power. Let's start off by using our brain power to think. Have students touch their brain buttons (temples). *Think in your head, what is something you learned this year in Pick a better snack?* Have students share all at once as a choral response, or lead students through a think-pair-share. Once students have thought and shared, say, *Wow, we have learned so much this year!*

Now, let's use our brain power to play a memory game. I'm going to show a picture on the screen for 15 seconds. Without saying anything, use your brain power and try to remember the names of all the things you see. Using the doc-cam, display a colorful image of the foods you've sampled in PABS this year. (example below). Hide the image after 15 seconds. *Now, I'm going to say the name of a food and if you saw it on the screen, spring up into the air.* Read through the names of PABS foods you've sampled that were on the picture along with some things that you didn't try during PABS, allowing students to use their memory and respond with jumping. *Excellent brain power!*

Display the image of PABS foods again. *Our brain is the part of our body that helps us learn about, try, and remember all of the foods we tried together this year. Your brain is very hungry because it's working and growing all the time. When is your brain working and growing?* (Choral response: *"all the time!"*). *Colorful fruits and vegetables like these contain vitamins and nutrients that help build our brain power by feeding our brain.*

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.

Seat students at their desks. Opportunity for 3 deep breaths.

Today, we're going to build our brain power and feed our brain by tasting radishes (and/or other local spring crops). Show students a whole radish (or other spring crops you will taste), or denote spring crops on the picture from the memory game. *Radishes are a colorful root vegetable that grow in the spring. Foods that grow in the spring are called spring crops. During the spring season, they get the conditions they need to begin to grow; warm spring rain, and longer, warmer days make them able to grow.* When the hot summer comes, these crops do not grow well. They love spring weather! *Spring crops are special because they're the first foods we can grow outdoors after winter ends!*

Sampling Local Spring Crops

There are several ways to sample local spring crops:

- Decorate Spring Crop Crackers. Bring prepared ingredients into the lessons: chopped or shredded spring crops (turnips, radishes, cabbage, carrots), multigrain crackers, cream cheese. Students can spread cream cheese on a cracker and decorate it with spring crop toppings.

- Make Spring Rolls. Bring prepared (chopped or shredded) spring roll ingredients (turnips, radishes, cabbage, carrots, rice paper, herbs, sauce) into the lesson and work with students to make their own spring roll. Check out FoodCorps' lesson, Rolling into Spring, for inspiration.

- Raw: Cut spring crops into sticks or half-moons and serve with a dip.

- Air fryer: Before the lesson, chop crops into smaller pieces. During the lesson, toss in an air fryer with olive oil and spice options (ex: garlic, pepper, paprika). You can also use an oven or fry in a skillet.

- Electric Skillet: Before the lesson, chop crops into smaller pieces. During the lesson, heat 2 tablespoons olive oil over medium heat, leaving uncovered. Add your spring crops to the skillet and season with optional spices (ex: salt, garlic, pepper, paprika).

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.

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 spring crops, 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 our magic word, "*radish," *you can say your answer aloud. Let's practice…*

- What month is it? (May)
- What spring crop(s) did we try today? (turnips, radishes)
- What's one thing spring crops need to grow? (water, sunshine)
- What do the nutrients in colorful foods give our brains? (brain power)
- What are some other colorful foods we can eat for brain power? (display attached visual if students need help coming up with colorful food)

Asking Discussion:
Raise your hand if you're excited to go home and tell your family about tasting spring crops.

- Ask a student with a raised hand: *if you wanted to try spring crops like turnips or radishes at home, how might you ask your grown-ups?*
- You might also ask additional questions like, *where could you buy spring crops like turnips or radishes?*
- What else do you know about turnips or radishes?

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




















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 Spring Root Veggies

- Look for turnips that are heavy, pearly, and have fresh leaves with no soft spots. Smaller turnips taste sweeter.
- Look for radishes that are brightly colored and smooth with green tops.
- Turnips and radishes can be stored in the refrigerator for 7 days.
- Scrub radishes and turnips with a vegetable brush under cool water before eating.
- Remove radish and turnip tops and store the veggie in the refrigerator for up to 1 week. Radish and turnip tops are edible; store them in the fridge like other salad greens and eat within a couple of days.
- Raw radishes have a peppery flavor, while cooked radishes have a slightly sweet flavor.

Facts About Spring Root Veggies

- Turnips are in season late spring and late fall. Radishes are in season May-October. Radishes are one of the first spring vegetables available.
- Turnips are a root that grows underground and a member of the mustard plant family.
- Originating in Asia, turnips are now grown all over the world in mild climates.
- Different types of turnips include purple-top white-globe, scarlet queen, and Tokyo cross. Turnips are usually purple or white in color.
- Radishes are a root in the mustard plant family and come in a variety of sizes and colors, although most commonly red.
- The shape of radishes range from spherical to cylindrical and less common color varieties include white, purple, yellow, and black.
- There are both summer and winter varieties of radishes grown all over the world.

Health Connection

- Turnips and radishes are high in vitamin C. They also give us fiber and potassium.
- Vitamin C helps heal our skin and helps our bodies fight off illness!
- Potassium helps keep our hearts and muscles healthy.
- Fiber is good for our digestive systems and our hearts.

References and Resources

https://fruitsandveggies.org/fruits-and-veggies/
https://www.canr.msu.edu/uploads/files/HNI46.pdf
https://bit.ly/3xlZKzc
https://www.iowafarmtoschoolearlycare.org/june-radish
https://www.fns.usda.gov/usda-foods/household-product-information-sheets-and-recipes

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Pick a better snack™

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