

# Local Summer Crops

## *Tomatoes, Eggplant, Cucumbers*

# GRADE

## K-1

**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 associate tomatoes with hot weather.
- Students will be able to list conditions for growing summer crops.

### Materials

- Prepared images for Hot or Cold Activity
- Printed “Summer Crops Need” half sheets for students
- 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

- If using doc-cam, print images for Hot or Cold Activity and cut into cards.
- Print “Summer Crops Need” half sheets for students.

### Recommended Books

(Send book suggestions to [suzy.wilson@idph.iowa.gov](mailto:suzy.wilson@idph.iowa.gov).)

### Standards Connection

This lesson supports the following Iowa Core standards.

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

**Science**  
 Kindergarten - [K-LS1-1](#).  
 LS1.C: Plant survival needs

First grade - [1-ESS1-2](#).  
 ESS1.A: Seasonal patterns

### Lesson Checklist

- Physical Activity
- Tasting
- Voting
- “Asking” Discussion
- Newsletters, Bingo cards, Stickers, Incentives
- Science Connection: Things plants need (K) and Seasonal patterns (1st)

## Engage

### 1. Introduction: 2 minutes

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

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 here's something I want to learn about you...* (have students stand up in a circle).

### 2. Engage Activity: 6 minutes

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

#### Hot or Cold?

*Think in your head (can put fingers up to temples and close eyes), Do you like when the weather is hot or when the weather is cold? When I say our magic word “tomato,” I want you to silently show us your preference. If you like when it's hot outside, put your arms over your head to make a big sun. If you like when it's cold outside, stretch your arms out to the side like you're a snowflake. Ready? Tomato! Observe all students' preference for hot or cold weather, and ask a couple of students to share why they like hot or cold weather better with the class (use pick-a-stick to randomly select students to share). Great job! Our classroom likes both hot and cold weather.*

*Now, we're going to look at a few pictures. When you see the picture, if you think of hot, put your arms over your head to make a big sun. If you think of cold when you see the picture, stretch your arms out to the side like you're a snowflake. Using the doc-cam, show one picture at a time, using the images below or include your own. Verbally name the image on each card and verbalize how students are responding as you move through the images. For example, “Ice Cube - we think of cold when we see an ice cube.” When you get to a picture of a tomato plant (or cucumber or eggplant - whatever you will be tasting), pause to see how students respond. Ask a few students, “Why does the tomato plant make you think of hot? Or, Why does the tomato plant make you think of cold?” Answers will vary. Share, *Those are great connections. Today we're going to taste a tomato, a vegetable that really likes hot, sunny weather.**

#### \*\*Hot or Cold Images

Include any images of your liking! Some included within this lesson plan are:

- Ice Cube
- Campfire
- Ice cream cone
- Glass of water
- Birthday candle
- Grill
- Winter Coat
- Tomato
- Sunshine

**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.*

Have students return to their desks (opportunity for 3 deep breaths).

Show students a whole tomato (or other summer crop you will taste). *We're going to taste this vegetable called a tomato. What's this vegetable called?* (choral response - "tomato") *Vegetables - like tomatoes - 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.* Show image of tomato plant and sun (below in this document) on the doc cam. *Summer crops need warm soil, lots of sunlight, and high temperatures to grow.* 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.

**"Summer Crops Need" Worksheet** - pass out "Summer Crops Need" worksheets. Ask students to draw a sun and sunshine over the tomato plant and a warm base of soil under the tomato plant. Show the completed image on the doc-cam for students to reference.

**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 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.

**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 our magic word, "tomato," you can say your answer aloud. Let's practice...*

## Reflect (cont'd)

- *What month is it? (September)*
- *Whose class am I in?*
- *What vegetable did we try today? (Tomatoes)*
- *Do tomatoes like hot or cold weather? (Hot)*
- *What is one thing that summer crops need? (Sunlight, high temperatures, warm soil)*
- *Why can't summer crops grow outdoors in Iowa's winters? (Little sunlight, low temperatures, cold soil)*

### Asking Discussion:

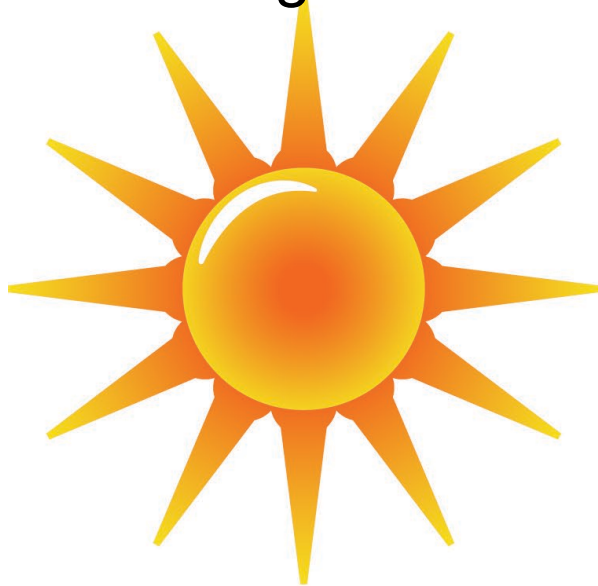
*Raise your hand if you're excited to go home and tell your family about tasting tomatoes.*

- *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?*

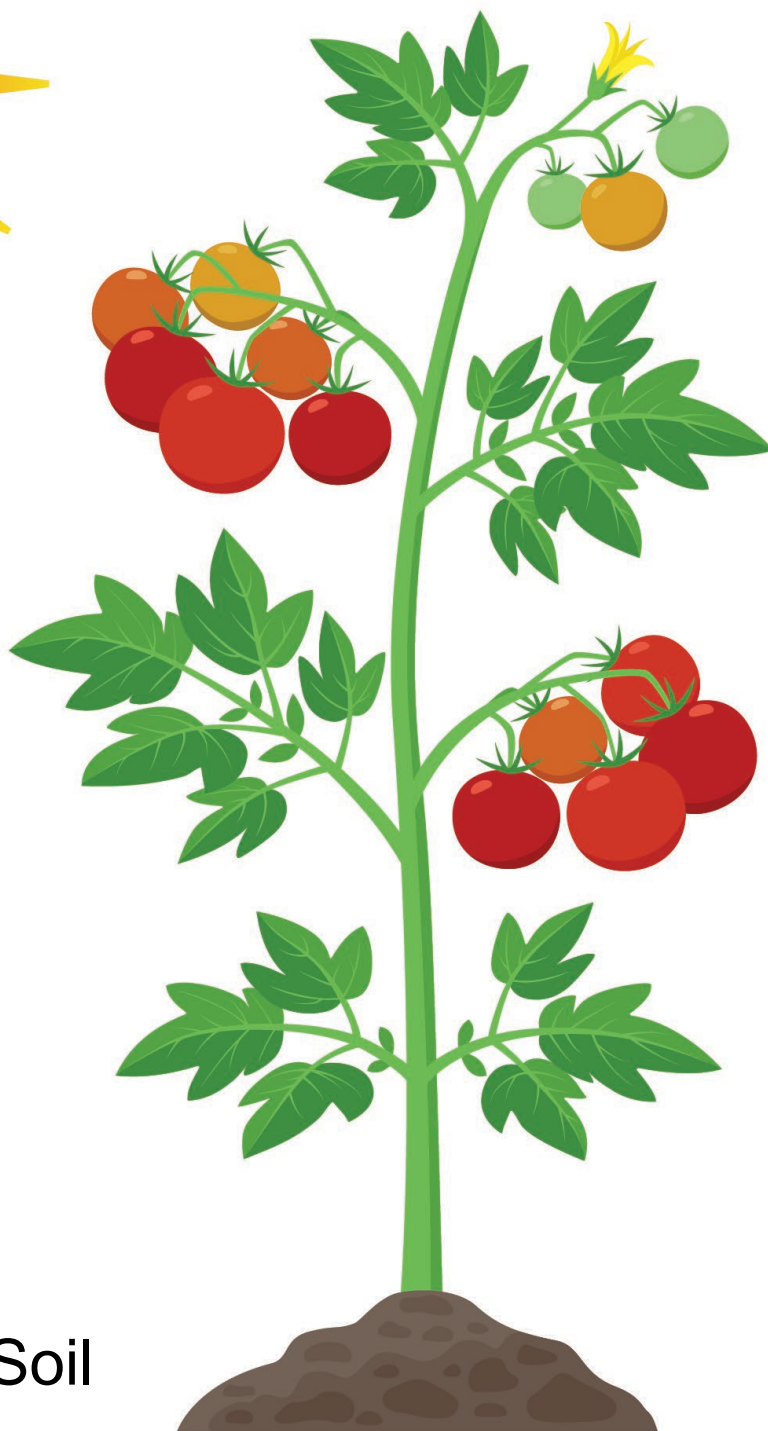
\*Leave newsletters, incentives, stickers, and BINGO sheets with the teachers to pass out.

# Summer crops need:

Lots of Sunlight



High Temperatures



Warm Soil

# Summer crops need:

## 1. Lots of Sunlight

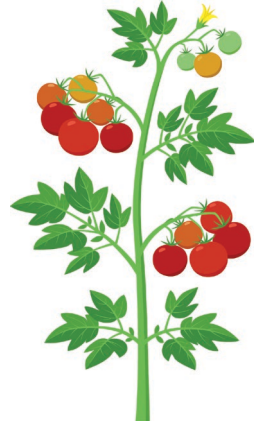
Draw a big sun over the tomato plant.

## 2. High Temperatures

Draw sunrays coming from the sun.

## 3. Warm Soil

Draw a warm bed of soil under the tomato plant.



This institution is an equal opportunity provider.

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



# Summer crops need:

## 1. Lots of Sunlight

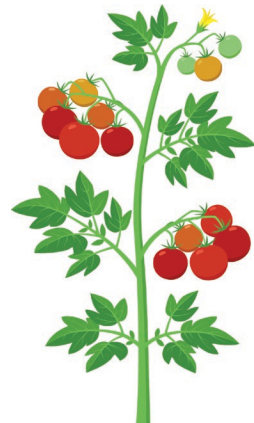
Draw a big sun over the tomato plant.

## 2. High Temperatures

Draw sunrays coming from the sun.

## 3. Warm Soil

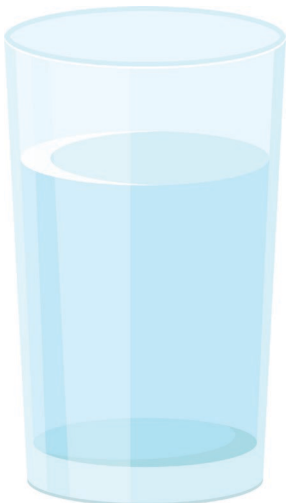
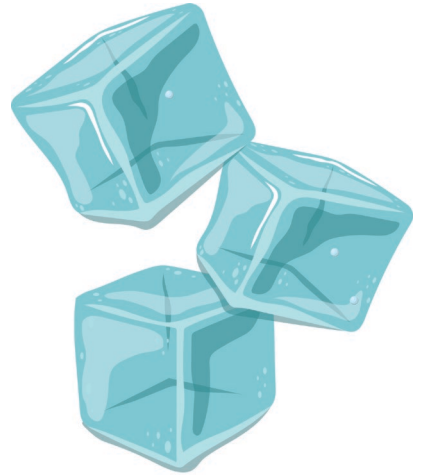
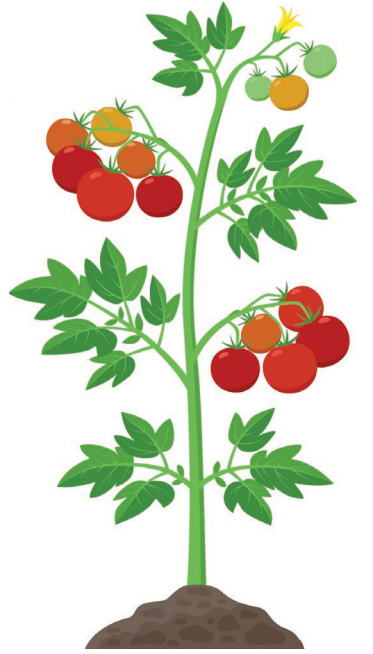
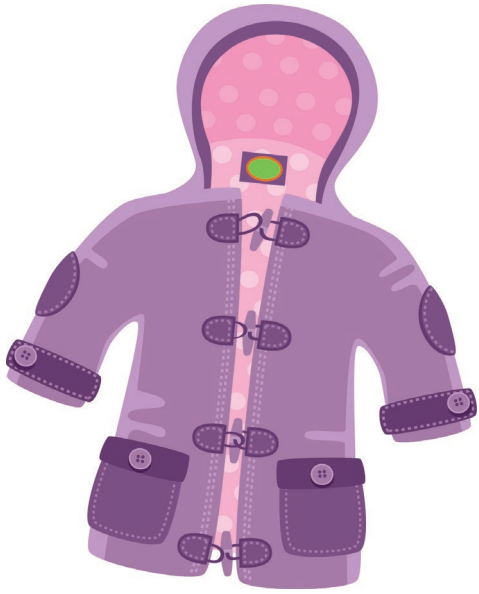
Draw a warm bed of soil under the tomato plant.



This institution is an equal opportunity provider.

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





## 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 20° 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>

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





# Local Fall Fruit

## Apples, Pears, Melons

**GRADE**  
**K-1**

**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 construct a plant using six plant parts.

### Materials

- 6 Plant Part Puzzles, one of each
- My Plant Part Puzzle ½ sheet, one for each student
- Tasting materials: napkins or paper plates
- Image of apple tree (included in lesson)
- 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.
- Print the full sheet, “My Plant Part Puzzle,” and cut into ½ sheets, one per student
- 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](mailto:suzy.wilson@idph.iowa.gov).)

### Standards Connection

This lesson supports the following Iowa Core standards.

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

**Science**  
Kindergarten - [K-LS1-1](#).  
LS1.C: Plant survival needs

First grade - [1-LS1-1](#).  
LS1.A: Structure and function

### Lesson Checklist

- Physical Activity
- Tasting
- Voting
- “Asking” Discussion
- Newsletters, Bingo cards, Stickers, Incentives
- Science Connection: Observing similarities and differences (K) & Parts of a plant (1st)

## Engage

### 1. Introduction: 2 minutes

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

### 2. Engage Activity: 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 plant parts and how they work together to make food. To start, we're going to work together!* 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!*

- Emphasize that getting untangled requires a lot of communication and cooperation. *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. Did they talk to each other? Did they have different roles? Celebrate their teamwork!

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. As a team, work together to fit the pieces of the puzzle together. Once your group has solved the puzzle, work together to decide what the picture is. 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. Did they take turns? Did they talk to each other? Did they have different roles? Celebrate their teamwork! Say, *Just like we worked together to solve our people puzzle and these plant part puzzles, plant parts work together to make food!*

## 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, *Every plant is a puzzle of plant parts.* While displaying the complete image of the apple tree (included in the lesson), briefly describe the function of each plant part and read the names together as a class.

- **Roots:** soak up water and keep the plant in the ground
- **Stem:** brings water up and food down
- **Leaves:** help the plant make food
- **Flowers:** grow into fruit with the help of bees
- **Fruit:** holds and spreads new seeds
- **Seeds:** help make new plants

Have groups raise their hands when you get to the plant part that was on their puzzle. Count the plant parts together, 1-6. *Plants, like this apple tree, have 6 plant parts. The plant part we eat from an apple tree is the (choral response- "fruit!"). In the fall, the fruit on a 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. We're going to take a really long time to eat it because we're going to explore everything we can about the fall fruit using our 5 senses.* Lead students through 5 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 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 fruit samples, talk the class through some descriptive words to describe the different fall fruit 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 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."*

**Student Plant Part Puzzle:** Give each student the ½ sheet (below) and instruct them to make their own imaginary plant part puzzle. *Use your imagination to create a new plant that has all 6 plant parts. When you're done, cut your puzzle into pieces and share it with a friend!*

#### Asking Discussion:

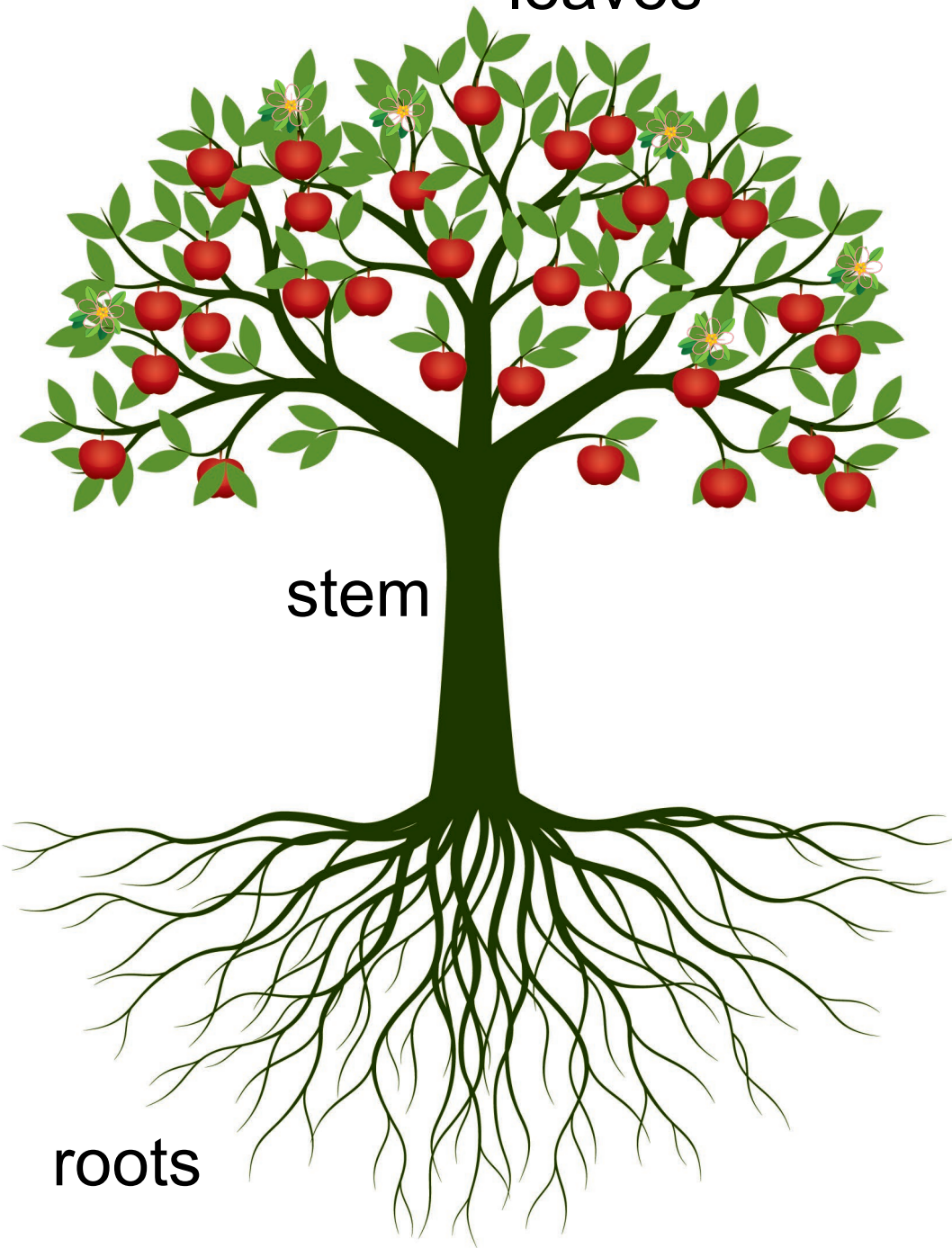
*Raise your hand if you're excited to go home and tell your family about tasting fall fruit.*

- *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 else do you know about fall fruit?*

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

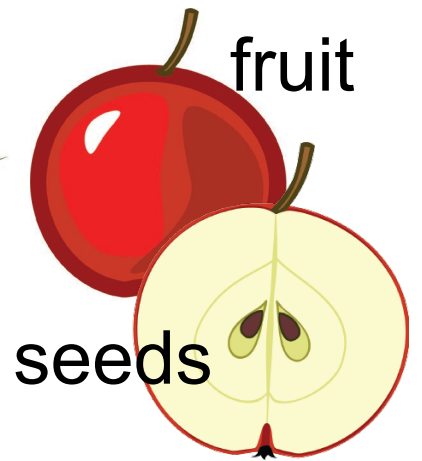
leaves

flower



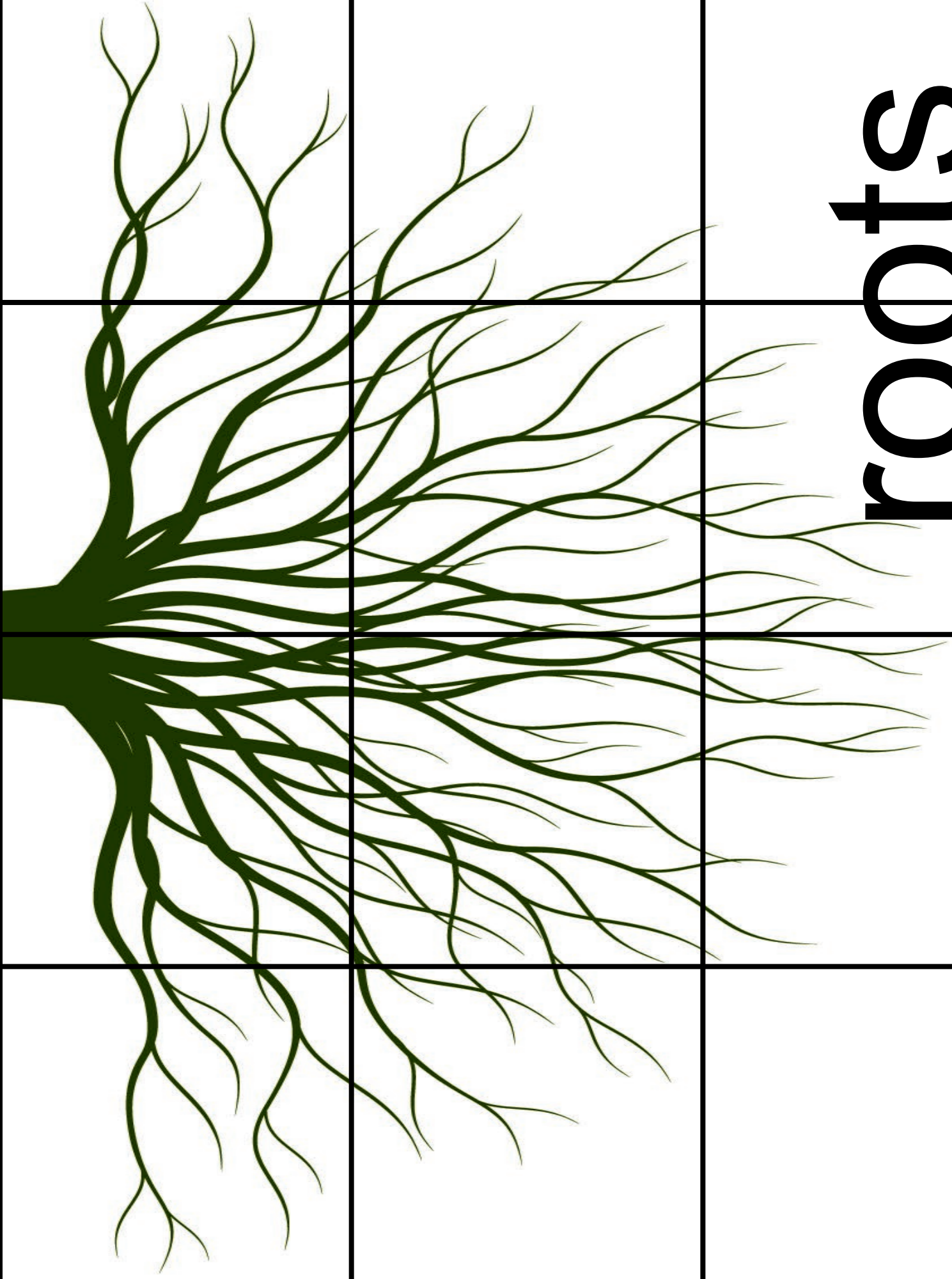
stem

fruit

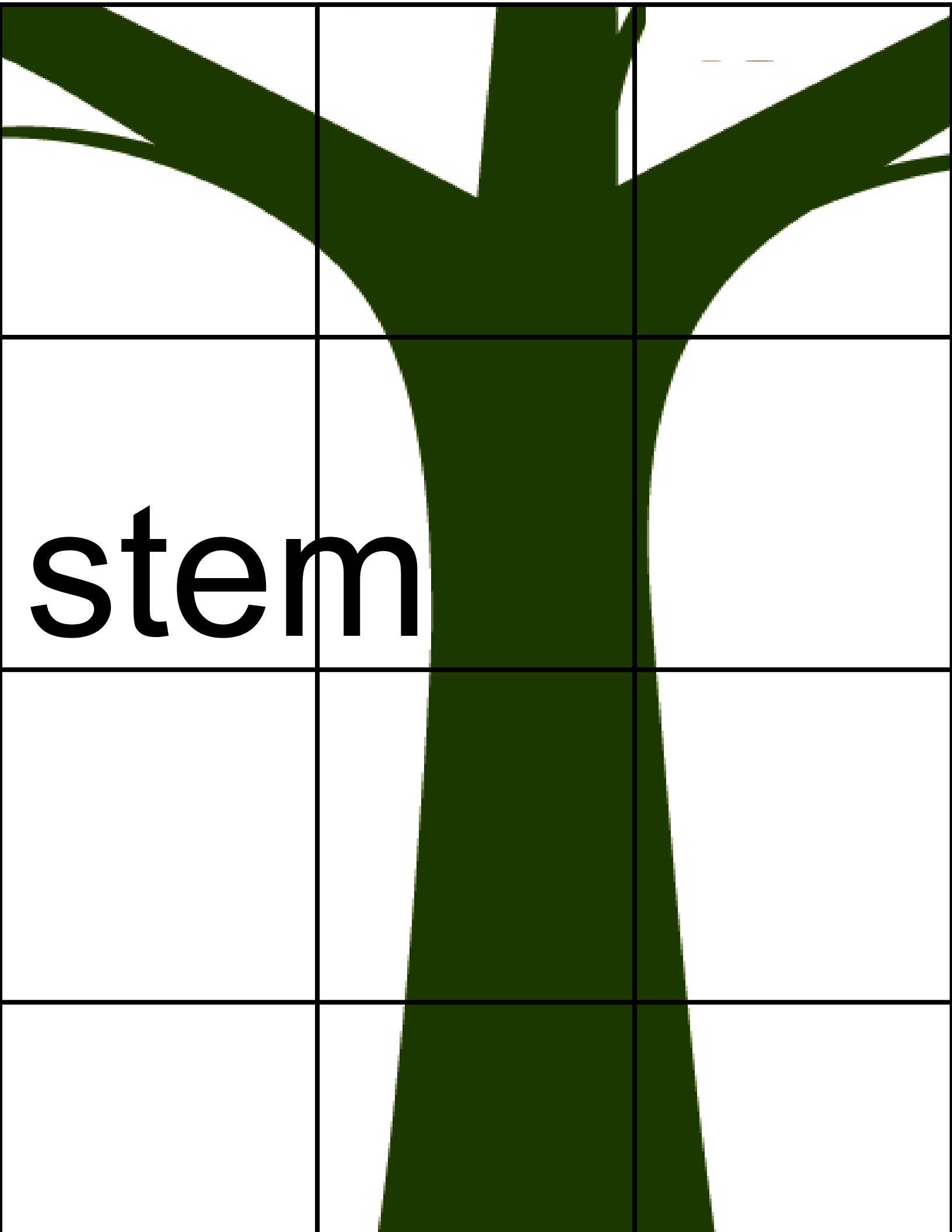


seeds

roots

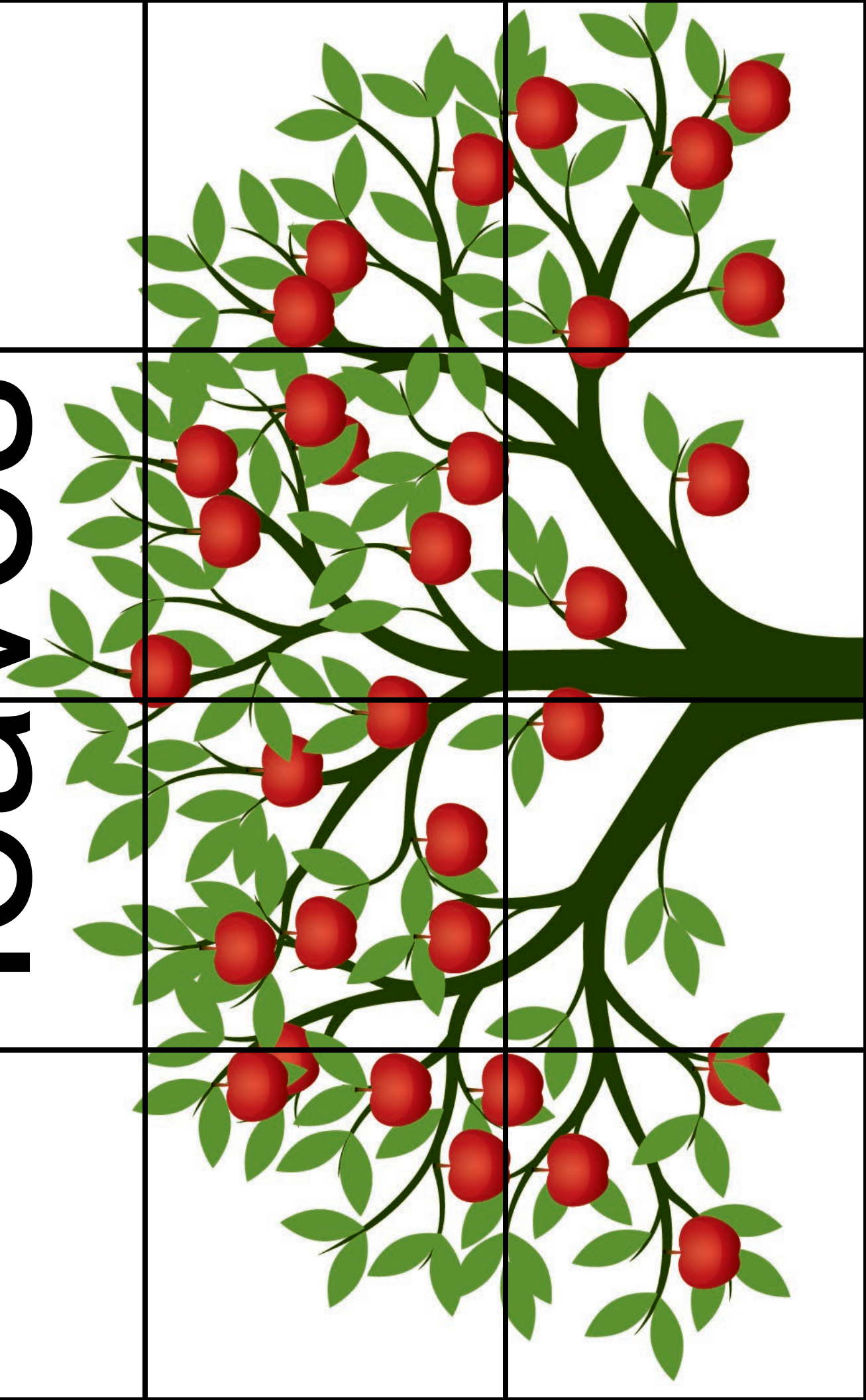


roots



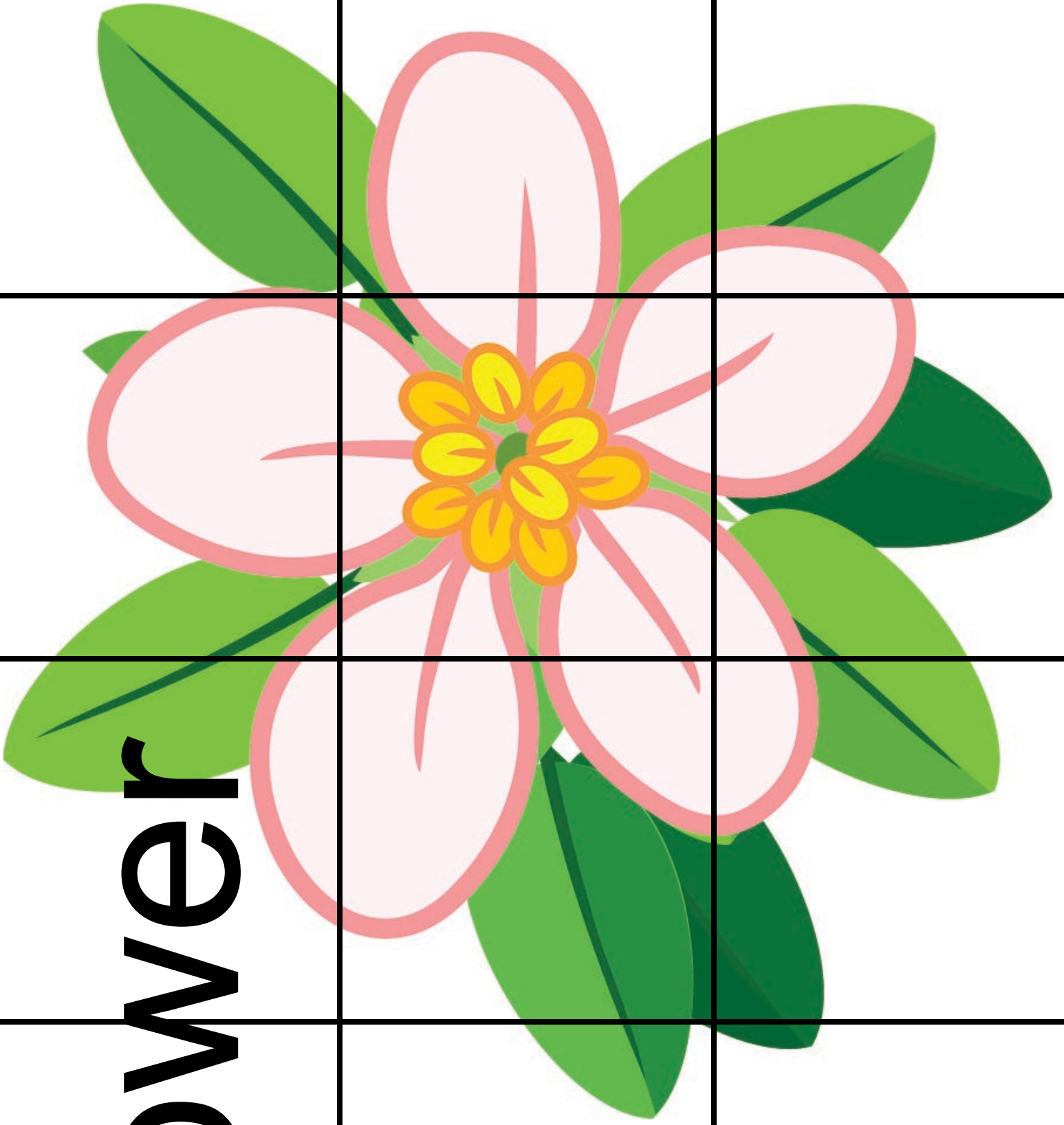
stem

leaves

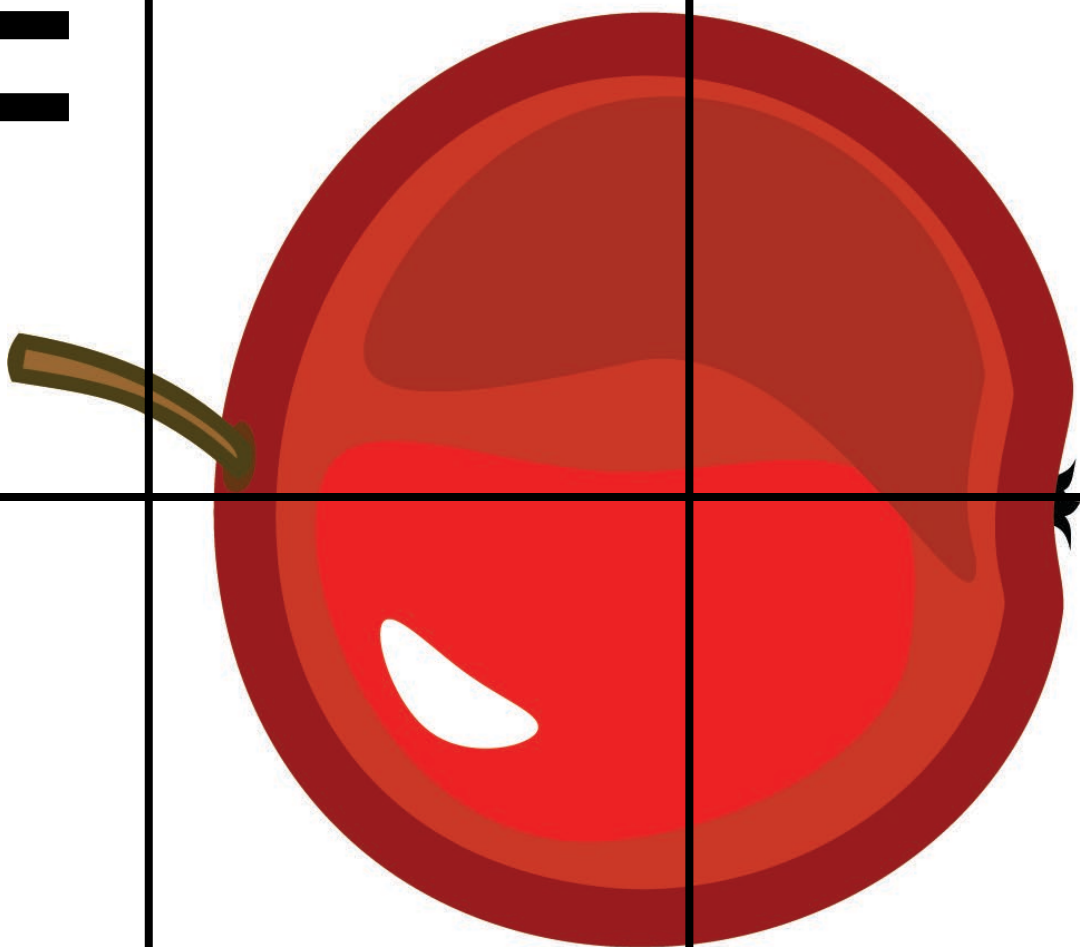
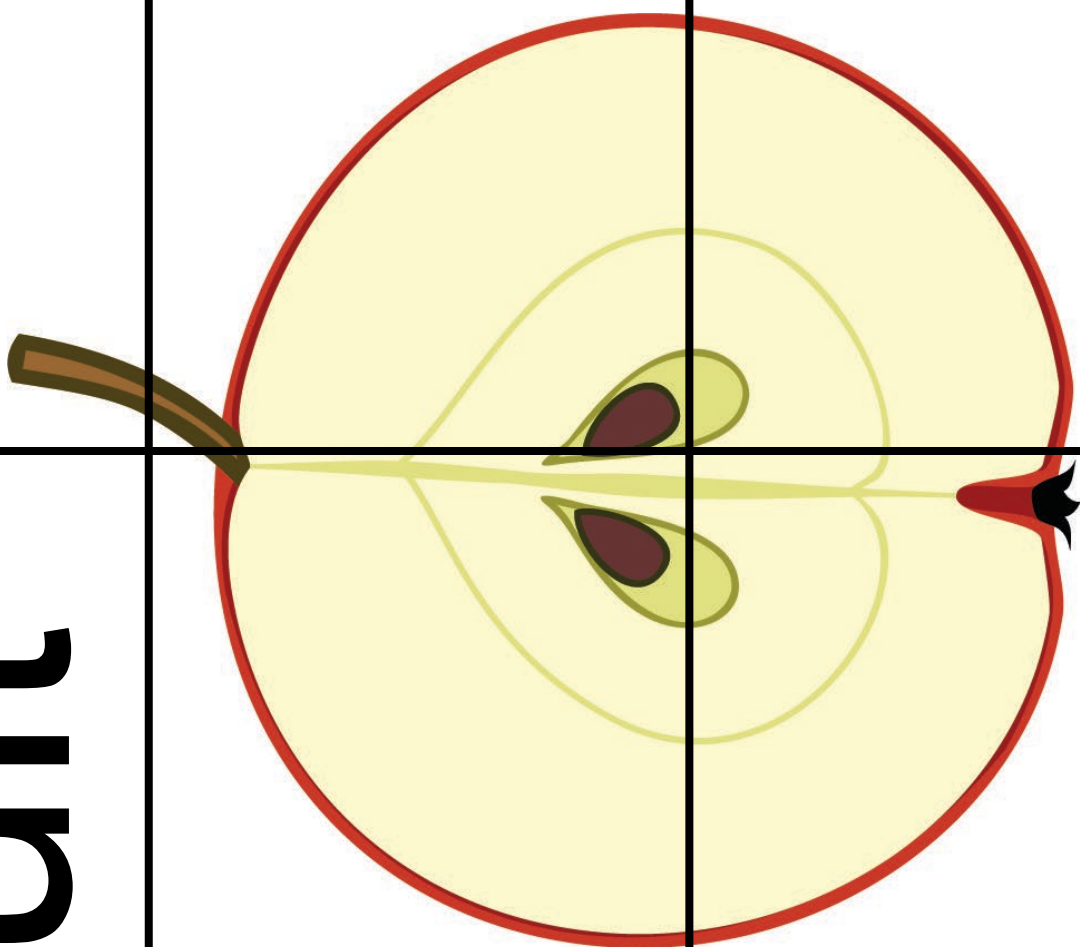




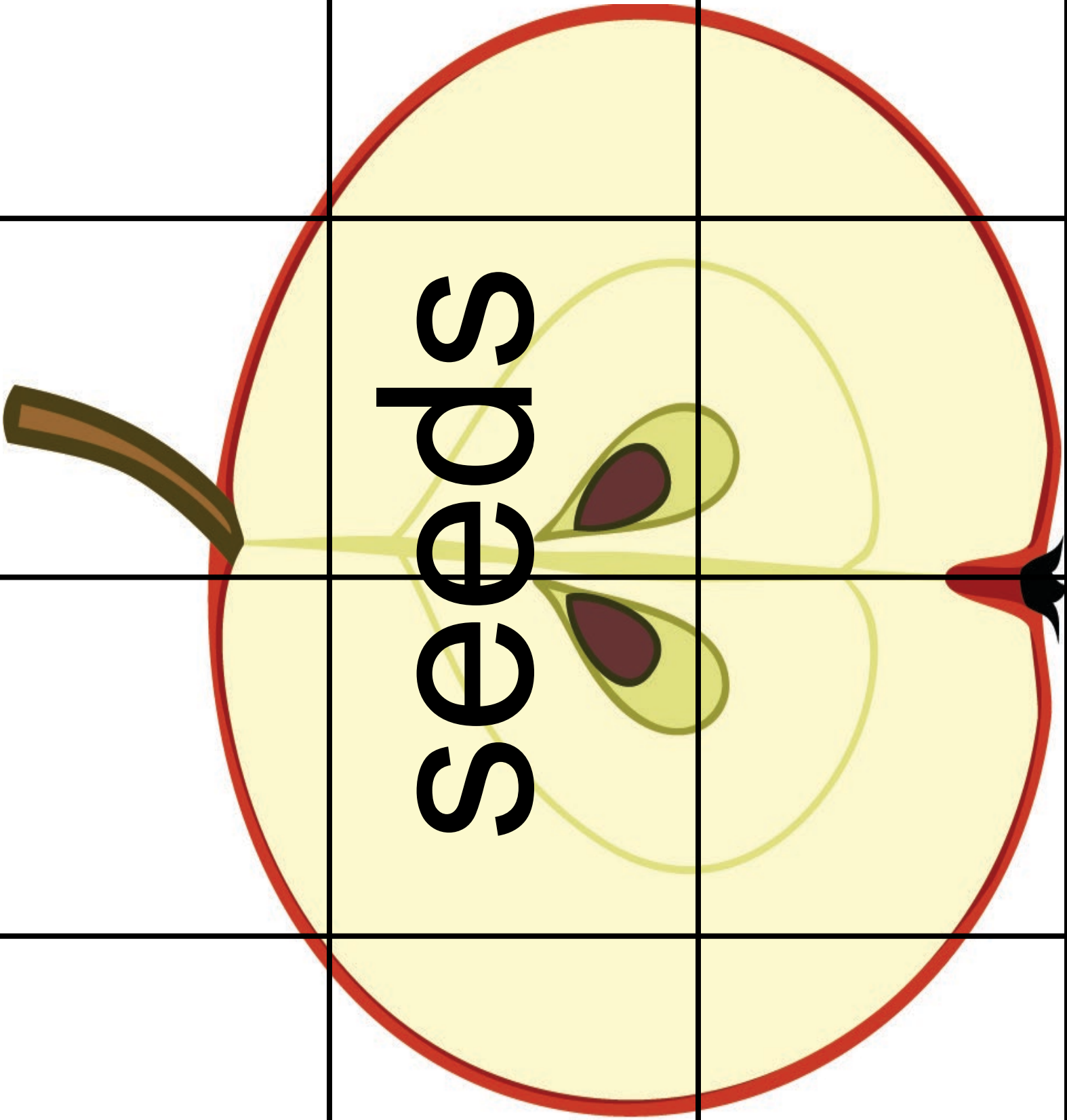
**flower**



fruit



seeds



## \_\_\_\_\_’s Plant Part Puzzle

Draw an imaginary plant in the space below. Label it’s 6 plant parts. Cut your puzzle into pieces and share it with a friend.


This institution is an equal opportunity provider.

This material was funded by USDA’s Supplemental Nutrition Assistance Program – SNAP. It was developed by the Iowa Department of Public Health in partnership with the Iowa Department of Human Services. August 2021



## \_\_\_\_\_’s Plant Part Puzzle

Draw an imaginary plant in the space below. Label it’s 6 plant parts. Cut your puzzle into pieces and share it with a friend.


This institution is an equal opportunity provider.

This material was funded by USDA’s Supplemental Nutrition Assistance Program – SNAP. It was developed by the Iowa Department of Public Health in partnership with the Iowa Department of Human Services. August 2021



## 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.  
 This material was funded by USDA's Supplemental Nutrition Assistance Program – SNAP. It was developed by the Iowa Department of Public Health in partnership with the Iowa Department of Human Services. September 2020



# Local Brassicas

## *Brussels Sprouts, Cabbage, Kohlrabi*

**GRADE**  
**K-1**

**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 compare and contrast traits of plants in 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!
- 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, 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.

### Standards Connection

This lesson supports the following Iowa Core standards.

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

**Science**  
Kindergarten - [K-LS1-1](#).  
Patterns

First grade - [1-LS1-1](#).  
LS1.A: Structure and function

### Lesson Checklist

- Physical Activity
- Tasting
- Voting
- "Asking" Discussion
- Newsletters, Bingo cards, Stickers, Incentives
- Science Connection: Observing similarities and differences (K) & Parts of a plant (1st)

### Recommended Books

(Send book suggestions to [suzy.wilson@idph.iowa.gov](mailto:suzy.wilson@idph.iowa.gov).)

## 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 of tablespoons of olive oil over medium heat, leaving uncovered.

## 2. Engage Activity: 4 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.

*People have families, but not all families are the same. Some families have one parent, some have two, some have more than two. Sometimes there are brothers or sisters, grandparents, aunts and uncles and cousins. Sometimes, friends are in our family. Families are different, but they're all special. I'd like you to think in your head of someone special in your family and when I say our magic word, “Brussels sprouts,” you can say their name out loud. As an example, share someone special in your family. Ready? “Brussels sprouts!” Thank you for sharing the names of your special family members with us.*

*Just like people have families, plants have families, too!*

## 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.*

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.*

#### Brussels Sprout Shout!

Using doc-cam, share images of vegetables in the Brassica family (images included in lesson). Share these instructions for the activity: *We're going to look at pictures of the many different members of the Brassica family. Together, we'll quietly read the names as I point to them. When I point to Brussels sprouts, we're going to jump up in the air and say "Brussels sprouts shout!" Let's practice.* Slowly point to each image in random order and read in a whisper voice the names of the Brassicas. Point to the Brussels sprouts image multiple times as you read through the Brassicas. When you land on Brussels sprouts, demonstrate your best Brussels sprouts shout! *Ready?*

Show how Brussels sprouts grow on a stalk (image included) and discuss these questions:

- How can you tell some of these plants are in the same family?
- Look at the parts of the plant. Observe the stems, leaves, and other plant parts. How do they look the same or different?
- Count together - how many members of the Brassica family did we look at today?
- Do you think all members of the Brassica family taste the same?

Transition students to their desks for the tasting.

### 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.

Below are some ideas for sampling Brussels sprouts:

Raw: Make a shredded Brussels 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: 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."*

#### 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 the Brassica family are the same?
- 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 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 know about Brassicas?*

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



Broccoli



Cauliflower



Brussels sprouts



Cabbage



Radish



Napa cabbage



Kale



Rutabaga



Kohlrabi



Mustard greens



Collard greens



Turnips



# Local Root Veggies

## *Carrots, Beets, Potatoes*

## GRADE K-1

**Month:** December

**Time Required:** 30 minutes

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

### Lesson Goals

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

### Lesson Objectives

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

### Materials

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

### Preparation

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

### Recommended Books

(Send book suggestions to [suzy.wilson@idph.iowa.gov](mailto:suzy.wilson@idph.iowa.gov).)

### Standards Connection

This lesson supports the following Iowa Core standards.

#### Health Education

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

#### Science

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

LS1.C: Plant survival needs

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

LS1.A: Structure and function

### Lesson Checklist

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

## Engage

### 1. Introduction: 2 minutes

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

### 2. Engage Activity: 6 minutes

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

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

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

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

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

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

*Great stretching, plants!*

## Explore

### 3. Experiential Learning: 12 minutes

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

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

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

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

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

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

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

### 4. Tasting Activity: 5 minutes

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

#### Root Veggie Taste Test Ideas:

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

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

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

## Reflect

### 5. Voting Activity: 2 minutes

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

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

### 6. Reflection: 3 minutes

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

#### Choral Response:

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

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

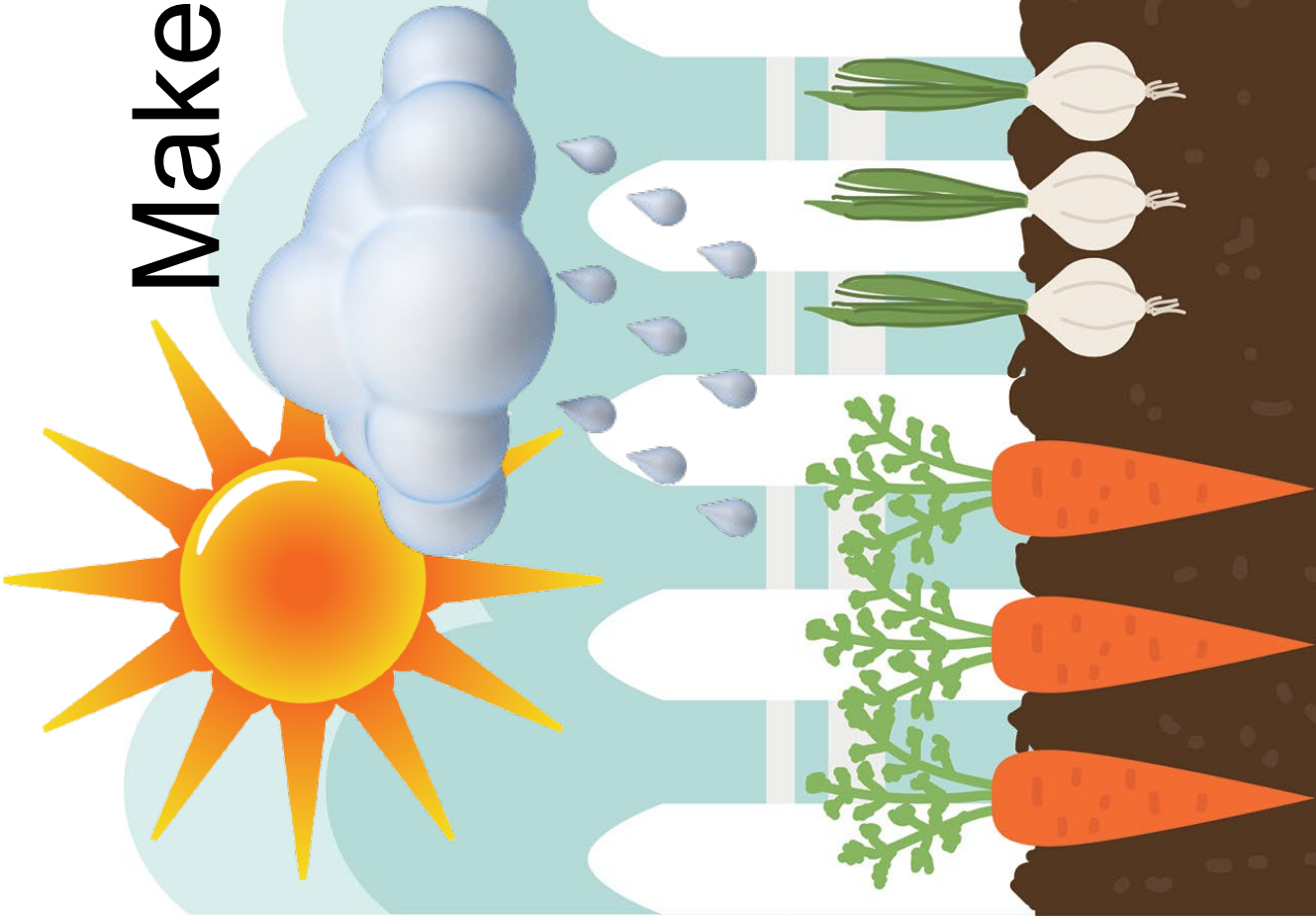
#### Asking Discussion:

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

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

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

# Make Room for Roots!





## Additional Materials

### Physical Activity

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

### What You Need to Know About Root Veggies

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

### Facts About Root Veggies

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

### Health Connection

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

### References and Resources

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

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

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

<https://www.britannica.com>

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

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



# Winter Squash

## *Butternut, Buttercup*

**GRADE**  
**K-1**

**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 recognize varieties of winter squash.

### Materials

- Image of many varieties of winter squash (included in lesson)
- All Kinds of Squash Matching Game picture cards
- 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 2-3 sets, depending on class size, of picture cards for All Kinds of Squash Matching Game (There are 10 cards per set; 1 card per student or 1 card per pair of students). Cut apart the cards. You may want to laminate the cards so you can reuse them.
- Prepare to share video book reading at the beginning of the lesson.
- 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

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

First grade - [1-LS3-1](#).

LS3.B: Variation of traits

### Lesson Checklist

- Physical Activity
- Tasting
- Voting
- “Asking” Discussion
- Newsletters, Bingo cards, Stickers, Incentives
- Science Connection: Similarities and differences in squash (K) & Diversity in squash (1st)

### Recommended Books

(Send book suggestions to [suzy.wilson@idph.iowa.gov](mailto: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.*

#### The Same and Different

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.”* When I say, *“Woohoo!”* (do this dramatically -- put your hands in the air and wiggle your fingers), *you're going to talk with a partner sitting next to you, and come up with ways you are the same as each other, and ways you are different from each other. What hair and eye color do you each have? How many ears? Do you wear glasses? Do they? What is their favorite color? Ready? “Woohoo!”*

Use a familiar callback to get students attention after a couple minutes. *Great job! To celebrate diversity in our classroom, we celebrate all the ways we are different from each other.* Use pick-a-stick or call on a few students at random to share what they learned from their partner. *Thank you for sharing with us. Now, we're going to read a book called “It's Okay to Be Different”* (link to book read aloud below). *Between every page, we're going to have a one second party to celebrate all the examples of diversity shared in the book. Together, we'll say “Woohoo!”* (dramatically put your hands in the air and wiggle your fingers) *in between every page.*

Play video: [“It's Okay to Be Different.”](#) by Todd Parr (2:51)

*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, and have them find their match. Depending on the class size, there will be groups of 2 or 3 students with matching cards. Or, bring in examples and give some students real squashes and some students pictures and have them find their match. After students have done it once or twice, you can start timing it and make it a fun race, or use music again. Encourage students to compare their squash picture with a neighbor's picture. *How do the squash look the same? How do they look different?*

\*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.

### 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







## 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>

# Local Food Preservation

## *Pickled, Frozen, Dried*

**GRADE**  
**K-1**

**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 define three tenses: past, present, future.
- Students will be able to describe three methods of food preservation.

### Materials

- Clear bowl
- Ice cubes
- Cooler (for ice cube experiment and transporting food tasting)
- Images or tangible examples of fresh and preserved foods
- 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)
- Printed worksheets, "Past, Present & Future Foods!"

### Preparation

- Print "Past, Present & Future Foods!" half-sheets for students.
- Decide what tasting you would like to offer based on the lesson length.

### Recommended Books

- "Time To Learn About Past, Present & Future," by Pam Scheunemann
  - YouTube video preview [here](#)

### Standards Connection

This lesson supports the following Iowa Core standards.

#### Health Education

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

#### Science

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

First grade - [1-LS1-2](#).  
Patterns

### Lesson Checklist

- Physical Activity
- Tasting
- Voting
- "Asking" Discussion
- Newsletters, Bingo cards, Stickers, Incentives
- Science Connection: Similarities, differences and patterns (K) & (1st)

## Engage

### 1. Introduction: 2 minutes

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

At the front of the classroom, place your cooler and lesson materials in a spot that will be visible to students. Gather students in a circle.

### 2. Engage Activity: 8 minutes

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

Have students sit in the circle. Put several ice cubes in a clear bowl. Share, *Today, we're going to learn about time. All things change over time. Let's think about how these ice cubes will change over time. Right now, these are ice cubes. If we leave them here, will they change by the end of our lesson?* Pick a stick or select a few students at random to share their ideas. Summarize response, *So we think they might change from ice cubes into water. We'll leave them here and check on them later.*

Have students stand up. *One way to think about time is in the past, present and future.*

- *Think in your head, what's something you did this morning before school? When I say our magic word, “pickle,” silently act it out. For example (share and act out something you did that morning). Ready? Pickle!* Observe students. *Excellent, before school, we (demonstrate some activities you observed: eating breakfast, brushing teeth, walking to school etc.).*
- *Think in your head, what's something you will do tonight after school? When I say our magic word, silently act it out. Ready? Pickle! Great, after school we are going to (demonstrate some activities you saw).*

*What you did this morning is in the past. The past means all the time before right now.*

*What we're doing right now, our PABS lesson, is the present. The present is the moment that is right now.*

*What you will do tonight is in the future. The future is the time after right now.*

*Let's see if our ice cubes have changed since the past. Allow students to see the ice cubes. To **preserve** means to save something for the future. What does preserve mean? Choral response - “save something for the future.” Note new vocabulary word. Define, write out, and have the class repeat the word “preserve.” We'll keep some ice in the cooler to see if it is preserved in the future.*

## 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).

*Just like we can preserve the ice cubes by keeping them in the cooler, we can also preserve food. Explain, For as long as humans have been eating food, they've found ways to preserve it - to save it for the future. When we preserve food, we turn a fresh food into a food that is saved to eat later. Let's explore three ways to preserve food.*

Show images on doc-cam.

\*\*Consider your classroom, and represent fresh and preserved foods across multiple cultures here!

1. *Dried foods are preserved by removing water.* Show images of fresh and dried foods (examples: apples, tomatoes, mushrooms, herbs).
2. *Frozen foods are preserved by making the food very cold.* Show images of fresh versus frozen foods (examples: peas, berries).
3. *Pickled foods are preserved by adding vinegar or salt.* Show images of fresh versus pickled foods (examples: fresh cucumbers and jars of pickles; fresh cabbage and jar of sauerkraut).

\*\*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. *How do these foods look / feel / smell / sound / taste the same? How are they different?*
5. Discuss flavors, textures, colors, seed shapes, etc., as a class.

See the "Health Connection" section at the end of this lesson for tips on choosing lower-sodium canned and pickled vegetables.

**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: 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."*

Pass out "Past, Present, Future Foods!" sheets. Ask students to draw some pictures of their favorite foods they ate in the past, eat now in the present, and would like to eat in the future.

#### 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 preserved foods?*

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

# Past, Present & Future Foods!

<p>In the past, I ate</p> <p>_____.</p>	<p>In the present, I eat</p> <p>_____.</p>	<p>In the future, I will eat</p> <p>_____.</p>
---	--	--

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



# Past, Present & Future Foods!

<p>In the past, I ate</p> <p>_____.</p>	<p>In the present, I eat</p> <p>_____.</p>	<p>In the future, I will eat</p> <p>_____.</p>
---	--	--

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



## 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 0°F 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  $\leq 5\%$ , that food is low in sodium. If it is  $\geq 20\%$ , 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  $\leq 5\%$  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://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](#)

This institution is an equal opportunity provider.

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



# Local Seeds

## Frozen Corn, Dried Beans

**GRADE**  
**K-1**

**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 identify corn and beans as seeds.
- Students will be able to sequence the order of soil to food.

### Materials

- Tasting materials (plates, napkins, etc.)
- Seedy Sweet Corn Salsa with corn tortillas or tortilla chips
- Printed recipe cards (optional)

### Preparation

- Prepare salsa: make 1-2 days prior to your lesson using the Seedy Sweet Corn Salsa recipe included in the lesson - adapt it or use your own!
- Print recipe cards, 1 per student (optional).
- Review image slideshow linked within this lesson plan and familiarize yourself with the song, "Dirt Made My Lunch," also linked in this lesson plan.

### Recommended Books

(Send book suggestions to [suzy.wilson@idph.iowa.gov](mailto:suzy.wilson@idph.iowa.gov).)

### Standards Connection

This lesson supports the following Iowa Core standards.

#### Health Education

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

#### Science

Kindergarten - [K-LS1-1](#).  
LS1.C: Plant survival needs

First grade - [1-LS1-1](#).  
LS1.A: Structure and function

### Lesson Checklist

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



## Engage

### 1. Introduction: 2 minutes

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

### 2. Engage Activity: 7 minutes

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

Gather students together. Share with students, *I want to know who is someone who makes lunch for you. Share a personal example of someone who makes lunch for you (a friend, a food service provider, a family member, etc.). When I say the magic word “seeds,” say your person out loud. Ready? Seeds!* Students will share their examples aloud. *Woah, so many special people make lunch for us (repeat a few examples you heard). Lots of people work hard to make sure we eat every day.*

*Another thing that makes our lunch is dirt. We're going to learn and sing a song called Dirt Made My Lunch. With students standing, teach the words and actions to the song “Dirt Made My Lunch,” popularized by the Banana Slug String Band! Sing through it a couple of times until students pick it up.*

[Dirt Made my Lunch \(youtube video\)](#)

\*This recording shows sign-language throughout the song. Consider learning and teaching this or coming up with your own moves!

Dirt made my lunch.

Dirt made my lunch.

Thank you dirt!

Thanks a bunch,

For my salad, my sandwich, my milk, and my munch.

Dirt, made my lunch.

[\(Here is a recording of just the song.\)](#)

*Thanks for singing along.*

## 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.*

Students remain standing. Yes, *everything in our lunch, everything that we eat, comes from dirt. Let's use tacos as an example.* [Use slides 16-26 in this slide deck](#) to explore how each taco ingredient comes from the dirt using a choral response. Students should be familiar with the concepts of foods starting as seeds/seedlings and seeds growing in dirt from previous lessons and learning. They may need some prompting on the more complex ingredients like tortillas and cheese. Before advancing to the next ingredient, have students do one jumping jack for each piece of the sequence and count out loud together (for example: tomatoes = 3 jumping jacks; cheese = 5 jumping jacks).

Seat students back at their desks for the tasting. Opportunity for 3 deep breaths.

### 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").*

#### Seedy Sweet Corn Salsa

*We can think of all kinds of foods and trace them back to the dirt. While showing an image of corn and beans, say, two of the taco ingredients are in our tasting today. For our tasting, we're going to try sweet corn and beans. Corn and beans are seeds. Seeds are the plant part that can grow a new plant. What plant part are corn and beans? (choral response - "seeds") We're going to taste sweet corn and black beans in a recipe called Seedy Sweet Corn Salsa. We'll taste it with a corn tortilla (or tortilla chip).*

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 the black beans. 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.

## Reflect (cont'd)

### 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."*

#### Choral Response:

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

- *What month is it? (March)*
- *Whose class am I in?*
- *What's one kind of seed we tried today? (Corn, beans)*
- *Where does all of our food come from? (Dirt)*

Sing another round of [Dirt Made my Lunch \(youtube video\)](#)!

Dirt made my lunch.  
 Dirt made my lunch.  
 Thank you dirt!  
 Thanks a bunch,  
 For my salad, my sandwich, my milk, and my munch.  
 Dirt, made my lunch.

#### 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?*

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

## 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.

Put a check mark next to the ingredients above that are seeds.  
Describe the salsa here!

This institution is an equal opportunity provider.

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



## 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.

Put a check mark next to the ingredients above that are seeds.  
Describe the salsa here!

This institution is an equal opportunity provider.

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



## 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.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>

This institution is an equal opportunity provider.

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



# Local Leafy Greens

## *Microgreens, Arugula, Lettuce*

**GRADE**  
**K-1**

**Month:** April

**Time Required:** 30 minutes

**Tasting:** Available local leafy greens

### Lesson Goals

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

### Lesson Objectives

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

### Materials

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

### Preparation

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

### Standards Connection

This lesson supports the following Iowa Core standards.

#### Health Education

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

#### Science

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

LS1.C: Plant survival needs

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

LS1.A: Structure and function

### Lesson Checklist

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

### Recommended Books

(Send book suggestions to [suzy.wilson@idph.iowa.gov](mailto:suzy.wilson@idph.iowa.gov).)

## Engage

### 1. Introduction: 2 minutes

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

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

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

### 2. Engage Activity: 6 minutes

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

#### Fast - Slow - Freeze!

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

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

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

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

## Explore

### 3. Experiential Learning: 12 minutes

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

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

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

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

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

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

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

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

### 4. Tasting Activity: 5 minutes

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

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

#### Leafy Greens Taste Test Ideas:

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

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



## Reflect

### 5. Voting Activity: 2 minutes

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

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

### 6. Reflection: 3 minutes

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

#### Choral Response:

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

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

#### Asking Discussion:

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

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

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

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

## Additional Materials

### Physical Activity

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

### What You Need to Know About Leafy Greens

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

### Facts About Leafy Greens

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

### Health Connection

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

### References and Resources

<https://spendsmart.extension.iastate.edu/cook/produce-basics/>  
<https://fcs-hes.ca.uky.edu/piukp-recipes>  
<https://bit.ly/3xlZKzc>  
<https://www.iowafarmtoschoolearlycare.org/choose-iowa-campaign>  
<https://www.britannica.com>  
<https://www.agmrc.org/commodities-products/vegetables/spinach>  
<https://hortnews.extension.iastate.edu/2019/03/grow-your-own-microgreens>  
<https://www.fns.usda.gov/usda-foods/household-product-information-sheets-and-recipes>

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



# Local Spring Veggies

## Turnips, Radishes

**GRADE**  
**K-1**

**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 associate color foods with 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](mailto:suzy.wilson@idph.iowa.gov).)

### Standards Connection

This lesson supports the following Iowa Core standards.

#### Health Education

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

#### Science

Kindergarten - [K-ESS3-1](#).

ESS3.A: Natural resources

First grade - [1-ESS1-2](#).

ESS1.B: Seasonal patterns

### Lesson Checklist

- Physical Activity
- Tasting
- Voting
- "Asking" Discussion
- Newsletters, Bingo cards, stickers, Incentives
- Science Connection: Things humans and plants need (K) & seasonal patterns (1st)

## Engage

### 1. Introduction: 2 minutes

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

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 we're 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 as many colors as you can see in the picture. Using the doc-cam, display a colorful image of the foods you've sampled in PABS this year (image included in this lesson). Hide the image after 15 seconds. Now, I'm going to say the name of a color and if you saw it on the screen, spring up into the air. Read through a list of colors, 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. Spring crops are special because they're the first foods we can grow outdoors after winter ends!*

#### Sampling Local Spring Crops

There are several ideas for sampling local spring crops:

- Decorate Spring Crop Crackers. Bring prepared ingredients to 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) to 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 plain or with a dip.
- Air fryer: Before the lesson, chop crops into smaller pieces. During the lesson, toss veggies 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)*
- *Why can't spring crops grow outdoors in Iowa's winters? (little sunlight, low temperatures, cold soil)*
- *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 needed)*

#### 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/3xIZKzc>

<https://www.iowafarmtoschoolearlycare.org/june-radish>

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



## 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>

This institution is an equal opportunity provider.

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

