Zucchini

GRADE 2-3

Month: September
Time Required: 30 minutes
Alternative Tastings: Tomato, Cucumber, Squash

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 recognize zucchini as a type of summer squash.
- ❑ Students will be able to describe four key flavors to create a dressing.

Materials

Materials needed depend on activity selected in the Explore section.

- ❑ 4 prepared "season signs"
- ❑ Whole zucchini (or image)
- ❑ Plastic condiment bottle for dressing
- ❑ Printed recipe cards; one per student
- ❑ Dressing Ingredient Options Chart
- ❑ 4-5 small mason jars with lids
- ❑ Measuring cups and tablespoons
- ❑ Various dressing ingredients (see Dressing Ingredient Options chart attached)
- ❑ Small paper plates
- ❑ Spoons for each group to serve the dressing
- ❑ Cleaning wipes or spray and rags

Preparation

Preparation will vary depending on the activity selected in the Explore section.

- ❑ Determine which option you will use in the Explore section.
- ❑ Write/type a physical activity on each of the four "season signs."
- ❑ Prepare Honey Mustard Dressing and store in a plastic condiment bottle in the refrigerator. Video the process of making the dressing.
- ❑ Select 8 dressing ingredients, using the Dressing Ingredient Options chart (attached).

Recommended Books

- ❑ "Our School Garden!" by Rick Swann
- ❑ "How a Seed Grows" by Helene Jordan
- ❑ "Zora's Zucchini" by Katherine Pryor
- ❑ "Carlos and the Squash Plant" by Jan Romero Stevens

Standards Connection

This lesson supports the following Iowa Core standards.

Health Education Standards 1, 2, 3, 4, 5, 7, 8

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

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

Lesson Checklist

- ❑ Physical Activity
- ❑ Tasting
- ❑ Voting
- ❑ "Asking" Discussion
- ❑ Newsletters, Stickers
- ❑ Lesson Objectives
- ❑ Science Connection: Biodiversity (2nd) & habitats (3rd)

Engage

1. Introduction: *2 minutes*

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

If students will make a dressing in small groups, set up "the ingredient station" at the front or center of the room, where all students can see it.

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. Everyone stand up and let's do an activity to learn about each other using the four seasons – winter, spring, summer and fall.*

2. Engage Activity: 4 *minutes*

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

Physical activity:

Display the four "season signs" attached in the lesson where students can see them easily. Before the lesson, determine a physical activity for each card (ex.: arm circles, high knees, side steps, hop in place, squats, etc.), and write the activity on the card.

Ask the questions below and have students do the physical activity for the season that represents their answer for each question. Have students do the physical activity for 10 repetitions or 10 seconds.

1) What season is your favorite? (Students do the physical activity that is listed for their favorite season.)
2) What season are we in right now?
3) What season is next after the season we are in right now?
4) What season is it when school ends?
5) What season is your birthday in?
6) What season does your favorite fruit or vegetable grow in?

Explore

3. Experiential Learning: *15 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.

Summer is the season when we grow and eat summer squash. Show photo of a variety of summer squash (included in lesson). *Why is summer the favorite time for vegetables like summer squash to grow in Iowa? Probably some of the same reasons why some humans like summer, too.* Discuss warm temperatures, lots of sunlight, rainwater, no snow, etc. *Today, we're going to taste a type of summer squash called a zucchini. What are we tasting today* (choral response: *"zucchini!"*). Show an image or whole zucchini to the class. *Zucchini might grow in Iowa in other seasons, but it will survive and thrive best in summer. Today we are going to taste fresh zucchini with a homemade salad dressing.*

Explore (cont'd)

Have you ever made a salad dressing? What kind of dressing did you make? Just like there are four seasons, which we talked about earlier, there are typically four main flavors in salad dressing: rich, sour, salty and sweet. Write the four flavors on the board*. There are many different ingredients you can use for each flavor to make salad dressing.*

1. *Rich – oils, like olive oil, sesame oil, vegetable oil and canola oil*
2. *Sour – vinegar, like apple cider vinegar, balsamic vinegar and rice vinegar*
3. *Salty – table salt and soy sauce; other ingredients sometimes used in salad dressings are salty too, like some herbal seasonings, parmesan cheese and mustard (mustard also has vinegar in it, so it tastes salty and sour).*
4. *Sweet – honey, maple syrup, fruit juice and sugar*

Complete Activity #1 **or** Activity #2 below.

Activity #1

I made a salad dressing to taste with zucchini today called Honey Mustard Dressing. In my dressing, I used canola oil (rich), apple cider vinegar (sour), Dijon mustard (salty and sour) and honey (sweet). Show a video of you preparing the dressing below or make the dressing in class. If making the dressing in class, consider using students to measure each ingredient and add it to the container. A container such as a jar with a tight-fitting lid can be passed around the class for students to shake to mix the dressing.

Honey Mustard Dressing
¼ cup Dijon mustard
¼ cup honey
¼ cup apple cider vinegar
¼ cup oil (canola, olive or vegetable)

Combine all ingredients in a container with a tight-fitting lid. Shake until all ingredients are combined. Store in the refrigerator. Shake well before each use.
Source: Iowa State University's Spend Smart. Eat Smart.

Activity #2

Organize students into 4 small groups. Have two different ingredients for each flavor at a location in the room, "the ingredient station." Display the "Dressing Ingredient Options" (included in lesson) where all students can see it. Pass out recipe cards (included in lesson) to each student. *The key to making a delicious dressing is balancing these flavors based on what you like. You will work in small groups to create your own dressing recipe.*

Explain:

- *As a group, pick 4 ingredients, and write them on your recipe cards: one rich flavor, one salty flavor, one sour flavor and one sweet flavor. Be open-minded and make sure everyone in your group is included in the decision.*
- *Once your group has written the recipe on your cards, one person from your group will come up to me to get your group's ingredients at the ingredient station.*
    - You may want to assign a group leader who will come up to gather ingredients.
    - Educator will measure ingredients into a mason jar for each of the 4 groups.

Explore (cont'd)

- *When you have your jar of ingredients, you'll - keep it closed!- and take turns shaking the jar as a group to get it all mixed together.*
- *Then, we'll sample it with fresh zucchini!*

Move around the room with the help of the classroom teacher to support group decision-making and writing. As students are ready to gather ingredients at the ingredients station, you will fill their mason jars using the following salad dressing formula:

Dressing = 2 Fat (Rich) + 1 Sour + Small Pinch/Dash of Flavorings (Salty and Sweet)
Example Dressing = 2 tbsp olive oil + 1 tbsp lemon juice + pinch of salt + dash of honey

Back at their tables, groups will take turns shaking their jars until all ingredients are mixed. Pass out small paper plates and a few pieces of fresh zucchini (slices, sticks or spiralized). Note: As students wait for their samples, encourage them to come up with a name for their dressing, and write the name on their ingredient cards. Students will use a spoon (one per group) to dish the dressing onto their plates to taste with the zucchini.

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 zucchini, be sure to review your brave tasting rules (for example, don't yuck my yum, we all try together, etc.). As students receive their samples, ask them to use their senses to learn about zucchini while they wait.

Reflect

5. Voting Activity: *2 minutes*

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

As students taste the zucchini and dressing, 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."

<u>Choral Response:</u>

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

- *What month is it?* (September)
- *What vegetable did we try today?* (Zucchini)
- *What did you create to taste with your zucchini? (Dressing)*
- *How many flavors did you put into your dressing?* (Four)
- *What season does zucchini grow best in Iowa?* (Summer)
- What else grows well in the summer? (watermelon, tomatoes, peppers, corn, beans, etc.)

Reflect (cont'd)

Asking Discussion:

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

- 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 zucchini? Have you ever grown zucchini in a garden? What is something else you remember about zucchini? When or how could you eat zucchini?*

*Leave newsletters and stickers with the teachers to pass out.

Winter

Spring

Summer

Fall

Dressing Ingredient Options

RICH FLAVORS (fats)	SOUR FLAVORS (acids)	SALTY FLAVORS	SWEET FLAVORS
Olive oil Sesame oil Canola oil Vegetable oil	Rice vinegar Apple cider vinegar Balsamic vinegar Red wine vinegar	Table salt Soy sauce Parmesan cheese Mustard Herbs or herbal seasoning (ex: garlic, basil, oregano, pepper)	Honey Maple syrup Fruit juice Sugar
**Select and offer 2 ingredients under each flavor, to allow for student led decision-making.			

My Dressing Recipe is called: _____

Ingredients

Rich Flavor: _____

Salty Flavor: _____

Sour Flavor: _____

Sweet Flavor: _____

Directions

Step 1. Select 4 ingredients

Step 2. Combine ingredients in a jar

Step 3. Put the lid on tight, and shake the jar

Step 4. Pour dressing over vegetables, like zucchini noodles!

Step 5. Eat it up!

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 Health and Human Services. August 2024

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Pick a Better Snack Lesson

My Dressing Recipe is called: _____

Ingredients

Rich Flavor: _____

Salty Flavor: _____

Sour Flavor: _____

Sweet Flavor: _____

Directions

Step 1. Select 4 ingredients

Step 2. Combine ingredients in a jar

Step 3. Put the lid on tight, and shake the jar

Step 4. Pour dressing over vegetables, like zucchini noodles!

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Additional Materials

Physical Activity

"Stories in Motion: A Visit to the Vegetable Patch" (Get Movin' Activity Breaks, page 59)
More ideas for physical activity are available at https://hhs.iowa.gov/pick-better-snack/materials.

What You Need to Know About Zucchini

- You can eat all parts of summer squash – skin, seeds, and flesh – raw or cooked.
- Zucchini is usually dark green in color.
- Choose zucchini that has smooth, shiny skin and feels heavy for its size. Ripe zucchini is firm and gives slightly to pressure.
- Zucchini can be stored for one week in the refrigerator in a plastic bag. Wash before using.
- Once zucchini has been cut up, it can last for three days in a sealed bag or container in the refrigerator.

Facts About Zucchini

- Zucchini is a warm season crop. It has a short growing season compared to melons and cucumbers. Once the fruit starts to grow, it can grow one inch per day.
- Zucchini is a summer squash. It is different from winter squash because it is harvested and eaten before it matures, so the rind is soft. It is the most common summer squash.
- Zucchini is best when picked small (about 6-8" long).
- Zucchini is considered a vegetable in our diet, but botanically it is the immature fruit of the plant.
- A zucchini plant has large, dark green leaves.
- Zucchini originated in Italy, but most squash varieties came to America from Europe.
- The Native Americans introduced squash as one of the "Three Sisters." The three native plants used for agriculture were corn, beans and squash.

Health Connection

- Zucchini is a good source of Vitamin C. Reinforce by putting up your defense shield (cross arms out in front of chest). Zucchini helps to ward off germs and keep us healthy.

References and Resources

https://spendsmart.extension.iastate.edu/produce-item/zucchini-2/
https://snaped.fns.usda.gov/seasonal-produce-guide/zucchini
https://hortnews.extension.iastate.edu/2003/4-1-2003/squash.html
https://homeguides.sfgate.com/zucchini-plants-start-vine-56658.html
https://spendsmart.extension.iastate.edu/video/make-homemade-salad-dressing/#video_player

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IOWA Health and Human Services

Pear

GRADE 2-3

Month: October
Time Required: 30 minutes
Alternative Tastings: Apple

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 explain the sequential order of plant growth.
- ❑ Students will be able to identify that seeds and fruit grow from flowers.

Materials

- ❑ 1-4 printed sets of “Seed to Fruit” cards (attached – choose the pear or apple tree to match the tasting)
- ❑ Paper plates or napkins
- ❑ Fresh pears or apples – This is a good month to source local! Consider slicing in class with a pear/apple slicer.

Preparation

- ❑ Depending on which activity you choose in the Explore section, print 1-4 decks of “Seed to Fruit” cards. Consider laminating the cards.

Recommended Books

“How Did That Get In My Lunchbox? The Story of Food” by Chris Butterworth
“From Seed to Plant” by Gail Gibbons

Standards Connection

This lesson supports the following Iowa Core standards.

Health Education
Standards 1, 2, 3, 4, 5, 7, 8

Science
Second grade - 2-LS2-2. Structure and function

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

Lesson Checklist

- ❑ Physical Activity
- ❑ Tasting
- ❑ Voting
- ❑ “Asking” Discussion
- ❑ Newsletters, Stickers
- ❑ Lesson Objectives
- ❑ Science Connection: Seeds (2nd) and plant life cycles (3rd)

Engage

1. Introduction: 2 *minutes*

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

If this is your first lesson of the year, introduce yourself to the class and to Pick a Better Snack. If this is your second lesson of the year, briefly review the feature of last month's lesson and what they learned. *Did you ask for zucchini at home?*

2. Engage Activity: *6 minutes*

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

When I visit your class each month, we will learn about different fruits and vegetables. These are foods that are good for us and help us grow. Moving our bodies is also good for us and helps us grow strong. Today, before we learn about the fruit I brought, let's move our bodies.

Physical Activity:

Lead students through the "Shakedown" physical activity (page 13 of Brain Breaks booklet). Explain to students that they will need to remember two details.

- First, they need to remember "5-4-3-2-1."
- Second, students need to remember "hand, hand, foot, foot." Demonstrate this by shaking one hand, then the other. Then kick out one foot, then the other. Explain to students that they will combine these two things.

Lead students in the "Shakedown."

- Shake one hand five times, counting out loud "5-4-3-2-1." Repeat with other hand.
- Then, kick out one foot five times, counting down "5-4-3-2-1." Repeat with the other foot.
- Repeat all the motions again, counting down from 4 times, then 3, then 2, then 1.

Source: FoodCorps Iowa

Good job! Doesn't it feel good to move our bodies!

When I visit your classroom each month, we're also going to learn about each other. This month I want to know: What is something you've learned since you were a 1st/2nd grader – either something you've learned about (knowledge) or something you've learned to do (skill)? Share with the students something you've learned in the past year.

Think-pair-share: *What is something you've learned in the past year?*

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

Wonderful, thank you all for sharing. As soon as we're born, we start growing and changing. This happens especially fast when we're young. Our bodies grow, we learn new skills, we like new things. Just like we change when we grow, so does our 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.

We're going to learn how pears grow. Complete Activity #1 **or** Activity #2 below.

Activity #1
I need a few helpers to help me demonstrate the life cycle of a pear. Choose 7 students to come to the front of the class and stand in a line facing the class so that the class can see each student. Give each student one of the "Seed to Fruit" cards in this lesson. Be sure to mix up the order of the cards. Explain, *each one of these students is holding a picture of a different stage of how fruit grows.* Ask each student to share out loud what is on their card. Say, *these are the stages a tree – like a pear tree or apple tree – goes through to produce fruit, but this is not the right order. I need your help to put these stages in the right order. What is the first stage of growing a pear tree?* Call on a student in the class (someone not holding a card) to tell the class the first stage. Ask the class if they agree. If someone disagrees, ask what they think is the next stage and why. Get agreement from the class before moving on. Continue calling on students until the class agrees on the order. *Excellent! Now let's review the order.* Review each stage and make corrections as needed.

1. First, we plant a seed in the ground and water it. (card 1)
2. That seed sprouts into a baby plant. (card 2)
3. Then that baby plant grows roots, a stem and a few leaves. (card 3)
4. The little tree grows branches and leaves. (card 4)
5. And even more branches and leaves (card 5)
6. Then flowers grow. (card 6)
7. The flowers change into fruit. There are seeds inside the fruit! (card 7)

These stages that show how living things grow and change is called a life cycle. The flowers make fruit and seeds. What do the flowers make? (choral response: "fruit and seeds!") *Excellent! It takes months for a flower to grow into a fruit.*

Activity #2
Pass out 4 sets of "Seed to Fruit" cards to small groups of students. Instruct students, *when I say go, your group will work together to put these pictures in order from first to last. I will know your group is finished sorting when I see you…*Pick a signal to indicate students are done (ex: do 5 jumping jacks and then sit quietly on the carpet, put your hand on top of your head, etc.). *Ready? Go.* With the teacher's help, move around the room to support each small group. Remind students to show that they are finished. Once all groups have sorted their cards and are seated, ask one group to share their work.

[Card Order: seed, seed sprout, taller plant/roots, leaf growth, more branches and leaf growth, flower growth, fruit growth]

Ask, *did anyone put their pictures in a different order? Why? How did you decide if the flower or the fruit should come first?* After a short class discussion and without revealing the correct order, give groups another minute to make any changes to their card order.

Explore (cont'd)

Once all groups have discussed and made edits, show the correct order of the cards. Consider using the projector or computer to display the correct order of the cards. Explain the order of the cards.

- *First, we plant a seed in the ground.* (card 1)
- *That seed sprouts into a baby plant.* (card 2)
- *That that baby plant grows roots, a stem, and a few leaves.* (card 3)
- *The little tree grows branches and leaves.* (card 4)
- *And even more branches and leaves* (card 5)
- *Then flowers grow.* (card 6)
- *The flowers change into fruit - with seeds inside!* (card 7)
- *Those seeds could be planted in the ground, and a new plant may grow!*

These stages that show how living things grow and change is called a life cycle. The flowers make fruit and seeds. What do the flowers make? (choral response: "fruit and seeds!") *Excellent! It takes months for a flower to grow into a fruit.*

Optional with either Activity #1 or Activity #2:
We're going to watch a video that shows us a sped-up version of the process. Play and narrate video (link below). YouTube Video: *"Pear flower opening to fruit swelling time lapse filmed over 8 weeks"* https://www.youtube.com/watch?v=SHHkmOh942A (1:14, can speed up by increasing the playback speed under the video settings)

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 review your brave tasting rules (for example, don't yuck my yum, we all try together, etc.). As students receive their samples, ask them to use their senses while they wait.

*Note: as students receive their sample, have them look for signs of the old flower (on the bottom of the pear) and for seeds (inside the pear).

Reflect

5. Voting Activity: *3 minutes*
This is a time for students to give their opinion on what they tried!

As students taste the pear, 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: *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 the magic word, "pears," you can say your answer aloud. Let's practice…

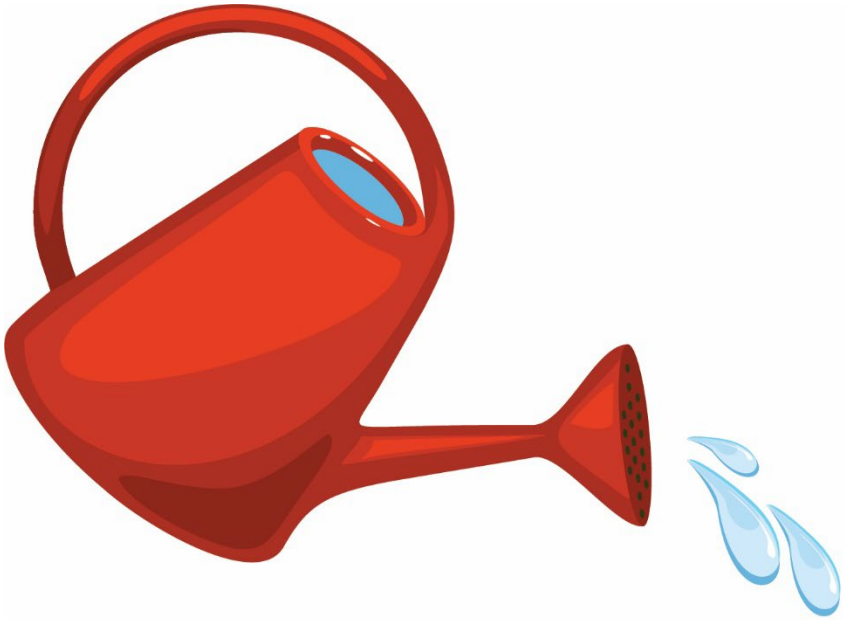
- *What month is it?* (October)
- Wha*t food did we try today?* (Pears)
- *What are the two plant parts that flowers make?* (Fruits and seeds)
- *What is the process called to explain how living things grow and change?* (Life cycle)

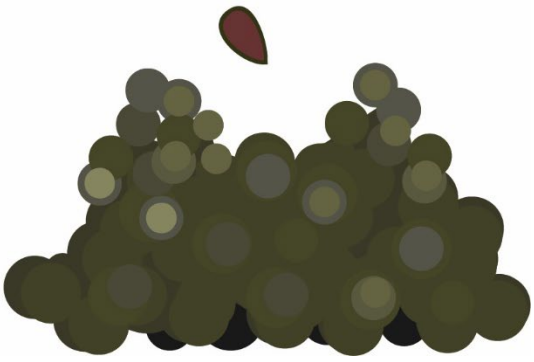
Asking Discussion:

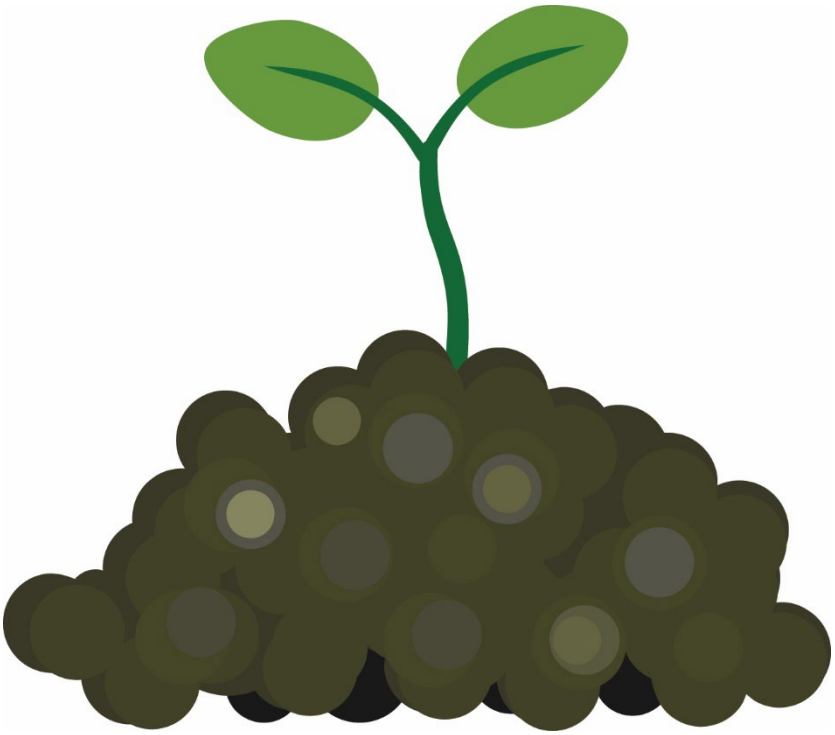
Raise your hand if you're excited to go home and tell your family about tasting pears.

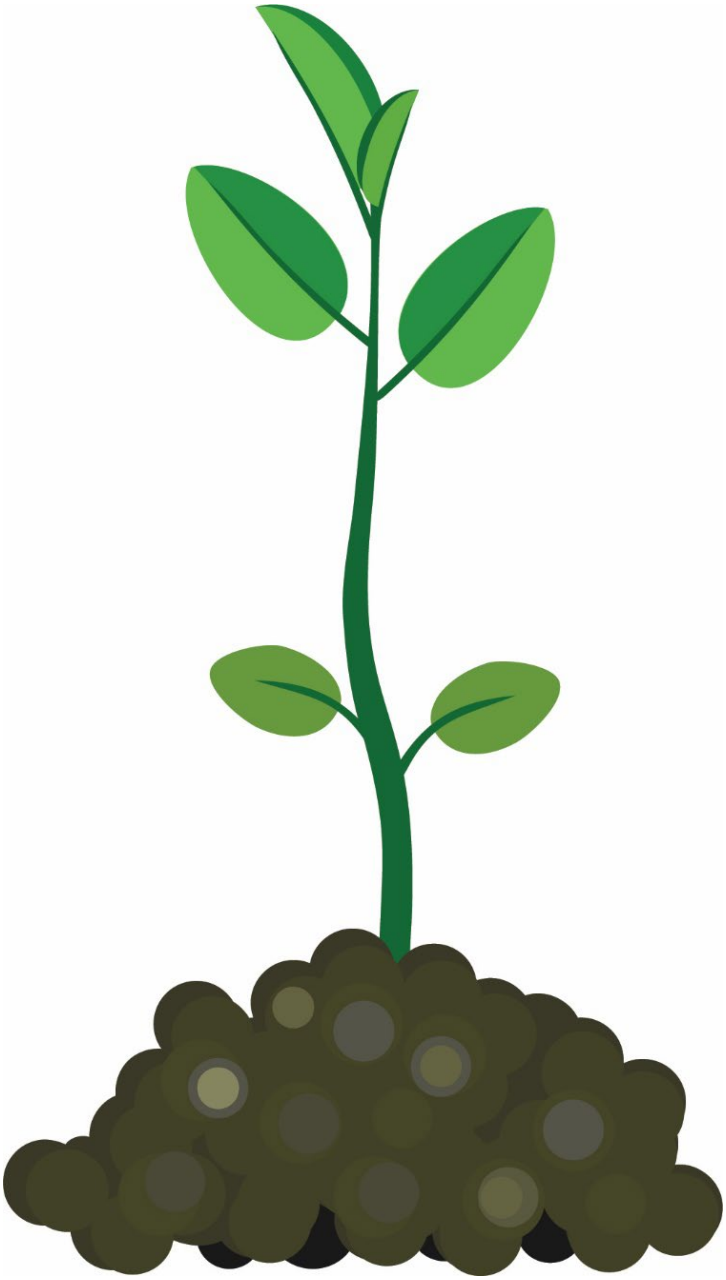
- Ask a student with a raised hand: *if you wanted to try pears at home, how might you ask your grown-ups?*
- *When could you eat pears?*
- You might also ask additional questions like, *where could you buy pears? What else do you remember about pears?*

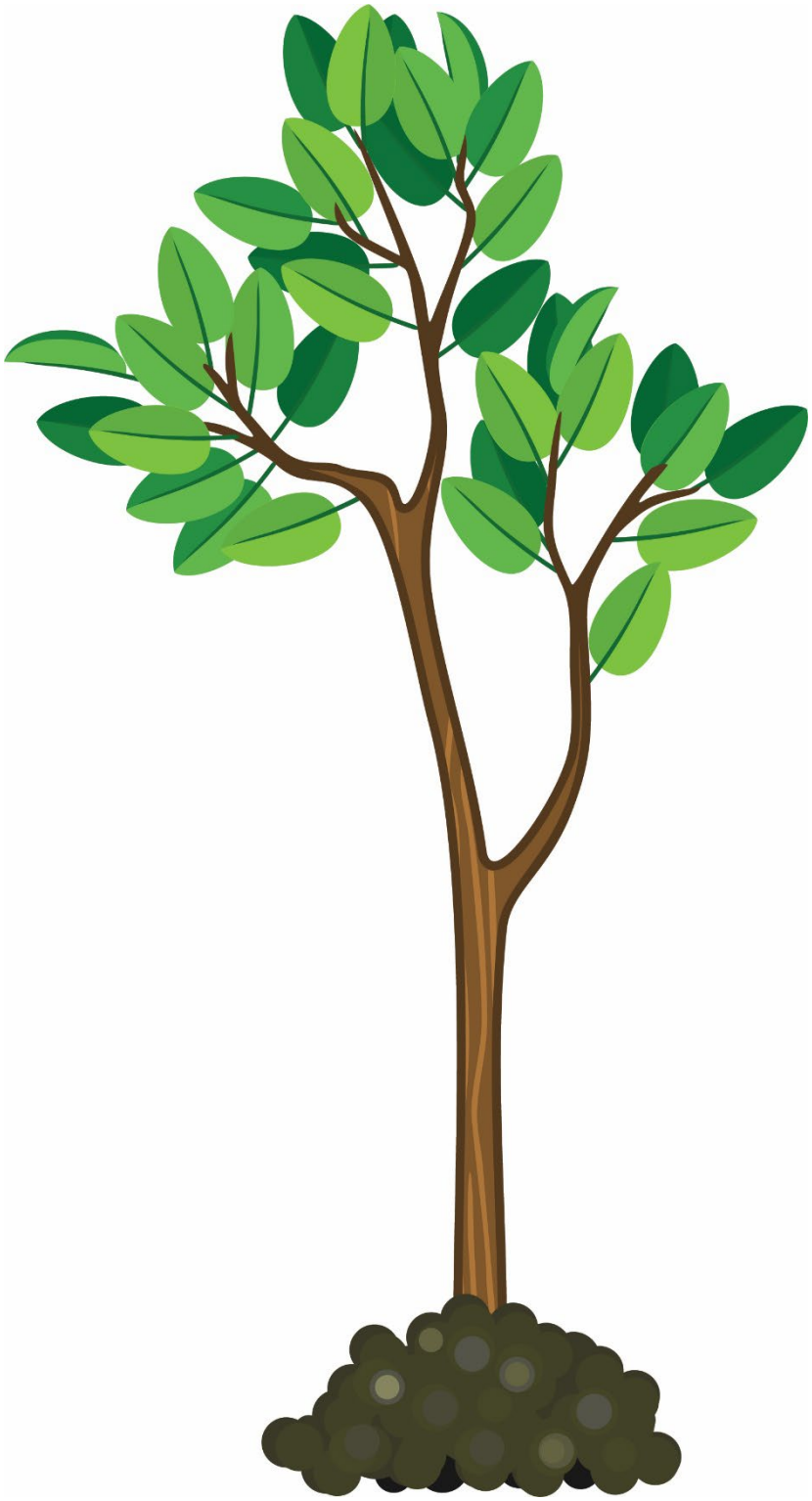
*Leave newsletters and stickers with the teachers to pass out.

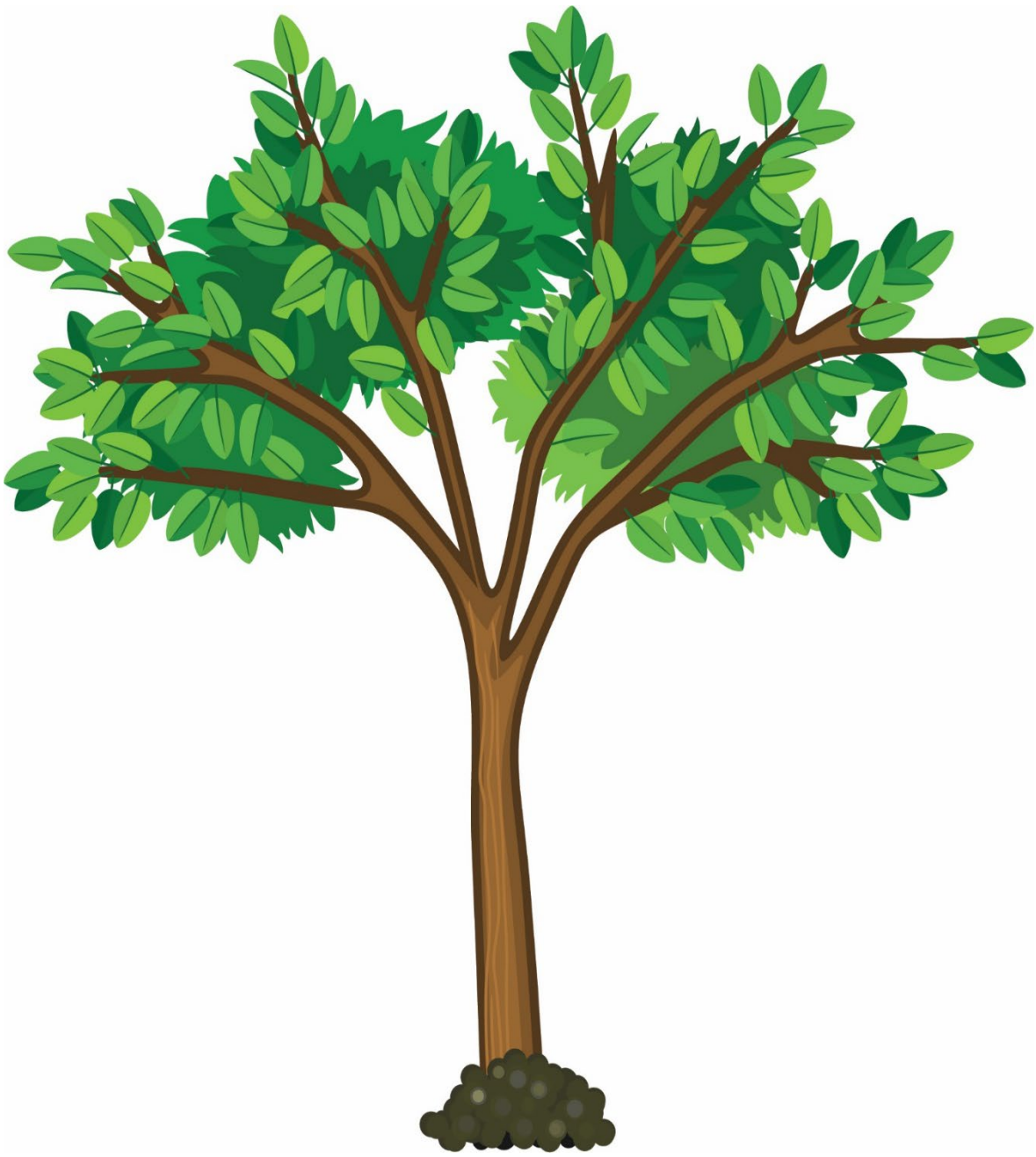


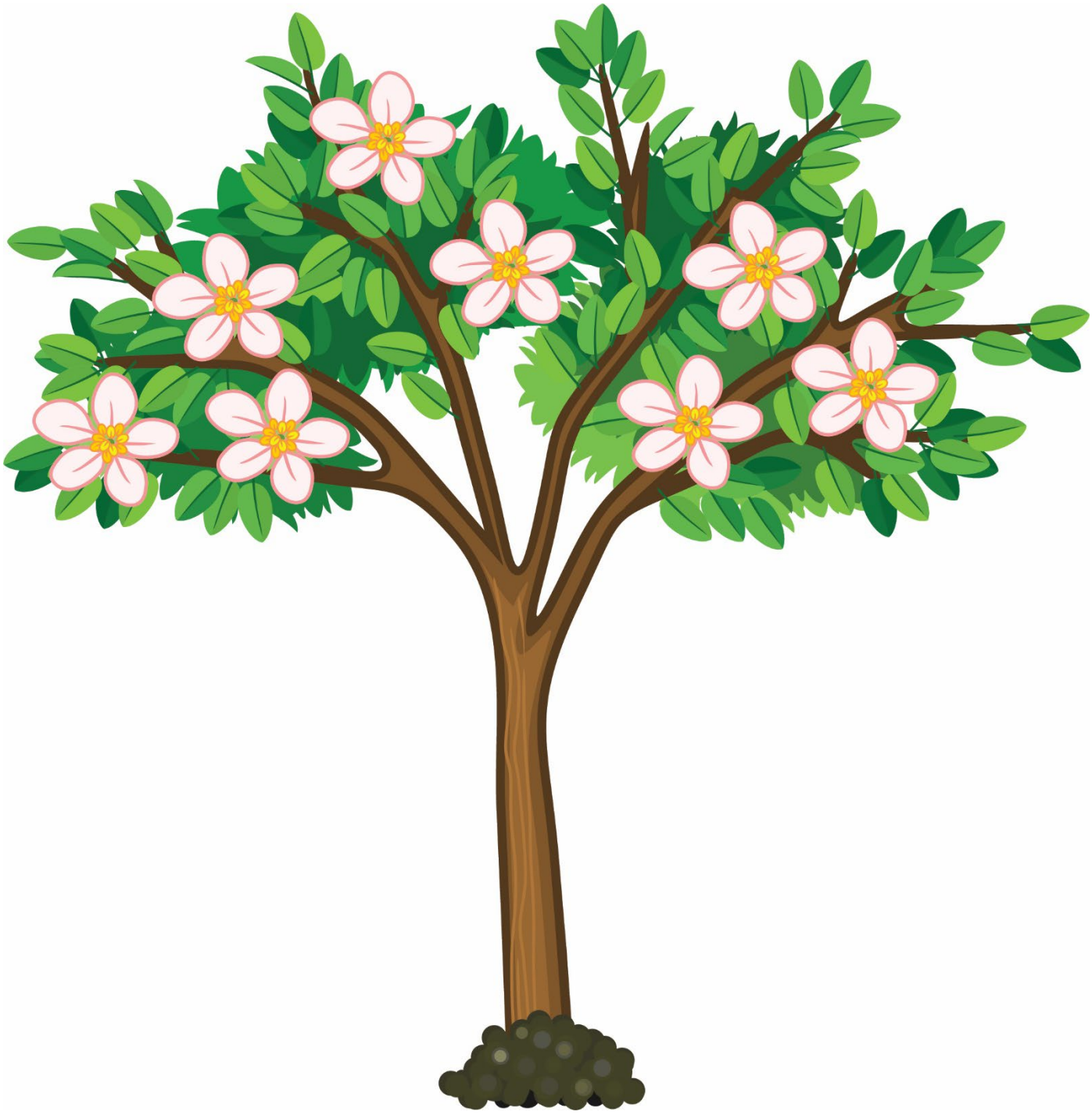


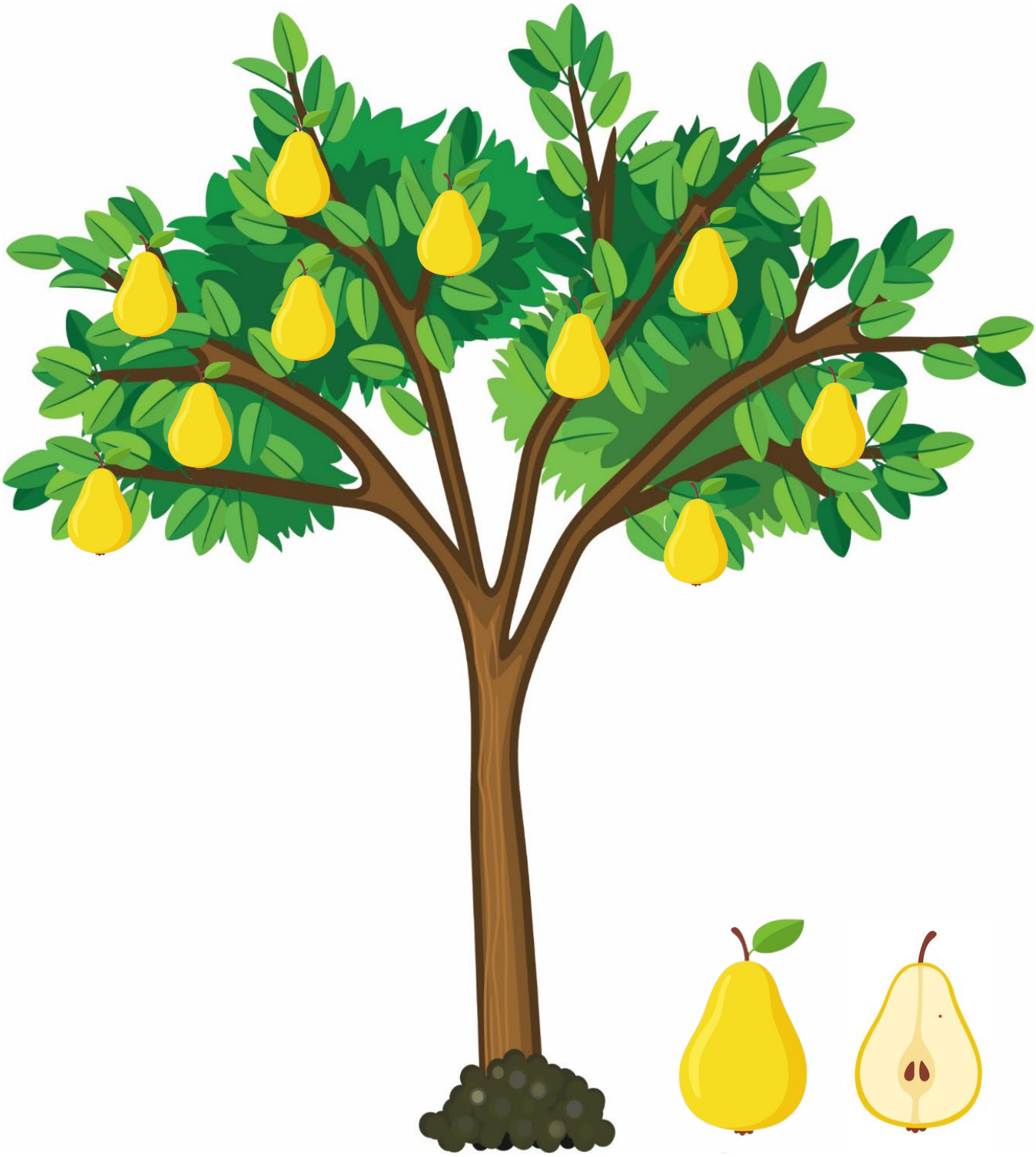


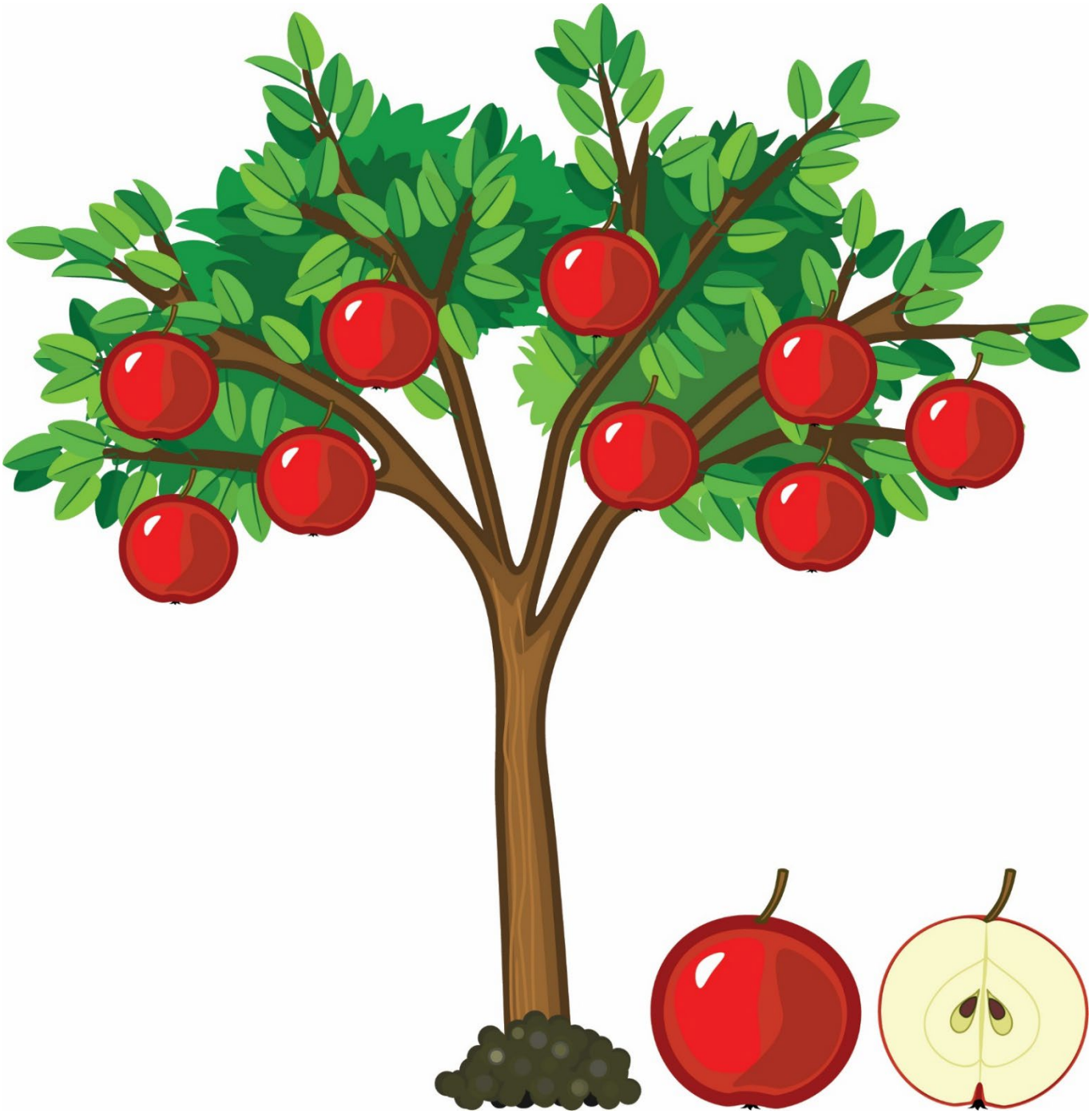












Additional Materials

Physical Activity

In Celebration of Farm to School Month: "Stories in Motion: Helping on the Farm." (Get Movin' Activity Breaks, page 64). More ideas for physical activity are available at https://hhs.iowa.gov/pick-better-snack/materials.

What You Need to Know About Pears

- Pears don't ripen well on the tree. They are harvested when fully grown but not yet fully ripe.
- Pears are hand-picked, placed in orchard bins and delivered to packing houses, where they are immediately cooled to help ripen consistently.
- To initiate ripening, bring pears to room temperature. Place them in a paper sack on the counter for faster ripening. Refrigerate pears after ripe or to slow the ripening process.
- Pears have a core, which is a hard center part that contains the seeds. We do not eat the core. Eating the skin of the pear increases fiber intake.

Facts About Pears

- Pears are one of the world's oldest cultivated fruits.
- There are over 3,000 known pear types grown around the world. Look for Red and Green Anjou, Bartlett and Bosc, just to name a few.
- Most of the pears grown in the United States are grown in California, Oregon and Washington. The Bartlett pear is America's favorite pear.
- The wood of a pear tree is one of the best woods for manufacturing high quality woodwind instruments.

Health Connection

- A medium pear is about 100 calories.
- It is a good source of Vitamin C. Reinforce with your defense shield (Cross arms in front of chest). It helps to fight off germs and heal cuts and scrapes.
- Pears lead the fruits in sources of fiber (especially with the skin on). Reinforce by rubbing your stomach to show how fiber keeps you full longer and helps with digestion.

References and Resources

http://usapears.org/pears-and-kids-nutrition/
http://usapears.org/pear-varieties/
http://usapears.org/activity-sheets/
https://snaped.fns.usda.gov/resources/nutrition-education-materials/seasonal-produce-guide/pears
https://snaped.fns.usda.gov/seasonal-produce-guide/apples
https://spendsmart.extension.iastate.edu/produce-item/pears/
https://www.youtube.com/watch?v=UWLmEh1HIBw
http://www.farmtoschool.org/
http://www.idalsdata.org/fmnp/index.cfm?fuseaction=main.formFarmersMarketDirectory

This institution is an equal opportunity provider.
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IOWA Health and Human Services

Sweet Potato

GRADE 2-3

Month: November
Time Required: 30 minutes
Alternative Tastings: **Carrot, Radish, Jicama, Potato**

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 learn that sweet potatoes are root vegetables.
- ❑ Students will be able to identify root vegetables as grown underground.

Materials

- ❑ Picture of a sweet potato plant (above ground view)
- ❑ Diagram of a sweet potato plant, showing roots
- ❑ Whole, raw sweet potato
- ❑ Cooler
- ❑ Cleaning wipes
- ❑ Electric skillet or Air fryer
- ❑ Plastic tote (to transport electric skillet)
- ❑ Spatula
- ❑ Power strip (with long cord)
- ❑ Kid-friendly music playlist/speaker
- ❑ Food storage bags
- ❑ Tasting materials (plates, napkins, etc.)
- ❑ Sweet potatoes for cooking (depending on class size)
- ❑ Olive oil (or vegetable, canola, etc.)
- ❑ Salt
- ❑ Pepper
- ❑ Preferred spices (ex: garlic, cumin, etc.)
- ❑ Supplies to clean skillet between classes

Standards Connection

This lesson supports the following Iowa Core standards.

Health Education
Standards 1, 2, 3, 4, 5, 7, 8

Science
Second grade - 2-LS4-1. Biodiversity

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

Lesson Checklist

- ❑ Physical Activity
- ❑ Tasting
- ❑ Voting
- ❑ "Asking" Discussion
- ❑ Newsletters, Stickers
- ❑ Lesson Objectives
- ❑ Science Connection: Diverse plants (2nd) & Development of Plants (3rd)

Preparation

- ❑ Wash sweet potatoes; peel and cut into ½" cubes or purchase frozen diced sweet potatoes.
- ❑ Portion sweet potatoes into food storage bags (one per lesson).
- ❑ Add olive oil and spices to the bag.

Recommended Books

- ❑ "The Little Sweet Potato" by Amy Beth Bloom
- ❑ "Oliver's Vegetables" by Vivian French
- ❑ "In the Garden with Dr. Carver" by Susan Grigsby
- ❑ "The Creepy Carrots" by Aaron Reynolds

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 new foods together and learning about different fruits and vegetables. These are foods that are good for us and helps us grow.*

*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.

2. Engage Activity: 5 minutes

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

We all have invisible qualities - personality traits, things we're good at, or things we like. These are things you can't always see just by looking at a person. Share one of your invisible qualities that you love about yourself (for example, maybe you love that you're an excellent cook).

Think-pair-share: *What is an invisible quality that you love about yourself?*

- *Think to yourself quietly.* Have students close their eyes, put their fingers to their temples, and think.
- Then, have students turn to a partner and share their invisible qualities.
- After a couple minutes, bring the class back together and select students to share out. If you use "pick a stick," this is a good way to randomly select students to share.

Explore

3. Experiential Learning: *13 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.

Show an above-ground picture of a sweet potato plant.

- *There is something special about this plant that we can't immediately see*.
- *This is a sweet potato plant. Other fruits and vegetables we will taste this year grow on the parts of the plant we can see above ground.*

Then show a diagram of a sweet potato plant to reveal the sweet potatoes and roots.

- *However, sweet potatoes grow below ground, where we can't see them. This is why a sweet potato is called a "root vegetable."*

Show the raw, whole sweet potato and point out evidence that sweet potatoes are root vegetables (rough peel, root hairs, soil, etc).

Show the bag of prepared potatoes and explain how you washed and prepared them and how you'll be cooking them. Before you add the potatoes to the preheated electric skillet, ask students to listen very carefully for the "sizzle" noises. Add the sweet potatoes to the skillet. Leave uncovered. Stir occasionally. Cook for 10 minutes or until tender. If you are reheating pre-cooked potatoes, cook time will be reduced and will be ready at 165°F internal temperature. Cook and plate the tasting while students complete the physical activity. (Air frying could be another option.)

Explore (cont'd)

Alternative Cooking Options: Depending on the time you have for preparation or feasibility for back to back lessons, you may want to consider other options for tasting prep.

1. Skillet or Air fryer: like lesson describes. If you pre-cook sweet potatoes in advance, you can reduce cooking time in class and just reheat in skillet or air fryer.
2. Microwave: Before the lesson, pierce whole potato with a fork several times and microwave for 6 minutes, turning regularly. During the lesson, cut in half lengthwise, then score the inside of the potato making horizontal and vertical lines to create a grid - be sure not to cut through the skin! Then invert the potato skin, revealing perfect cubes to slice off the skin.
3. Raw: You can spiralize sweet potatoes or purchase frozen if you want to taste test it raw.

Physical activity: While the sweet potatoes are cooking, gather students in a large circle for a game of "hot potato."

- Play music and start passing around a whole sweet potato to the person next to you.
- If the music stops on you, you need to show the class your favorite dance move. Have the rest of the students copy their move.
- Repeat until desired time.

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 review your brave tasting rules (for example, don't yuck my yum, we all try together, etc.). As students receive their samples, ask them to use their senses while they wait and then try tasting all together.

Reflect

5. Voting Activity: *2 minutes*

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

As students taste the potato, 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."

Reflection questions:

- *Will someone share what they liked or loved about the sweet potatoes?* Select a couple students to share.
- *What part of the plant is a sweet potato?* (root)
- *Where do root vegetables grow?* Below ground
- *What else do you remember about sweet potatoes?* Rough peel, root hairs, soil on them
- *Raise your hand if you're excited to go home and tell your family about tasting sweet potatoes.*
    - 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 sweet potatoes?*

Leave newsletters and stickers with the teacher to pass out.

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 Sweet Potatoes

- The sweet potato grows underground; it is the root of the plant. Because it grows under the ground, we scrub the outside to remove soil and germs before we cut it open.
- It is very hard when harvested; when you cook it, it becomes soft.
- Sweet potatoes can be long and thin or short and fat, but always taper at the ends.
- Store sweet potatoes in a cool, dry, well-ventilated container. Do not store in the refrigerator as it will produce a hard center and unpleasant taste.
- Sweet potatoes are usually the size of regular white potatoes. The smooth, thin skin can be eaten. Choose firm sweet potatoes with no signs of decay. Look for uniform shape for even cooking. Some sweet potatoes grow in Iowa.
- Find them in the grocery store fresh, canned or frozen.

Facts About Sweet Potatoes

- The Native Americans were growing sweet potatoes when Columbus came to America in 1492. By the 16th century, sweet potatoes were being grown in the southern states.
- North Carolina is the top-producing state of sweet potatoes. They produce 50 percent of the nation's annual crop.
- Sweet potatoes are "cured" (placed in a newspaper-lined box) after harvest for about two weeks. During this time, the sweet potato starch changes to sweet sugar.
- Sweet potatoes are different from yams. Most "yams" labeled in the U.S. are actually sweet potatoes.

Health Connection

- Sweet potatoes are part of the red/orange group in the MyPlate vegetable group. This group is important for our eyes and skin as it has a lot of Vitamin A. Reinforce with super goggles. (Use your fingers to make goggles for your eyes.)
- Sweet potatoes have a lot of Vitamin C, which is important to help cuts heal and keep us healthy. Reinforce with the Vitamin C shield by crossing arms in front of chest.

References and Resources

https://snaped.fns.usda.gov/seasonal-produce-guide/sweet-potatoes-yams
https://spendsmart.extension.iastate.edu/produce-item/sweet-potato-2/
https://ncsweetpotatoes.com/
https://www.fns.usda.gov/tn/myplate

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IOWA Health and Human Services

Kiwi

GRADE 2-3

Month: December
Time Required: 30 minutes
Alternative Tastings: Banana

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 explain how a kiwi grows.
- ❑ Students will learn that you can eat kiwi with the skin on.

Materials

- ❑ ¼ kiwi with the skin for each student or ½ kiwi with skin and a spoon to scoop kiwi and eat; make sure to get ripe kiwi or buy ahead and allow time for ripening
- ❑ 1-2 hula-hoops, if using physical activity option #2
- ❑ Kiwi video link
- ❑ Images of kiwi growing on vines

Preparation

- ❑ Wash and cut kiwi and store in a clean container in the refrigerator. Consider cutting kiwi in class in front of students. For ¼ kiwi per student, cut kiwi in half lengthwise and cut each half lengthwise. (See Knife Skills video in Reference section on the last page.) For ½ kiwi per student, cut kiwi in half through the short center.
- ❑ Have video and photos loaded at the beginning of the lesson.

Standards Connection

This lesson supports the following Iowa Core standards.

Health Education
Standards 1, 2, 3, 4, 5, 7, 8

Science
Second grade - 2-LS2-2. Structure and function

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

Lesson Checklist

- ❑ Physical Activity
- ❑ Tasting
- ❑ Voting
- ❑ “Asking” Discussion
- ❑ Newsletters, Stickers
- ❑ Lesson Objectives
- ❑ Science Connection: Plant parts (2nd) & plant growth and development (3rd)

Recommended Books

“A Fruit is a Suitcase for Seeds” by Jean Richards
“I Love to Eat Fruits and Vegetables” by Shelley Admont

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: *8 minutes*

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

Today we'll be talking about kiwi, a fruit that grows on a special plant that provides ***support.*** Note vocabulary word: support. Define, write out, and repeat the word support. *To give support means you help others grow by giving them what they need, or you encourage or comfort someone. To have support means you're taken care of; you have what you need to grow.* Nutrition educators, share a personal example of someone who supports you in your job.

Now think to yourselves, who supports you at school? Tell students to put their fingers on their temples to show that they are thinking. Give students a minute to think of someone. *I'm going to call out a name of someone who supports you at school. Stand up if I call the name of the person you thought of (use the person's name if possible).* Name several individuals at school one at a time. *Your teacher (say teacher's name), the principal (say their name), the cooks in the lunchroom, the bus driver, the PE teacher, the music teacher, the librarian, the custodian, the guidance counselor, the office staff, the afterschool program leader. Ask, "Did we miss anyone?" to see if the students have any additions.* Ask a few students to share examples of how the person at school supports them (ex.: helps them learn, gives them food, plays with them, teaches them something new, makes them laugh, asks how they are doing, cleans up a mess, etc.).

<u>Physical Activity</u>

Lead students through activity # 1 **or** activity #2.

Activity #1

Those are great examples of people at school who support you. Isn't it awesome we have so many people at school who support us. Now we're going to do an activity to get our bodies moving using the names of people who support you. When I say [teacher's name], I want you to jog in place. When I say [principal's name], I want you to twist your body at the waist. When I say [the custodian's name], do squats. When I say [the PE teacher's name], jump in place. When I say [the music teacher's name], do toe touches. Add additional names as you see fit and use physical activities that are suited for your class. Consider displaying the names with the activity to make it easy to remember. Tell students, *keep doing the activity until I say the next name.* Go through the names in the order you listed them. Try mixing up the order. Try saying the names closer together so students are switching up the activity more frequently. Continue for about 3 minutes for a classroom activity break.

Activity #2

Now, we're going to play a game that shows how we can all support each other by working together as a team. Explain and lead students in the Hula-Hoop Challenge.

Engage (cont'd)

Activity #2 (cont'd)

Hula-Hoop Challenge (from PlayWorks)

- Have the students form a circle, holding hands. Demonstrate how to get body through the hula-hoop without using hands. Check for understanding.
- Place the hula-hoop over two people's interlocked hands so it cannot escape the circle.
- Explain that the goal of the game is to get the hula-hoop all the way around the circle without anyone letting go of their teammate's hands. Have group cheer each other on.
- If time is a concern, use two hula hoops and form two smaller groups. Groups could compete to finish first.

After completed once, discuss successes and challenges and try again, if time allows. Ask follow-up reflection questions after the game:

- What felt hard about the challenge?
- What did we learn to make it easier for all of us?
- How did we support one another to be successful?

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.

Have students sit where they will eat (opportunity for 3 deep breaths). *We're going to taste a fruit called a kiwi. Kiwis grow on* ***vines****.* Note vocabulary word: vine. Define, write out, and repeat the word vine. *A vine is a long stem that supports the plant. Just like we need support at school to grow, vines need support as they grow.* Show a picture of kiwifruit growing on vines in this link or attached in the lesson. *The vine grows up and around these posts, using them for support. The bunches of kiwifruit hang off of the vine and are supported by the vine. We're going to watch a short video about kiwi. This video talks about two different kinds of kiwi that grow in Oregon.* Show students where Oregon is on the map, if possible. *Watch for the vines with kiwi growing on them in the video.*

Watch Oregon Harvest for Schools' kiwi video (1:25), https://www.youtube.com/watch?v=zySeLrnXoW0, or this kiwi video from Farm Fresh to You, https://www.youtube.com/watch?v=c7UejA4c6Jo, stopping at 1:15. Answer any questions and consider re-watching if time permits, pointing out the vines.

With the teacher or student helpers (those passing out fruit must wear gloves), pass out the kiwi to all students. As students receive their samples, ask them to use their senses while they wait. Ask, *what do you notice about the kiwi?* Allow a few students to respond. *Kiwis are green on the inside with black seeds and a white center They have brown skin on the outside.* Ask students to point to the spot on the kiwi where the fruit was attached to the vine (look for small indentation/nub at the long end of the fruit). Ask students to feel the kiwifruit skin and describe what it feels like. Write the describing words on the board for all to see and read.

Explore (cont'd)

Kiwi skin is special because it's a part of the fruit that we can eat. We don't have to peel it or cut it off; we can eat the fruit whole - the skin on the outside and the fruit and seeds on the inside. Before you eat kiwi, rinse it under cold, running water. I washed it before I came today so it's ready to eat. Let's try it!

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").

Be sure to review your brave tasting rules (for example, don't yuck my yum, we all try together, etc.). Students are invited to taste the kiwi. Give each student ¼ of a kiwi (cut the kiwi lengthwise in half and cut each half again lengthwise.) Encourage students to take a bite of kiwi with the skin and without the skin (bite off only the green flesh). Alternatively, give each student a half of a kiwi and spoon. Show students how to scoop out the kiwi with a spoon. (The kiwi must be soft enough for this to work well.) Encourage students to also take a bite of the kiwi with the skin.

Reflect

5. Voting Activity: *2 minutes*

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

As students taste the kiwi, 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."

<u>Reflection questions:</u>

- *What did you like or love about the kiwi?* Select a couple students to share. *Will someone share what you could do to make it better if you disliked it? (mix with other fruit, add to yogurt, put in a smoothie, etc.)* Select a couple of students to share.
- *Will someone share how the kiwi tasted with the skin compared to without the skin?*
- *What do kiwis grow on?* Vines
- *What is in the middle of the kiwi?* Seeds
- *What are ways you can eat kiwi? (cut in half and scoop out fruit with a spoon, slice a kiwi, with the skin or without, cut up with other fruit, etc.)*
- *How do you know if kiwi is ready to eat? (it is a little soft when you press on it)*
- *Raise your hand if you're excited to go home and tell your grown-ups about tasting kiwi.* 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 kiwi?*

Leave newsletters and stickers with the teachers to pass out.

Additional Materials

Physical Activity

More ideas for physical activity are available at https://hhs.iowa.gov/pick-better-snack/materials.

What You Need to Know About Kiwi

- Kiwi is usually eaten raw. It can be eaten whole like an apple or cut into quarters like an orange. You can cut the kiwi in half and scoop out the flesh with a spoon. The skin can be eaten or the kiwi can be peeled. Be sure to wash the kiwi first.
- Kiwi grows on vines on a trellis, much like how grapes are grown.
- Kiwi is a berry and is available year-round. It is usually sold individually. Select firm, unblemished fruit. The size does not affect the flavor.
- Ripe kiwi is plump and gives slightly to pressure. If it is too hard, it is not ready to eat yet. You can help ripen it faster by putting it in paper bag with an apple or banana. Kiwi will keep several days at room temperature and up to four weeks in the refrigerator.
- The serving size for school food service is two whole kiwi (2 whole kiwi = ½ cup serving).

Facts About Kiwi

- Kiwi originated in China over 700 years ago where it was called Yang Tao. In 1906, the seeds were sent to New Zealand and renamed Chinese Gooseberry. Later, the Chinese Gooseberry was renamed “kiwifruit” after New Zealand’s national bird the “kiwi.”
- Kiwi can be used as a natural meat tenderizer (meaning it helps make the meat more tender). Just rub a cut end of kiwi over the meat an let stand 10-15 minutes.
- California produces 98 percent of kiwi grown in the United States. Italy, New Zealand, Chile, France and Japan also grow kiwi.

Health Connection

- High in Vitamin C to fight off germs and heal cuts and wounds; good for our gums. Reinforce with defense shield (Cross arms in front of your chest).
- Good source of vitamin E. Kiwi provides more vitamin E than most fruits (fruits and vegetables are generally not good sources of vitamin E.) Vitamin E is good for your skin and eyes. (The Oregon video in the lesson mentions vitamin E.) Point to skin and eyes.
- Good source of fiber (especially when you eat the skin) to help with digestion and help you feel full. Reinforce by rubbing stomach.

References and Resources

https://spendsmart.extension.iastate.edu/produce-item/kiwi-fruit/
https://snaped.fns.usda.gov/seasonal-produce-guide/kiwifruit
https://foodhero.org/kiwi; Knife Skills – Kiwi & Oranges video (start at 1:11)
https://fruitsandveggies.org/fruits-and-veggies/kiwifruit/

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IOWA Health and Human Services

Chickpeas

GRADE 2-3

Month: January
Time Required: 30 minutes
Alternative Tastings: Edamame, Black Beans, Black Eye Peas

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 what a seed needs to sprout.
- ❑ Students will be able to recognize chickpeas as seeds.

Materials

- ❑ Canned chickpeas for tasting, drained
- ❑ Dried chickpeas for sprouting, 1-2 per student
- ❑ Small food storage bags (snack size), paper towels, spray bottle with water, permanent marker, yarn and tape (optional) for Bean Buddies
- ❑ Optional: Glass jar for sprouting beans in advance
- ❑ Optional, for cooking chickpeas in class: air fryer or electric skillet, plastic tote to transport electric skillet, hand towel, cleaning wipes, power strip, extension cord, oil (olive, canola, vegetable, etc.), 15 oz can chickpeas, salt, pepper or other spices

Preparation

- ❑ Prepare a model Bean Buddy to show students.
- ❑ Optional: soak dried chickpeas in water for 24 hours to speed up sprouting
- ❑ Optional: if not making Bean Buddies, prepare a glass jar with damp paper towels with dried chickpeas along the sides of the glass for viewing. Place in dark, warm spot. Look for sprouts in about 1-2 weeks or sooner.
- ❑ If cooking beans, rinse the garbanzo beans and pat dry with a paper towel. Store in a container or food storage bag. The drier the bean, the faster they'll cook and the crispier they'll be. You may want to pat dry again immediately before cooking.

Recommended Books

"The Sandwich Swap" by Queen Rania Al Abdullah and Kelly DiPucchio; "A Seed in Need" by Sam Godwin; "One Bean" by Anne Rockwell; "Mr. Putter & Tabby Spill the Beans" by Cynthia Rylant

Standards Connection

This lesson supports the following Iowa Core standards.

Health Education
Standards 1, 2, 3, 4, 5, 7, 8

Science
Second grade - 2-LS2-1. Interdependent relationships in Ecosystems

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

Lesson Checklist

- ❑ Physical Activity
- ❑ Tasting
- ❑ Voting
- ❑ "Asking" Discussion
- ❑ Newsletters, Stickers
- ❑ Lesson Objectives
- ❑ Science Connection: Seeds and plant diversity

Engage

1. Introduction: *3 minutes*

The "Introduction" section is a time to introduce yourself, recap previous lessons, establish norms, or introduce the days lessons.

If cooking beans in class, immediately plug in the electric skillet or air fryer and preheat. Explain to students how you'll cook the garbanzo beans and how to stay safe while using heat sources.

Follow these cooking instructions:

- Air fryer: Preheat to 390 degrees. Once preheated, add your drained and dried chickpeas, 1 tablespoon oil, and seasoning. Set the timer to 10 minutes. Shake the basket once or twice throughout the lesson. After 10 minutes, check for crispiness.
- Electric skillet: Preheat skillet with 1-2 tablespoon oil over medium or medium-low heat (this depends on your electric skillet). Once hot, add dry chickpeas and seasoning and leave uncovered. Set a timer to 10 minutes. Stir occasionally. After 10 minutes, check for crispiness.

Cooking Tips:

- Feel free to delegate responsibilities with the teacher. Have them stir the beans, 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, 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: *5 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 start the lesson with a game that will help us learn more about each other and get our bodies moving.

Physical Activity: The Great Wind Blows

Have students gather in a circle, and introduce the game, The Great Wind Blows. Explain that a person will stand in the middle of the circle and say something that they like about themselves. Give an example such as, *I like that I'm good at drawing.* Explain, *If that's true for you then move to a new seat in the circle. If there's no more left, then you're the person in the middle, and you get to say, "I like that..."* Have everyone quietly think to themselves about something they like about themselves, then play several rounds of the game, so everyone gets to move.

Engage (cont'd)

This engage activity is also the physical activity. As students catch on, feel free to introduce more physical activity, such as hopping to their new spot. Or crawling to their new spot.

When you finish, transition by saying, *Everyone in this class is all so different, and some of you shared characteristics.* Give examples from the activity that demonstrate shared characteristics.

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.

At the carpet or with students seated at their desks say, *I have a joke for you.*
You: *Knock Knock.*
Class: *Who's there?*
You: *Bean.*
Class: *Bean who?*
You: *Bean a while since I've seen you!*

That joke makes me laugh because it ***has been*** *a while since I've seen you, but also because it's a clue to what I brought today for us to taste. Can you guess what it is?* (beans!) *That's right,* ***beans****.*

Today we are going to taste beans. Did you know that all beans are seeds? Seeds are the part of the plant that can grow into a new plant. And just like you all, seeds can have lots of different and similar characteristics.

Seeds need our special care to sprout and grow. Seeds need water and warmth to start to sprout, and eventually, they need dirt and sun to grow into a full plant. When a seed starts to sprout, it's called germination. Germination is the sprouting of a seed. Write the new vocabulary word on the board. *Repeat after me. Germination.* Have students say the word out loud. Ask, *what is germination?* (when a seed sprouts)

We need to give seeds two things for them to germinate. They need: 1) warmth, and 2) water. (Choral response/repeat-back) *What do we need to give seeds so that they can germinate?* (warmth and water)

Complete Activity #1 or Activity #2 to demonstrate germination.

Explore (cont'd)

Activity #1: Bean Buddies Sprouting Activity

We're each going to use chickpea seeds to start the germination process today. Show students your model bean buddy necklace. *My bean buddy here will get water from this wet paper towel and will get warmth from my body as I wear it.* Explain that the bean buddy necklace should be worn against their skin, so it gets heat from their body. It may not work if worn on the outside of their clothing. *Eventually, after enough warmth and water, it will sprout. When the seed is planted in dirt, it can grow into a full plant with more seeds.* Show students the images of chickpea plants and pods included in the lesson. *We're each going to make a bean buddy to wear and take care of.* Students can work independently or in small groups.

- Pass out a paper towel to each student and a spray bottles to share (predetermine the number of spritzes that will adequately dampen the towel and tell students to only use that many).
- Pass out 1-2 dried chickpeas to each student. Have students fold their paper towel around the bean.
- Pass out small food storage bags. Have students place their bean inside. Attach the baggie to a piece of yarn, turning the bean buddy into a necklace. If prefer not to make necklaces, put students' bean buddies in a warm spot. Students can write their names on the baggies.
- Have students clean up and wear their bean buddies next to their skin.

Tip: Use student helpers to pass out the materials.

Activity #2: Glass jar with sprouted chickpeas

Sprout chickpeas in a glass jar 1-2 weeks before the lesson and bring to class. Prepare the glass jar with damp paper towels and dried chickpeas along the sides of the glass for viewing. Place in a dark, warm spot for 1-2 weeks. Pass around the jar to all students to view the germination. Ask students, *did any of the seeds sprout? What does the sprout look like? How many seeds are sprouting? What do you think the seed needs to grow into a plant? What kind of plant will this seed grow? Do you think we could sprout other seeds? What kinds of seeds would you sprout? Do you think chickpeas can grow in Iowa? (*They have a long growing season and do best in hot, dry conditions. They can grow in Iowa, but it is harder to grow them compared to some other beans.*)* Show students images of chickpea plants and seeds attached in the lesson.

4. Tasting Activity: *4 minutes*

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

Before you pass out any samples, be sure to review your brave tasting rules (for example, don't yuck my yum, we all try together, etc.). As students receive their samples, ask them to use their senses while they wait.

Give each student 2 or so canned chickpeas or the chickpeas cooked in class. Taste plain chickpeas even if tasting chickpeas in hummus, 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 chickpeas, 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:

A choral response is where you pose a question to the class that has a clear answer and can be answered in a few words or less, and you have the students all answer at once. It's nice to have a visual cue to teach the kids. For example, you could say, *I'm going to raise my arms and ask a question to the class. When I lower my arms, that means it's the class' turn to answer. Let's practice…*

- *What month is it?* (January)
- *What food did we try today?* (chickpeas)
- *What part of the plant are chickpeas?* (seeds)
- *Why are seeds important to plants?* (They can grow into new plants.)
- *What is it called when a seed starts to sprout?* (germinate)
- *What two things does a seed need to germinate?* (warmth and water)
- *How can you eat chickpeas? (it's the main ingredient in hummus and falafel; add to soup or salads; seasoned and roasted; etc.)*

Asking Discussion:

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

- 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 chickpeas?*

Leave newsletters and stickers with the teachers to pass out.

Chickpea plants

Chickpea pods usually have one to three chickpeas (seeds) each.

Additional Materials

Physical Activity

More ideas for physical activity are available at https://hhs.iowa.gov/pick-better-snack/materials.

What You Need to Know About Chickpeas

- Available in dried, canned and frozen forms.
- Beans and peas contain plant protein, iron and zinc, which are similar to nutrients in meat, poultry and fish, so they can be represented in the protein group.
- Beans and peas contain dietary fiber, folate and potassium, which are common nutrients in the vegetable group. Chickpeas can count as a protein serving or a vegetable serving.
- One-half cup of cooked beans provides about 8 grams of protein.
- Beans and peas are mature forms of legumes and include kidney beans, pinto beans, black beans, black-eyed peas, chickpeas/garbanzo beans, split peas and lentils.
- Chickpeas grow in pods on small bushes; one seed pod contains 1-3 chickpeas.

Facts About Chickpeas

- One of the world's oldest cultivated crops. Cultivation goes back 7,000 years in some parts of the world.
- Chickpea and garbanzo beans are the same thing and are a member of the pea family.
- The chickpea has a small beak that looks like a chick's beak, giving it the name chickpea.
- The kidney bean is shaped like a kidney.
- Some heirloom varieties of beans are: Eyes of Goat, Tongues of Fire and Mortgage Lifters. Heirloom vegetables are grown from seeds that have been passed down through generations.

Health Connection

- Chickpeas are a good source of protein. Reinforce by flexing muscles.
- They are also high in fiber. Rub stomach to reinforce they help food move through the digestive tract and help keep us full longer.

References and Resources

https://foodhero.org/beans
https://spendsmart.extension.iastate.edu/pantry-picks/beans/
https://yardandgarden.extension.iastate.edu/how-to/all-about-beans
https://spendsmart.extension.iastate.edu/recipe/after-school-hummus/
https://spendsmart.extension.iastate.edu/recipe/peanut-butter-balls/ (substitute chickpeas for great northern beans and Sunbutter for peanut butter, if needed).
https://www.eatright.org/food/planning-and-prep/recipes/pizza-hummus-recipe
https://www.agmrc.org/commodities-products/vegetables/chickpeas

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IOWA Health and Human Services

Pineapple

GRADE 2-3

Month: February
Time Required: 30 minutes
Alternative Tastings: Banana

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 conclude that pineapples grow far away from Iowa.
- ❑ Students will be able to compare the food miles of different fruits.

Materials

- ❑ Paper plates
- ❑ Forks or toothpicks
- ❑ Knife
- ❑ Cutting board
- ❑ Whole pineapple
- ❑ ½ pineapple per 25 students
- ❑ Tajin seasoning (optional)
- ❑ Fruit images (see below) & tape
- ❑ Food mile index (see below)
- ❑ Recipe card template (see below)
- ❑ Pineapple corer (if demonstrating)

Optional

(if making fruit salad recipe)

- ❑ 1½ apples per 25 students
- ❑ 4 bananas per 25 students

(if students help with prep)

- ❑ Disposable or reusable plastic kid-knives (for each student)
- ❑ Cutting boards (for students)

Standards Connection

This lesson supports the following Iowa Core standards.

Health Education
Standards 1, 2, 3, 4, 5, 7, 8

Science
Grade 2 - 2-LS4-1
LS4.D Biodiversity

Grade 3 - 3-ESS2-2
ESS2.D Climate

Lesson Checklist

- ❑ Physical Activity
- ❑ Tasting
- ❑ Voting
- ❑ "Asking" Discussion
- ❑ Newsletters, Stickers
- ❑ Lesson Objectives
- ❑ Science Connection: Plant diversity (2nd) and climate (3rd)

Preparation

- ❑ Cut pineapple into bite size pieces, but if students will help prepare them then cut in 1 ½" cubes.
- ❑ Fruit Salad ingredients: Wash the apples. You could cut apples and bananas in advance, but there will likely be browning.
- ❑ Communicate with classroom teacher to have Google Earth map prepared to be pulled up on screen.

Recommended Books

"Before We Eat: From Farm to Table" by Pat Brisson
"Pineapple Pete's Remarkable Feat" by Josephine Baskin Minow
"How Did That Get in My Lunchbox?" by Chris Butterworth

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.

Show students three large, printed images of fruit (included in lesson) and have them say the fruit names with you (choral response): apple, pineapple, banana. Place the pictures in a line across the classroom: the apple toward the front of the room, the pineapple in the middle of the room, and the banana at the back of the room. You may need tape to hang on classroom wall, so they are high enough for students to see.

2. Engage Activity: 8 minutes

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

With students seated at their desks or carpet, say, *I want you to think quietly to yourself and decide, of these three fruits, which one is your favorite to have as a snack? Apples, pineapples, or bananas? Think in your head and when I say "go," you will quietly walk to the picture of your favorite fruit.* Give students 5-10 seconds to think; say *"go."* In groups, have students discuss their favorite fruit. Ask if students know where those fruits are grown; do they grow near Iowa or far away from Iowa?

Introduce the concept of food miles. To do so, have the Google Earth map (link below) pulled up on screen and progress through the slides as you explain foods grown FAR, FARTHER, and FARTHEST away.

Explain, *The United States gets most of its pineapples from Costa Rica. That means that when you eat a pineapple it's traveled thousands of miles to get to you. In fact, year-round the fruits we have available this time of year were grown outside of Iowa, like pineapple. Most fruits we eat cannot survive outdoors in Iowa winter weather. What makes survival hard in our winter weather?* (the very cold temperatures)

- (Slide 1, Iowa – where we live) Standing at the front of the room (closest to the apple group), explain, *Apples grow really well in Iowa during the summer and fall, but it's winter, so we have to get apples from FAR away states like Washington where they grow LOTS of apples and store the fall harvest to distribute year-round.*
- (Slide 2&3, Washington) Write the word "far" on the board. Show the slides so they can see distance from Iowa to Washington. (See video in Reference section for information on how Washington apples are stored in a controlled environment after harvest, so they stay fresh year-round.)
- (Slide 4&5, Costa Rica) *Pineapples grow even FARTHER away, in hot and wet tropical areas like Costa Rica.* Write the word "farther" on the board. Show the slides so they can see how much farther Costa Rica is from Iowa.
- (Slides 6&7, Peru*) And bananas grow the FARTHEST away in tropical areas like Peru.* Write the word "farthest" on the board. Show the slides so they can see how Peru is the farthest away from Iowa.
- Have students repeat these words. *Apples grow far away, pineapples grow farther away, bananas grow farthest away.*

Engage (cont'd)

Visual: Students can move to the front of the room to look at the visuals together. A visual will help the students understand the lesson objective. You are welcome to use other visual resources, but the Google Earth slides link is provided here.
Google Earth map of locations: show to demonstrate near, far, and farther (select Present and move through 7 slides to show apples in Washington, pineapples in Costa Rica, bananas in Peru).
Google Map of locations: show lines and distances between Washington, Costa Rica, and Peru.

Physical Activity: pick from options below

Option 1: Movement game with Sesame Street - "Near and Far" Song.

- With students gathered together in the front of the room or at their seats, say, *We're going to play a movement game while listening to a song about the meaning of the words "near" and "far." When you hear the word "near," you should squat down onto the ground (demonstrate). When you hear the word "far," you should jump up into the air (demonstrate). Ready?* On smart screen/projector, play the Sesame Street - "Near and Far" Song.
- Feel free to get creative with these older grades. For example, you can make this even more fun by doing dance moves when they hear the words "near" or "far."

Option 2: Food Miles Exercises

- *How far would we need to travel to harvest the fruits from the Food Miles Index list?* Referring to the Food Miles Index handout, you can randomly draw or identify fruits from the list and have the students march or run in place for allotted time based on distance away that food is grown.
- Every 1,000 miles could equal one second or # of repetitions of a particular exercise. (Example: Grapefruit is grown 5,000 miles away, so 5,000/1,000 = 5 repetitions. 5 seconds of jogging in place or 5 jumping jacks.) You could explain *we're going to put in extra work for the longer distance away something grows.* Additional exercise ideas: Arm circles, toe touch stretches, pushups, sit ups, knee high touches, jump in place, etc.

Explore

3. Experiential Learning: 8 minutes

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

Have students sit at their desks (opportunity for 3 deep breaths).

While holding up a whole pineapple, say, *For our tasting today, we're going to try our "farther fruit" from our activity: pineapple. We can eat the bright yellow inside of the pineapple after we chop off the crown and the skin* (demonstrate if preparing tasting from fresh, whole pineapple or explain if this has already been done).

Explore (cont'd)

During this time there are a few options to have the students help explore learning more about pineapple. You can decide how many activities you want to offer to fit the timeframe.

- Option A: Show video - If you would like to show a video at this time, there are two options in the resource list that talk about how pineapples are grown. (different lengths of time).
- Option B: Use the pineapple corer and demonstrate how to core and slice pineapple.
- Option C: Making Fruit Salad (optional) – you can either prepare it in front of them or have them help. Directions provided below if you choose this option.

Option C Directions: Far, Farther, Farthest Fruit Salad

You're going to be a chef today and prepare your own fruit salad using the fruits from our earlier activity: pineapple, apple, and banana. This is called a Far, Farther, Farthest Fruit Salad, to describe where our fruit came from. Using choral response: the apple grows ***far****, the pineapple grows* ***farther****, and the banana grows* ***farthest*** *away from Iowa.* This is also an excellent time to remind students that apples can grow near, right here in Iowa, but not during the cold winter months. In Iowa, they are typically ripe and harvested in the fall.

(Before passing out materials, be sure to review the following safety:

- *Always cut down.*
- *Always place your knife down on the table when you're not using it.*
- *Use pinching fingers or the bear claw to protect your fingers.*

- Pass out paper plates to each student. Paper plates can serve as both their cutting board and their plate, if you're not using reusable cutting boards. Before passing out knives, pass out the first piece of fruit and demonstrate how to properly cut it up. Then pass out knives. (Passing out plates and fruit first means no idle hands holding knives while waiting for fruit).
- Continue passing out fruit, demonstrating how to cut.

4. Tasting Activity: 2 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").

Explain to students that we're going to taste the pineapple first. 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 pineapple together.

Reflect

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

If students taste the pineapple and the fruit salad, have them vote with their thumbs on how they like pineapple by itself first and then vote a second time for the fruit salad. 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: 8 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.

Far, Farther, Farthest Fruit Salad Recipe Cards (optional)
(It is optional to distribute the recipe cards and have students complete individually. You may prefer to adapt this activity and complete as a large group aloud. If you choose this option, you won't need to print and distribute the recipe cards.)

To finish today's lesson, we're going to write a recipe for our very own "Far, Farther, Farthest Fruit Salad. You must include today's Pick a Better Snack: pineapple!" Pass out recipe cards or display on screen/board and have students think up two other fruits that they'd like to add to their own fruit salad. Display the Food Miles Index (attached below) on the board. Instruct students to look up the food miles for their fruits, then circle or indicate whether that fruit is far, farther, or farthest.
Asking Discussion:
Raise your hand if you're excited to go home and tell your family about tasting pineapple.

- Ask a student with a raised hand: *if you wanted to try this at home, how might you ask your grown-ups?*
- *Which fruit did we discuss today grows far from Iowa?* (Apple) *Which grows farther?* (Pineapple) *Which one grows the farthest?* (Banana)
- You might also ask additional questions like*, what is something you remember about pineapple? where could you buy pineapple?*

Leave newsletters and stickers with the teacher to distribute.

Food Miles Index

These are estimates of how far away our foods often travel to get to Iowa. If there's a * next to a fruit that means it can also be grown right here in Iowa!

***Apples - 1,700 miles**	**Lime - 1,900 miles**
***Apricots - 2,000 miles**	**Lychee - 6,500 miles**
Banana - 3,520 miles	**Mango - 7,500 miles**
***Blackberry - 1,650 miles**	***Nectarine - 6,500 miles**
***Blueberry - 1,700 miles**	**Orange - 1,300 miles**
***Cantaloupe - 2,000 miles**	***Peach - 6,500 miles**
***Cherry - 2,000 miles**	***Pear - 1,700 miles**
Clementine - 2,000 miles	**Pineapple - 3,400 miles**
Cranberry - 1,100 miles	***Plum - 6,500 miles**
***Grape - 2,000 miles**	**Pomegranate- 7,500 miles**
Grapefruit - 5,000 miles	**Prickly Pear - 1,900 miles**
Guava - 8,000 miles	**Quince - 1,900 miles**
***Honeydew - 2,000 miles**	***Raspberry - 2,000 miles**
Kiwi - 5,100 miles	***Strawberry - 1,900 miles**
Lemon - 1,900 miles	***Watermelon - 2,000 miles**

_____’s Far, Farther, Farthest Fruit Salad Recipe

Fruit: Miles:	Fruit: Miles:	Fruit: Miles:
Circle if this fruit is ● Far ● Farther ● Farthest	Circle if this fruit is ● Far ● Farther ● Farthest	Circle if this fruit is ● Far ● Farther ● Farthest

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IOWA Health and Human Services

Pick a Better Snack Lesson

_____’s Far, Farther, Farthest Fruit Salad Recipe

Fruit: Miles:	Fruit: Miles:	Fruit: Miles:
Circle if this fruit is ● Far ● Farther ● Farthest	Circle if this fruit is ● Far ● Farther ● Farthest	Circle if this fruit is ● Far ● Farther ● Farthest

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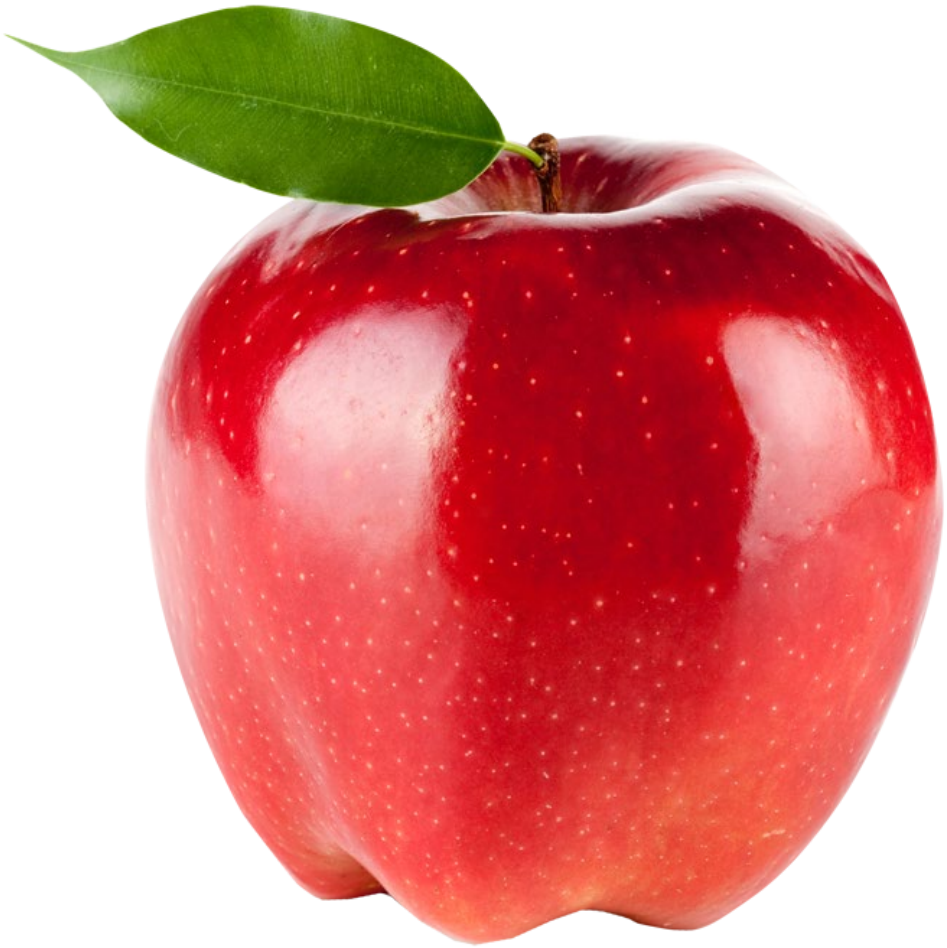
APPLE



BANANA

PINEAPPLE

Additional Materials

Physical Activity

More ideas for physical activity are available at https://hhs.iowa.gov/pick-better-snack/materials.

What You Need to Know About Pineapple

- Pineapple does not grow in Iowa. It requires a tropical or subtropical environment. It can grow year-round in Hawaii, Southern California and Southern Florida.
- Purchase pineapples that are plump and fresh-looking with a fresh green crown top. Avoid soft or dark spots with dry-looking leaves. A ripe pineapple is usually mostly yellow, especially at the base. The inside can be nearly white to yellow.
- The leafy crown, rind and core are usually cut off before eating.
- Pineapples do not ripen after they have been picked.
- Pineapple is sold fresh, canned, dried, as juice and frozen.

Facts About Pineapple

- Pineapple originated in Brazil and Paraguay in South America.
- Christopher Columbus may have carried it back to Spain.
- The name pineapple in English (or piña in Spanish) comes from the similarity of the fruit to a pinecone.
- The pineapple crown is used to plant a new plant.
- It takes 18-20 months to get the first fruit. The next crop takes another 15 months.
- The pineapple is a symbol of hospitality.

Health Connection

- Pineapple is high in Vitamin C, which helps us fight off germs, heal cuts and wounds and keep our gums healthy. Reinforce with defense shield (Cross arms in front of chest).
- Pineapple is a good source of fiber, for healthy digestion and to make you feel full. Reinforce by rubbing stomach.

References and Resources

https://snaped.fns.usda.gov/seasonal-produce-guide/pineapples
https://fruitsandveggies.org/fruits-and-veggies/pineapple/
How to Grow A Pineapple for Kids – YouTube (4:40 in length) – Explains how to plant and harvest pineapples.
How do Pineapples Grow? – YouTube (1:40 in length) – Explains how pineapples grow.
https://www.youtube.com/watch?v=9PZlQVdtpn8 – Explains how Washington apples are harvested in the fall, but they stored in a controlled environment so that they can be shipped to stores year-round.

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IOWA Health and Human Services

Sugar Snap Peas

GRADE 2-3

Month: March
Time Required: 30 minutes
Alternative Tastings: Green Peas, Snow Peas, Okra

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 that peas grow in pods.
- ❑ Students will be able to describe how peas plants climb using trellises.

Materials

- ❑ Fresh sugar snap peas, washed (2 per student)
- ❑ Napkins or small paper plates
- ❑ Classroom whiteboard
- ❑ Image or video of pea trellis
- ❑ Optional: printed recipe and worksheet (attached)

Optional *(if cooking snap peas):*

- ❑ 2 tbsp sesame or olive oil
- ❑ 1 lb sugar snap peas, washed
- ❑ 1 tsp minced garlic (in a jar)

Optional (cont'd)

- ❑ 1 tbsp reduced-sodium soy sauce or tamari (a gluten-free alternative, but check label)
- ❑ 1 tsp chili oil (optional)
- ❑ Sesame seeds (optional)
- ❑ Measuring spoons
- ❑ Platter or bowl, serving utensil
- ❑ Cooler and ice pack
- ❑ Water bottle with water (for cleaning); hand towel
- ❑ Electric skillet, power strip and extension cord

Standards Connection

This lesson supports the following Iowa Core standards.

Health Education
Standards 1, 2, 3, 4, 5, 7, 8

Science
Second grade - 2-LS2-2 Structure and function

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

Lesson Checklist

- ❑ Physical Activity
- ❑ Tasting
- ❑ Voting
- ❑ "Asking" Discussion
- ❑ Newsletters, Stickers
- ❑ Lesson Objectives
- ❑ Science Connection: Plants structures (2nd) & plant life cycles (3rd)

Preparation

- ❑ Wash the peas.
- ❑ Optional: Search the internet for pictures of pea trellises. There are some creative ones out there!
- ❑ Optional: Print recipe and worksheet (attached) for each student.

Recommended Books

"First Peas to the Table" by Susan Grigsby (This book is longer but covers all the lesson objectives.)
"Gregor Mendel: The Friar Who Grew Peas" by Cheryl Bardoe

Engage

1. Introduction: *4 minutes*

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

If cooking sugar snap peas in class, as soon as you arrive in the classroom, plug in the electric skillet and preheat. Explain to students how you'll cook the sugar snap peas and how to stay safe while using heat sources. Use the following instructions (the recipe is also attached):

Follow these cooking instructions:

1. Heat 2 tablespoons sesame oil in a skillet over medium heat or medium-low heat (this depends on how hot your electric skillet gets).
2. Add 1 pound sugar snap peas to hot oil. Cook for 5-7 minutes, uncovered.
3. Add 1 teaspoon minced garlic and 1 tablespoon reduced-sodium soy sauce or tamari, stir. Cook for another 1-2 minutes. Be careful not to burn the sauce; tamari and soy sauce burn quickly.
4. Remove from heat and toss in 1 teaspoon chili oil. Sprinkle with sesame seeds. Enjoy!

Cooking Tips:

- Feel free to delegate responsibilities with the teacher. Have them stir the peas, 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, 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: *4 minutes*

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

There's a special saying about good friends or family members, like cousins or bothers and sisters, that they're "2 peas in a pod" (write saying on board or on doc cam). Let's read that together: "2 peas in a pod." This means that 2 people are like each other, that they enjoy doing the same things, that they're close. Educator shares example: *I'm "2 peas in a pod with _____" because we both like to _____." I want to know, who are you 2 peas in a pod with?*

Engage (cont'd)

Choral Response:

(Rather than a choral response, you could use a think-pair-share activity to give more time for students to think of a friend or family member and pair up with another student to share their response.)

- *When I say the word, "peas," I want all of you to say the name of a friend or family member. Ready? Peas!* Pause to listen to answers. Listen and try to pick out a couple names you heard; repeat them back to the class.
- *Everybody quietly think of your favorite activity to do with your friend or family member. When I say the word, "peas," I want you to say your answer. Ready? Peas!* Listen and try to pick out a couple activities you heard; repeat them back to the class.

When you finish, transition by saying, *Excellent! Isn't it great to have someone who you get along with and like to do things with. Today we are going to talk about **real** peas in pods.*

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.

Before we learn about peas, let's play a game to get our bodies moving and our minds ready to learn.

Physical Activity: Mum Ball

This game uses nonverbal communication skills. Have students stand up to form a circle. Use a foam ball, beach ball or bean bag for students to toss. The student who catches the ball then tosses the ball to another student in the circle. Students continue to pass the ball around the circle. The object is to not make a sound and to catch the ball. If someone makes a sound or doesn't catch the ball, the class gains one letter in the word "pea" (similar to the game of "horse" in basketball). The class is "out" when they spell "pea." Another option is to start with the word "pea" and lose one letter each time someone makes a sound or drops the ball.

Here are the rules:

1. No talking of any kind. This includes singing, whispering, but does not include involuntary noises like coughing, sneezing, etc. (Decide if you want to allow giggles; the game can be a little silly at times.)
2. If someone doesn't catch or drops the ball, the class gains a letter: "P," "E," or "A."
3. If someone talks, the class gains a letter: "P," "E," or "A."
4. If someone throws the ball really hard trying to make the other person miss, the class gains a letter.
5. Play until the class gets all the letters: "P-E-A." If this comes quickly, play another round. Encourage students to beat their time for spelling "pea." Aim to play for at least 3 minutes. Want to make it more challenging? Add a second ball to the circle.

Explore (cont'd)

Have students return to their desks. Ask students, *what did we taste in Pick a Better Snack in January?* Call on students to share what they remember. *That's right, we tasted chickpeas. And what part of the plant are chickpeas?* Pick different students to share. *Yes, chickpeas are seeds. Today, I brought another kind of seed that we eat. I brought sugar snap peas.*

In January, we learned about a kind of seed or a bean called a chickpea. Just like there are different kinds of beans (like chickpeas, black beans, pinto beans, red beans, etc.), there are different kinds of peas. Some peas you may know are green peas (also called garden peas), snow peas and sugar snap peas. Have you eaten peas peas before? What kinds?

*Today we're trying sugar snap peas. On a snap pea plant, the peas - which are seeds - grow inside of a **pod** that we can eat.* Draw a diagram on the board or doc cam and label "peas" and "pod." *The pod is the long, narrow part of some plants that contains and protects the seeds.* Note vocabulary word: pod. Define, write out, and repeat the word "pod." *Many peas grow inside of 1 pod. There can be 2 peas in a pod, or many more!*

*To grow tall and strong, the pea plant needs to climb a **trellis**.* Expand your drawing of the snap peas to include the plant and trellis. Draw and label the "trellis." Note vocabulary word: trellis. Define, write out, and repeat the word "trellis." *The trellis is a structure, often made of light wood or metal bars, used to support climbing plants; the climbing pea plant can wrap around it as it grows. The trellis is necessary to support the plant but also adds decoration to a garden.*

Show students images of sugar snap peas growing on a trellis (one is included in lesson). Watch a timelapse video of a pea plant growing: Dancing Pea Plant (1:17) or Pea Plant Growing (suggest showing until 1:00). *In the video, we saw how the pea plant waved around in the air as it was growing. Those curly, waving arms are pea shoots that want to hold on to something for support.*

Optional - Trellis Activity: Show creative examples of pea trellises found on the internet. In small groups or individually, support students to design a fantastical, imaginative pea trellis of their dream using the worksheet provided in the lesson. Share an example of your own!

Cooking tips: If you are cooking sugar snap peas for the tasting, check in on the peas while students are drawing. 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: *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 review your brave tasting rules (for example, don't yuck my yum, we all try together, etc.). As students receive their samples, ask them to use their senses while they wait.

Explore (cont'd)

Have students wash their hands or use hand sanitizer before dissecting the pea so that they are ready for the tasting. Give each student two fresh sugar snap peas. *We're going to explore and dissect a sugar snap pea before we taste it. I gave you two snap peas. Leave one on your napkin (or plate) and pick up one snap pea. Listen quietly and break it in half.* Have everyone be quiet and listen as they break the snap pea in half. *Now, use your fingers to carefully pull the pod apart of each half to observe how many peas are on the inside.* Demonstrate how to break the pea in half and pull apart the pod. *How many seeds are in your pea pod?*

Pick up the second snap pea. Everyone listen quietly and take a bite on the count of 3: 1-2-3. (crunch!) Students may also eat the dissected pea. You could add a dip, such as hummus, (connect back to chickpea lesson in January) or try Savory Yogurt Dip or a similar dip. Another option: Taste the sugar snap pea stir-fry prepared in class. In this case, you could give students only one fresh sugar snap pea to dissect and taste. Students can compare the fresh snap pea to the cooked snap pea. Vote twice if students taste both a fresh and cooked snap pea.

Reflect

5. Voting Activity: 2 *minutes*

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

As students taste sugar snap peas, 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 ask a question and you're going to quietly think to yourself. When I say the word, "peas," you can say your answer aloud. Let's practice…

- *What food did we try today?* (Sugar Snap Peas)
- *What do peas grow in?* (Pods)
- *Why is the pod important?* (It protects the seeds/peas)
- *What do peas grow on?* (A trellis)
- *Why is a trellis important?* (It supports the plant as it grows)
- *What other fruit or vegetable we tried this year grows on a plant that needs support?* (Kiwi)

Asking Discussion:

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

- 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 sugar snap peas? Where could you get garden-grown sugar snap peas?*

Leave newsletters and stickers with the teacher to pass out. Optional, share printed copies of Sugar Snap Pea Stir Fry recipe for students to take home.

Sugar snap pea plant growing on a trellis

Sugar Snap Pea Trellis

Design your Dream Pea Trellis.

This institution is an equal opportunity provider. This material was funded by USDA's Supplemental Nutrition Assistance Program – SNAP.
January 2025

IOWA Health and Human Services

Pick a Better Snack Lesson

Sugar Snap Pea Trellis

Design your Dream Pea Trellis.

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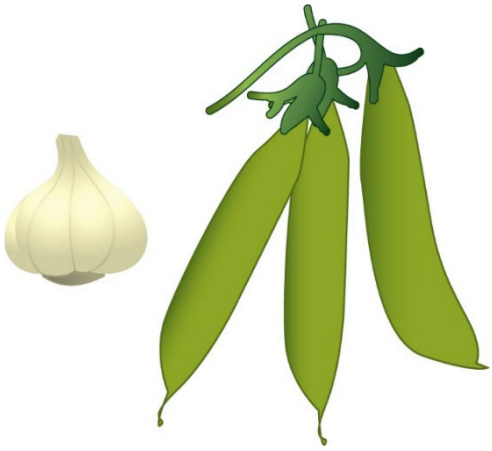
January 2025

IOWA Health and Human Services

Sugar Snap Pea Stir Fry



Ingredients:
2 tablespoons sesame oil (vegetable or olive oil will work too)
1 pound sugar snap peas
1 teaspoon minced garlic
1 tablespoon reduced-sodium soy sauce (or tamari – check for gluten free)
1 teaspoon chili oil (optional)
Sesame seeds (optional)

Directions:
1. Heat sesame oil in a skillet over medium heat.
2. Add sugar snap peas to hot oil. Cook for 5-7 minutes, uncovered.
3. Add garlic and soy sauce or tamari, stir. Cook for another 1-2 minutes. Be careful not to burn the sauce; tamari and soy sauce burn quickly.
4. Remove from heat and toss in chili oil. Sprinkle with sesame seeds. Enjoy!

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IOWA Health and Human Services

Pick a **Better Snack** Lesson

Sugar Snap Pea Stir Fry

Ingredients:
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1 teaspoon minced garlic
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4. Remove from heat and toss in chili oil. Sprinkle with sesame seeds. Enjoy!

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Additional Materials

Physical Activity

"Hit the Deck" (from Get Movin' Activity Breaks book, page 12). More ideas for physical activity are available at https://hhs.iowa.gov/pick-better-snack/materials.

What You Need to Know About Peas

- Peas grow in Iowa; They do well in cooler temperatures (plant in early spring and late fall), not the intense summer heat.
- Peas are a member of the legume family, which includes plants with pods enclosing fleshy seeds.
- Sugar snap peas have an edible, crunchy pod with sweeter, full-sized peas inside. Snow peas also have a pod that you can eat. Their pod is flatter with smaller peas.
- Green peas must be shelled before eating; the pods are not edible.
- Green peas can be found in the grocery store fresh, canned or frozen.
- Fresh sugar snap pea pods should be firm, bright green and appear ready to burst.
- Keep unwashed sugar snap peas in the refrigerator for up to three days.

Facts About Peas

- Today only 5% of peas grown are sold fresh. Most are canned.
- Sugar snap peas began in the 1960s by crossing green peas and snow peas.
- Sugar snap peas convert their sugar to starch just hours after harvest. Keep the peas cold to slow down the conversion of sugar to starch to help them stay sweet.

Health Connection

- Sugar snap peas, snow peas and green peas are excellent sources of Vitamin C, to help heal cuts and wounds and keep our immune system strong. Reinforce with defense shield (Cross arms out in front of chest.)
- Peas are a good source of fiber, to help you feel full longer and move food through your body. Reinforce by rubbing stomach.
- Green peas contain Vitamin A, to help keep our eyes healthy. Reinforce with super goggles (Make goggles with your hands over your eyes.)
- Green peas have more protein than many other vegetables, about 4 g per ½ cup. (Use your arms to show your muscles.) One cup of sugar snap peas has 2 g protein.

References and Resources

https://yardandgarden.extension.iastate.edu/how-to/growing-peas-iowa
https://www.extension.iastate.edu/news/ask-isu-extension-garden-experts-about-growing-peas
https://snaped.fns.usda.gov/seasonal-produce-guide/peas
https://spendsmart.extension.iastate.edu/produce-item/peas/
https://foodhero.org/recipes/parmesan-peas

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IOWA Health and Human Services

Peach

GRADE 2-3

Month: April
Time Required: 30 minutes
Alternative Tastings: Plum, Apricot, Avocado

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 process of pollination.
- ❑ Students will be able to give an example of how plants and animals help each other.

Materials

- ❑ Link to bee pollinating video
- ❑ Flower/fruit necklaces (attached, one sheet per student)
- ❑ Sticky notes, one per student (pollen)
- ❑ Beach ball (bee)
- ❑ Song or bee sound for physical activity
- ❑ Peaches for tasting (recommend frozen or canned)
- ❑ Napkins or small paper plates

Optional:

- ❑ Video link for additional activity
- ❑ Book for additional activity

If making bees:

- ❑ Black and yellow chenille sticks/pipe cleaners – 1 stick of each per student
- ❑ White chenille sticks/pipe cleaners – ½ stick per student

Standards Connection

This lesson supports the following Iowa Core standards.

Health Education
Standards 1, 2, 3, 4, 5, 7, 8

Science
Second grade - 2-LS2-2 LS2.A: Interdependent relationships in ecosystems

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

Lesson Checklist

- ❑ Physical Activity
- ❑ Tasting
- ❑ Voting
- ❑ "Asking" Discussion
- ❑ Newsletters, Stickers
- ❑ Science Connection: Pollination & interdependent relationships within a habitat

Preparation

- ❑ Print the attached flower/fruit cards (one per student) and fold the paper in half horizontally, so the flower and the fruit are on opposite sides. Punch two holes along the top and run a long piece of yarn through the holes to create a necklace. Consider laminating the necklaces to better withstand reuse.
- ❑ Prepare the bee beach ball by covering it with sticky notes (enough for one note per student). Optional, use black tape to transform a yellow beach ball into a bee!

Recommended Books – See suggested books listed in the Explore section.

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: *5 minutes*

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

Gather students in a large circle. *Today, we're going to taste a fruit that needs help from animals to grow. But first I want to know, What are ways you help others? Think about this in your head, and when I say "buzzzz," turn to a partner and share your thoughts. "Buzzzz."* Give students time to discuss, making sure all students have a partner and time to share. *"Buzzzz"* again to get students attention. *Another question I have is, what are things you like getting help with? Again, when I say "buzzzz," turn to a partner and share your thoughts.* Randomly select a few students to share aloud (pick a stick would work well here).

Discuss responses and then say, *just like we help each other by* (insert students' examples), *plants and animals help each other, too.*

Explore

3. Experiential Learning: *14 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 (opportunity for 3 deep breaths). B*ees are one of the animals that help plants grow. Bees get their food inside flowers. While the bee is getting its food from the flower, something else important is happening called pollination. Let's watch a video of bees flying from flower to flower to eat so that we can learn about pollination.* Play this 1-minute video, pausing if preferred, and narrate what is happening: Bees in slow motion pollinating apple blossoms (0:58). Repeat the video if needed.

- (0:06) *The bee visits the flower looking for food.*
- (0:11) *The bee finds food. Bees get two kinds of food from flowers:* ***nectar*** *and* ***pollen****. Nectar is a sweet juice, and pollen is a yellow powder.*
- (0:16) *While the bee collects the food from the flower, some of the pollen sticks to the bee's legs in a special structure called a pollen basket.* Point to the yellow pollen baskets on the bee's legs.
- (0:22) *The bee then flies to another flower to get more food. When it visits the new flower, some of the pollen falls off the bee's legs onto the flower.* (The video doesn't show pollen falling off the legs.)
- (0:30 - 0:58) *The bee is moving pollen from flower to flower while it eats. This is called* ***pollination****.*
- *Pollination is the transfer of, or moving of, pollen from flower to flower.*
- *Pollination helps the flower become a fruit. Once the flower is pollinated, it can produce fruit.*

Explore (cont'd)

Bees need flowers for food, and flowers need bees for pollination, so that they can turn into fruit. This is how bees and peaches help each other. In fact, they could not survive without each other.

We've tasted fruit this year in Pick a Better Snack that needs pollination to grow. What fruit have we tasted this year? (pear, kiwi, pineapple) *That's right! Pears, kiwi, pineapple all grow because of pollination. Many fruits need pollination to grow, like oranges, apples, avocados, cranberries, blueberries, lemons and limes, and many more. Another fruit that grows because of pollination is – peaches! Later today we will taste peaches, a fruit that grows thanks to bees pollinating the flowers on a peach tree.*

Because bees pollinate flowers, they are called ***pollinators****. Pollinators are animals or insects that transfer, or move, pollen from flower to flower. There are other animals or insects that pollinate flowers, too. What is an animal or insect that might also be a pollinator?* If needed, help students think of an example by asking, *what would an animal need to be able to get from flower to flower?* (wings) *So what are some animals or insects that have wings that could fly from flower to flower?* (butterflies, moths, birds, bats, beetles, etc.) *You got it!*

Let's play a game to simulate (act out) the process of pollination.

Physical Activity: Pollination Simulation
(Adapted from Science and Health Education Partnership Pollination lesson)

- Have students stand in a circle wearing the flower-fruit necklaces (cards attached). The flower side of their necklace should be facing forward.
- Use a beach ball to represent the bee, a pollinator. Cover the beach ball with small sticky notes to represent pollen. Tell students they are the flowers, and the ball is a bee with pollen on it. Point to the sticky notes.
- Play the "Bees Buzzing" sound effect or the Betty and the Turnips, "Little Bees" song (or a similar song) while students pass the ball to one another.
- Randomly stop the sound effect/music. When the music stops, the student holding the ball takes a sticky note from the ball and attaches it to their flower. They are now pollinated. They turn their card over to show the fruit and pick an exercise for the class to do.
- After the exercise, play the music again, and students resume passing the ball to those who aren't pollinated yet.
- Students continue tossing the ball to one another and becoming pollinated until all the "flowers" are pollinated.

Wow, look around to see all the flowers this "bee" has pollinated. The "bee" survives thanks to the food from the flower, and the "flowers" can produce fruit thanks to pollination.

Instruct students to deposit their necklaces in a specific location and return to their seats

Explore (cont'd)

If time allows, consider one of these optional activities:

- Select a book from the recommended book list to read to the class:
  "What is Pollination?" by Bobbie Kalman
  "What if There Were No Bees?: A Book About the Grassland Ecosystems" by Suzanne Slade
  "You Wouldn't Want to Live without Bees" by Alex Woolf
  "Flight of the Honey Bee" by Raymond Huber
  "What are Bees Good for Anyway?" by Nicole Frankel
- Discuss how bees communicate to one another through the waggle dance and show one of these videos to learn more:
  - https://www.youtube.com/watch?v=LA1OTMCJrT8 (2:47)
  - https://www.youtube.com/watch?v=pb1IRI-YePU&t=59s (2:21)
- Learn more about pollinators by watching this video:
  https://www.youtube.com/watch?v=pnBoM4idf1k (5:08)
- Make chenille stick/pipe cleaner bees to take home as a reminder to share with their grown-ups what they learned about bees and the food we eat. See instructions included in the lesson.

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 students receive samples, be sure to review your brave tasting rules (for example, don't yuck my yum, we all try together, etc.). As students receive their samples, ask them to use their senses while they wait.

Since peaches are not in season this time of year, making it difficult to find a tasty, ripe peach, provide canned or frozen peaches to taste. If using canned, look for peaches packed in 100% juice. Optional: lightly sprinkle cinnamon on peaches.

Reflect

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

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

Reflect (cont'd)

6. Reflection: *4 minutes*

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

Choral Response:

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

- *What month is it?* (April)
- *What food did we try today?* (Peaches)
- *How do flowers help bees survive?* (By providing food – nectar and pollen)
- *How do bees help flowers survive?* (Through pollination, so fruit can grow)
- *What is pollination?* (transfer of, or movement of, pollen from flower to flower)
- *What is an example of an animal or insect that is a pollinator?* (bee, butterfly, bird, etc.)

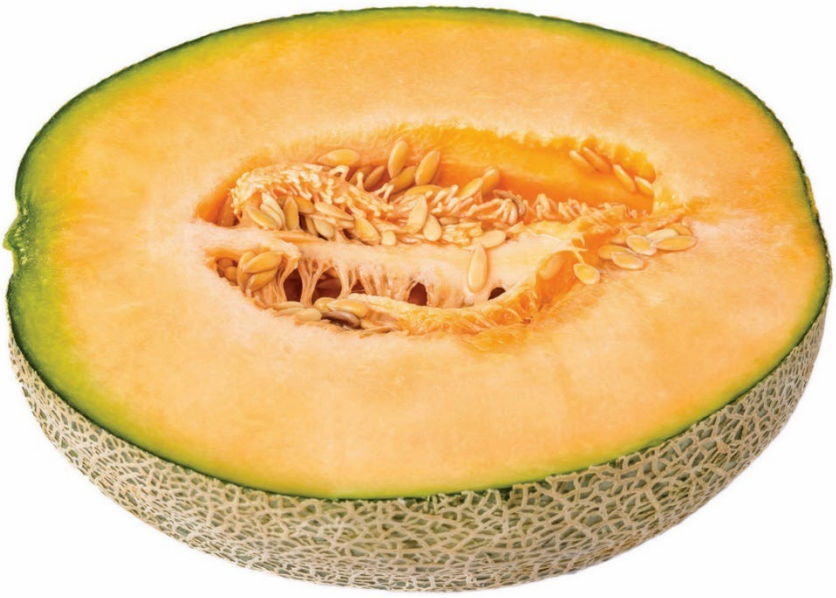
Asking Discussion:

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

- 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 peaches? Do you see peaches at school lunch, breakfast or snack?*

*Leave newsletters and stickers with the teachers to pass out.

CANTALOUPE



CRANBERRIES

MANGO

STRAWBERRY

PEAR

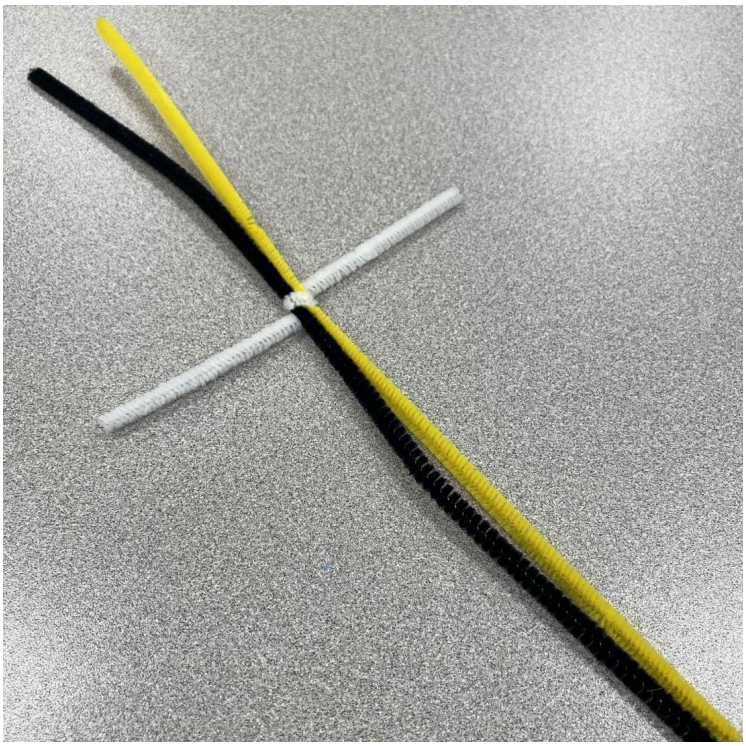
KIWI

PEACH

Chenille Stick/Pipe Cleaner Bees

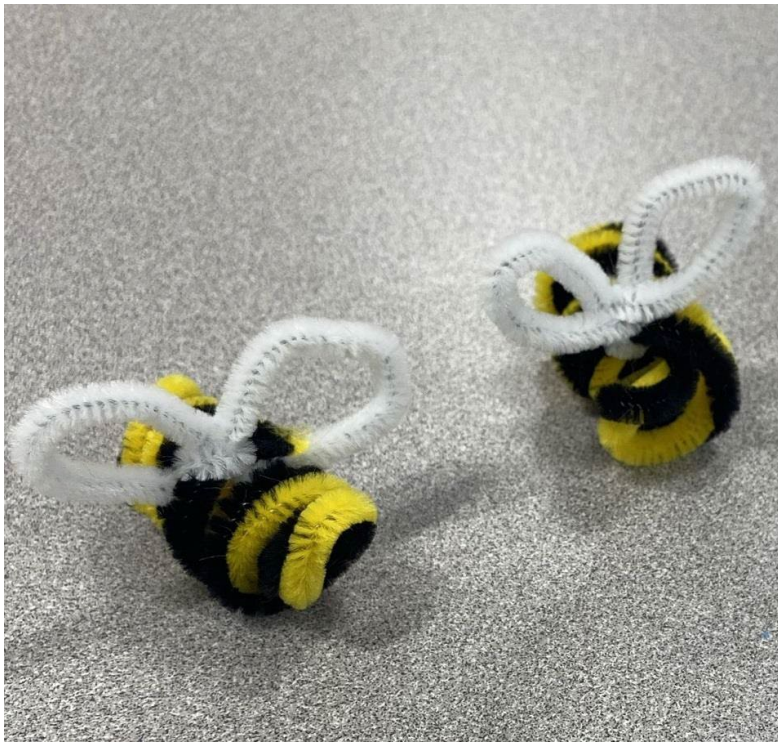
Step 1: Give each student a black, yellow and white (shorter) chenille sticks (aka pipe cleaners).

Step 2: Wrap the white stick around the yellow and black sticks.



Step 3: Wrap yellow and black sticks around your finger and point the white ends up.

Step 4: Bend in each white end to form wings. Pull the sticks off your finger.



Additional Materials

Physical Activity

More ideas for physical activity are available at https://hhs.iowa.gov/pick-better-snack/materials.

What You Need to Know About Peaches

- Peach season is May to October, peaking in June, July and August.
- Peaches discolor quickly when cut open. To keep from discoloring, sprinkle peach with lime or lemon juice.
- Nectarines are a type of peach with smooth skin (no fuzz). Choose peaches with no blemishes.
- Peach trees are short-lived (only about 20 years).
- Peaches don't get sweeter once picked, so pick at peak ripeness for the best taste.
- Peaches can be eaten fresh, frozen, dried or canned. Enjoy them plain for a snack or with a meal as well as in appetizers and entrees.

Facts About Peaches

- The Spanish brought the peach to America. It became a favorite of the Native Americans.
- Peaches are considered a stone fruit because the fruit surrounds a shell with a seed.
- The United States is the world's leading grower of peaches.
- Most peaches grow in California, Georgia and South Carolina in the United States. Georgia is known as the "peach state." California leads the country in peach and nectarine production.

Health Connection

- Peaches are a good source of Vitamin C. Reinforce with defense shield. (Cross arms in front of chest to ward off the germs).
- Peaches have Vitamin A. Reinforce with super goggles. (Make goggles with your hands over your eyes).
- Peaches have fiber, to help you feel full and move food through your body. Reinforce by rubbing your stomach.

References and Resources

https://www.youtube.com/watch?v=LA1OTMCJrT8 – Learn about the Waggle Dance (2:47)
https://www.youtube.com/watch?v=pb1IRI-YePU&t=59s – More about the Waggle Dance (2:21)
https://spendsmart.extension.iastate.edu/produce-item/peaches/
https://snaped.fns.usda.gov/seasonal-produce-guide/peaches
https://fruitsandveggies.org/stories/5-facts-about-canned-foods/
https://www.fs.usda.gov/managing-land/wildflowers/pollinators/what-is-pollination
https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/plantsanimals/pollinate/
https://gardenatschool.wordpress.com/2012/06/16/pollination-games/

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IOWA Health and Human Services

Spinach

GRADE 2-3

Month: May
Time Required: 30 minutes
Alternative Tastings: Kale

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 name community members who make and provide food.
- ❑ Students will be able to describe the function of leaves.

Materials

- ❑ Flipchart paper and markers
- ❑ Bag of leaves collected from trees, garden plants, or grocery store
- ❑ Photosynthesis image (attached)
- ❑ Fresh spinach and other veggies
- ❑ Ziploc Bags
- ❑ Napkins or paper plates

Optional Items:

- ❑ Photosynthesis recipe cards; print one per student (attached)
- ❑ Book: "Before We Eat"
- ❑ Thank you card supplies

Preparation

- ❑ Optional: Print attached photosynthesis recipe cards and cut in half; prepare one per student.
- ❑ Collect 25-30 leaves outdoors, from various trees or garden plants (examples: kale, collards, spinach, maple, oak, lettuces, cabbage, herbs, etc.).
- ❑ Send classroom teacher any links you want to use.

Recommended Books

"Before We Eat" by Pat Brisson
"Water, Weed, and Wait" by Edith Hope Fine
"Sylvia's Spinach" by Katherine Pryor
"Our School Garden!" by Rick Swann

Standards Connection

This lesson supports the following Iowa Core standards.

Health Education
Standards 1, 2, 3, 4, 5, 7, 8

Science
Second grade - 2-LS2-1 Plants depend on water and light

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

Lesson Checklist

- ❑ Physical Activity
- ❑ Tasting
- ❑ Voting
- ❑ "Asking" Discussion
- ❑ Newsletters, Stickers
- ❑ Science Connection: Photosynthesis

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: *8 minutes*

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

Gather students in a circle. *Ask, Who helps you get the food you eat? Think in your head and when I say the word, "leaves," share your thoughts with a partner. "Leaves."* Give students a minute to take turns sharing with a partner. Randomly select a few students to share their responses aloud, and begin recording these responses on large flipchart paper, the board, or doc-camera. As you record ideas and support student brainstorming, ask students, *Who prepares the food we eat at school? Who helps with the food we get at a store? Who makes the food we eat at a restaurant?* Adapt the questions and conversations to fit your school and broader community. Review the list as a class.

Now, let's say thank you! Pick someone on this list and when I say the word "leaves," we'll all say "thank you" and then you say who you're thinking of. Ready? "Leaves." As a class, *Thank you _____! It is great that so many people in our community help make the food we eat. Today, we're going to learn about how leaves make food for plants.*

Book Option: If time allows, consider reading a book such as Pat Brisson's "*Before We Eat*." Ask, *Who are the people who helped make the dinner that the people ate? Who else helped?* (Adapted from FoodCorps Lesson: People Who Feed Us)

Sample list of community food helpers:

- Cafeteria cook
- Corner store clerk
- Family members who cook
- Farmer, gardener
- Fisher
- Food packager
- Food pantry volunteer
- Food truck driver
- Grocery store clerk
- Restaurant cook

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.

Sitting in a circle, pass out an assortment of leaves to students; one per student or they can share with a partner. Leaves can be collected outside on trees, from the garden, or grocery store (examples: kale, collards, spinach, maple, oak, lettuces, cabbage, herbs, etc.). Ask students to examine their leaves. *What do you see? What does the leaf feel and smell like? Where do they think the leaves came from?*

- Option: break the classroom into 2 groups. The classroom teacher can support one group while the PABS educator works with the other.

Explore, cont'd

Tell students, *We're all holding leaves. These leaves came from different plants, such as* (share plant source; consider sharing pictures of full plants over the doc-cam). *Leaves make food for plants. What do leaves do?* (choral response: *make food for plants*). *This process is called* ***photosynthesis****.* Write out and repeat vocabulary word: photosynthesis. Have students say "photo" while pretending to take a picture. Have them say "synthesis" while clapping their hands together. Explain, *photo means light and synthesis means to put together. All together, photosynthesis means putting light together to make food.*

Show simple photosynthesis image (attached). *Leaves are like the kitchen of the plant - where the food is made. Leaves use a special three-ingredient recipe to make plant food: sunlight + water + air. Leaves absorb sunlight from the sun and air from the carbon dioxide we breathe out. Then, leaves combine sunlight and air with water from the roots and turn it into food for the plant to eat. In the process, the leaves release oxygen for us to breathe in.* Repeat these three ingredients with kinesthetic movements several times:

- *Sunlight* (wave hands and fingers overhead)
- *Water* (rain hands down from overhead to the ground)
- *Air* (put hands around mouth and blow out).

There are many types of leaves that we can eat. Today, we're going to try a leaf called spinach.

Physical Activity: Plant Yoga

Before we do our tasting let's move back to our seats and do a physical activity. We will use our energy to move our body in different ways to stretch and relax. You can lead them through a series of simple plant yoga poses that simulate growing from a seed, to blooming flower, to a butterfly. From Seed to Bloom: Spring Yoga Sequences for Kids

- Another option could be to play a video they follow along to while you prep the tasting: Seed To Tree | Yoga For Kids | Ages 3+ | 3 Minutes

Optional: With student or teacher helpers, pass out photosynthesis recipe cards (attached) and tasting materials. *While we pass out spinach samples, fill in the blanks on your photosynthesis recipe card* (leave photosynthesis image up on doc-camera).

4. Tasting Activity: *2 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 students receive samples, be sure to review your brave tasting rules (for example, don't yuck my yum, we all try together, etc.). As students receive their samples, ask them to use their senses while they wait.

It is recommended to have the students try a bite of spinach with or without dressing. Try the Salad in a Bag recipe from Spend Smart. Eat Smart. You will need a gallon size Ziploc bag, couple cups of Spinach, chopped veggies (try to source locally from the community to tie in with the lesson and share where they were sourced) and 2 Tablespoons of the dressing per class batch. Shake the bag and distribute 1-2 spinach leaves per student.

- Salad Dressing = Mix equal parts oil and juice with a sprinkle of dried seasoning in a jar.
  - Ex: 1 Tablespoon olive oil + 1 Tablespoon orange juice (or lemon/lime) + sprinkle of oregano
  - How to Make Salad Dressing.pdf | Powered by Box

Reflect

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

As students taste the spinach, 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."

Optional: Make a thank you card for the folks who feed us!
Have students write and color a thank you card for their school lunch heroes or someone on the list you made at the beginning of the lesson. Consider asking students how they will get their cards to the person they're thankful for, and if you can support them in any way.
(Note: Celebrate National School Lunch Hero Day. Consider organizing a classroom or school wide "thank you!" for school food service staff.)

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

- *What month is it?* (May)
- *What food did we try today?* (Spinach)
- *What plant part is spinach?* (A leaf)
- *What are the three ingredients plants use to make food through photosynthesis?* (Sunshine, water, air)
- *Who helps make or provide food in our community?*

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

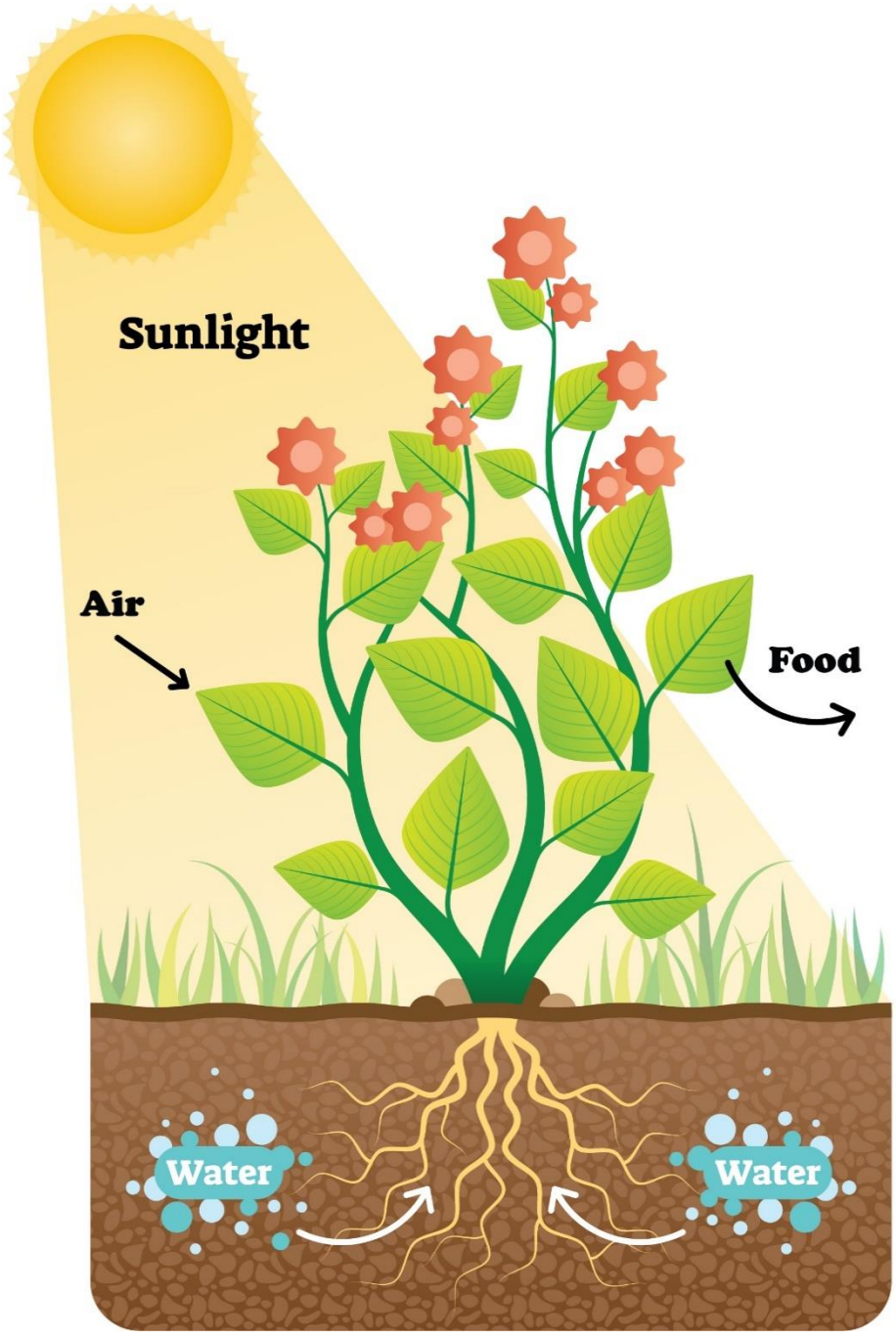
- Ask a student with a raised hand: *if you wanted to try this at home, how might you ask your grown-ups?*
- You might also ask additional questions like, *where could you buy spinach?*

Since it is the last lesson of the year, thank the class for being such great learners this year and ask a few reflection questions about the other lessons.

- *What other vegetables and fruits did we try this year that you liked? (Zucchini, Pear, Sweet Potato, Kiwi, Chickpea, Pineapple, Snap Pea, and Peach)*
- *What fruits or vegetables have you tried at home?*

*Leave newsletters and stickers with the teachers to pass out.

Leaves make food through **Photosynthesis.**



Photosynthesis: A Recipe for Plant Food!

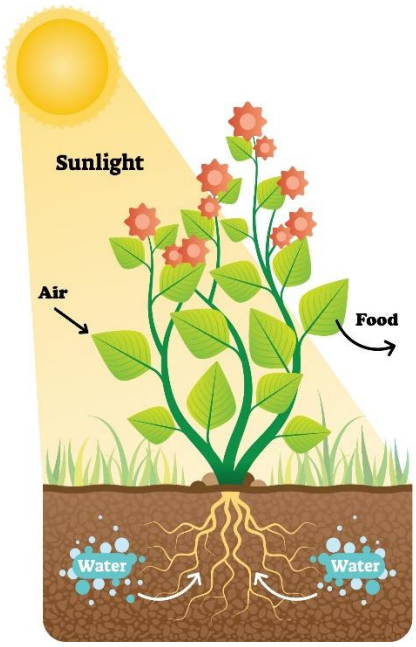
Ingredients:

1. _____

2. _____

3. _____

Plant food is made in the _____.



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Pick a Better Snack Lesson

Photosynthesis: A Recipe for Plant Food!

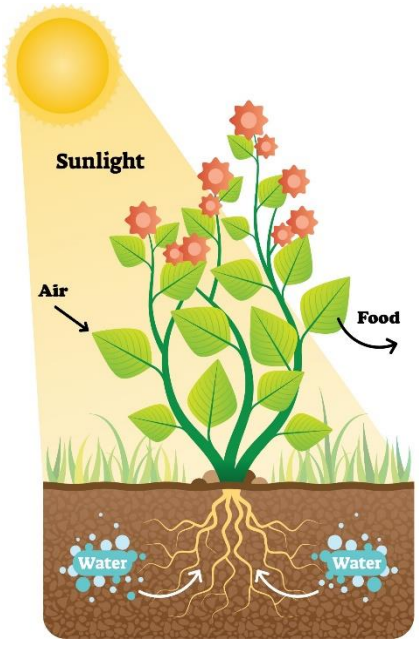
Ingredients:

1. _____

2. _____

3. _____

Plant food is made in the _____.



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Additional Materials

Physical Activity

More ideas for physical activity are available at https://hhs.iowa.gov/pick-better-snack/materials

What You Need to Know About Spinach

- Choose spinach with fresh, crisp green leaves with no spots or signs of damage.
- Spinach is a dark green vegetable. While all lettuces are healthy, darker leafy greens generally offer more nutrition (e.g., spinach v. iceberg lettuce).
- Spinach is available fresh, frozen and canned.
- Wash fresh spinach under clean, running water before eating. Bagged spinach is pre-washed and ready to eat.
- Spinach is an annual plant, so it must be planted each year.
- Spinach can grow in Iowa during spring and fall when it is more cool and damp weather.

Facts About Spinach

- Spinach originated in Persia (modern Iran). It was not commonly eaten in the U.S. until the early 19th century.
- Spinach was the first frozen vegetable available commercially.
- Many Americans associate spinach with Popeye, a 1929 cartoon character who ate spinach to gain his strength.
- Annual consumption of spinach increased drastically from 1992 to 2002 according to USDA's Economic Research Service, mostly due to availability of pre-cut, bagged spinach.
- California produces the most spinach grown for commercial use in the U.S. Other states that produce much of the commercially grown spinach are Arizona, New Jersey and Texas.

Health Connection

- Spinach is high in vitamin C, which helps to heal and protect the body. Reinforce with defense shield and cross arms in front of chest.
- Spinach is high in Vitamin A, which is important for eyes, skin and growth. Reinforce with super goggles and make circles with hands over eyes.
- Spinach is an excellent source of fiber, which helps with digestion and helps us feel full longer. Reinforce by rubbing stomach.

References and Resources

https://spendsmart.extension.iastate.edu/produce-item/greenslettuce/
https://snaped.fns.usda.gov/seasonal-produce-guide/spinach
https://www.cdc.gov/physical-activity-education/guidelines/?CDC_AAref_Val=https://www.cdc.gov/healthyschools/physicalactivity/guidelines.htm
http://togethercounts.com/wp-content/uploads/2017/11/K-2_Curriculum_ALL-1.pdf
https://spendsmart.extension.iastate.edu/recipe/salad-in-a-bag/ - Taste Test recipe
https://iastate.app.box.com/s/jx3un42t7wab3j7l04qewpgirj58yvzw - How to Make Salad Dressing
https://www.youtube.com/watch?v=peQwwRPWnjs - SNAP-Ed tips on Spinach
https://growing-minds.org/documents/spinach-smoothies.pdf - Spinach Smoothie recipe

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