Cantaloupe

GRADE 2-3

Month: September
Time Required: 30 minutes
Alternative Tastings: Honeydew, Watermelon

Lesson Goals

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

Lesson Objectives

- ❑ Students will be able to define and give examples of traditions, including food traditions.
- ❑ Students will be able to identify seeds within melons.

Materials

- ❑ Whole cantaloupe; cut sections of cantaloupe and cantaloupe seeds for discussion, if not cutting whole melon in class. Consider sourcing local melon.
- ❑ Pictures of cantaloupe, whole and cut
- ❑ Small paper plates or napkins for taste test

If cutting in classroom:

- ❑ Knife (be mindful of school policies with sharp knives)
- ❑ Cutting Board

Preparation

- ❑ Wash the outside of the whole melon(s) under cool running water. Scrub with vegetable brush
- ❑ If not cutting in classroom, cut cantaloupe into cubes to offer students during taste test time.
- ❑ Save seeds from prepping cantaloupe and place in 4-6 bags for passing around in class.

Recommended Books

"The Antelope Who Loved Cantaloupe" by Celeste Marie Halata
"The Cantaloupe Cat" by Jan Yager
"The Antelope Ate My Cantaloupe" by Jen Lee
"Fruit is a Suitcase for a Seed" by Jean Richards

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
Growth and Development

Lesson Checklist

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

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.

As 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 each month, we're going to have fun trying foods together and learning about each other.*

Discuss expectations, such as: *I probably have some of the same expectations as your classroom teacher; if you have a question or want to share something, make sure to raise your hand* (demonstrate raising your hand).

Pick a better snack is going to be fun, and I will come in and teach you all about different fruits, vegetables, how they grow, where they come from, and the best part is we get to taste the fruit or vegetable as part of our lesson!

One of the best parts of these lessons is we get to learn about each other, so here's something I want to learn about you… what do you remember about Pick a Better Snack, and if you are new to this school and have never had Pick a Better Snack, what are some things you think will be fun about these lessons? Call on several students to share their answer. Using the classroom's "Pick a Stick" (student names written on craft sticks) is a good way to randomly call on students.

2. Engage Activity: 8 *minutes*

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

You all have great memories from Pick a Better Snack, and I'm excited to hear what you are looking forward to with the lessons. Let's learn a little more about each other and start by talking about things that our families like to do together again and again, like a tradition. It could be a tradition related to food, like eating sweet corn in the summer, pumpkin pie at Thanksgiving, or jicama on a stick at family celebrations. For example, in my family we INSERT A FAMILY TRADITION. Now, <u>think</u> in your head what is something special that your family likes to do together? Encourage students to put their fingers to their temples and squint their eyes to think hard.

Do you have it? Now, when I say the word "melon," I want you to <u>pair</u> with someone next to you and quietly <u>share</u>. "Melon." Make sure all students have a partner; it's ok to partner 3 students if needed. After a minute or two of sharing, do an attention-getter. (Example: count backwards using your fingers as a visual, *5-4-3-2-1,* to end the discussion.) Select several students to share out what they talked about with their partner (Consider using Pick-a Stick again to select students.) After someone shares, you can celebrate the tradition by giving a few claps (*clap, clap, clap*).

These special things we like to do together with our families are examples of traditions. Recall examples from students' sharing. *Let's all say that word together: tradition.* Write the word on the smart board/white board. You can even clap out the syllables "tra-di-tion" with the students. *A tradition is something we learn from our family or community. Traditions often happen year after year and are one way we celebrate and share our family or community values and activities.*

Engage (cont'd)

In Pick a Better Snack, we have a few traditions, or things we do over and over. We always do a physical activity or a game, we always taste a fruit or vegetable, and we always vote with our thumbs on how we feel about the food we tasted.

Physical Activity: Uno Game
Next, we're going to do a physical activity based on a tradition in my family. One tradition my family likes is to play is Uno, a card game with different numbers and colors. I brought the cards with me today. Each color on the card will represent an action. Let's make yellow = squats, green = running in place, blue = jumping up and down, and red = balancing on 1 foot. Consider writing these actions on the board or displaying them on the projector to help students remember. *The number on the card will tell us how many of each activity we will do.* Draw a card and demonstrate to students how the game works. For example, drawing a yellow 8 will have the students do 8 squats. You as the educator can make up your own actions. Tip: you may want to pull out several cards to use ahead of time rather than use the entire deck.

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 at their desks (or an alternative place if their teacher wants them to taste test somewhere else). Here is an opportunity for 3 deep breaths after they transition.

Show students a whole cantaloupe or an image of a whole cantaloupe. *Today we are going to taste this fruit called cantaloupe. When I say the word "melon", I want you to say what you think is inside the cantaloupe. "Melon."* Engage the students to have them guess and respond, "seeds." *There are seeds inside the cantaloupe.* Cut the melon open in class and show students the seeds and the edible inside. If cutting the melon in class is not feasible, show students a section of a cantaloupe you cut prior to class, or show photos of a whole cantaloupe and a cut cantaloupe to see the inside as well as some real seeds.

Optional: In addition to cantaloupe, show students cut sections of watermelon and honeydew with the skin. Photos can be used in place of the actual melon. Compare and contrast the inside and outside of the three melons (color, seeds, flesh, skin, size of seeds, texture, shape, etc.). Ask questions such as: *What do you notice is the same about these melons? What do you notice is different? How do you think the outside of each melon would feel?*

Explore (cont'd)

We're going to eat the orange part of the melon, but we're not going to eat the seeds. Instead, we are going to practice a tradition called seed saving. Write "seed saving" on the board and have students repeat it back to you. *People all around the world, throughout all of history, have practiced seed saving as a tradition. We can dry and save these cantaloupe seeds to plant and grow more cantaloupe next year!*

Choose Activity #1 or #2 to practice seed saving.

Activity #1 (if cutting cantaloupe in class):
Work with the teacher to prepare samples of cantaloupe, with some seeds included. *While we prepare our cantaloupe samples, please discuss softly with your table/neighbor: why do you think seed saving is an important tradition?* Pass out pieces of melons (with seeds) to all students, reminding them to not taste it yet. Ask a few groups to share their discussion and answer any questions. S*eed saving is an important tradition because it means we can re-grow our favorite foods every year. If you see any seeds in your sample, save them on your napkin and we'll collect them at the end of our lesson and save these seeds!*

Activity #2 (if preparing cantaloupe prior to the lesson):
If you plan to pre-cut your melon, put some seeds in several food storage bags as prepare your melon for the class. Pass these bags out to groups of 4-5 students to let them explore and discuss what they observe while you get ready for the taste test. *I am going to pass some seeds out for each of you to explore with your hands and your eyes. Talk with your group about what you see, feel and how you could plant them. While you are doing this, I will get your cantaloupe that we will be tasting as a class ready. While I pass out the cantaloupe, please don't eat it yet. I will go over tasting rules when I am finished, and we will wait for the whole class to have a piece of cantaloupe in front of them before we eat.*

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 trying your samples, be sure to share your brave tasting rules (for example, don't yuck my yum, we all try together, be a brave taster, be polite, etc.). Serve the class a couple of bite-size pieces of cantaloupe or a slice of cantaloupe with the skin still on (instruct students to hold the melon by the skin and take bites of the orange flesh). This is a good month to source locally. Optional: Offer fresh watermelon and honeydew to taste as well.

As students receive samples, ask them to use their senses while they wait.

As students finish and clean up, give directions about where students can put the seeds they saved if doing Activity #1.

Reflect

5. Voting Activity: 1 *minutes*

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

Introduce the tradition of voting with your thumb. *In the Pick a Better Snack Lessons, we have some traditions of our own. To show what we think of the foods we're trying, we vote with our thumbs.* As students taste the cantaloupe, have them vote with their thumbs. Thumbs up = I like it; thumbs sideways = It's okay or I'm not sure; thumbs down = I tried it and didn't care for it today.

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. Let students know that it may take several times of trying the food before they like it. Also, let them know that there are other ways to eat the food that they may like if they didn't like how the food was prepared today. *Does anyone want to share a tradition or a way you eat melon with your family?*

Program Evaluation:

1. Record the number of students in the class and the number who tasted the sample to measure willingness to try the food.
2. When students vote, record the number of students for each vote: "Like it," "It's okay, "I didn't care for it today."
3. Then ask students, *Was this your first time trying [insert the fruit or vegetable]?* and record the number of students who raise their hands to indicate "yes."

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 the word, "melon," you can say your answer aloud. (Educators, at the end of each question, give the students a few seconds to think, and then say the word "melon" to have them give the response in unison.)

- *What food did we try today?* (cantaloupe)
- *What can we save that's inside the cantaloupe?* (seeds)
- *If we plant those seeds, what could we grow and harvest next summer?* (cantaloupe)
- *What's the word for something important that we do over and over again?* (tradition)

Asking Discussion:

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

- Ask a student with a raised hand: *if you wanted to eat cantaloupe at home, how might you ask your grown-ups?*
- You might also ask additional questions like, *where could you buy cantaloupe? Have you ever tried to grow a cantaloupe?*

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

Cantaloupe

Watermelon

Honeydew

Cantaloupe growing on a vine.

Watermelon growing on a vine.

Taste Testing Expectations

- Be willing to try new foods.
- Be Kind - say, “Yes” or “No thank you.”
- Wait until everyone is served before trying the food.
- Don’t say, “Yuck” or make faces.
- If you don’t like it, politely remove it with a napkin.
- Be willing to try the food again. Sometimes it takes a few tries to like something.

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This project has been founded at least in part with Federal funds from the U.S. Department of Agriculture. The contents of this publication do not necessarily reflect the view or policies of the U.S. Department of Agriculture, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government. USDA is an equal opportunity provider, employer, and lender.

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 Cantaloupe and Melons

- Look for melon that does not have cuts or bruises on the surface. It could have a sweet smell and a little softness on the end that has been picked.
- Always wash the whole fruit under running water before preparing and eating. Always use clean knives and cutting surfaces (adults should do the cutting). Store cut sections in the refrigerator.
- Cantaloupe and honeydew have a hallow cavity that is filled with seeds that are scooped out before cutting.
- Watermelons contain small black seeds throughout the flesh or come in a seedless variety.
- Cantaloupes range in size from 1-10 pounds. (Use your hands to show students the typical size of cantaloupe.)

Facts About Cantaloupe

- Melons grow on the surface of the ground on a trailing vine. They grow in Iowa.
- It takes 3-4 months for a cantaloupe to grow big enough to be picked.
- Cantaloupes only ripen on the vine. They won't get sweeter once they are picked.
- Flowers on a melon vine need to be pollinated (visited) by bees to make melons.
- Watermelon is the most common melon consumed in the United States by weight, then cantaloupe and honeydew.
- China produces the most cantaloupes in the world; United States is the 5th largest producer with over half grown in California.

Health Connection

- Cantaloupe is an excellent source of Vitamin C, to help you fight germs and keep you healthy. Put up your defense shield (cross your arms in front of your chest).
- Cantaloupe is an excellent source of Vitamin A (one of the highest among fruits), which is important for your eyesight. (Use your fingers to make goggles over your eyes.)
- Cantaloupe is high in fiber, which is good for digestion and helps you feel fuller longer (Rub your stomach for good digestion).
- Honeydew and watermelon are also good sources of Vitamin C.

References and Resources

Iowa Farm to School Virtual Field Trip – Muscatine Melons (14:12 video) – Consider sharing the video with the teacher to show the class later. You may want to show a segment of the video during the lesson, such as 4:16 – 5:27 or 4:16 – 7:21.
https://fruitsandveggies.org/fruits-and-veggies/cantaloupe/; https://www.watermelon.org/
https://spendsmart.extension.iastate.edu/produce-item/melon-2/
https://snaped.fns.usda.gov/seasonal-produce-guide/cantaloupe
https://fns-prod.azureedge.us/sites/default/files/resource-files/tn-growit-book5.pdf

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

IOWA Health and Human Services

Jicama

GRADE 2-3

Month: October
Time Required: 30 minutes
Alternative Tastings: **White potato, Sweet Potato,Turnip, Carrot**

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 compare the needs of plants and humans.
- ❑ Students will be able to explain the function of roots.

Materials

- ❑ Whole jicama or photo of jicama
- ❑ "Plants" and "People" images, printed and labeled
- ❑ "Plant and People Needs" cards
- ❑ Venn Diagram worksheet (optional)
- ❑ Napkins or paper plates
- ❑ Jicama, cut up and prepared to serve
- ❑ Tajin seasoning and lime juice (optional)

Preparation

- ❑ Prepare jicama samples: peel and slice jicama into chips or sticks, or purchase pre-cut or frozen jicama sticks instead to save time with prep. (Check with school food service suppliers.)
- ❑ If choosing Physical Activity #1, cut the attached page of "Plant and People Needs" cards, enough to give one per student or enough for students to use with partners.
- ❑ Optional: Print worksheets.
- ❑ Optional : Offer raw jicama and a lime-Tajín-flavored jicama.
  - 2 cups peeled and sliced jicama, cut into small-medium sticks
  - Juice from 2-3 limes
  - Tajín sprinkled on to taste (½ teaspoon)
  - Put ingredients into a large plastic bag or plastic container before lesson to enhance flavors.

Recommended Books

"Tops and Bottoms" by Janet Stevens
"Stone Soup" by Ann Mcgovern

Standards Connection

This lesson supports the following Iowa Core standards.

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

Science
Second grade – 2-LS2-1
LS2.A: Plants depend on water and light to grow

Third grade – 3-LS4-3
LS4.C: Some organisms survive well, some survive less well, and some cannot survive at all.

Lesson Checklist

- ❑ Physical Activity
- ❑ Tasting
- ❑ Voting
- ❑ "Asking" Discussion
- ❑ Newsletters, Stickers
- ❑ Lesson Objectives
- ❑ Science Connection: Roots

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 each month, we're going to have fun trying foods together and learning about each other.*

Discuss expectations, such as: *I probably have some of the same expectations as your classroom teacher; if you have a question or want to share something, make sure to raise your hand* (demonstrate raising your hand).

Pick a Better Snack is going to be fun, and I will come in and teach you all about different fruits, vegetables, how they grow, where they come from, and the best part is we get to taste the fruit or vegetable as part of our lesson!

One of the best parts of these lessons is we get to learn about each other, so here's something I want to learn about you… what do you remember about Pick a Better Snack, and if you are new to this school and have never had Pick a Better Snack, what are some things you think will be fun about these lessons? Call on several students to share their answer. Using the classroom's "Pick a Stick" (student names written on craft sticks) is a good way to randomly call on students.

If this is **NOT** your first lesson of the year, as part of program evaluation:

1. Ask students: *Since the last time I visited, who asked their grown-ups to have [insert name of fruit or vegetable tasted last month] at home?* Consider having students put their heads down and then raise their hands so they aren't influenced by the class.
2. Record the number of students who raised their hands.

2. Engage Activity: *10 minutes*

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

Show students the two large printed and labeled images of a plant and a person included in the lesson. Place the pictures in the classroom: the plant toward the front of the room and the person at the back of the room, for example. If space is limited, write the words "Plant" and "People" on the board or display on screen via a slideshow.

Choose Physical Activity #1 or #2 to engage students.

Physical Activity # 1

With students seated at their desks or carpet, pass out prepared cards that have plant and people needs listed on them, one per student or one per pair of students. *I want you to read the word on your card, think quietly to yourself and decide: is the word on your card something that a plant needs or something that a person needs? Think in your head and when I say "go," you will quietly walk to the picture that matches what you're thinking and stay there.* Give students 5-10 seconds to think; say *"go."*

Engage, cont'd

Tell students, *Now we have two groups: a group that represents plants and a group that represents people.* Have both groups crouch down low to the ground. *I'm going to read the words that were on our cards. If I say something that a plant needs, the plant group will jump up and crouch back down. If I say something that people need, the people group will jump up and crouch back down.* Demonstrate the jump-up and share an example. Read the list of words aloud, observing and verbalizing which group jumped, or if students from both groups jumped.

- **Words on cards:** Water, House/apartment, Air, Pants, Soil, Spaghetti, Shoes, Sunlight, Love and care, Tacos

Explain, *plants and people need certain things to grow. Some of these things are very different and some of these things are the same. For example, plants need soil to grow in, but people don't. People can eat tacos to grow, but plants don't. Plants AND people both need water to grow.*

Move the person and the plant images to the middle of the room. Tell students, *I'm adding a space to the middle of the room. This is a place to stand if you think your card is something that both plants AND people need. When I say "go," you will talk with your group and decide if anyone should move to this spot. "Go."* Have students in the middle of the room read their cards aloud. *Excellent, this is a great list of things that both plants AND people need to grow!*

Physical Activity # 2 (Option if space is limited)
Read the words "Plants" and "People" displayed on the board and have students work in groups of three or four to discuss whether they think each item is needed by plants, people or both. Afterwards, read each word aloud and have the students do a different activity depending on how they decided to categorize each item. Examples of physical activities could include:

- Squat/crouch if the item is needed by plants
- Jump up and reach for the sky if the item is needed by people
- Run in place if the item is needed by both plants and people

If there is a discrepancy in answers among the class, this is a good opportunity to ask the students what they think and explore why they chose their answers for each item (if time allows).

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).

One of the things that both plants and people need is water. We drink water from a cup or water bottle, but plants use their roots. The food we're trying today is jicama and it is a root. Note new vocabulary word: root. Define, write out, and have the class repeat the word root. *A root is a plant part that grows underground. Just like we drink water when we're thirsty, the roots drink water when the plant is thirsty; the root is like a straw.* Optional: Show a video of jicama being harvested from underground (start at 2:15).

Explore, cont'd

The roots grow deep into the soil and take in water for the plant. They also help hold the plant in place. Have students stand very still pretending to be roots. Note how the jicama has smaller roots growing off the main root. *We're going to watch a short video that shows us how a root vegetable grows many roots before it comes out of the ground.*

Draw a large Venn diagram on the board. List plant needs on the left side, people needs on the right, other needs for both in the middle where the circles overlap. Watch the potato root video together and narrate for clarification. After viewing, complete the Venn diagram on the board with the students together as a class. Optional: pass out the Venn diagram worksheet to complete individually or in small groups, or have students use a whiteboard to follow along if feasible.

Potato root video: https://www.youtube.com/watch?v=YbTFCh_XdYI (1:00)

Hold up a whole jicama or show an image of one and discuss with students how it looks very different before it has been cut up into sticks. *This is a whole jicama. It looks very different than the jicama sticks we will try today. If you were to look for one at the grocery store, it will look like this (hold up jicama) Then you could take it home, peel it and cut it up into pieces to snack on like we are about to do today.*

With teacher or student helpers, pass out jicama samples to all students.

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").

Be sure to review your brave tasting rules (for example, don't yuck my yum, we all try together, etc.). You can refer to the Tasting Expectations poster resource. As the jicama sample is distributed, ask students to use their senses while they wait until the entire class is ready to taste the jicama together. Option: provide a sample of both a plain jicama stick and one seasoned with lime and Tajín seasoning.

Reflect

5. Voting Activity: *2 minutes*

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

As students taste the plain jicama, have them vote with their thumbs. Thumbs up = I like it; Thumbs sideways = It's okay or I'm not sure; Thumbs down = I tried it and didn't care for it today. 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. If you also provide a sample with lime and Tajin seasoning, they can vote separately for that flavor option. Discuss different ways to try jicama (ex: dip in guacamole or hummus; mix into salads, slaw or salsa; bake in the oven/air fryer with different seasonings to make jicama "fries").

Reflect (cont'd)

Program Evaluation:

1. Record the number of students in the class and the number who tasted the sample to measure willingness to try the food.
2. When students vote, record the number of students for each vote: "Like it," "It's okay, "I didn't care for it today."
3. Then ask students, *Was this your first time trying [insert the fruit or vegetable]?* and record the number of students who raise their hands to indicate "yes."

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."

Reflection Questions:

- *What did you like or love about the jicama?* Select a few students to share
- *What is one way that a root helps the plant?* (takes in water or holds the plant in place)
- *What is something that a plant needs?* (soil) *What is something that people need?* (tacos)
- *What is something both plants and people need?* (water)

Asking Discussion:

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

- 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 jicama? Or what are some other ways that you can try jicama?*

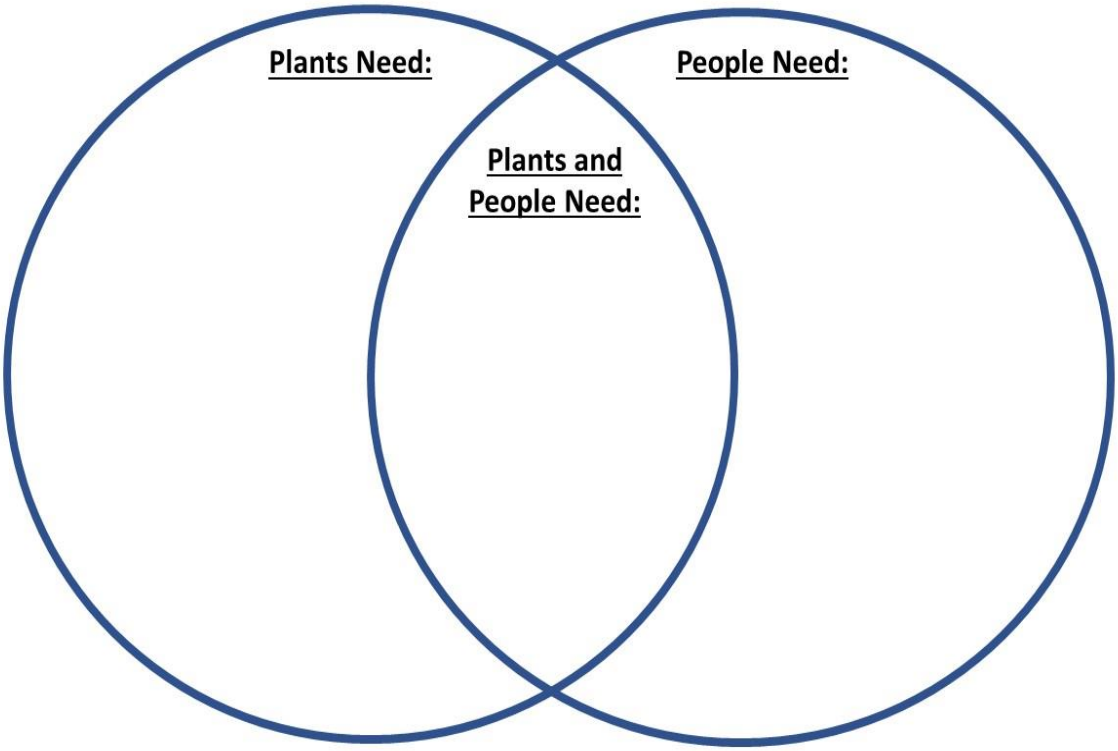
Leave newsletters and stickers with the teachers to pass out.

PLANTS

PEOPLE

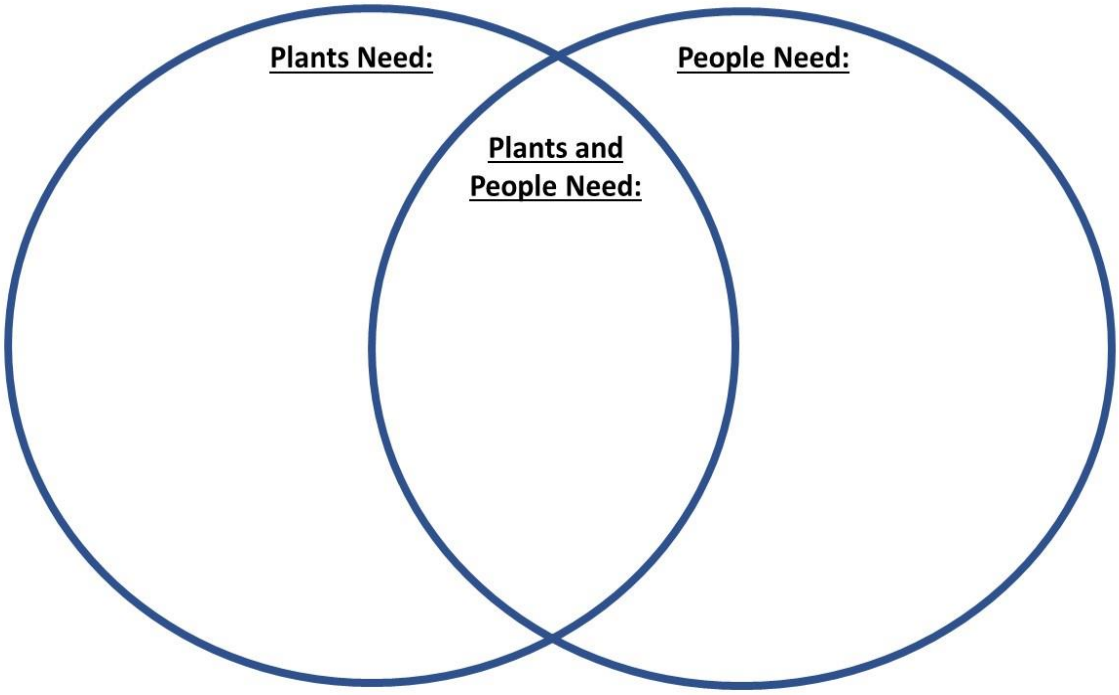
Plant and People Needs Cards: Copy and cut enough for one per student or one per student pair.

House or Apartment	Shoes
Air	Sunlight
Pants	Love and care
Soil	Water
Spaghetti	Tacos



IOWA Health and Human Services

Pick a Better Snack Lesson



IOWA Health and Human Services

Whole Jicama, and sliced in half

Taste Testing Expectations

- Be willing to try new foods.
- Be Kind - say, "Yes" or "No thank you."
- Wait until everyone is served before trying the food.
- Don't say, "Yuck" or make faces.
- If you don't like it, politely remove it with a napkin.
- Be willing to try the food again. Sometimes it takes a few tries to like something.

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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 Jicama

- Jicama needs warm temperatures for nine months to grow.
- Jicama is available from November to May and can be purchased in Mexican markets and most large supermarkets.
- Choose firm, unblemished jicama. Store whole jicama in a dry, cool place for two weeks. Place raw, cut jicama in a plastic bag in the refrigerator for up to one week. Refrigerate cooked jicama and use within a few days.

Facts About Jicama

- Root vegetables grow underground. Many root vegetables can grow through the winter (in some climates).
- Jicama is grown in Central America and Mexico (show on a map). Optional: use Google Earth to show where jicama is grown.
- Jicama can grow up to 50 pounds, but supermarkets usually sell the 3-to-5-pound size. Jicama is sold individually, whereas potatoes are often sold in sacks.
- The jicama skin should be removed before eating as the skin can be toxic. The leaves and seeds also contain mild toxins.
- When cooked, jicama retains its crisp, water chestnut-like texture.
- Jicama is a versatile vegetable that can be enjoyed raw, in salads, stir-fried, pickled or even spiralized into noodles.

Health Connection

- Excellent source of Vitamin C, to heal our wounds and keeps us healthy (reinforce by crossing arms in an “X” for our defense shield).
- Good source of fiber, to keep us full longer and help with digestion (reinforce by rubbing stomach).

References and Resources

https://fruitsandveggies.org/stories/top-10-ways-to-enjoy-jicama/
https://aggie-horticulture.tamu.edu/vegetable/guides/specialty-vegetables/jicima/
https://livewellutah.org/2017/10/18/give-jicama-a-try/

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

IOWA Health and Human Services

Cranberries

GRADE 2-3

Month: November
Time Required: 30 minutes
Alternative Tastings: Grapes

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 why fresh cranberries float.
- ❑ Students will be able to identify questions as part of the scientific method.

Materials

- ❑ Napkins or paper plates
- ❑ Fresh cranberries
- ❑ Dried cranberries
- ❑ Bog Experiment
  - Clear container full of water
  - Assortment of items that sink or float (ex: dry sponge, plastic spoon, metal key, pencil, marbles, index card, raw cranberry, dried cranberry)

Preparation

- ❑ Collect an assortment of items that will sink or float (these can be reused from class to class).

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. Planning and carrying out investigations

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: Scientific investigations (2nd), plant diversity (3rd)

Recommended Book

"Time for Cranberries" by Lisl H. Detlefsen

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.

Place all materials for the cranberry bog experiment in the center of the carpet. Write question words on the board: Who, What, Where, When, Why, How.

Program Evaluation:

1. Ask students: *Since the last time I visited, who asked their grown-ups to have [insert name of fruit or vegetable tasted last month] at home?* Consider having students put their heads down and then raise their hands so they aren't influenced by the class.
2. Record the number of students who raised their hands.

2. Engage Activity: *13 minutes*

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

As we start today, think about what you want to be when you grow up. What dream job do you want when you get older? Think quietly in your head and when I say the word "water," you're going to tell me what you want to be. Pause for students to think, then say "*water."* Listen for a few examples from the group; acknowledge some of their responses.

Physical Activity

You had some great examples of dream jobs. We're going to pretend to be some of those dream jobs today! Have all students stand up, and when the educator calls their name to share their dream job, all students should act it out, such as: professional basketball player dribbling a ball, a dancer doing warm-ups, a track star jogging in place, a rock climber stretching, etc. Instruct students to march in place after each student shares before the educator calls on the next student.

Bog Experiment

Gather students in a seated, large circle and place the bog experiment materials in the center where all students can see. Opportunity for 3 deep breaths. *Today, we're going to practice being another dream job: scientists. Does anyone know what scientists do?* Use "Pick a Stick" (student names written on craft sticks) or select a child at random to share.

Scientists conduct experiments to help explain why things work the way they do. Scientists conduct experiments and ask "Who, What, Where, When, Why, and How" questions. Reference the words written on the board.

1. *Look at these items on the carpet, and in your head, think of one question you have about these things. Your question might include one of these "Wh" words. When I say "go," you'll turn to a partner and take turns asking your questions.* Move around the circle, listening to students' questions.
2. *Those were great questions! I heard question words like* [share student examples]. *This is a curious classroom. Now, think in your head, why is it important to ask questions? Again, when I say "go," you'll turn to your partner and share with each other.* Move around the circle, listening to students' discussions. Ask a couple of partners to share their answers.

Engage (cont'd)

We ask questions to learn. Scientists make guesses of what they think is going on, called a hypothesis. Write the word on the board, define it, and have the class repeat it out loud. *Scientists make a hypothesis and then they create an experiment to find an answer. One question we are going to explore with these materials is: Will they sink or will they float when we put them in water?*

Will it sink or float?

1. Conduct the experiment where all students can see. Test if each object will float or sink.
    a. If students think the object will sink, they should crouch to the ground.
    b. If students think the object will float, they should stretch toward the sky.
    c. Students will make a guess for each object before you place them in the water (save the cranberries for last).
2. As you test each object, make two piles: things that float and things that sink.
3. What do the things that float have in common? What do the things that sink have in common?
4. Lastly, have students make a hypothesis about the fresh cranberry and dried cranberry. Will they sink or float? (The fresh cranberries will float, and dry cranberries will sink.)

Think-Pair-Share

Have students think, "Why did the fresh cranberry float? Why did the dry cranberry sink? What is different about them?" Pause to give students time to think, then allow them time to share with a partner. Transition students back to their desks. *Quietly return to your desks where we'll learn why fresh cranberries float and the dry cranberries sink.*

Optional: Continue the discussion with this video about whether different fruits and vegetables will sink or float. For physical activity, as each fruit or vegetable appears in the video, have students crouch down to the ground if they think the object will sink and stretch toward the sky if they think the object will float. Sink or Float Challenge video: https://www.youtube.com/watch?v=aMbQSe6IdBU (3:10).

Explore

3. Experiential Learning: 7 *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.

Today, we're going to taste this fruit called a cranberry, but first, we're going to look inside to see if we can figure out why cranberries float. With a student or teacher helper, pass out a napkin to each student and place two fresh cranberries and two dried cranberries on top.

Tell students to leave the dried cranberries alone for now and to pick up one of the fresh cranberries. Have students use their fingers to break one fresh cranberry into two pieces (demonstrate this using the classroom projector if available). *What do you see inside?* Confirm that there are seeds inside and four air pockets. *The air pockets on the inside make the cranberry float. The dried cranberry we tested didn't float because it doesn't have air pockets on the inside to make it light.*

Explore

Explain, *Fresh cranberries are harvested in a special way because they float.* Play and narrate a short portion of one of the videos below showing a cranberry harvest.

- Wisconsin Cranberries: Growing Strong: https://www.youtube.com/watch?v=PIbkxXAnkIc (recommend playing 1:33 – 2:09)
- Fresh Cranberries – Habelman Family Farm: https://www.youtube.com/watch?v=Dkf3p2sZgLQ (recommend playing 2:54 – 4:06)
- Cranberry Harvest, drone footage (no words): https://www.youtube.com/watch?v=KTUbRyqo_os&feature=emb_rel_pause (4:23) Consider increasing the playback speed (see Settings).

When cranberries are ready to be harvested in the fall, the field where they are growing is flooded with water, a harvesting machine is driven through the field, and the cranberries float to the top. The cranberry farmer gathers up and collects the floating cranberries. Use the photo of a flooded cranberry bog included in the lesson as needed. *How is this different than harvesting other fruits and vegetables?* If time allows, consider allowing students to discuss this in a think-pair-share format.

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").

Be sure to review your brave tasting rules (for example, don't yuck my yum, we all try together, etc.). Ask them to use their other senses before they taste the cranberries.

Direct students' attention back to the fresh and dried cranberries on their napkin. *We're going to taste two types of cranberries today: a fresh cranberry and a dry cranberry. Do you think the cranberries will taste the same or different?*

Instruct students to taste the fresh cranberry. How would they describe the taste? Instruct students to taste the dried cranberry. How does it taste? Is it different and similar to the fresh cranberry?

Fresh cranberries are very sour, while dried cranberries are sweet. Fresh cranberries are so sour that we usually don't eat them plain. Instead, we eat them after they have been sweetened with sugar. Dried cranberries have sugar added to them to make them sweet.

This may be a good time to explain that dried fruits are sticky and will stick to your teeth. Explain the importance of brushing your teeth to prevent cavities. You may also want to explain that while dried cranberries can be a healthy snack, we don't want to eat too many of them at one time because of the added sugar.

Reflect

5. Voting Activity: 1 *minute*

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

As students taste the cranberries, have them vote with their thumbs. Vote for the fresh cranberry and dried cranberry separately. Thumbs up = I like it; thumbs sideways = It's okay or I'm not sure; thumbs down = I tried it and didn't care for it today. 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. Let students know that it may take several times of trying the food before they like it. Also, let them know that there are other ways to eat the food that they may like if they didn't like how the food was prepared today.

(Due to time, it might be wise to ask the teacher or a classroom aid to lead the voting activity and ask some of the reflection questions to the class while you clean up your sink/float experiment supplies. Or, consider asking the reflection questions as you are cleaning up the experiment.)

Program Evaluation:

1. Record the number of students in the class and the number who tasted the sample to measure willingness to try the food.
2. When students vote, record the number of students for each vote: "Like it," "It's okay, "I didn't care for it today."
3. Then ask students, *Was this your first time trying [insert the fruit or vegetable]?* and record the number of students who raise their hands to indicate "yes."

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."

Reflection Questions:

Choral Response:

- *What fruit did we try? (*cranberries)
- *What did we pretend to be today? (*scientists)
- *Why do scientists ask questions?* (to learn how things work)
- *Did fresh cranberries sink or float?* (float)
- *What is inside the cranberry that makes it float?* (air or air pockets)

Asking Discussion:

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

- 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 cranberries?*
- *How could you eat cranberries?* (for a snack, in trail mix, in oatmeal, cooked in a sauce, etc.)

Leave newsletters and stickers with the teachers to pass out.

Flooded cranberry bog

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 Cranberries

- The cranberry is a Native American wetland fruit which grows on trailing vines like a strawberry. Flowers grow on the vines in May-June, and the cranberries are ripe and ready for harvest in late September to early October.
- The American Cranberry is a low-growing, vining woody perennial. During harvest, water is used to float the fruit for easier collection. These cranberries are usually used for juice and sauce. The dry harvested fruit are combed from the vines and are used as the fresh fruit.
- Most production occurs in Wisconsin, Massachusetts, New Jersey, Oregon, Washington, Canada and Chile.
- Fresh cranberries should be firm, plump and dark red.
- Cranberries freeze well. Rinse before using, not before freezing. They will last about one year in the freezer or three to four weeks stored in the refrigerator.

Facts About Cranberries

- Cranberry juice is the most popular way cranberries are consumed, but during the holidays, cranberries are often used in stuffing, dressing, relish and cranberry sauce.
- Grapes are also a fruit that grows on vines; dried grapes are called raisins. In French, raisin means “grape.”
- Raisins vary based on the type of grape used and are found in different sizes and colors including green, black, blue, purple and yellow.

Health Connection

- Vitamin C. Cranberries have vitamin C, to help heal cuts and keep the gums and skin healthy (reinforce with crossing arms for a defense shield)
- Fiber. Cranberries have fiber, to keep us full longer and to help with digestion (reinforce by rubbing stomach)
- Potassium. Cranberries have potassium, to keep our heart healthy. (reinforce by squeezing hands to show heart beating). The heart is a muscle that needs a workout. To make it stronger, be active in a way that gets you huffing and puffing.

References and Resources

https://www.cranberryinstitute.org/
https://snaped.fns.usda.gov/seasonal-produce-guide/cranberries

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

IOWA Health and Human Services

Broccoli/Cauliflower

GRADE 2-3

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

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 6 plant parts.
- ❑ Students will be able to recall broccoli and cauliflower as plants in the Brassica family.

Materials

- ❑ Heads of broccoli and cauliflower with leaves and stem to show or photos
- ❑ Photos of flowering broccoli and cauliflower and Brassica family

Optional:

- ❑ Variety of fruit and vegetable cutouts, enough for 4-5 small groups to have a set. Place in gallon size plastic bags. (See images in K-1 Pepper lesson and larger images, like in the Cantaloupe lessons.)
- ❑ Laminated labels of the six plant parts, one set for each small group (add to plastic bag with cutouts)
- ❑ White sheet of paper for drawing

Optional, if cooking:

- ❑ Air fryer or electric skillet and power strip (with long cord)
- ❑ Plastic tote (to transport electric skillet)
- ❑ Water bottle with water
- ❑ Rags
- ❑ Spatula
- ❑ Tasting materials (plates, napkins, etc.)
- ❑ Broccoli and/or cauliflower for cooking
- ❑ Olive oil
- ❑ Spices (ex: salt, pepper, garlic, cumin, chili powder, etc.

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
Crosscutting Concept: Structure and function

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

Lesson Checklist

- ❑ Physical Activity
- ❑ Tasting
- ❑ Voting
- ❑ "Asking" Discussion
- ❑ Newsletters, Stickers
- ❑ Lesson Objectives
- ❑ Science Connection: Flowers & plant parts

Preparation

- ❑ Wash broccoli and/or cauliflower and chop into small "trees" for tasting.
- ❑ If cooking during the lesson, portion broccoli and/or cauliflower pieces into food storage bags (one per lesson). Optional: add olive oil and spices to the bag; shake well.

Recommended Books

"The Trouble with Cauliflower" by Jane Sutton

"The Vegetables We Eat" by Gail Gibbons

Engage

1. Introduction: 2 *minutes*

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

*If you're planning on cooking your broccoli or cauliflower in an electric skillet or air fryer, you may want to start preheating (set at 375 degrees for the air fryer) your cooking instruments as soon as you arrive in the class. Alert students and teachers to the hot skillet or air fryer. If using a skillet, heat a couple tablespoons of olive oil over medium heat, leaving uncovered.

Program Evaluation:

1. Ask students: *Since the last time I visited, who asked their grown-ups to have [insert name of fruit or vegetable tasted last month] at home?* Consider having students put their heads down and then raise their hands so they aren't influenced by the class.
2. Record the number of students who raised their hands.

2. Engage Activity: 4 *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 taste broccoli and/or cauliflower. If you're cooking, show your students your container of chopped up broccoli or cauliflower. Before you add the broccoli to the preheated electric skillet or air fryer, ask students to listen very carefully to the "sizzle" noises. Add the broccoli and/or cauliflower. If using a skillet, leave uncovered, stir occasionally and cook for 10 minutes or until tender over medium heat.

Think-pair-share: Gather students in a large circle or have students remain at their desks. *As we begin today, I would like to know who is in your family.* As an example, share a few people in your own family. (You don't need to state specific names; just think in general terms such as parents, aunts, uncles, cousins, grandparents, etc.)

- *Think to yourself quietly.* Have students close their eyes, put their fingers to their temples, and think real hard.
- Ensure all students have a partner. Then, have students turn to a partner and share some examples of who is in their family.
- After a couple minutes, bring the class back together and select students to share out. If the teacher has "pick a stick," this is a good way to randomly select students to share.
- As students share about their family, have them put on an imaginary crown.

That's beautiful! All our families are different, and all our families are special, just like the vegetables we are going to learn about today.

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.

Have students sit (opportunity for 3 deep breaths or a waterfall, where students take a deep breath, put their arms in the air and bring them down as they sit back down making a swoosh sound).

Did you know, just like people, plants belong to families, too? Today we're going to learn about broccoli and cauliflower, two vegetables that belong to a special family of plants called Brassica (write and have class repeat the word: Brassica). There are many vegetables in the Brassica family, including broccoli and cauliflower.

Show a head of broccoli and cauliflower with leaves and stem still intact. While whole heads of broccoli and cauliflower are preferred, if needed, use the image in the lesson of broccoli and cauliflower side-by-side instead for students to observe broccoli and cauliflower. Place the image on a slide and use the classroom projector to improve visibility. *We can observe special traits, qualities that make a plant or animal special, that might show broccoli and cauliflower are in the Brassica family.*

- *Think in your head of one way these vegetables are different.* Use "pick a stick" to randomly select students to share.
- *Now, think in your head of one way these vegetables are the same.* Use "pick a stick" to randomly select students to share.

There are all kinds of vegetables in the Brassica family. Just like our families, each one is unique and special. Show the image of the Brassica family and name them: broccoli, cauliflower, kale, kohlrabi, Brussel sprouts, cabbage.

When we eat vegetables in the Brassica family, we are eating different plant parts. There are six plant parts (how many plant parts? "Six!"). They are root, stem, leaf, flower, fruit and seed. Use the diagram in the lesson to illustrate all six parts of the plant. Place the diagram on the classroom projector or print and laminate it prior to class and use a dry erase marker. Ask students to name each part as you write it on the diagram.

Broccoli and cauliflower are flowers (what plant part are they? "Flowers!"). Refer to the head of broccoli or cauliflower or the image to name parts of the vegetable: stem, leaves, flower. *Some people even call them the "crowns"* (put on imaginary crowns again). *We eat broccoli and cauliflower before the flowers bloom, when they are tender and sweeter.* This would be a good time to show the image of the broccoli and cauliflower plants flowering.

Lead the class through one of the following physical activities below for about 3 minutes.

Explore (cont'd)

Physical Activity #1 : Plant Parts Dance

Practice leading the dance with this video! "Parts of a Plant: A Dance Tutorial with FoodCorps" (start at 1:22) https://www.youtube.com/watch?v=sIELVWIzfOY&t=21s. *We're going to do a dance to learn about what each plant part does.* I'm a plant and I have…

- Roots: soak up water and keep the plant in the ground
- Stem: the elevator that brings water up and food down
- Leaves: help the plant make food
- Flowers: where the bees come to drink nectar and pollinate the plant
- Fruit: helps spread seeds
- Seeds: help make new plants

Physical Activity #2: Freeze Vocabulary

We're going to move different parts of our bodies and learn more about the parts of the plant. Have the students do a certain physical activity (ex: jumps, squats, arm circles, running in place, jumping jacks, etc.). When you call out "freeze," students will stop and freeze. Then call out a fruit or vegetable and have students guess the part of the plant of that fruit or vegetable.

Once students guess the correct answer, call out a new physical activity for students to do until you say "freeze" again and name a different fruit or vegetable. Repeat for 2-3 minutes. Fruit or vegetable ideas include carrot (root), broccoli (flower), peppers (fruit), celery (stem), corn (seed), cauliflower (flower), spinach (leaf), apples (fruit), pears (fruit), potato (root), radish (root), cantaloupe (fruit), tomato (fruit), asparagus (stem), beans (seed), jicama (root), etc.

As time allows, choose one of the optional activities below.

Optional: Plants Parts Person

Organize the class into small groups of 3-5 students. Give each group a plastic bag with the set of laminated fruit and vegetable cutouts (realistic images preferred) along with the six plant part labels. Have students use the fruit and vegetable cutouts to make a "plants part person" and encourage them to be creative. Then have students discuss what part of the plant they think the fruit and vegetable cutouts are within their group and label them on their plant part person (see example to the right.) Walk around to each group and discuss their plant part person, giving students clues as to what part of the plant the cutouts are if necessary.

Optional: Plant Part Art:

Give each student a blank sheet of paper and instruct students to trace their hand, making a head of broccoli. Use the classroom projector to demonstrate how they can choose to add different plant parts: flowers to fill out the crown, a stem and leaves. They may also choose to add roots, flowers and seeds (and a crown!) to make their own special version of a broccoli plant.

Explore (cont'd)

4. Tasting Activity: 4 minutes

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

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

Select one of the following ways to taste broccoli and/or cauliflower. You may serve one or both vegetables.

- Raw: Cut into small "trees." You can serve plain or with a dip. If serving with a dip, try dipping the piece of broccoli or cauliflower into the dip as you serve it to each student. You can even only put dip on half the floret so students can taste it without the dip, too. Or, if preferred, bring napkins or small paper plates to serve the vegetable and dip. Dip ideas include Vegetable Dip, Savory Yogurt Dip or mix a packet of ranch seasoning into a 32-ounce container of plain Greek yogurt.
- Air fryer: Before the lesson, chop cauliflower and/or broccoli into smaller pieces. During the lesson, toss in an air fryer with olive oil and spice options (ex: garlic, pepper, paprika). Cook for ~10 minutes at 375 degrees or until tender, shaking halfway through.
- Electric skillet: Before the lesson, chop cauliflower and/or broccoli into smaller pieces. During the lesson, heat 2 tablespoons olive oil over medium heat, leaving uncovered. Add your broccoli or cauliflower to the host skillet and season with optional spices (ex: garlic, pepper, paprika).

Reflect

5. Voting Activity: 2 *minutes*

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

As students taste the cauliflower and/or broccoli, 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. This is a good time to ask how others in the classroom have eaten broccoli and/or cauliflower.

Program Evaluation:

1. Record the number of students in the class and the number who tasted the sample to measure willingness to try the food.
2. When students vote, record the number of students for each vote: "Like it," "It's okay, "I didn't care for it today."
3. Then ask students, *Was this your first time trying [insert the fruit or vegetable]?* and record the number of students who raise their hands to indicate "yes."

Reflect (cont'd)

6. Reflection: 3 *minutes*

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

Choral Response:

- *What is the name of the family broccoli and cauliflower belong to?* (Brassica)
- *How many plant parts are there?* (six)
- *What part of the plant are broccoli and cauliflower?* (flower)
- *What are the five other plant parts?* (roots, stem, leaf, fruit, seed)

Asking Discussion:

- *Raise your hand if you're excited to go home and tell your family about tasting broccoli and/or cauliflower.*
- *If you wanted to try this at home, how might you ask your grown-ups? How could you* eat broccoli and cauliflower at home? (ex: raw for a crunchy snack, cooked with a meal)

Leave newsletters and stickers with the teachers to pass out.

Cauliflower

Broccoli

The Brassica Family

Broccoli

Cauliflower

Kale

Kohlrabi

Brussel Sprouts

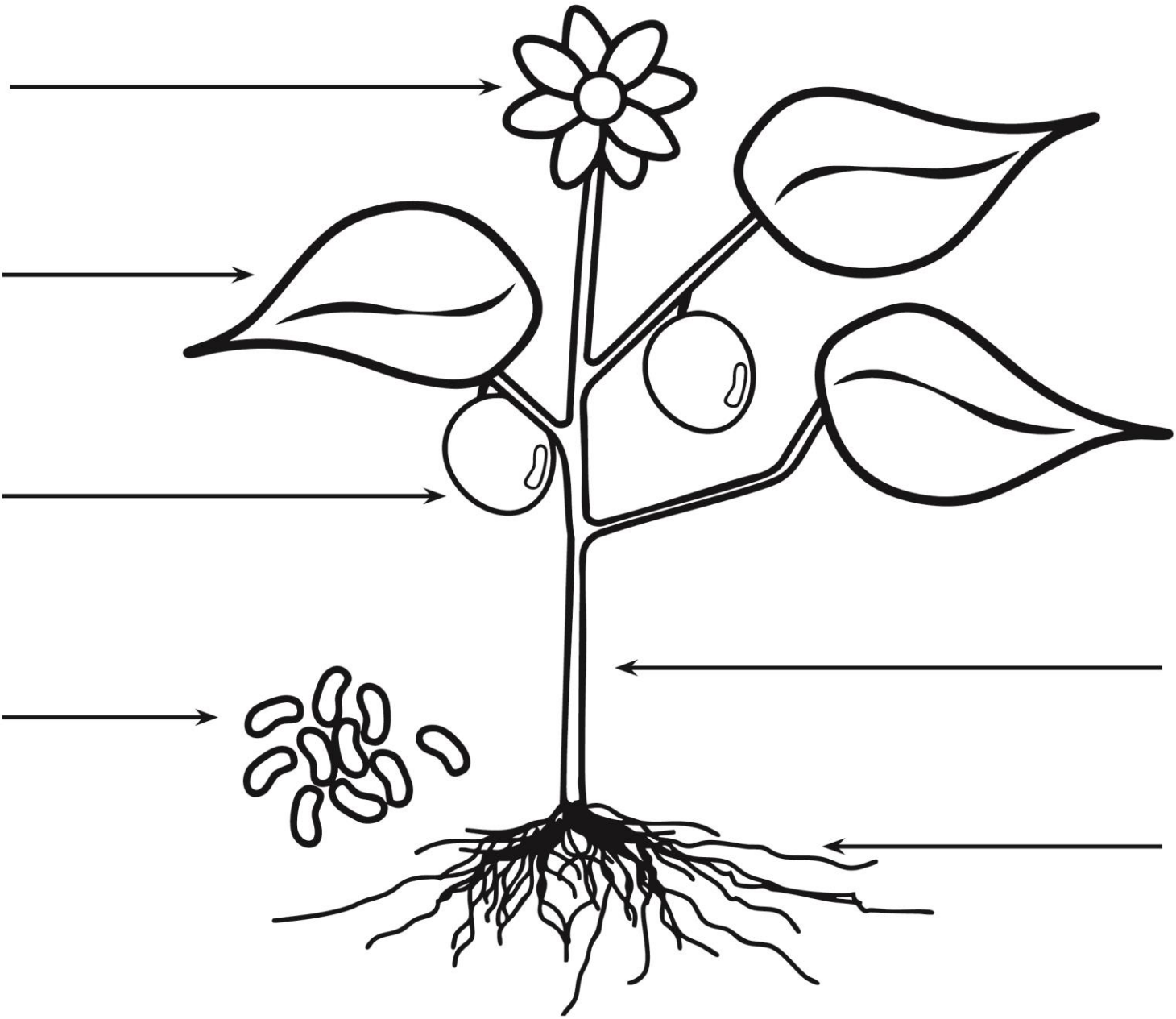
Cabbage

Parts of a Plant

Label the six different plant parts.

Word Bank:

roots	stem	seeds
leaf	flower	fruit



Pick a Better Snack

Eat Fruits and Veggies

IOWA™ Health and Human Services

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

Flowering broccoli

Flowering cauliflower

Additional Materials

Physical Activity

Two other ideas for physical activity:

- 12 Days of Gym Class: https://www.youtube.com/watch?v=zZTmrWL9-9Q
- The 12 Days of Fitness: See page 35 in the Activity Breaks booklet at https://hhs.iowa.gov/pick-better-snack/materials.

What You Need to Know About Broccoli and Cauliflower

- Broccoli is a cool season crop, which means it is not affected by frost when planted in the cooler weather. We can grow broccoli in Iowa.
- California is the top producer of broccoli in the United States, growing 90% of the broccoli eaten in the U.S.
- Choose broccoli with tight florets that are dark green, purplish or bluish green. Stalks should be very firm.
- Choose cauliflower with compact creamy white buds and bright green leaves. Avoid brown spots or loose sections that are spread out.

Facts About Broccoli and Cauliflower

- The part of the broccoli that we eat is a group of buds that are almost ready to flower.
- Broccoli is known as the "Crown Jewel of Nutrition" because it is rich in vitamins and high in fiber.
- The word "cauliflower" means "cabbage flower" in Latin. It's a cousin to cabbage, kale, and Brussels sprouts.
- Cauliflower is usually white, but it can also be orange, purple, and green.

Health Connection

- Broccoli is a good sources of vitamin A, to keep your eye healthy (Reinforce with super goggles.)
- Broccoli and cauliflower are good sources of vitamin C, for healthy skin, strong immune system and for healing wounds. (Reinforce with Vitamin C defense shield: cross arms to make an X.)
- Broccoli and cauliflower are good sources of fiber, to help with digestion and make us feel full longer (Reinforce by rubbing stomach; you can even and say "mmm fiber" when doing that motion.)

References and Resources

https://spendsmart.extension.iastate.edu/produce-item/broccoli-2/
https://spendsmart.extension.iastate.edu/produce-item/cauliflower-2/
https://snaped.fns.usda.gov/seasonal-produce-guide/broccoli
https://www.youtube.com/watch?v=EM0AUU5W6iw – Cauliflower, How Does it Grow? video
https://www.youtube.com/watch?v=TUxx0OJKJjc – broccoli video for kids (broccoli salad recipe)
https://www.youtube.com/watch?v=EYV_Pb8PVvY – cauliflower video for kids (recipe)
https://www.youtube.com/watch?v=NGoHibWQUro – broccoli farm (Iowa) video

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IOWA Health and Human Services

Mango

GRADE 2-3

Month: January
Time Required: 30 minutes
Alternative Tastings: **Papaya**

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 mango as a tropical fruit.
- ❑ Students will be able to describe what a mango needs to grow.

Materials

- ❑ Inflatable beach ball
- ❑ Mango seed
- ❑ Pictures of mangoes
- ❑ Fresh or frozen mango for tasting
- ❑ Optional: blender, tasting cups, and additional ingredients if making the smoothie, or mango salsa prepared in advance

Preparation

- ❑ Determine which beach ball activity you will lead and prepare the beach ball for the physical activity.
- ❑ Send teachers the links to videos and the map you want to show ahead of time. Also, let teachers know you will be drawing in class and will need students to have a writing utensil and paper or a white board.
- ❑ Determine the way you will serve mango and prepare it for class.
- ❑ Prep a mango seed by taking it out of the mango and letting it dry. Cut off the mango around the pit as much as possible, place it on a paper towel on the counter and allow it to dry for about 24 hours, turning it over at least one time. If you'd like to show the seed inside, cut off the end of the pit and use a serrated knife to **carefully** "saw" it open along the seam.

Recommended Books

"Too Many Mangoes" by Tammy Paikai
"How to Eat a Mango" by Paola Santos

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-ESS2-2 ESS2.D Weather and climate

Lesson Checklist

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

Program Evaluation:

1. Ask students: *Since the last time I visited, who asked their grown-ups to have [insert name of fruit or vegetable tasted last month] at home?* Consider having students put their heads down and then raise their hands so they aren't influenced by the class.
2. Record the number of students who raised their hands.

2. Engage Activity: *8 minutes*

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

Start by doing either option 1 or option 2, depending on what you have for space in the classroom.

Option 1:

Delineate one side of the room for hot weather and one side for cold weather. Ask students, *Do you like hot weather or cold weather? Maybe you like both? Think about this in your head and when I say the word, "Mango," I want you to quietly walk to this side for hot weather, this side for cold weather, or stand in the middle if you like both. When you get to your spot, take turns sharing why you like hot weather, cold weather or both.*

- Give students time to think and decide; instruct them to move to their preference and share with others in their group. Ask one student from each group to share what their group talked about.
- Remind students to make the decision for themselves and not be swayed by where others stand.

Option 2:

If space is an issue, consider having students stand either next to their desks or near each other in the front of the classroom. Delineate one movement for hot weather and one for cold, such as a tree pose for hot weather, chair pose for cold weather and warrior pose for both; or do an action item, such as squats, straight jumps, and running in place. Ask the same question as Option 1, and after the students do their action item for the weather they enjoy most, have them turn to the person next to them and have a conversation. Call on a few students to share.

After either option 1 or option 2 is complete have the students quietly sit and introduce the term tropical. Explain, *In Iowa, we experience all kinds of weather – hot weather in the summer, cold weather in the winter, and mild weather in the spring and fall. The weather changes all year. In some parts of the world, the weather is more consistent. It can be very cold all year in some places, and very hot all year in other places. "Tropical climate" describes places that are very warm and wet all year. Let's say that word together: "tropical climate."* Show an image of the different climate regions in the world, pointing out the tropical zone: Tropical Zone World Map *Today we're going to taste a type of tropical fruit that grows in tropical climates. But first, let's play a game.*

Engage (cont'd)

Physical Activity:
Today we are going to use a beach ball, which can be played with in tropical areas, for our physical activity.

–Gather students in a large circle and complete one of the activities below. Bring the beach ball!

– **Option 1:** Write several vocabulary words on the beach ball (warm, wet, tropical, mango, fruit). Instruct students to gently pass the beach ball. If their hand is on a vocabulary word when they catch it, the student can read and spell the word aloud. Then, pick a physical activity to do as the class spells the word aloud together. (ex. For "fruit," do five jumps or squats while saying F-R-U-I-T). Do this activity for 3 minutes. If the student's hand does not land on a word, have the student pick a word close to one of their thumbs. Do this activity for 3 minutes.

–O**ption 2:** Write the word mango on the board and spell it together as a class. Instruct students to gently pass the beach ball (or other ball/item to toss). Spell mango as a class, one letter per toss (m-a-n-g-o). Try to speed it up without dropping the ball! When the ball is dropped do 5 squats or jumps spelling out mango. Do this activity for 3 minutes.

Explore

3. Experiential Learning: *11 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.

Mango Life Cycle Exploration:
While holding up a fresh mango or picture of a mango say*, For our tasting today, we're going to try a tropical fruit called mango. Mangoes grow in tropical places because they need wet, warm weather all year to survive. Mangoes have one large seed inside that is surrounded by the pit.* Show a real mango pit (or photo of the seed), prepared in advance and dried. If showing just the pit, explain that there is a seed inside. *The mango seed is surrounded by a large, flat covering that you can see when you cut a mango; this is what makes it difficult to cut through a mango fruit.* Pass around the mango pit if time allows.

Optional: Show the video of opening a mango pit to see the seed inside (see video link in the Resources section on last page).

We are going to briefly learn about the life cycle of a mango. First, you would plant a seed under the ground and once it received enough water from the soil, it would start sprouting. The seedling would start to sprout above the ground and grow into a tree. It can take 3-7 years for the small tree to grow big enough to start flowering, which is needed to grow the mango. Show picture of the flowering tree. *Once bees and bugs go from flower to flower, the flower will start to turn into a mango and grow the fruit.* Show picture of a mango growing on mango tree. *Mangoes can come in many different colors including yellow, orange, red and green.*

Explore (cont'd)

Let's quietly walk to your desks and take out a piece of paper and writing utensil such as a pencil, pen or crayons. (You may want to give the teacher a heads up, before arriving to class, to have paper and writing utensils ready or a white board for each student to make this transition quicker and easier.)

Once students are seated, *We are now going to draw the life cycle of a mango. Remember, this is going to start as a seed underground, and roots are going to sprout from them and grow down, to get nutrients, and up, to start the tree.* As students draw, if there is time, take them through another drawing of a seed sprouting into a tree. You can be as creative as time allows during this activity. It may be helpful to show a picture of a mango tree on the classroom projector as students draw their mango tree or educators can draw on the classroom whiteboard a seed sprouting into roots and then the mango tree above the ground.

Optional: As time allows, pick one of the following videos for your students to watch:

1. *Here is a video that shows the first year of a mango tree growing.* After the video ask questions about the video such as: *What did you notice about the seed at the beginning? What did you notice about the tree growing? Did the tree grow as big or fast as you thought it would in one year? Why or why not?*
   Growing Mango Tree video: https://youtu.be/jh_ukt8g53c?si=zxDb6rtUM_ouZvIr (2:56)
   (You can speed up to 1.5x to save on time.)

2. The Mango Song: https://youtu.be/2o5CVG_f4ok?si=0Nu8qDry6mYhCDs5 (3:13).
   Have students march in place for the 3-minute video; when the song says "Mango Mango," have students put their hands in the air. Ask the students to watch for different things during the video. For example, *observe the different colors of mangoes in the video. What other types of fruits do they mention in the song? Be listening in the song for different ways they eat mango.* This video could be the physical activity if students are moving during the whole video.

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.). Choose one of the following ways to taste mango. As students wait until the entire class is ready to taste the mango, have them use their senses to explore mango.

Option 1: Give each student one or two bite-size pieces of pre-cut fresh or frozen mango.

Option 2: Mango Salsa: Pass out two chips with mango salsa that has been prepared ahead of time. You could also give students a piece of fresh mango to try without the other ingredients in the mango salsa. (There is a Mango Salsa recipe at the end of this lesson.)

Option 3: Make Mango Smoothie in class. Pass out in small cups to students. See the mango smoothie recipe link on the Additional Materials page at the end of this lesson.

Reflect

5. Voting Activity: *2 minutes*

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

As students try the mango tasting, 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.

Program Evaluation:

1. Record the number of students in the class and the number who tasted the sample to measure willingness to try the food.
2. When students vote, record the number of students for each vote: "Like it," "It's okay, "I didn't care for it today."
3. Then ask students, *Was this your first time trying [insert the fruit or vegetable]?* and record the number of students who raise their hands to indicate "yes."

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."

Reflection Questions:

- *What did you like about the mango tasting?*
- *What do mangoes need to grow?* (warm and wet or tropical weather, sun, dirt)
- *Do you think it would be easy to grow mangoes in Iowa? Why or why not?* (no, need hot temperatures year-round and lots of rain)
- *What are some other tropical fruits, besides mango, you can think of?* (pineapple, kiwi, pomegranate, passion fruit, papaya, bananas)
- What are other ways you can eat a mango?

Asking Discussion:

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

- Ask students: *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 a mango?*
  - *Is there a special way your families have eaten mango?*

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

Germinated mango seed (the seed is inside the pit)

Flowering mango tree

Mango tree with fruit

Mango

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 Mango

- Mango gets softer as it ripens. Judge its ripeness by feel, not color. Mangoes ripen at room temperature. You can put mangoes in a paper bag at room temperature to speed up the ripening process. Once ripe, mangoes can be stored in the refrigerator for up to 5 days.
- Mangoes are 2-4 inches in length and are very colorful. They could be green, yellow, red, or orange on the skin, but all are orange-yellow on the inside and juicy and sweet when ripe.
- Mangoes have one big, flat seed that you can't eat.
- Mangoes are tropical fruit and like warm, sunny weather. Other tropical fruit include bananas, kiwi, papaya, pineapple, pomegranate, and passion fruit.
- A lot of mango is grown in India, Mexico, Pakistan, China, Indonesia, Brazil, and the Phillipines. In America, much of our mangoes are grown in Florida.
- Mangoes grow on trees; some can grow as tall as 100 feet.

Facts About Mango

- The mango is called the "king of fruit" in India, where there are over 1,000 varieties.
- In India, a basket of mangoes is considered a gesture of friendship.
- Mango is the most popular fruit in the world. Its taste resembles a mix of oranges, peaches and pineapples.
- The fruit of the mango tree matures in three to five months after flowering. The fruit weighs ¼ pound to 3 pounds.

Health Connection

- Mangoes are rich in vitamin C, which helps our bodies fight infection and heal wounds. (Reinforce with a defense shield; cross your arms in front of your body to ward off germs).
- Mangoes are rich in vitamin A, which is important for healthy eyesight. (Use fingers to put on your super goggles). Mangoes contain more vitamin A than most fruits.
- Mangoes are a good source of fiber. Fiber helps with digestion and helps us feel fuller longer. (Reinforce by rubbing stomach).

References and Resources

https://snaped.fns.usda.gov/seasonal-produce-guide/mangos
https://spendsmart.extension.iastate.edu/produce-item/mango-2/
https://www.mango.org/mango-nutrition/
https://spendsmart.extension.iastate.edu/recipe/mango-salsa/ (mango salsa recipe)
https://extension.umd.edu/programs/family-consumer-sciences/snap-ed/eat-smart/recipes/mango-smoothie/ (mango smoothie recipe); dairy free recipe: https://snapedny.org/recipes/mango-smoothie/
https://youtu.be/GPQ1wt-PusY?si=az9ZMwjLoEiOqI_x – How to Cut a Mango video
https://youtu.be/ZGVPDvEzdh4?si=PAtm-8p_BSpLvpCx - cleaning, opening mango seed video
https://www.youtube.com/watch?v=_zCQj8nwZGs – PABS video, includes mango salsa snack

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IOWA Health and Human Services

Bell Pepper

GRADE 2-3

Month: February
Time Required: 30 minutes
Alternative Tastings: Tomato, Cucumber

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 fruits and vegetables of different colors.
- ❑ Students will be able to explain the concept of "Eating a Rainbow."

Materials

- ❑ Five sheets of construction paper – red, orange, yellow, green, purple. Write a different physical activity on each sheet of paper.
- ❑ Sets of 5 sheets of construction paper for each small group: red, orange, green, purple, white. May place in plastic sheet protectors.
- ❑ Pepper plant image, 5 colors of bell peppers image or real peppers
- ❑ 5 Fruit and vegetable color cards, each in a plastic sheet protector or laminated
- ❑ 2-3 colors per student of bell pepper strips or mini peppers (whole or half) for each student (dip optional)
- ❑ Optional: knife, cutting board, bell pepper to cut pepper to show inside

Preparation

- ❑ Cut pepper strips for tasting (2-3 different colors)
- ❑ Consider placing colored sheets of paper in plastic sheet protectors for each small group.

Standards Connection

This lesson supports the following Iowa Core standards.

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

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

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

Lesson Checklist

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

Recommended Books

"It's Me, Serrano the Pepper!" by Dina Attlias Nahman
"Chile Pepper Pete" by Dawn Boone (see physical activity idea on last page of the lesson.)

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 choosing physical activity #1 below, in each of the four corners and the center of the room, post pieces of paper of different colors (green, red, yellow, orange and purple). Prior to your first lesson, write a different physical activity on each color so that the students can read it.

Program Evaluation:

1. Ask students: *Since the last time I visited, who asked their grown-ups to have [insert name of fruit or vegetable tasted last month] at home?* Consider having students put their heads down and then raise their hands so they aren't influenced by the class.
2. Record the number of students who raised their hands.

2. Engage Activity: 6 *minutes*

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

Choose one of the activities below and lead the students in physical activity.

Physical Activity #1:

Out of these five colors - green, red, yellow, orange and purple - which color is your favorite? Think in your head (can put fingers up to temples and close eyes) and *when I say the word, "pepper," I want you to quietly walk to the space that shows your favorite color - green, red, yellow, orange or purple. When you get to your spot, take turns sharing why that's your favorite color.*

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

While students are in their color groups, instruct them to do the physical activity written on the color paper for 15 seconds. Then have the groups rotate to the left to the next color. Instruct students to do that activity for 15 seconds. Continue rotating groups around the room through all the colors. Examples of activities to write on each color:

- Red = jumping jacks or jump in place
- Green = bend over to touch toes
- Purple = balance on one leg
- Orange = squats
- White = twist at the waist

Engage (cont'd)

Physical Activity #2:

Use five sheets of colored construction paper (red, green, yellow, orange and purple). Each sheet has a physical activity written on it so that students can read it, such as jumping jacks (or jump up and down if space is an issue), balance on one leg, bend over to touch toes, twist at the waist and squats.

- **Round 1:** Flip through the colored paper gradually, showing one color at a time. When a student sees their favorite color, have them do the physical activity on the paper until a new color is shown.
- **Round 2:** Flip through the colored paper, showing one color for 5 – 10 seconds. Have all students do the physical activity until they see the next color.
- **Round 3:** Flip through the colored paper at a faster pace, such as 3 – 5 seconds per color. Have all students do the physical activity until they see the next color. Repeat, increasing the speed even more, like 1 – 2 seconds per color.
- **Round 4:** *Now, let's cool our bodies down a bit. Think about which of these colors is your favorite to eat. In other words, do you like green, red, yellow, orange or purple foods? When I hold up your favorite color to eat, do a star pose (arms out to side, feet spread apart) to show us that it's your favorite color of food to eat.* Flip through each color slowly, reflecting on the different colors of foods the students like to eat.

Today, we're going to learn about and practice eating a rainbow of colors!

Explore

3. Experiential Learning: 12 *minutes*

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

Seat students in 5 small groups, where they can work together (opportunity for 3 deep breaths).

Explain, *Today, we'll be tasting a vegetable called a pepper. Peppers grow in a rainbow of colors in a variety of habitats* (show image of the 5 different colors of bell peppers or show real peppers). *Fruits and vegetables come in different colors and contain different types of vitamins, minerals and other nutrients.*

Fruits and vegetables have phytonutrients. Phytonutrient (or phytochemical) is the name given to substances found naturally in plants that protect the plant; they also have health benefits for people. Say it with me: Phytonutrient. Repeat. Help students remember the new vocabulary word by breaking the word apart and adding actions: phyto = plant (wave your arms out to the slide like leaves on a plant) and nutrient = things that are healthy for us which help us fight off disease and sickness (flex your arms to show your muscles or fist pump). Another way to demonstrate this is to make boxing fists and say "fight-o-nutrients."

Explore (cont'd)

There are thousands of phytonutrients. Some of these phytonutrients give the plant it's color; they make carrots orange and tomatoes red, for example.

Different phytonutrients protect our bodies in different ways. They are good for our eyes, heart, brain, stomach, skin, our immune system – and more! Phytonutrients help protect us from sickness and disease. We say "Eat a rainbow of fruits and vegetables" because we need to eat fruits and vegetables of many different colors to get the phytonutrients our body needs to stay healthy.

Give each of the 5 groups a different colored sheet of paper: red, orange, purple, green and white. (For the sake of this activity, yellow produce is combined with orange.)

Ask each group to name different fruits and vegetables of that color. Have them discuss if they've tried the fruit or vegetable before and how they like to eat it. If students struggle to name fruits and vegetables of that color, give each group the appropriate fruit and vegetable color card included in the lesson.

After a couple of minutes, ask each group to share with the class 2 fruits or vegetables of that color. *When we eat a rainbow of colors, our body takes in a rainbow (a variety) of nutrients.*

Have students return to their desks. This would be a good time to have students wash hands or share hand sanitizer with students.

In preparation for the tasting, show students the image of the red and green pepper growing. Ask if students think these peppers are the same kind of pepper or different. Then explain that they are the same kind of pepper. *A red pepper starts out green, and with lots of sun and some time, it fully ripens and turns red. Yellow and orange peppers also start green and change to yellow or orange overtime as they ripen. Peppers become sweeter as they ripen. Red peppers are sweeter than green peppers. Yellow and orange peppers are also sweeter than green peppers.*

Hold up a fresh bell pepper and point to the stem of the pepper and ask students, *what plant part is this?* Identify the stem in the image as well, explaining to students how the stem connects the pepper to the plant. Ask, *what do you think is inside the pepper?* Consider cutting the bell pepper in class to show students the hollow inside with seeds. *We can eat all sides of the pepper after we remove the seeds and the stem.*

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").

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 (see, touch, smell, hear) while they wait until the entire class is ready to taste the peppers together.

Explore (cont'd)

For our tasting today, we're going to taste a rainbow of peppers; we're going to taste 3 [or 2] different colors of bell peppers, one at a time, and compare their flavors.

Give each student pepper strips in two or three different colors. Offer green peppers and then one or two additional colors of pepper (ex: green and red; or green, yellow and red). Taste one at a time and ask students to describe it. Compare the taste of each color of pepper. *Were some colors sweeter than others?* (Red, yellow or orange peppers are sweeter than green peppers because they are fully ripe.) Explain that bell peppers are not spicy like hot peppers (examples of hot peppers include chili peppers, like jalapeños, or peppers in sriracha or Tabasco sauce).

Optional: Rather than serve bell pepper strips, give students a whole or half mini sweet pepper with or without a dip. Have students look around the room at the different colors of mini peppers.

Reflect

5. Voting Activity: 3 *minutes*

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

As students taste the different peppers, 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.

Program Evaluation:

1. Record the number of students in the class and the number who tasted the sample to measure willingness to try the food.
2. When students vote, record the number of students for each vote: "Like it," "It's okay, "I didn't care for it today."
3. Then ask students, *Was this your first time trying [insert the fruit or vegetable]?* and record the number of students who raise their hands to indicate "yes."

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."

Reflection Questions:

- *Out of the 3 [or 2] colors we tasted, what was your favorite color of pepper?*
- *Did the three [or two] colors of peppers taste the same? Different? Explain.*
- *Name two [red, orange, yellow, green, purple or white] fruits or vegetables.*
- *Why is it important to "Eat the rainbow?"* (because different colors of fruits and veggies have different nutrients for our bodies)
- *What is the nutrient we learned about today that we get from eating colorful fruits and vegetables?* (phytonutrient – demonstrate the actions)
- *What did you like or love about the pepper?*
- *What would you change about the pepper tasting?*

Reflect (cont'd)

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

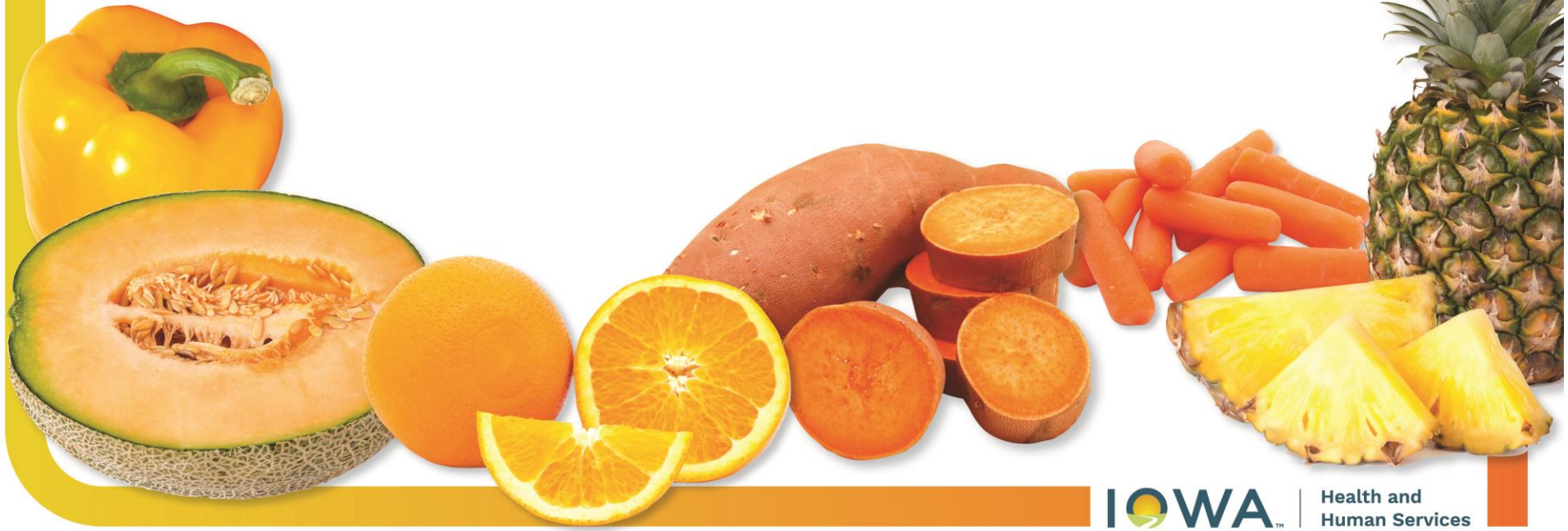
- Ask a student with a raised hand: *if you wanted to try this at home, how might you ask your grown-ups?*
- You might also ask additional questions like, *where could you buy peppers?*

Leave newsletters and stickers with the teachers to pass out.

Pick a Better Snack

Eat Fruits and Veggies

Yellow/Orange



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Pick a Better Snack

Eat Fruits and Veggies

Green

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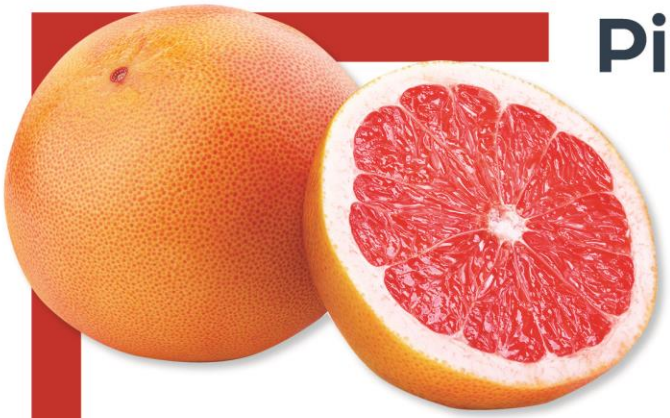
Pick a Better Snack

Eat Fruits and Veggies



Red

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Pick a Better Snack

Eat Fruits and Veggies

Blue/Purple

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Pick a Better Snack

Eat Fruits and Veggies

White

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Bell pepper plants with green and red peppers

Additional Materials

Physical Activity

- "Chile Pepper Pete" book (act out the sports for each pepper on the back page.)
- More ideas for physical activity are available at https://hhs.iowa.gov/pick-better-snack/materials.

What You Need to Know About Peppers

- Peppers can grow in Iowa.
- The variety and stage of ripeness determine the flavor and color of the pepper.
- As bell peppers age, they become sweeter and milder. Bell peppers are often harvested when they are green. Most but not all green peppers will turn yellow, orange or red over time. A red pepper is a mature green pepper that has fully ripened. Orange and yellow peppers are a different variety of pepper, but they also started out green.
- Select a pepper that has firm skin and is heavy for its size. The stem should be fresh and green.
- Take out the seeds before eating.

Facts About Peppers

- Peppers originated in Central and South America.
- California and Florida grow 80% of the bell peppers in the United States.
- Christopher Columbus discovered peppers in the West Indes and thought they were spices. He brought them back to Europe.
- Peppers have two broad categories: (1) hot or chili peppers, and (2) sweet or bell peppers.

Health Connection

- Peppers are high in Vitamin C, which helps fight off germs and heal cuts and wounds (Reinforce with defense shield by crossing arms).
- Peppers are a good source of Vitamin A. (Reinforce healthy eyes with super goggles).

References and Resources

https://spendsmart.extension.iastate.edu/produce-item/peppers/
https://fruitsandveggies.org/fruits-and-veggies/bell-peppers/
https://snaped.fns.usda.gov/seasonal-produce-guide/bell-peppers
https://www.health.harvard.edu/blog/phytonutrients-paint-your-plate-with-the-colors-of-the-rainbow-2019042516501
https://fruitsandveggies.org/stories/what-are-phytochemicals/
https://newsnetwork.mayoclinic.org/discussion/eat-the-rainbow-for-good-health/
https://www.youtube.com/watch?v=jHZxzQyiezw&list=PLsfcjTQBxPDHUIPCjwyIVkwpwV6iCk7Zy&index=5 – Cutting a bell pepper PABS social video (cutting with a sharp knife like this is for adults only and could be done with a smaller knife; students could cut peppers with a child knife)
https://www.youtube.com/watch?v=_zCQj8nwZGs – PABS promotion video with 3 snack ideas, including mini peppers.
Fhttps://www.youtube.com/watch?v=1u5HOURq7kQ – Fun Eat a Rainbow song video

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IOWA Health and Human Services

Oranges/Clementines

GRADE 2-3

Month: March
Time Required: 30 minutes
Alternative Tastings: Grapefruit, Blood Orange, Lemon/Lime

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 vitamin C as contained in oranges.
- ❑ Students will be able to describe the difference of fiber content in a fresh orange vs orange juice.

Materials

- ❑ Oranges or clementines
- ❑ Napkins or paper plates
- ❑ Citrus press or juicer (If a citrus press or juicer is not available, a fork may be used)
- ❑ Oranges for juicing
- ❑ Knife and cutting board
- ❑ Paper towels and moist towelettes for clean-up (consider giving one to each student to wipe their hands after tasting)
- ❑ Clear, plastic glass or food storage container

Preparation

- ❑ If serving oranges, wash and pre-cut into 1/8ths (or cut during the lesson if time permits) and store in food storage container or bag. May serve a whole or half clementine if preferred.
- ❑ Send teachers the link for the video you plan to show in class prior to the lesson.

Standards Connection

This lesson supports the following Iowa Core standards.

Health Education
Standards 1, 2, 3, 4, 5, 6, 7, 8

Science
Second grade –2-LS4-1.
LS4.D: 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: Biodiversity (2nd) and life cycles of plants (3rd)

Recommended Books

"An Orange in January" by Dianna Hutts Aston
"Nothing Rhymes With Orange" By Adam Rex
"Oranges on Golden Mountain" by Elizabeth Partridge

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.

Program Evaluation:

1. Ask students: *Since the last time I visited, who asked their grown-ups to have [insert name of fruit or vegetable tasted last month] at home?* Consider having students put their heads down and then raise their hands so they aren't influenced by the class.
2. Record the number of students who raised their hands.

2. Engage Activity: 4 *minutes*

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

Gather students in a large circle.

Today, we're going to learn about and taste a fruit that fights off sickness. But first I want to know, who takes care of you when you are sick? It might be grandparents, aunts/uncles, neighbors, parents, siblings, friends, doctors, nurses. Think of someone in your head, and stand up when I call that person… One by one, share examples. Ask several students to share examples of *how* they are taken care of by their grownups or community member(s) as they stand and sit. After you have run through the list, ask *"did we miss anyone?"* to see if students have any additions.

Thank you all for sharing. Isn't it nice to know we have friends and family who help take care of us!

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.

Today, we are going to learn about and taste oranges (or clementines). Show the photo of the orange tree. *Oranges grow on trees in clusters, meaning they grow very close to each other on the tree. Many orange trees are grown together in something called an orchard. Orange trees are very fragrant, meaning they have a strong, sweet smell in full bloom because the leaf, flower and fruit all grow at the same time. We are going to watch a video to learn more about where and how oranges grow*. Play the video: ORANGE - How Does it Grow? (Stop video at 3:06*) Now that we know more about how oranges grow, let's take a few minutes to stretch our bodies and get ready to continue learning about oranges.*

Physical Activity

Let's all stand up and practice balancing like a tall orange tree. Lead students through 'tree pose,' taking deep breaths and balancing on one leg at a time. Grow strong branches up into the air that blow in the wind and get heavy with oranges. Switch legs.

Explore (cont'd)

Yogi Says: Play this game just like Simon Says but with Yoga poses.

1. The nutrition educator will be the Yogi.
2. The other students must do the yoga poses that the Yogi tells them to do if the instruction starts with "Yogi says." If the Yogi doesn't use "Yogi says," then players do not do the pose.
3. Play for several rounds and consider starting round 1 at a slow pace and speeding up after each subsequent round.

(source: Marilynn Wei, MD, JD, Harvard Medical School)

Below are some examples of yoga poses to try:

- Frog Pose - Squat with feet wide apart, and place hands on the ground between the knees.
- Star Pose - Stand with feet wide apart and arms stretched out to the sides, forming a big "X" shape
- Chair Pose – Stand with feet together, bend knees as if sitting in an invisible chair, and raise arms overhead
- Crescent Moon Pose – Stand tall, raise arms overhead, and gently bend to one side
- Triangle Pose – Stand with feet wide apart, stretch one rm down to the shin or ankle, and the other arm straight up, forming a triangle shape.
- Forward Bend - Stand tall, with arms overhead then bend forward at the hips, reaching for the toes
- Warrior 1 Pose - Step one foor forwards into a lunge, back foot turned slightly out, and arms raised over head
- Windmill Pose – Stand with feet wide, arms out, and twist to touch the opposite hand to foot, then switch sides

Other yoga poses for this activity can be found at https://namastekid.com/tool-type/kids-yoga-poses/

Have students quietly sit back down at their desks. Consider doing a waterfall, where students take a deep breath, put their arms in the air and bring them down as they sit back down making a swoosh sound.

You all shared how our friends and family members help take care of us when we're sick, did you know that so do fruits like oranges? Oranges contain vitamin C. Note vocabulary word: vitamin C. Define, write on the board and repeat "vitamin C." *Vitamins, like vitamin C, help your bodies fight off sickness and keep you feeling healthy.* Cross your forearms out in front and make an "X" for a defense shield and have students copy this motion.

Oranges have other nutrients that help keep you healthy. They provide phytonutrients – remember we learned about phytonutrients last month? Write the word "phytonutrient" on the board next to the word "vitamin C." *Phytonutrients are substances in plants, like fruits and vegetables, that protect our bodies. Think of this word like "fight-o-nutrients*." Put your arms out in front of you and pretend to punch the air. Have students copy this motion. *Oranges give your bodies phytonutrients that help "fight" sickness.*

Explore (cont'd)

Oranges also have fiber. Write the word "fiber" on the board. *Fiber is good for you. It helps you feel full, (reinforce this by rubbing you're your stomach and have students copy this motion) helps your digestion and is good for your heart*. Tap on your heart and have students copy this motion. *I'm going to show you the fiber in an orange today.*

Whole fruit, like an orange, gives you more nutrition than 100% juice. You get more fiber when you eat an orange than when you drink 100% orange juice. (Educators, both whole fruit and 100% juice count as a fruit serving. Whole fruit is fruit that is fresh, canned, frozen or dried. Beverages with less than 100% fruit juice do not count as a fruit serving.)

Demonstrate the fiber in whole fruit compared to 100% juice by juicing an orange. Before you begin, gently roll the orange back and forth on a hard surface 10-15 times to help loosen the juice inside. This will make the juicing process easier and will allow for more juice to be extracted from the orange. Cut an orange(s) in half horizontally (around its "equator") and squeeze with your hand or use a citrus press, juicer or fork to extract the juice. (See video tutorial link on how to use a fork to juice an orange in the resources section on the Additional Materials page at the end of the lesson). Show students the juice in a clear glass. Then show them the remaining orange half. Explain*, the juice is mostly clear* (there may be some pulp if not strained), *while the orange half still has the fleshy orange bits still inside. While the juice and the orange both have vitamin C and phytonutrients, the whole orange still has a lot of pieces of fruit left that we could eat. This is where the fiber is. You can see that there is more fiber in the whole orange than in the juice.*

Optional: If a fiber demo in class is not feasible, consider making a video of this fiber demo at home or at work, then sharing the link with teachers ahead of time to show the students in class.

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").

Be sure to review your brave tasting rules (for example, don't yuck my yum, we all try together, etc.). as you pass out samples of the orange. Ask students to use their senses (see, touch, smell, hear) while they wait until the entire class is ready to taste the oranges together.

Pass out samples of the orange using option 1 or option 2.

Option 1: Cut the orange into 8 sections with the skin on (2 pieces per student) and have the students bite into it and hold it in their mouths to make "orange smiles."

Option 2: Give each student a whole clementine or cut clementines in half horizontally through the center (around its "equator") and show students how to push out the fruit by pressing with their thumbs on the skin at the bottom of the fruit. If giving students a whole clementine, have students break apart the segments after peeling it and count them. With half a clementine cut horizontally, students can count the segments before eating as well.

Explore (cont'd)

Ask the students to share other creative ways to eat on orange (ex: fruit salad, smoothie, squeezed into juice, rolled up in a spinach or lettuce leaf to make an "orange slice taco").

Reflect

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

As students taste the orange, 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.

Program Evaluation:

1. Record the number of students in the class and the number who tasted the sample to measure willingness to try the food.
2. When students vote, record the number of students for each vote: "Like it," "It's okay, "I didn't care for it today."
3. Then ask students, *Was this your first time trying [insert the fruit or vegetable]?* and record the number of students who raise their hands to indicate "yes."

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:

- *What did you like or love about the orange?* Select a couple students to share.
- *What are other ways you could eat an orange?* Select a couple students to share.
- Using choral response
  - *Where do oranges grow?* (on trees)
  - *What nutrients are inside oranges that keeps us healthy? (vitamin C, fiber, phytonutrients)* Consider showing the motions that were taught in class for each nutrient to help students recall them.
  - *What has more fiber – a whole orange or 100% orange juice? (a whole orange)*

Asking Discussion:

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

Leave newsletters and stickers with the teachers to pass out.

Orange Tree

Additional Materials

Physical Activity Map Activity: Look at a Map of the U.S. and identify the main citrus producing states: Florida, California, Arizona and Texas. Count how many states away from Iowa each state is and perform that many repetitions of each exercise (e.g., Florida is six states away from Iowa, so do six jumping jacks). Exercise ideas include toe touches, jump in place, march in place, touch opposite knee to elbow, and squats. Repeat with different exercises for each state.

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

What You Need to Know About Oranges/Clementines

- Citrus fruits like oranges grow in a topical or subtropical environment. Citrus is an important industry in Florida, California, Arizona and Texas. In the U.S., Florida produces the most oranges and grapefruit. California produces the most lemons and tangerines.
- The complete citrus fruits list is a long one and includes oranges, lemons, limes, mandarins, clementines, tangerines, grapefruits, kumquats, minneola tangelos, pomelos, oroblancos, and uglis.
- Unlike many fruits, citrus does not ripen after it has been picked from the tree.
- The United States ranks third in citrus production worldwide.
- Orange trees are the most common fruit tree in the world.
- Navels and Valencia are the most popular oranges in California.
- Clementines are tiny versions of regular oranges. Mandarin oranges are sweeter and are often canned. If they are canned in syrup they have added sugar.

Facts About Oranges/Clementines

- About 90% of Florida's citrus fruit is produced into orange and grapefruit juice. Most oranges grown in California are sold as whole fruit.
- Orange is the 3rd most popular flavor worldwide after chocolate and vanilla.
- The orange is a cross between a pomelo and a mandarin.

Health Connection

- Excellent source of Vitamin C, to heal our wounds and keeps us healthy (reinforce by crossing arms in an "X" for our defense shield)
- Good source of folate which is needed to grow and develop. (Stand up tall to show you are growing and point to your head to show you are getting smart!)
- Good source of fiber, to keep us full longer and help with digestion (reinforce by rubbing stomach)

References and Resources

https://www.floridacitrus.org/
https://snaped.fns.usda.gov/seasonal-produce-guide/oranges
https://www.nutritionletter.tufts.edu/general-nutrition/oranges-vs-orange-juice-which-is-better-for-you/
https://fruitsandveggies.org/blog/top-10-ways-to-enjoy-oranges/ – Different ways to try oranges
https://youtu.be/k6d9sDWFnHo?si=2NZTedg3zDsYwGt3 – How to juice an orange with a fork

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IOWA Health and Human Services

Asparagus

GRADE 2-3

Month: April
Time Required: 30 minutes
Alternative Tastings: Celery, Rhubarb

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 asparagus as the stem of a plant.
- ❑ Students will be able to define "local" and compare food miles of fruits and vegetables.

Standards Connection

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

Materials

- ❑ Straw and cup/bottle of water
- ❑ 2+ copies of Food Miles Activity Cards (attached: need 1 card per student)
- ❑ Tape, magnets or items to place cards on board for activity
- ❑ Picture of asparagus plant
- ❑ Asparagus (one stalk per student)
- ❑ Tasting supplies (plates, napkins, ranch, etc.)
- ❑ Device to play music
- ❑ **Optional:** celery plant in color dyed water

Optional: If cooking asparagus:
- ❑ Cleaning supplies
- ❑ Electric skillet, spatula
- ❑ Power strip (with long cord)
- ❑ Olive oil, salt/pepper
- ❑ Tote or way to transport skillet between classrooms

Lesson Checklist

- ❑ Physical Activity
- ❑ Tasting
- ❑ Voting
- ❑ "Asking" Discussion
- ❑ Newsletters, Stickers
- ❑ Science connection: Plant diversity (2nd) & climate (3rd)

Preparation

- ❑ Prepare tasting by washing asparagus stalks.
  - Portion asparagus by classroom (1 stalk per student); wrap bottom of bundle with wet paper towel and place in food storage bag (one bag per classroom).
  - Add olive oil and salt and pepper to the bag if you plan to cook it.
- ❑ Print and prepare 2+ copies of attached Food Miles Activity cards. Recommend laminating them for longer use across classrooms. Have magnets or tape ready to place cards on board for matching activity.
- ❑ Optional: To demonstrate water transport via the stem, place celery stalk or plant in glass of water with 1-2 drops of red or blue food coloring the day before.

Recommended Books

"The Vegetables We Eat" by Gail Gibbons

"The Mighty Asparagus" by Vladimir Radunsky

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.

It is optional to cook the asparagus but if you plan to sauté it, you may want to preheat your electric skillet and alert students of the hot skillet. Preheat to medium, depending on the skillet.

Program Evaluation:

1. Ask students: *Since the last time I visited, who asked their grown-ups to have [insert name of fruit or vegetable tasted last month] at home?* Consider having students put their heads down and then raise their hands so they aren't influenced by the class.
2. Record the number of students who raised their hands.

2. Engage Activity: *6 minutes*

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

Gather students in a large circle. *In our town of (*community name*), there are lots of places nearby that we visit by car, by bus, by bike, or by walking.* Educator can share a personal example of a place they like to visit and how they get there.

Think-Pair-Share: *What are some places you like to visit in your neighborhood or town? Do you go to your local library, park, gas station, school, splash pad, etc.?*

- *Think to yourself quietly.* Have students turn to a partner and share a favorite local place.
- After a couple minutes, bring the class back together and select students to share out. The educator can get students' attention with a special word (perhaps "asparagus" or a clap back). If you use "pick-a-stick," this is a good way to randomly select students to share.
- Ask students how they get to their favorite places as they share aloud.

Thank students for sharing and introduce a new vocabulary word: **local**. Write "local" on the board and repeat together. *All of your favorite places are called "local" because they're close to where you live. For example, the park near to your house would be called your "local park."* Cite places that students mentioned and explain how they are local.

*We can also eat **local food**, meaning food that grows in gardens or farms, close to where we live. Can you think of any foods that are grown locally?* Call on a couple students to share ideas.

Optional: Read "The Vegetables We Eat" by Gail Gibbons, which talks about vegetables and parts of the plant, or another recommended book.

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.

Our tasting today is a vegetable called asparagus. Asparagus can be ***local****, because it can grow right here in Iowa. Iowa's climate (typical weather) is just right for growing asparagus, and it is often harvested in the spring.* Show a picture of an asparagus plant included in the lesson. Then play the video that talks about the different parts of the plant: roots, stems, and leaves. https://www.youtube.com/watch?v=cEX3x4-dQJI (2:28) Ask the class what part of the plant Asparagus is. *Asparagus is a stem that moves nutrients from the roots throughout the rest of the plant.*

Compare asparagus to a straw. *When you use a straw, your drink moves from the glass up through the bottom hole of straw to the top opening of the straw to your mouth just like how a stem moves water from the roots up to the top of the plant to the leaves or flowers.* Demonstrate this by placing a straw in a glass or bottle of water and taking a drink to show water moves up to your mouth. Another option could be to ask a student volunteer to demonstrate.

Optional: Another way to demonstrate water and nutrient transport via the stem is to place a celery plant in a glass of water with colored dye. (Example images at end of lesson.)

1. Slice a thin layer off bottom of celery stalk. (This allows water to better move through stem.)
2. Place celery plant or stalk into a glass of water that has red or blue food coloring. (Gel food coloring is recommended as it is more concentrated and will make the dyed water more distinguishable.)
3. Set it out 24 hours in advance to allow time for the dyed water to move through the plant, slightly changing the color of the stem and leaves at top of plant.

Show the students the celery stalk and compare to one that was not placed in dyed water. If you cut a small portion off the top of one of the stalks, colored droplets should appear showing how the water moved up through the stem, via the capillaries (or xylem).

If serving raw asparagus, you can explain to the students they will get to look at an asparagus soon during the tasting.

If you are cooking the asparagus, show the bag of prepared asparagus stems and explain how you'll be cooking them. Before you add the asparagus to the preheated electric skillet, ask students to listen very carefully for the "sizzle" noises. Add the asparagus to the skillet. Leave uncovered. Stir occasionally. Cook for 8 minutes or until tender.

Explore, cont'd

Physical Activity: Food Miles Activity

While the asparagus is cooking, gather students in a large circle for a food miles game.

- Pass out a food card to each student. (Be sure to pass out cards based on # of students so there are two of each card distributed. If there is an odd number, then you or the classroom teacher could be the other match.)
- On the board, draw a chart with one column labeled "Local" and the other column labeled "Not Local".
- With music playing, students will move around the room doing a designated physical activity (ex: walk, hop, high-knee touches, tip-toe, etc.)
- When the music stops, instruct them on how to find a partner.

Round 1: Walking - Play the music and instruct students to walk around the room.

- When the music stops, ask them to *Find someone with the same fruit or vegetable as shown on your card. Discuss with partner if you think it is grown locally in Iowa or outside of Iowa.* (Hint the answer is on the back of card.)

Round 2: Hopping - Play the music and instruct them to hop around the room.

- When the music stops ask them to find someone with a fruit or vegetable that is grown in a different location than yours. *If your item grows locally in Iowa, you need to match with someone whose food item grows outside of Iowa, and if you have a food that grows in another state, you need to find someone whose food item grows in Iowa.*
- There will be fewer nonlocal foods, so it's okay if they form in groups of 3-4 people for this one. Have students explain to their partner(s) how far away their food grows if it is not local.

Bring the group back together and ask for those with a local food to raise their hands. Attach one copy of each local food card onto board under the “Local” column. Then ask the students to share a food not local to Iowa and put it in the “Not Local” column. Write down the number of miles away from Iowa it is grown next to it on board.

To draw attention to the difference in distance foods are grown, each student will do a physical activity you instruct them to hold; the difference will be how long they hold that pose or exercise based on how far away their food item grows from Iowa.

- Pick a pose/exercise. Ideas could include a standing squat, plank position or balance on one foot. Depending on which food they had and where it was grown will determine how long they hold the pose.
  - Local food = 5 seconds; Non-local foods is # of miles/100 = # of seconds
- *If you had a local food to Iowa, hold the pose for 5 seconds. For non-local foods, you will hold it longer. Orange for 10 seconds, Lemon for 15 seconds, Banana for 30 seconds, and Pineapple for 40 seconds.*
- Encourage the students who are done early to cheer on their classmates as they finish the exercise.
- *It sure takes a lot more effort to get foods to Iowa that are grown far away, just like your effort with the physical activity. There are lots of benefits to growing fruits and vegetables in Iowa when we can, to make them easier to get and not have to travel so far.*

Explore (cont'd)

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 to explore asparagus.

Choose to offer the tasting raw or cooked.

- Raw tasting: With a raw spear, invite the students to snap off the bottom of the asparagus spear and encourage them to look closely at the bottom so they can see the little holes that carry water and nutrients to the plant. (This is a great way to use their sense of sight and hearing.)
    - Have students try both the tip of asparagus (the crown) and the spear (the stalk), OR if you are offering it with a dipping sauce, they can pretend their asparagus is a paintbrush and dip the tip into the sauce like they were going to paint with it. You can ask them what differences they notice from tasting the tip versus the spear.
- Cooked tasting: Place cooked asparagus on plate or napkin and distribute to each student. If they were prepared as cut sections, try to offer each student a piece that has the tip of the asparagus to compare flavors and textures of different parts of the asparagus plant.

Reflect

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

As students taste the asparagus, 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.

<u>Program Evaluation:</u>

1. Record the number of students in the class and the number who tasted the sample to measure willingness to try the food.
2. When students vote, record the number of students for each vote: "Like it," "It's okay, "I didn't care for it today."
3. Then ask students, *Was this your first time trying [insert the fruit or vegetable]?* and record the number of students who raise their hands to indicate "yes."

Reflect (cont'd)

6. Reflection: *5 minutes*

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

Reflection questions:

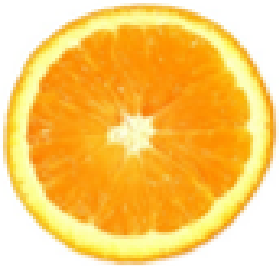
- *Asparagus is what part of a plant?* (stem)
- *How does the stem help the plant?* (it moves water and nutrients from the soil up from the roots to the leaves and holds the plant in the ground)
- *What does local mean?* (close to where you live)
- *Why does asparagus grow well in Iowa? (climate and soil)*
- *Name a fruit or vegetable that is local to us because it grows in Iowa.* (From the Food Miles Activity: asparagus, broccoli, watermelon, apple, carrot, cabbage, beet, green bean. Students may respond with other local produce as well.)
- *Name a fruit or vegetable that is not local to us because it cannot grow in Iowa.* (From the Food Miles Activity: lemon, oranges, pineapple, banana. Students may respond with other local produce as well.)
- *What is something else you remember about asparagus?*

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

- 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 asparagus?*

Leave newsletters and stickers with the teacher to pass out.

Food Miles Activity Cards: Cut along the solid lines and fold along the dotted lines to make 12 Food Miles Cards, each with a front and back. Consider laminating them to better withstand repeated use.

Asparagus 	Local to Iowa	**Banana** 	**Not Local** Bananas grow in Costa Rica which is 3,000 miles away from Iowa.
Apple 	Local to Iowa	**Orange** 	**Not Local** Oranges grow in Florida which is 1,000 miles away from Iowa.
Cabbage 	Local to Iowa	**Pineapple** 	**Not Local** Pineapples grow in Hawaii which is 4,000 miles away from Iowa.

Broccoli 	Local to Iowa	**Watermelon** 	Local to Iowa
Carrot 	Local to Iowa	**Lemon** 	**Not Local** Lemons grow in Arizona which is 1,500 miles away from Iowa.
Beet 	Local to Iowa	**Green Bean** 	Local to Iowa

Asparagus plant

Celery stalk placed in cup of water with blue dye. Note the top of stalk on left is turning blue and some of the leaves are blue at the tips.

This image shows what it may look like if you cut one of the celery stalks off towards top of stem. The blue dyed water appears in the capillaries or tiny tubes that span the length of stem, known as xylem.

Additional Materials

Physical Activity

"Exercise Your Name" (page 12) in "Brain Breaks" (consider spelling "local" or "asparagus")
More ideas for physical activity are available at https://hhs.iowa.gov/pick-better-snack/materials.

What You Need to Know About Asparagus

- Asparagus grows in Iowa in the spring.
- Asparagus is a perennial plant (meaning it grows back year after year) member of the lily family.
- It is a perennial plant that can grow for 15 years and can be harvested after three years.
- After two to three months of harvesting, the plant looks like a fern and then goes to a dormant stage.
- Choose firm stalks with tight tops ("tips" or "crowns"), avoiding wilted stalks.
- Thinner stalks tend to be tender and sweeter compared to thicker stalks.
- Break or cut off the woody bottom end of the stalk and eat the rest as it is more tender. The stalk will usually snap at the natural break between the woody end and the rest of the stalk.

Facts About Asparagus

- Asparagus is believed to have originated in Greece 2,500 years ago.
- The name asparagus is from a Greek word meaning short or sprout.
- A spear can grow 10 inches in 24 hours (demonstrate with a ruler).
- There are green, white and purple varieties. The green variety is the most popular.
- In Iowa, it is common to find asparagus growing in roadside ditches which can be a local treasure when found.

Health Connection

- Good source of Vitamin C, to keep students healthy and to heal cuts and scrapes (cross arms to reinforce the super defense shield)
- Good source of Vitamin A, to help our eyes, especially our night vision (reinforce with super goggles on the eyes)
- Great source of Fiber, to help you with digestion and to feel full longer. (Reinforce by rubbing stomach)

References and Resources

https://spendsmart.extension.iastate.edu/produce-item/asparagus/
https://snaped.fns.usda.gov/seasonal-produce-guide/asparagus
https://www.chooseiowa.com/asparagus
https://www.youtube.com/watch?v=cEX3x4-dQJI - Parts of a Plant: Roots, Stems, Leaves (2:28)
https://www.youtube.com/watch?v=MJz2ZLm852s - Asparagus, How Does it Grow video (8:25)
https://www.youtube.com/watch?v=YNjSPkKYG6k - Time Lapse Video of Asparagus growing (0:31)

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

IOWA Health and Human Services

Strawberry

GRADE 2-3

Month: May
Time Required: 30 minutes
Alternative Tastings: Blueberry, Raspberry, Blackberry

Lesson Goals

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

Lesson Objectives

- ❑ Students will be able to define perennial.
- ❑ Students will be able to explain the function of strawberry runners.

Materials

- ❑ Image of labeled PABS tastings (attached)
- ❑ Printed Strawberry Runner Activity cards, enough for each student to have one card (attached)
- ❑ 2 balls of yarn or 2 very long strings

Tasting option 1:

- ❑ Fresh strawberries, 1 per student

Tasting option 2: Strawberry Graham Slam

- ❑ Graham cracker squares
- ❑ Yogurt
- ❑ Strawberry slices
- ❑ Napkins
- ❑ Spoon to scoop and spread yogurt on crackers

Preparation

- ❑ Wash the strawberries before the lesson
- ❑ If serving Strawberry Graham Slam, cut strawberries into slices and store in a food storage container.
- ❑ Print the images of PABS fruits and vegetables included in the lesson or place the images on a slide to project in class.
- ❑ Print Strawberry Runner Activity cards; every student will need one card (not all 3); consider laminating for re-use from class to class
- ❑ Share this link with the teacher if needed to show the simple diagram at the bottom of this webpage

Recommended Books

"From Seed to Plant" by Gail Gibbons
"From Seed to Strawberry" by Mari Schuh

Standards Connection

This lesson supports the following Iowa Core standards.

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

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

Third Grade – 3-LS1-1
LS1.B Growth and development of organisms

Lesson Checklist

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

Engage

1. Introduction: *2 minutes*

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

Program Evaluation:

1. Ask students: *Since the last time I visited, who asked their grown-ups to have [insert name of fruit or vegetable tasted last month] at home?* Consider having students put their heads down and then raise their hands so they aren't influenced by the class.
2. Record the number of students who raised their hands.

2. Engage Activity: *8 minutes*

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

This year in Pick a Better Snack, we've learned about and tasted many fruits and vegetables. You've been brave tasters and practiced trying foods, like…(Using the images included in the lesson on the classroom projector or show the paper of printed images, review the names of all 7-8 PABS tastings so far as a class).

Physical Activity

Part 1: *Let's do an activity to see how our taste buds have grown and changed this year. I'm going to say a sentence and when you agree, you will show us by doing five jumps, then freeze* (if you don't want to have students jump, use any physical activity of choice). *If you do not agree, do not jump. For example, jump if you agree: I am your class's Pick a Better Snack teacher* (students jump). *Great! Ok, jump if you agree…*

- *I tasted different fruits and vegetables this year.*
- *I liked a fruit or vegetable that I didn't like before.*
- *I learned something new about how fruits and vegetables grow.*
- *I had fun exploring and tasting fruits and vegetables with my friends.*
- *I enjoyed using my 5 senses to explore fruits and vegetables.*

Part 2: Have students respond to their favorite fruits and vegetables by performing an activity (ex: jump five times) Repeat the fruit and vegetable names for two more rounds with a different physical activity.

1. Showing images of vegetables, ask *Think about the different vegetables we tasted during Pick a Better Snack this year. Which ones were your favorites? When I say the name of your favorite vegetable…(choose any physical activity, for example: do 5 jumping jacks, jog in place for 8 seconds, etc.)* Note, you can encourage them if they have multiple favorites or liked the ones named, they can do the physical activity too.
    - Jicama
    - Broccoli/Cauliflower
    - Peppers
    - Asparagus

Engage (cont'd)

2. *Excellent! Let's see what our favorite fruits are next.* Showing images of fruit, ask *What were your favorite fruits we tasted during Pick a Better Snack this year? When I say the name of your favorite fruit…(choose any physical activity, for example: do 5 jumping jacks, jog in place for 8 seconds, etc.)* Note, you can encourage them if they have multiple favorites or liked the ones named, they can do the physical activity too.
   - *Cantaloupe*
   - *Cranberries*
   - *Mango*
   - *Oranges/Clementines*

Wonderful! Thank you for sharing your favorite foods from this year. Look at these foods again, and think in your head, is there a fruit or vegetable that your taste buds started liking this year? Educator can share a personal example of changing food preferences. *When I say "go," please turn to a partner next to you to share. Go.*

- Give students a couple of minutes to discuss, making sure both partners have time to talk.
- Use a 5-4-3-2-1-0 count to get students' attention and randomly select a couple of students to share (pick-a-stick would work well for this).
- *Our favorite foods can change as we grow and our taste buds change. Just like you will keep growing for many years, strawberry plants can grow for many years!*

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.

Today we are tasting strawberries. Strawberries are a ***perennial*** *plant.* Define, write out, and repeat this new vocabulary word: **perennial**. *Perennial plants grow back year after year from the same plant. Once planted in the ground, a perennial plant, like a strawberry plant, does not die in the cold winter and can grow for many years. Cranberries and asparagus, two foods we learned about this year, are also perennial plants.*

Let's look at a picture of a strawberry plant. Show the simple diagram at the bottom of this webpage. Label and point out plant parts on the diagram (roots, stems, leaves, flowers, fruits). Share, *strawberries have a special plant part called a* ***runner****.* Label, write out, and repeat this new vocabulary word: runner (have students run in place for kinesthetic connection). *A runner is a stem that can grow into a new strawberry plant. As a whole class, we're going to act out how this process works.*

Explore (cont'd)

Strawberry Runner Activity

1. Give every student one of three card options: A Plant card, Runner card, or Strawberry card.
2. *Every strawberry plant needs strawberries and runners to grow new plants. If you have a plant card, hold it in the air so that our friends with runner cards and strawberry cards can come to you.* Tell students that there can only be 1 student with a runner card and 1 student with a strawberry card with the student with a plant card, so there will be groups of 3. Showing their cards to others, students will have 1 minute to cluster into groups of three: 1 plant, 1 runner and 1 strawberry (depending on class size, add extra strawberries as needed). Help students find groups when needed.
3. *Great! Now we have* (approximately 6-9 depending on class size) *complete strawberry plants.* The educator will randomly select 2 groups to be "original" strawberry plants. Demonstrate:
   a. *These strawberry plants* (have students with plant card hold it up) *are growing strawberries* (have students hold up strawberry fruit cards) *and runners* (have students with runner card hold up their card). *The runners are going to stretch out and grow into new strawberry plants.*
   b. Give each of the "runners" in these two groups a ball of yarn (or a very long string); instruct them to pass it to a different group. Runners will toss or walk the yarn to another group.
4. Once connected, the "runner" from the new group will pass the yarn to another group, connecting 3 groups total.
5. Repeat until all groups are touching the yarn. *Now, all of our strawberry plants are connected by runners. Once a runner has grown into a new plant, it can start growing strawberries. If you're holding a strawberry, put it up in the air so we can see your plant is growing.*
6. Consider repeating if time allows, narrating and answering questions for clarification.

Transition to the tasting: instruct students to deposit their cards and yarn in a specific location, wash hands or get hand sanitizer, and pick up a napkin before returning to their desks.

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").

Choose one of the following ways to taste strawberries.

Option 1: Give students a fresh strawberry. Explain to students, *we're going to use our 5 senses to observe the fruit today before we taste it.* Lead students through 5 senses observation.

- **Touch:** Students can close their eyes and feel the strawberry with their fingers. *What does it feel like? Bumpy, smooth, hard or soft? How does the bottom feel different from the top?*

(continued on next page)

Explore (cont'd)

- **See:** Have students carefully examine the strawberry, looking very closely at the outside and the inside. Can they see where the strawberry was once attached to the plant? What details do they see?
    - Observe the seeds! *Strawberry seeds grow on the outside of the fruit. Most other fruits grow their seeds on the inside. Can you count how many seeds are on the outside of the strawberry?*
- **Smell:** Have students bring the strawberry to their noses and inhale. Ask them to describe the smell.
- **Taste/Hear:** Everyone should be very quiet to listen for any sounds. Students are invited to taste the strawberry. Demonstrate how students can hold the green top of the strawberry like a handle and prepare to take a bite!

Option 2: Strawberry Graham Slam.* Spread yogurt on a graham cracker square and top with strawberry slices. Prepare the tasting for each student by putting a spoonful of yogurt on the cracker and spread briefly with the back of the spoon. Place a few slices of strawberries on top. Ask the classroom teacher and any associates in the classroom to assist. Select a couple of students to assist if needed. Have helpers preparing the food use hand sanitizer and wear gloves. Another idea is to show a read-aloud video of the selected book, such as this video, and prepare the tasting during the video.

*With multiple ingredients for this option, make sure to check all allergens and not just students with a strawberry allergy.

With either option, you can also show students the Pick a Better Snack Graham Slam video: https://www.youtube.com/watch?v=LfShWWVfqQo (0:15). Encourage students to make the snack at home (check with a grown-up first). Or, if you haven't shown the Pick a Better Snack video with the three snacks (mango salsa, mini sweet peppers and dip, and strawberry graham slam), you could show it now and point out the fruits and vegetables tasted in Pick a Better Snack this year. https://www.youtube.com/watch?v=_zCQj8nwZGs (0:30)

Reflect

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

As students taste the strawberry, 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)

Program Evaluation:

1. Record the number of students in the class and the number who tasted the sample to measure willingness to try the food.
2. When students vote, record the number of students for each vote: "Like it," "It's okay, "I didn't care for it today."
3. Then ask students, *Was this your first time trying [insert the fruit or vegetable]?* and record the number of students who raise their hands to indicate "yes."

6. Reflection: *3 minutes*

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

Choral Response:

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

- *What month is it?* (May)
- *What fruit did we try today?* (Strawberries)
- *What do we call plants that can grow back year after year?* (Perennial)
- *What strawberry plant part makes new strawberry plants?* (Runners) (Consider running in place to help students recall the answer!)

Asking Discussion:

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

- 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 strawberries?*
- *Has anyone ever gone to a strawberry patch to pick their own strawberries?*

Leave newsletters and stickers with the teachers to pass out.

Pick A Better Snack Vegetables

JICAMA

BROCCOLI/ CAULIFLOWER

PEPPERS

ASPARAGUS

Pick A Better Snack Fruits

CRANBERRIES

MANGO

CANTALOUPE

ORANGE/ CLEMENTINE

Strawberries

Plant

Runners

Runners

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 Strawberries

- Strawberries are a fruit; often the first fruit to ripen in the spring.
- Once picked, strawberries don't continue to ripen.
- Strawberries grow in Iowa and are in-season in June.
- Strawberries are a small, low growing perennial (meaning it comes back each year) with "runners" that take root to make new plants.
- After the strawberry plant flowers, bees pollinate the flower to make the fruit. It usually takes 30 days for the flower to develop the fruit, which starts white, then turns red.
- ½ cup of sliced strawberries = 4 large strawberries

Facts About Strawberries and Other Berries

- The seeds - about 200 - are on the outside of the strawberry.
- Strawberry is the most popular berry in the United States.
- The green top on the strawberry is called the "cap" or "hull."
- California grows 83% of the strawberries in the United States.
- The strawberry and raspberry plants are members of the rose family
- Blueberries are known as a superfood for all the antioxidants and nutrients found in them
- Blackberries start red before they ripen to their usual color.

Health Connection

- High in Vitamin C, to fight off germs and heal cuts and wounds (reinforce with defense shield by crossing arms)
- Good source of fiber, to help you with digestion and to help you feel full longer. (Reinforce by rubbing stomach)

References and Resources

https://spendsmart.extension.iastate.edu/produce-item/berries-strawberries-blueberries-raspberries/
https://snaped.fns.usda.gov/seasonal-produce-guide/strawberries
http://www.californiastrawberries.com/health_and_nutrition/whats_in_a_strawberry

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