



HARVEST LESSONS

THIS MONTH'S THEME:
WINTER SQUASH

Lesson Plan



HARVEST LESSONS ARE A FUN WAY FOR K-4 CLASSROOMS TO EXPLORE, TASTE AND LEARN ABOUT EATING MORE FRUITS AND VEGETABLES EVERY DAY.

ACTIVITY SUMMARY

ACTIVITY	GRADE LEVEL	CURRICULUM CONNECTION	TIME
Intro	all	Literacy: speaking, listening Science & Social Studies: evaluating claims to determine whether or not they are true	10 min.
Taste Test	all	Literacy: speaking, listening Math: measurement, graphing/tallying responses	20 min.
#1: Observe, Draw & Discuss Squash	all	Science: classification, observation	15 min.
#2: Explore Squash with All Five Senses	K-2	Science: observation Literacy: vocabulary, adjectives, description	30 min.
#3 All Kinds of Squash Matching Game	all	Science: classification	30 min.
#4 Squash Literature	all	Literacy: listening comprehension	20 min.
#5 Map the History of Squash	3-4	Social Studies: history, geography	20 min.
#6 Create a Squash Recipe	2-4	Science: inquiry Literacy: writing informative/explanatory text	45 min.
#7 Three Sisters Tag	all	Physical Education: movement Social Studies: Native American history	10-20 min.
#8 Sink or Float?	all	Science: inquiry, density	30 min.



INTRODUCTION (10 MINUTES)

TRUE OR FALSE?

Begin with a fun interactive true or false activity. When a statement is true, students will stand up. When they believe a statement is false, they will sit down.

1. Squash, like most orange veggies, has tons of Vitamin A, which is good for your eyes and your skin.

True!

2. There aren't very many ways to cook squash.

False. You can roast it, make soup with it, make cake with it, make bread or biscuits with it, fill ravioli with it, make salads, put it in eggs, etc. Today we will try it (insert taste-test of the day).

3. Squash has lots of Vitamin A, but not very many other vitamins.

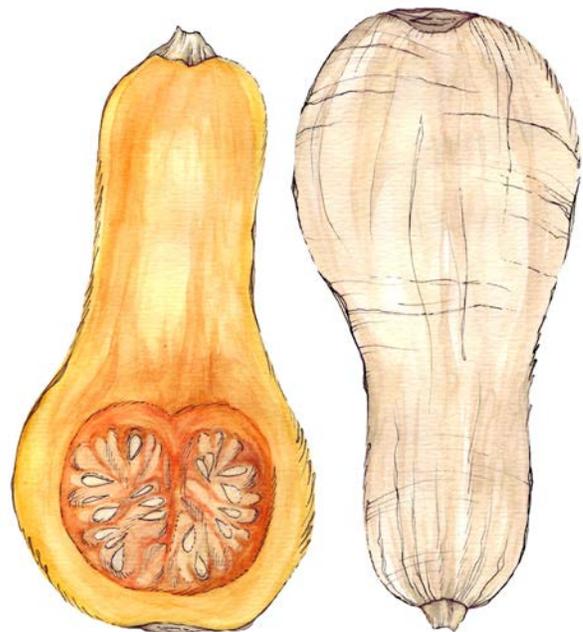
False. It also has lots of Vitamin C and potassium, which prevents muscle cramps.

4. Winter squash is called winter squash because it can be stored in your cellar during the winter for months, or in any cool, dry place. No refrigeration required!

True!

Ask these focusing questions throughout the lesson:

- What is the part of the plant that we eat?
- What color is it?
- How does it help our body?
- Where does it originate?





ACTIVITY #1 (15 MINUTES)

ALL GRADES

OBSERVE, DRAW & DISCUSS WINTER SQUASH

MATERIALS

- Several squashes (you can choose to have students observe different types of winter squashes, or different specimens of the same variety)
- Paper and writing utensils to draw and record observations
- Knife and cutting board (if you'd like to show students the inside of a squash)

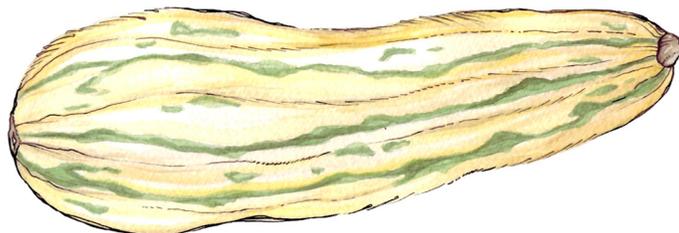
PREPARATION

Arrange the squashes so that all students can see, touch, and smell them. You could put students in groups and give each group a squash, or have students sit in a circle around the squash. Squashes look very different on the inside than they do on the outside, so if possible, cut open a squash so students can see the bright orange flesh and the cavity with the seeds in it.

PROCEDURE

Instruct students to silently observe the squash, and to draw what they see and write down words describing what they see, feel and smell. Encourage them to pass a squash (or more than one) around and touch and smell it. Ask them to think about how the squashes are different from each other if you brought more than one variety, and/or about how the inside and outside of a squash are different if you cut a squash open. Once students have spent time observing the squash, drawing it, and writing about what they see, smell and feel, have them share out what they noticed. Make a class chart with information and descriptive words about the squash. This is a good chance to introduce or review vocabulary, and practice detailed description. Is the outside of the squash smooth or bumpy? Does it smell sweet or sour? What other words could you use to describe the smell? What does it remind you of? After the class has discussed their observations, give students a few minutes to add to their drawing and writing.

Depending on the age and past experience of the students, and the focus of your lesson, you may want to ask students what part of the plant the squash is. Students can guess and explain their thinking. They may figure out that the squash is the fruit, which grows from the pollinated flower and contains the seeds, or you may explain this to them.





ACTIVITY #2 (30 MINUTES)

GRADES K-2

EXPLORE SQUASH WITH ALL FIVE SENSES

In this extended observation of squash, students spend more time observing squash using all five senses. It would most likely take the place of or merge with the previous activity where students observe, draw & discuss. It could be done before or instead of the taste test, since students taste raw squash and plain cooked squash. This activity takes a lot of time to prepare and involves a lot of materials, but is very engaging for younger students.

MATERIALS

- Five or more winter squashes of the same type
- Knife and cutting board
- Baking sheet
- Cooking spray or olive oil
- Vegetable peeler
- Blender or food processor for preparing the cooked squash, roasted squash seeds and raw squash samples (ahead of time, not necessarily at school)
- Clean spoon for each student
- Container for dirty spoons
- Toothpicks
- Two small-medium bowls for holding pureed squash

PREPARATION

Be prepared to spend 1.5 to 2 hours preparing the pureed squash and the other forms of squash for the sensory exploration. Here are detailed instructions:

1. Roast and puree 1-2 of the squash (one squash per 10 kids):

- Halve or quarter each squash.
- Save seeds for roasting.
- Roast squash on a greased baking sheet at 425 F for about 40 minutes, until soft when poked with a fork.
- Let cool until it can be safely handled, about 20 minutes.
- Scoop the squash out of the peel and into a food processor.
- Blend until smooth.
- Refrigerate in an airtight container until lesson.

2. Prepare another two squashes raw:

- Halve squashes
- Leave three halves as-is for touching and seeing
- Peel the other half, and cut up into small chunks for kids to sample raw
- You can save the peel for kids to touch and smell



(activity #2 continued)

3. Roast seeds from squash that were cooked

- Toss with 1-2 T olive oil and 1-2 t salt, bake at 375 for 20 minutes, until brown.

4. Reserve two whole squashes.

On the day of the lesson, arrive about 15 minutes before to set up materials. Set up stations. You can set up stations by sense and have students rotate, or set up stations with a mix of everything and have students stay at one station and go through every sense. If setting up by sense, set up one table for tasting with most of the raw squash and toothpicks, pureed squash and spoons, and roasted seeds. Then set up a table for touching and smelling with pureed squash, the squash half, some of the cut up raw squash, and squash peels. Set up a third table with a squash half and a whole squash for seeing. Set up a fourth table with a squash half and a whole squash for hearing.

If setting up stationary stations rather than rotating ones, make sure each group has pureed squash, roasted seeds, squash peels, raw squash, spoons, toothpicks, and a half or whole squash.

PROCEDURE

Start by asking students what their five senses are (seeing, touching, hearing, smelling, tasting). If needed, give them hints by pointing to the parts of the body that are used for this sense. Tell students that they will be using their five senses to learn more about squash. Model for students how they will go through the stations. Make sure students wash their hands before they start, and remind them not to use spoons or toothpicks more than once.

Ask students to think about how to describe how squash tastes, smells, sounds, looks and feels, and about what it reminds them of while they go through the stations. Tell them they can discuss what they notice with their classmates while they observe. Then, send them off to explore!

If you decide to have students rotate through stations, keep track of time and ring a chime or use another signal to tell students to move to the next station. If students are staying at the same station, walk around listening to their observations, and reminding them to use all five senses. After about 15 minutes of exploration, bring students together to discuss what they noticed as a group. Make a chart with each of the five senses on it, and go through each sense asking what the students discovered. Conclude the activity by asking students to help you clean up (be sure to give specific instructions on how they can help).



ACTIVITY #3 (30 MINUTES)

ALL GRADES

ALL KINDS OF SQUASH MATCHING GAME

MATERIALS

One set of the All Kinds of Squash cards (see appendix).

PREPARATION

Print and cut apart the cards. You may want to laminate them so you can reuse them.

PROCEDURE

This activity is similar to the Brassica Matching Game in the Cabbage & Broccoli Lesson. It's a fun activity to do at morning meeting. After students have done it once or twice, you can start timing it and make it a fun race.

Tell students that there are tons of different varieties, or kinds, of squash. Not only do we make the distinction between summer squash and winter squash, there are many different types of winter squashes. Each kind looks very different from others and also tastes different. They are all the same species of plant however!

Introduce the kinds of squash in the game by using the pictures on the cards, or using actual examples. Then, hand each student or pair of students a card from the matching game, and have them find their match (they need to match the description of the squash with the picture). For kindergarteners, first graders and other students still in the early stages of learning to read, print two copies of the pictures and have students find their matching picture. Or, bring in examples and give some students real squashes and some students pictures and have them find their match.

ACTIVITY #4 (20 MINUTES)

ALL GRADES

READ SQUASH LITERATURE

Here are some books with squash connections:

Carlos and the Squash Plant by Jan Romero Stevens: Carlos works on a farm in New Mexico with his parents. He doesn't like taking baths, and eventually starts growing a squash plant in his ear just like his mother warned he would! This book is about summer squash, and features a recipe for calabacitas, a Mexican dish made with summer squash. However, the book could be tied in to this winter squash lesson if you chose to follow the story with a discussion of the differences between summer and winter squash. The book relates to the origins of this vegetable, three sisters plantings, and its use across cultures.



(activity #4 continued)

Fred the Fish and the Squash that Goes Squish by Duke Christoffersen: Fred the Fish avoids getting eaten by convincing his hungry fish-eating friends of the benefits of eating squash instead!

The Little Squash Seed by Gayla Dowdy Seale: This book tells about the life cycle of squash and marvels at how such a nutritious, bright vegetable comes from a tiny drab seed.

The Pumpkin Book by Gail Gibbons: This engaging, beautifully illustrated nonfiction book describes the life cycle of a pumpkin, the different kinds of pumpkins, as well as the pumpkin's history and uses.

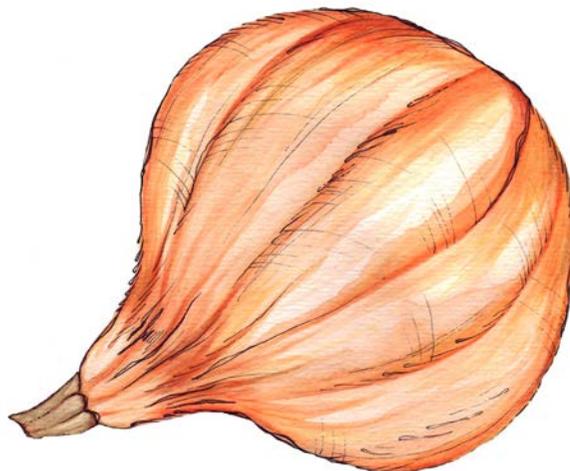
Pumpkin Circle: The Story of a Garden by George Levenson: This rhyming book describes the life cycle of a pumpkin complete with close-up photographs of every stage.

Pumpkins: A Story for a Field by Mary Lyn Ray: This story is about how a man conserves a field from development, saving it for growing pumpkins.

Sophie's Squash by Pat Zietlow Miller: Sophie's mom buys a squash that she becomes attached to - what will she do when it starts to rot? While this book isn't particularly informative when it comes to the nutrition, science & history of squash, it is a fun story where a squash is featured! Students could write their own story featuring a squash after reading it.

Squash (Native Foods of Latin America) by Ines Vaughn: This nonfiction book tells about the origin of squash, the different kinds, and its uses in Latin American cooking. This book is bilingual.

See the Harvest Lesson Activities to Use Again and Again for information and ideas on how to engage students in reading about healthy foods.





ACTIVITY #5 (20 MINUTES)

GRADES 3-4

MAP THE HISTORY OF SQUASH

MATERIALS

- Copy for each student of Harvest Lessons map (see appendix)
- One copy of the Squash Mapping Directions to project, or one copy per student
- Atlas for each student or pair of students
- Colored pencils

PREPARATION

Gather materials.

PROCEDURE

Pass out copies of the Harvest Lessons map to each student. Project or pass out the Squash Mapping Directions. Instruct students to follow the directions to map the history of squash!

SQUASH TIMELINE & MAPPING DIRECTIONS

Squash first grew in Central America, probably in Guatemala or Mexico.

#1: On your map, color Central America in green.

Christopher Columbus and other early explorers found squash when they colonized the Americas and brought it with them back to Europe where it spread and is still grown today.

#2: On your map, color Europe in orange.

There are many different types of squash, some that even started near here! The Waltham Butternut was first grown in Waltham, Massachusetts.

#3: On your map, draw a black star near where Massachusetts is.

Squash is grown all over the world today. China grows the most squash today.

#4: On your map, color China red to highlight where the most squash comes from.

See appendix for world map worksheet.



ACTIVITY #6 (45 MINUTES)

GRADES 2-4

CREATE A SQUASH RECIPE

MATERIALS

- Two or three large butternut squash
- Baking sheet
- Food processor
- Olive oil or cooking spray.
- Ingredients to add to the pureed squash, such as: cinnamon, sour cream or yogurt, butter, maple syrup, raisins, black pepper, cheese
- Sampling spoons – one for each student
- Mixing spoons – one per group per add-in/combination
- Serving spoons for add-ins
- Small bowls for each ingredient and for each student
- Buckets to collect dirty dishes and utensils (there will be lots!)

PREPARATION

This activity takes a while to get ready for, set up and cleanup, but is a lot of fun for students and gets them to really think about what they are tasting.

PROCEDURE

As a whole class, have children share their experiences with fruits and vegetables. Ask the following questions:

- Are there any foods you thought you didn't like, but when you tried it you liked it? (Write student responses on the board.)
- If you don't really like something, what could you do to make it taste better? (Write student responses on the board.)
- Ask student if they know what a recipe is and explain that we will be making a recipe for butternut squash. We will experiment with different ingredients to add to the squash and come up with our own group recipe for butternut squash.

Divide students into groups of three. Pass out squash and utensils. Have them try some plain squash and record (via the [Harvest of the Month online form](#)) if they like it/didn't like it, and how it tasted (sweet, salty, creamy, etc.).

Explain to them that one person in their group is going to come up and get one ingredient to add the squash. They will mix the ingredient with some squash, and then each group member will taste the combination and record whether they like it or didn't like it. Have them fill out their worksheet as a team as they taste each topping. Give 2 to 3 minutes for each ingredient.

*(activity #8 continued)*

When all the ingredients have been tasted, gather the group and tell them they are now going to create one class butternut squash recipe. Choose an adult to test the recipe on -- you could ask the classroom teacher to leave the room until the recipe is complete so he or she is surprised, or you could ask the principal, another teacher, a paraeducator, etc. to sample the recipe when it is finished. Have the children pick 2 to 3 ingredients to add to the butternut squash to make a recipe (rules: it has to taste good; everyone gets to help choose).

Go through the sheet they filled out and find the top 2 to 3 ingredients that everyone liked the best with their butternut squash. Once the recipe is made, have the teacher come back in, or bring in the other adult you have chosen. Blindfold him/her and ask him/her to guess the secret ingredients! Also ask whether he/she likes it!

ACTIVITY #7 (10-20 MINUTES)**ALL GRADES****THREE SISTERS TAG**

Native Americans practiced companion planting in the garden with the "Three Sisters," which are corn, beans and squash. Each plant was a staple in native diets, and paired in planting, they each have their role in the garden.

- Corn provides shade and a stalk for beans to grow up.
- Beans are a legume, and fix nitrogen into the soil.
- Squash has spiky leaves which protect the other plants from animals, and it also keeps moisture in the soil with its leaves.

To play three sisters tag, first talk about the companion planting, and how each plant has a job and supports the others. This is a freeze tag game. Designate someone who is "it." Upon being tagged, students will freeze in the shape of a vegetable. In order to be freed, two other students must link arms around the frozen student and repeat "CORN, BEANS AND SQUASH!"

Depending on the number of students you can designate more than one person to be a tagger. Not all kids may get a chance to be it but remind them now that they know the rules, they can play during recess. Consider passing along these instructions to the school's PE teacher.



ACTIVITY #8 (30 MINUTES)

ALL GRADES

SINK OR FLOAT?

MATERIALS

- Four specimens of four or five different varieties of winter squashes
- Four large buckets or bins filled with water
- Paper and pencil to record your results

You might also want other objects to test -- other food items such as apples or summer squash or items you have around your classroom.

PREPARATION

Gather and set up materials. Set up four different stations for groups to conduct the same experiment. You may want to set this experiment up outside or on a tarp, since some water may spill.

PROCEDURE

Review the directions for the experiment. Also review classroom expectations for using materials safely and respectfully, for working in groups, and for conducting experiments (being exact, accurate, thoughtful, recording what really happens).

CLOSINGS

ACKNOWLEDGEMENTS

The following people contributed to developing this lesson plan: Chloe Powell, Aurora Coon, Cat Buxton and Karen Ganey.

APPENDIX SEE WORKSHEETS THAT FOLLOW

WINTER SQUASH MATCHING GAME *Activity #3*

Students will be given a description of a squash to read, and must match it with pictures of the vegetable on the following page. Cut out each description and pass them out around the classroom.

DELICATA: I am long and thin with a shape almost like a zucchini. I am a light yellow color with orange and dark green stripes. My skin is so thin that you can eat it! So you don't have to peel me. But, I also don't last as long because of my thin skin. My insides are a light orange and I have a mild, sweet flavor.

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

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

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

(winter squash matching game, continued)

BLUE HUBBARD: I am the strongest, longest lasting squash - I have very very thick, bumpy, bluish skin that keeps me from rotting. My skin is SO thick, that you need an axe to cut me open - a knife just won't work. Some people open me up by throwing me off a roof onto hard ground - but even that doesn't always work. It is worth the effort to prepare me because my light orange insides are very sweet and have lots of Vitamin A, which helps your eyes.

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

SWEET DUMPLING: I am light yellow, with orange and green spots and stripes - I almost look like I have polkadots! I am the smallest winter squash. I have the shape of a small bowl. I taste kind of like a sweet potato.

PUMPKIN: You know me! I am the most popular of all the winter squashes. Did you know that there are some pumpkins that are big and tough for carving, and other smaller, sweeter pumpkins called sugar pumpkins that are best for making pies? I am delicious not only in pies and desserts, but also on top of oatmeal, mixed into yogurt and in smoothies. I have tons of Vitamin A, which helps your eyes.

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

(winter squash matching game, continued)



THIS MONTH'S FOOD:

