



Pumpkin Exploration

Goals

Introduce students to pumpkins and how they grow. Use a pumpkin seed activity to practice sorting and counting in 2s, 5s, and 10s.

Curriculum Alignment

Find a list of which Common Core State Standards and NC Essential Standards this lesson plan aligns with on the lesson plan page at www.growing-minds.org.

Materials

Pumpkin Exploration

- 5 local pumpkins per 20 students
- Bowls for seeds
- Knife to cut pumpkin
- Newspaper
- String
- Ruler

Pumpkin Watercolor Painting

- Watercolor paper
- Watercolors, paint brushes, water containers
- Pumpkin templates
- Crayons
- Pumpkin pictures including vines

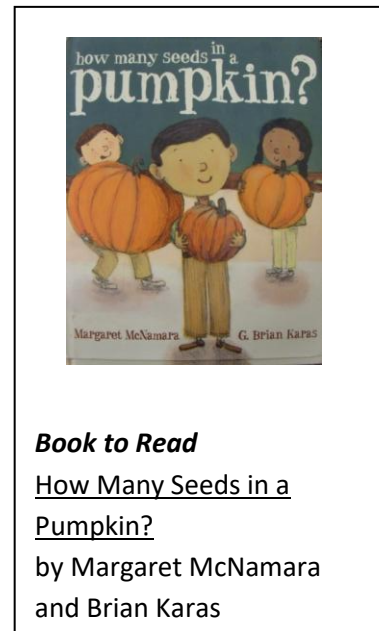
Preparation

For this lesson you will need to get local pumpkins. For the pumpkin watercolor painting use the pumpkin template paper in the lesson plan materials to cut out pumpkin templates for the students from a heavier paper (like cardstock).

Vocabulary

Tendrils: a twisting, threadlike structure by which a twining plant, such as a grape or cucumber, grasps an object or a plant for support

Circumference: the boundary line of a circle, a figure, area, or object



Book to Read

How Many Seeds in a Pumpkin?

by Margaret McNamara
and Brian Karas



Pumpkin Exploration

Activities

Pumpkin Exploration

Read **How Many Seeds in a Pumpkin** by Margaret McNamara. This story teaches math and science concepts while modeling kind behavior. When the main character, Mr. Tiffin brings three pumpkins into class for a math and science lesson, all the children guess how many seeds are inside. Charlie, the smallest kid in class, feels frustrated: "All the best guesses are taken." Then the class opens the pumpkins and counts the seeds. The author introduces the concepts of counting by twos, fives, and tens, and includes pumpkin facts (the more lines on the pumpkin, the more seeds it will have). Charlie ends up with the correct guess and discovers that "small things can have a lot going on inside them." Explain to the students that they will now do the lesson in the book!

Digging In and Counting Seeds!

1. Hold up the pumpkins for the students to see and ask them to predict what the inside of the pumpkins looks like. Are they wet or dry on the inside? Which part of the pumpkin do they think we eat? Using the pumpkin facts from How Many Seeds in a Pumpkin ask the students to predict which pumpkin has the most seeds. (For each line on the outside of the pumpkin, there is a row of seeds growing on the inside. The longer the pumpkin grows, the more lines it gets! WOW!)
2. Put newspaper or a table covering down on tables and organize your students into groups of 4-5 students. Cut a circle around the tops of each pumpkin and pass one out to each group.
3. Give them each a string and a ruler. Demonstrate how to find the circumference of the pumpkin and ask them to do the same! Record the circumference of each of the pumpkins on the board.
4. Next, ask the students to take all of the seeds out of the pumpkin and put them into a bowl. Emphasize sharing so that each student gets a turn. Guide the students in cleaning up (both their hands and the table!).
5. Spread the seeds on newspaper to dry, keeping the groups of seeds separate. Drying the seeds will make them much easier to count. They may be too slimy to count right out of the pumpkin.
6. The next day, ask the students to sit in their original pumpkin groups and pass out the seeds that correspond to the group's pumpkins. Ask the students to sort the seeds, putting big seeds in one pile and small seeds in another pile. Next, assign a counting method to each group (by 2s, 5s, 10s). Ask the students to put their seeds into groups of 2s, 5s, or 10s. Next, the students will count how many groups they have. Write the numbers on the board and assist students in completing the final calculation.



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Optional: make roasted pumpkin seeds for snack. Wash the seeds and roast them at home using the following recipe.

Ingredients

1 1/2 cups raw whole pumpkin seeds, 2 teaspoons butter, melted, 1 pinch salt

Directions

Preheat oven to 300 degrees F (150 degrees C). Toss seeds in a bowl with the melted butter and salt. Spread the seeds in a single layer on a baking sheet and bake for about 45 minutes or until golden brown; stir occasionally.

Garden Exploration

Go out into the garden and observe pumpkin plants or other vegetables that grow on vines. Before going out to the garden, talk with the students how pumpkins grow (on a vine) and ask them if they know other vegetables that grow on vines (squash, cucumbers, etc.). Tell the kids that you are going to go out to the garden and look for vines. Once they locate vines, talk with the kids about how vines grow. (A vine is actually a plant stem. The vine, or long stem, has two purposes. A vine enables the plant to reach sunlight with a minimum investment of energy. The vine growth also enables plants to colonize large areas quickly, out competing weeds and neighboring plants. Vines can twist around posts or fences and even trees, enabling the plant to climb, climb, reach new areas where the plant can reach new sunlight and prosper.)

Ask the students to imagine they are a vine, climbing to the top of a tree. What do they see? How does it feel to be at the tip top of a tree?

Pumpkin Painting

Steps for making a pumpkin painting.

Tape a piece of watercolor paper to the surface of the table using painter's tape. This will keep the paper from rolling up once it's wet. On the watercolor paper, trace around one or more of the pumpkin templates on the page using a crayon. If you trace multiple pumpkins, have some pumpkins going off the page. This will make a dynamic composition. Once you have traced all of the pumpkins you'd like (you can have one or twenty pumpkins!), add details to the pumpkins like lines or shading with the crayons. You can also draw a vine and leaves connecting the pumpkins. Next, wet your paint brush and tickle your watercolors to get pigment on your brush, and begin painting your picture. You can pass right over the crayons; because they are wax, the paint rolls right off. Paint over your entire page, making sure to leave no white spots.