

Pumpkins by the Pound

Skills: Math, Science, Social Studies

Objective: Students will use pumpkins of various sizes to experiment with weight and perimeter.

Background

The pumpkin is a vegetable, but most pumpkins grown today are sold for decorating and carving. They come in all sizes and shapes, from minipumpkins, the size of apples, to giant ones, weighing over 200 pounds. Some pumpkins are gray or pale green, but most are yellow or orange. Some are even white.

Pumpkin flowers are large and yellow. Some kinds of pumpkins are grown for cattle to eat. Cucumbers, squash, melons and gourds are all related to the great pumpkin.

The pumpkin is one of only a few foods we still eat today that is native to North America. The Pilgrims and other early New England settlers liked to use pumpkins because uncut pumpkins would keep for several months, if stored in a cool, dry place. Pumpkins were a main part of the early settlers daily diet.

Pilgrims and other early American settlers made the first pumpkin pies by burying pumpkin in the ashes of their fires. After a pumpkin had cooked, they would cut off the top, scrape out the pulp and add honey or maple syrup. The pulp was then made into delicious pies and breads. Pumpkins were used for many different things. Dried pumpkin shells served as bowls or containers for storing grains and seeds. Pumpkin seeds were dried and roasted for a high-energy treat. The Pilgrims' dependence on pumpkins is reflected in this poem, from 1630. (Notice the Old English "undoon" for "undone.")

For pottage and puddings and custards and pies,
Our pumpkins and parsnips are common supplies,
We have pumpkins at morning and pumpkins at noon,
If it were not for pumpkins we should be undoon.

Language Arts

1. Read and discuss background and vocabulary.
2. Hand out copies of the reading page and worksheet B.
 - Students will read independently or in groups.
 - Students will answer the questions on the worksheet

Math

1. Bring several pumpkins to class in assorted sizes.
 - Set the pumpkins out in random order.
 - Introduce the terms "weight" (a measure of the heaviness of an object)

P.A.S.S.

GRADE 1

Reading—2.1; 5.1

Math Process—1.1,2,3,5;
2.3,4; 3.2,3; 4.1,3; 5.1,2

Math Concept—2.1,2a,4;
5.1,2

Science Process—1.1;
2.1,2; 4.1,3

Physical Science—1.1,2

Social Studies—2.3

Physical Education—
1.1,3,4; 2.2,3; 3.1,2;
5.1,3,4; 6.1,2,3; 7.1,3

GRADE 2

Reading—4.1; 6.3

Math Process—1.1,2,3,5;
2.3,4; 3.2,3; 4.1,3; 5.1,2

Math Concept—2.1a,3;
4.2ab; 5.1,2

Science Process—1.1,2;
2.1,2; 4.1,3

Social Studies—2.4

Physical Education—
1.1,2; 2.13; 3.1; 5.2,3;
6.1,2; 7.2

GRADE 3

Reading—4.4; 5.3

Math Process—1.1,2,3,5;
2.3,4; 3.2,3; 4.1,3; 5.1,2

Math Concept—2.1a; 4.3;
5.1abc

Social Studies—2.2,3,4

Physical Education—1.1;
2.1; 3.3; 5.1,2,3; 6.2

Materials

pumpkins in assorted sizes

string

scale

tape measure

1 large knife

(for each group)

1 pumpkin

3 sheets construction paper

tape

10 small cups (muffin cup,
bathroom cup, or nut cup)

2 large styrofoam cups

Roasted Pumpkin

Seeds

1. Wash pumpkin seeds.
2. Place seeds in a vegetable steamer with some water.
3. Cover and cook for 30 minutes.
4. Dry the seeds with a towel.
5. Spread seeds on a cookie sheet, brush with vegetable oil and sprinkle with salt.
6. Bake the seeds in a preheated 300-degree oven for 30 minutes, or until golden.

and “perimeter” (the measure of the whole outer boundary of a body or figure).

- Students will lift the pumpkins one by one and estimate their weights.
 - Students will arrange the pumpkins according to their weights— from lightest to heaviest.
2. Pass out student worksheet B.
 - Students will weigh the pumpkins and record their findings in pounds and kilograms.
 3. Students will estimate the perimeter of each pumpkin by cutting lengths of string they think will reach around the pumpkin.
 - Students will measure the pumpkins with a tape measure.
 - Create a chalkboard graph with the words “too long,” “too short,” “same.”
 - Students will tape the string estimates in the correct space on the chalkboard graph.
 - Discuss the graph. Ask how many pieces of yarn were too long? Too short? The same? Most estimates were _____
 - Students will draw a model of the graph in a journal or on a separate sheet of paper
 4. Introduce the abbreviation for pounds (“lbs.”) and the pound symbol (“#”).
 5. Students will estimate the number of seeds in a pumpkin.
 - Divide class members into groups of four or five students.
 - Provide one pumpkin for each group. Allow students to handle the pumpkins.
 - Review the term “estimate.”
 - Each group will estimate the number of seeds in their pumpkin.
 - Write the group estimates on the chalkboard.
 - Hand out three sheets of construction paper.
 - Groups will tape the construction paper together in a row to create place value boards.
 - One member of each group will write the place value terms:
 - “ones” across the top of the first sheet of construction paper,
 - “tens” across the top of the second sheet
 - “hundreds” across the top of the third sheet.
 - Cut the top from each pumpkin.
 - Give each group 10 small cups and two large styrofoam cups. Keep extra containers handy in case any of the pumpkins have unusually large numbers of seeds.
 - Students scoop the seeds from the pumpkins with their hands and place them on the construction paper labeled “ones.”
 - Students count the seeds into groups of ten and place them in the small cups.
 - Students place the filled cups on the construction paper labeled “tens.”
 - When students have counted ten groups of ten they dump those cups into the larger cups and place them on the construction paper labeled “hundreds.”
 - Continue the activity until all the seeds have been counted.

- Students will write and read the exact number of seeds in their pumpkins.
- Students compare exact numbers with estimates.

Science

1. Students will guess whether the pumpkins will sink or float. Test guesses in a tub of water.
2. Use the recipe included with this lesson to make pumpkin pie in a bag.
 - Students will describe the pie ingredients before baking.
 - Ask students to write what they think will happen after the ingredients are baked.
 - Students will describe ingredients after they are baked.

Social Studies

1. Use pumpkins as globes to represent the Earth.
 - Students will draw latitude and longitude lines on their pumpkins at 10 degree increments.
 - Students will find north, south, east and west hemispheres.
 - Students will paint continents on their pumpkins with tempera paint.
 - After the continents have dried, students will paint bodies of water.

Visual Arts

1. Make pumpkin seed art.
 - Bake clean seeds in a 300-degree oven for 30 minutes, or until golden.
 - Let the seeds cool completely.
 - Provide students with tempera paint in autumn colors, and have them dip the pumpkin seeds in the paint.
 - Let the seeds dry.
 - Students draw tree trunks with branches and glue seeds to the branches to make beautiful full trees.
4. Students draw Jack-o-lanterns, color them and use different kinds of seeds to make their features.

Get Up and Move

1. Play Pumpkin Man:
 - Teach the following chant:

Pumpkin man, pumpkin man, catch a brownie if you can,
Yes I will, Yes I will, if the brownie will stand still.
 - Divide students into two groups—a Pumpkin group and a Brownie group.
 - Students form a circle, facing inward.
 - Pumpkins step forward and put their palms together to make "windows." (Don't weave fingers.)
 - Brownies go in and out of the windows at least twice as everyone says the chant.
 - When teacher says "stop," Pumpkins lower the "windows." All Brownies inside the circle become Pumpkins and join the Pumpkin circle.
 - Play twice so everyone who started as a Pumpkin gets to be a Brownie.

Vocabulary

carve—to cut with care or exactness

decorate—to make more attractive by adding something that is beautiful or becoming

gourd—any of a family of tendril-bearing vines (as the cucumber, melon, squash, and pumpkin)

Pilgrim—one of the English colonists who founded the first permanent settlement in New England at Plymouth in 1620

pulp— the soft juicy or fleshy part of a fruit or vegetable

pumpkin—the usually round orange fruit of a vine of the gourd family widely used as food

settler—a person who settles in a new region

vegetable—a leafy plant (as the cabbage, bean, or potato) usually without woody tissue grown for an edible part that is usually eaten as part of a meal

Extra Reading

- Gillis, Jennifer, *In a Pumpkin Shell: Over 20 Pumpkin Projects for Kids*, Storey, 1992.
- King, Elizabeth, *Pumpkin Patch*, Dutton 1990.

Pumpkins by the Pound

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Name _____

Pumpkins by the Pound

A

Write F for fact if the statement is a fact. Write O for opinions if the statement is an opinion.

1. ___ Pumpkins taste great!
2. ___ Pumpkins were eaten by pilgrims.
3. ___ Pumpkins are vegetables.
4. ___ Pumpkin pie is my favorite kind of pie.
5. ___ Pumpkin seeds can be dried and roasted.
6. ___ Pumpkin flowers are large and yellow.

7. Write a fact about pumpkins: _____

8. Write an opinion about pumpkins or pumpkin pie.

9. In the poem, the words at the end of lines 1 and 2 are pies and supplies. What do we call that sound pattern? Circle the correct answer.

rhythm rhyme syllables

10. Write as many words as you can that rhyme with the word "pie."

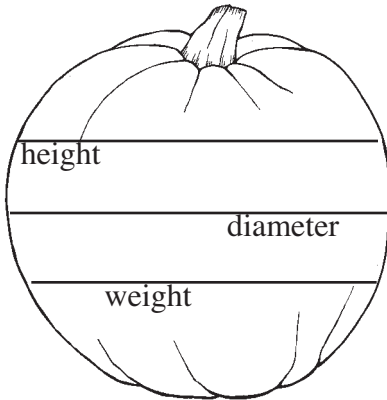
Name _____

Pumpkins by the Pound

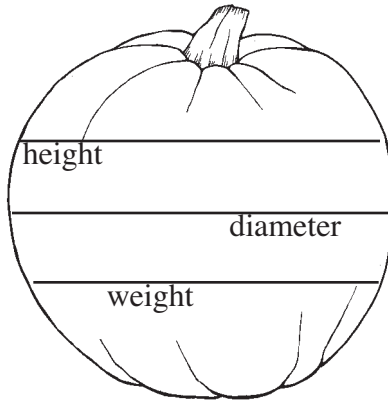
B

Measure and weigh several pumpkins. Record the facts below.

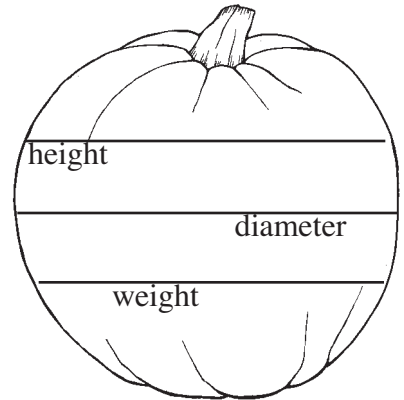
1.



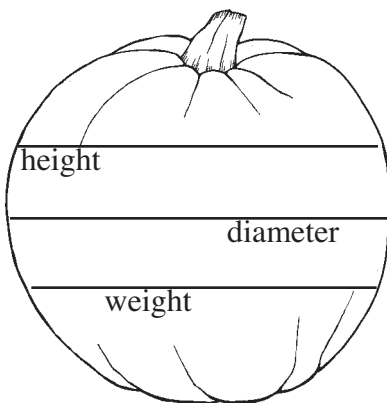
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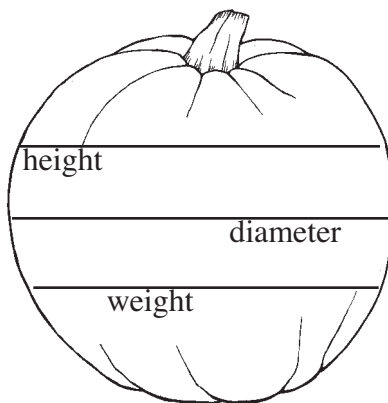
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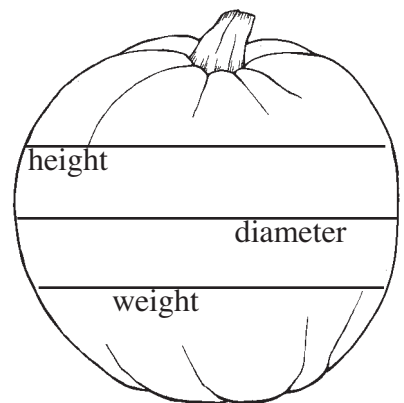
4.



5.



6.



1. Which pumpkin is biggest? _____
2. Which pumpkin weighs the most? _____
3. Does the biggest pumpkin weigh the most? _____
4. Does the smallest pumpkin weigh the least? _____
5. Which two pumpkins are closest in size? _____
6. Which two pumpkins are closest in weight? _____

Pumpkin Pie in a Bag

per two students:

1/8 cup milk
2 T canned pumpkin (not pie filling)
dash cinnamon
dash ginger
1 T vanilla pudding mix
1 T graham cracker crumbs or two ginger snaps

quart-size zip freezer bag

1. Combine the milk and instant pudding in the bag. The mix should have the consistency of pudding. If it is too runny, add pudding mix. If it is too thick, add milk.
2. Remove the air from the bag and seal it.
3. Squeeze and knead with hands until the mixture is blended—about one minute.
4. Add the pumpkin, cinnamon and ginger.
5. Remove the air and seal the bag.
6. Squeeze and knead with hands until blended—about two minutes.
7. Place 1/2 tablespoon of graham cracker crumbs or one ginger snap in the bottom of each cup.
8. Cut the corner of the freezer bag, and squeeze pie filling into the cups.
9. Garnish the cups with whipped topping.
10. Provide spoons. Enjoy.

Follow directions as above and squeeze mixture into tart-size premade graham cracker crusts, or place a ginger snap at the bottom of small cups to serve as crust.