

# Pumpkin Exploration

## Math

### Materials

- Pumpkins of different sizes (1 per child)
- Scale measuring ounces and pounds
- Flexible tape measure
- Ruler
- Calculator
- Pencils and Paper
- 1 orange crayon
- Estimation and Recording sheet
- 3 sheets of paper per child for bar graphs and line plot

**Grade Level:** 3

**Time:** Field trip to a pumpkin patch  
classroom time 1 hour

**Standards:** Math

3.MD.2

3.MD.3

3.OA.3

*For Kansas standards, visit  
[www.ksde.org](http://www.ksde.org)*

### Overview

The class will take a field trip to the local pumpkin patch where each child will pick out a pumpkin to take back to the classroom to measure the height, weight, and circumference of the pumpkin. The students will draw horizontal and vertical bar graphs and a line plot to record and compare the pumpkin data.

### Objectives

- 1.The students will collect data by measuring the height, weight, and circumference of their pumpkin.
- 2.The students will be able to draw a horizontal and vertical bar graph and a line plot to compare their pumpkin data.
- 3.The students will compare the data and hypothesize why some pumpkins are bigger than others.

### Background information

Pumpkins, like all plants, need sunlight, water, air, soil, and a proper environment to grow. The height, weight, and circumference of each pumpkin varies depending on these factors.

### Preparation

- 1.Make arrangements to visit the local pumpkin patch and secure funds for each child to be able to pick out a pumpkin.
- 2.Read background information and lesson plan.
- 3.Gather materials listed above.
- 4.Copy estimation and data record sheet.



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## Instructional Format

1. The data may be estimated and recorded individually or with a partner. Each child will draw his or her own bar graphs to compare the height and weight of the pumpkins. They will also make a line plot to compare the circumference. The the class will compare the data as a whole.
2. Upon completing the lesson, the students will calculate the average height, weight, and circumference of the pumpkins. Then they will hypothesize why the pumpkins vary in height, weight, and circumference.

## Procedures

1. Students will complete the “My Pumpkin Data” worksheet with a partner. Partners can help each other accurately measure and record the data.
2. Instruct each student how to draw a bar graph and line plot. Draw an example of each on the board and decide as a class what the scale will be.
3. Call upon each student to share his or her pumpkin data for the height. As each child shares the data, other students will fill in the bar on their graph with a crayon.
4. Repeat for the weight data.
5. Complete line plot. As each child tells his circumference data, the other students can plot it.

## Conclusion Questions

1. What is the average height, weight, and circumference of the pumpkins?
2. Whose pumpkin was the tallest? Heaviest? Whose had the greatest circumference?
3. Why do you think this is?
4. What do plants need to live?
5. What would happen to a plant if it did not get much sunlight or rain?
6. What if the plant received too much rain?
7. Does the type of soil a plant is grown in effect it?
8. How could you grow a really big pumpkin? Assessment: Check each student’s bar graphs, line plot, and data worksheet.

## Vocabulary

Circumference: the external boundary or surface of a figure or object

Height: the distance from the bottom to the top of something standing upright

Weight: the amount that a thing weighs

Estimate: the approximate value of something (or to put it more simply: a good guess)

## Other Resources

Illinois Ag in the Classroom: [http://www.agintheclassroom.org/060605/Teachers/Make%20&%20Takes/lessons\\_and\\_activities.html](http://www.agintheclassroom.org/060605/Teachers/Make%20&%20Takes/lessons_and_activities.html)

The Pumpkin Patch Directory: [www.thepumpkindirectory.com](http://www.thepumpkindirectory.com)

Kansas Agritourism: <http://kansasagritourism.com/RegOperators/Pages/SearchExperience.aspx>



**Primary Name****Want More?****Extensions**

1. The students could paint their pumpkins.
2. A book about how pumpkins are grown and Fall could be read prior to visiting the pumpkin patch. Students could learn the parts of a pumpkin plant.
3. Pumpkin seeds could be roasted for a snack. Before eating the seeds, ask each child to count out twenty-four seeds and divide them into equal groups. How many ways can the seeds be divided?

**Book Suggestions**

Pumpkin Jack by Will Hubbell (ISBN 080756667)  
Pumpkins by Jacqueline Farmer (ISBN 9781570915581)  
Pumpkin Circle by George Levenson (ISBN 0439228832)  
Too Many Pumpkins by Linda White (ISBN 0823413209)



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Name:

My Pumpkin Data

|               | Estimate | Actual |
|---------------|----------|--------|
| Height        |          |        |
| Weight        |          |        |
| Circumference |          |        |

