

# Pumpkin Einsteins

## Week of \_\_\_\_\_

### Activity

We will use pumpkins and math to introduce students to the Scientific Method.

### Goal

To get a sense of how scientists approach their work.

### Supplies

- 6 named pumpkins, varying slightly in size (in the shed)
- Measuring tapes (one per student, in the shed)
- Weighing scale (in the shed)
- Clipboards (in the shed)
- Copies of the attached grade-level worksheet (teacher provide)
- Pumpkin Circle Video (in the shed)

### Things you need to know

Teachers should show the video Pumpkin Circle to students ahead of time.

Teachers or Garden Parents, set up materials ahead of time in a quiet place, either in the classroom, in the garden or on the lawn. Line up six pumpkins, next to each other alphabetically, in plain view.

Explain to students that they're going to work as "pumpkin scientists" this week. They're going to approach the work as scientists do, using the Scientific Method to study pumpkins.

Read the five steps in the scientific method.

1. Posing a question
2. Hypothesis
3. Making an educated guess about the conclusion
4. Conducting an investigation to gather information to help answer that question
5. Studying what was observed during the investigation and trying to reach a conclusion.

The question today is; Can we tell by looking at these six pumpkins which one is the heaviest?

Have students record their collected data on the worksheet.

Was it possible to tell which pumpkins were heaviest by looking at their outsides? If not, what does that suggest? Does it mean that the pumpkin's weight is also affected by what is inside of the pumpkins? Can students think of what's inside the pumpkin that might affect the pumpkins weights? Would there be another experiment they could do to figure out how much the seeds and pulp inside affect the pumpkin's mass?

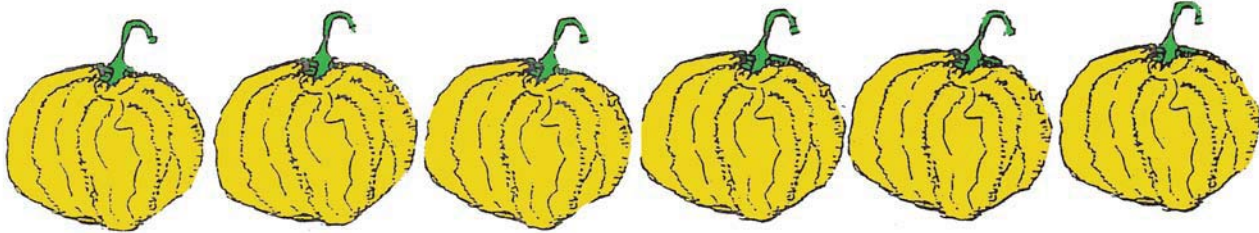
With younger students, you can gather the information while leading them in discussion.

- Any detailed instructions will be on the bulletin board in the shed.



# Pumpkin Einsteins

Scientist \_\_\_\_\_



Alice

Ben

Charlie

Diane

Ellen

Frank

1. Guess which pumpkin is the heaviest. Rank from 1 (heaviest) to 6.

A \_\_\_\_\_ B \_\_\_\_\_ C \_\_\_\_\_ D \_\_\_\_\_ E \_\_\_\_\_ F \_\_\_\_\_

2. Measure how big around each pumpkin is (the circumference.)

A \_\_\_\_\_ B \_\_\_\_\_ C \_\_\_\_\_ D \_\_\_\_\_ E \_\_\_\_\_ F \_\_\_\_\_

3. Count each pumpkin's ribs.

A \_\_\_\_\_ B \_\_\_\_\_ C \_\_\_\_\_ D \_\_\_\_\_ E \_\_\_\_\_ F \_\_\_\_\_

4. Are there any other things you see that could affect each pumpkin's weight? Do they have large or small stems? Different colors. Additional Comments?

A \_\_\_\_\_ B \_\_\_\_\_

C \_\_\_\_\_ D \_\_\_\_\_

E \_\_\_\_\_ F \_\_\_\_\_

5. Review the data and rank the pumpkins again by which one might be heaviest.

A \_\_\_\_\_ B \_\_\_\_\_ C \_\_\_\_\_ D \_\_\_\_\_ E \_\_\_\_\_ F \_\_\_\_\_

6. Weigh the pumpkins. Record their actual weights below.

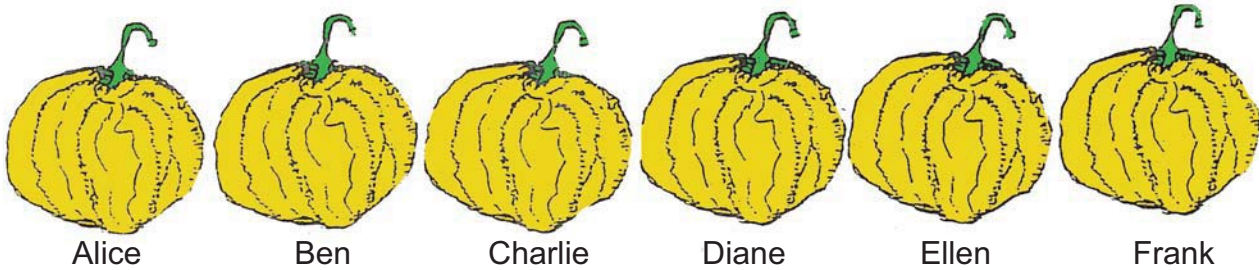
A \_\_\_\_\_ B \_\_\_\_\_ C \_\_\_\_\_ D \_\_\_\_\_ E \_\_\_\_\_ F \_\_\_\_\_

7. Which pumpkin is the heaviest? What conclusion did you reach? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

# Pumpkin Einsteins

Scientist \_\_\_\_\_



1. Write each pumpkin's name.

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_  
4. \_\_\_\_\_ 5. \_\_\_\_\_ 6. \_\_\_\_\_

2. Guess which pumpkin is the heaviest. \_\_\_\_\_  
\_\_\_\_\_

3. Measure how big around each pumpkin is (the circumference.)

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_  
4. \_\_\_\_\_ 5. \_\_\_\_\_ 6. \_\_\_\_\_

4. Count each pumpkin's ribs.

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_  
4. \_\_\_\_\_ 5. \_\_\_\_\_ 6. \_\_\_\_\_

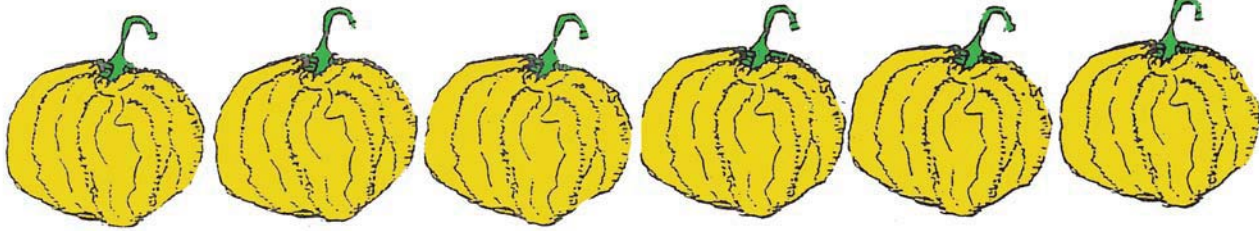
5. Weigh the pumpkins. Record their actual weights below.

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_  
4. \_\_\_\_\_ 5. \_\_\_\_\_ 6. \_\_\_\_\_

6. Which pumpkin is the heaviest? What conclusion did you reach? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# Pumpkin Einsteins

Scientist \_\_\_\_\_



Alice

Ben

Charlie

Diane

Ellen

Frank

1. Guess which pumpkin is the heaviest. \_\_\_\_\_

\_\_\_\_\_

2. Measure how big around each pumpkin is.

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4. \_\_\_\_\_ 5. \_\_\_\_\_ 6. \_\_\_\_\_

3. Weigh the pumpkins. Record their actual weights below.

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4. \_\_\_\_\_ 5. \_\_\_\_\_ 6. \_\_\_\_\_

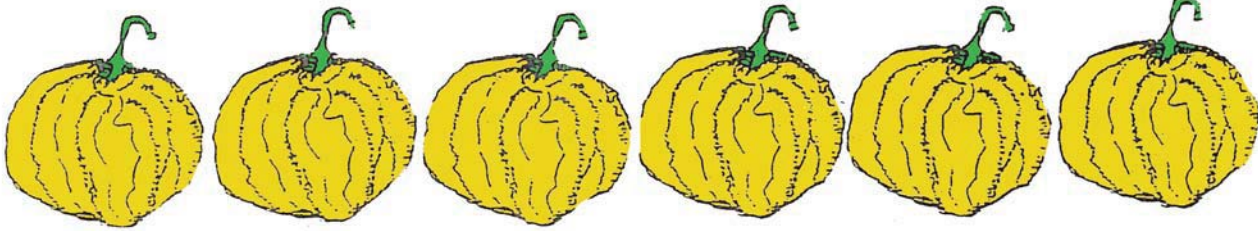
5. Which pumpkin is the heaviest? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# Pumpkin Einsteins

Scientist \_\_\_\_\_



Alice

Ben

Charlie

Diane

Ellen

Frank

1. Guess which pumpkin is the heaviest. \_\_\_\_\_

2. Weigh the pumpkins.

3. Which pumpkin is the heaviest? \_\_\_\_\_

4. Draw a picture of the heaviest pumpkin.

# A Gardener's Notes

## Pumpkin Einsteins



### Garden Parents and Teachers:

Make copies of the "Pumpkin Einstein" worksheet. Attaching worksheets to a clipboard makes it easier for students to collect data in the field.

Pumpkins have always captured the imagination of children. Come up with some ideas to expand this lesson for your students. Most libraries have an assortment of pumpkin storybooks. Have students research how Native Americans used pumpkins. They can make their own pumpkin shaped books or write a pumpkin poem. If pumpkins are growing in the school garden, have students graph their growth rates. Using graph paper, students can measure the pumpkins growth every day or measure the length of the vine and the length of the runners. Add the last two number together to get total vine measurement. Buy your own class pumpkin. Use the seeds for math lessons. Students can count, add, subtract, multiply and estimate the pumpkin seeds. Visit a pumpkin patch and/or try some pumpkin treats.

### Garden Supplies Coordinator:

Purchase six pumpkins. Be sure the pumpkins are similar in size. If you have a local pumpkin patch you might get them donated. Write the pumpkin's name on each one with permanent marker. Pumpkin Circle is an award winning video narrated by Danny Glover. It can be purchased at [www.pumpkincircle.com](http://www.pumpkincircle.com). Other instructional material is also available at that address. You'll need measuring tapes and clipboards for this lesson. A discount store may offer the best deals. You can find good produce weighing scales at secondhand or antique stores. Keep a lookout for some books to add to this lesson.

### Garden Communication Coordinator:

As always, if new resource materials are added to this lesson be sure to change the instructions on the lesson plan. Good communication is essential in running a good garden program. This lesson would be enhanced if it were done in the Autumn.