

Pumpkin Investigation

Incorporate some math and science thinking into your annual fall fun with this pumpkin investigation activity! There's a lot more to pumpkins than just jack-o'-lanterns and pumpkin pie! Your child will have a blast investigating various ways of measuring pumpkins. Children will estimate and then measure their pumpkin's weight, circumference, number of seeds, and more, recording their findings as they go. Ideal for third and fourth graders, this activity will get your young learner thinking about the variety of ways to measure and investigate any object. Have fun with this measurement activity year-round by conducting a similar investigation with another fruit or plant.

What You Need:

- Pumpkin for each child
- Knife and spoon to carve the pumpkin
- Newspaper or paper plate
- Scale
- Measuring tape or string and ruler
- Large tub or bucket of water (preferably a transparent one)
- The [Pumpkin Investigation Guidelines](#) worksheet (one per child)



What You Do:

1. Kick off this activity with a conversation about pumpkins. Ask your child what they know about pumpkins. Some ideas to discuss are:
 - What is the pumpkin life cycle?
 - What does a pumpkin smell/taste like?
 - Does a pumpkin sink or float?
 - What can we do with a pumpkin?
 - Why are pumpkins associated with Halloween?
2. Tell your child that today they will conduct an investigation of their pumpkin. Give your child a chance to touch, lift, and smell their pumpkin.
3. Next, give your child a copy of the Pumpkin Investigation Guidelines worksheet. Have them write their name and date on it. Give them a couple minutes to peruse the worksheet so that they may begin thinking of the predictions and calculations they'll make.
4. Tell your child that they are going to wrap a string around the pumpkin. Have them consider the length (in centimeters or inches) of the string they'll need. Make sure they write down their prediction before using a string and ruler (or measuring tape) to measure it.
5. Then, have your child estimate the weight of the pumpkin. To weigh the pumpkin, first weigh your child using the scale, then have them weigh themselves a second time while holding the pumpkin. Ask your child to calculate the difference. Encourage your learner to show their math thinking on the worksheet.
6. Have your child predict how far their pumpkin will roll. Have them roll it on a smooth ground or surface, and remember to include the unit of measurement when they record their prediction and results. Discuss the reflection prompt with your child and have them write a response.
7. Using the tub or bucket of water, conduct the sinking or floating experiment and have your child reflect on their prediction vs. results again.
8. Before opening the pumpkin, have your child estimate the number of seeds. Then, use the knife to cut open the pumpkin. Help your child scoop out all the seeds and place them on the newspaper or paper plate. Ask them to modify their first prediction, based on the visual of the pile of seeds. Finally, have them count the seeds and document their results. Encourage your child to count the seeds in groups. Support them in their counting, as needed.
9. Have your child draw a picture of their favorite part of the activity and discuss what they particularly liked about this part.
10. Finally, ask your child if there is any other aspect of the pumpkin they would like to investigate. Depending on their interest, see if there is a way to carry out the investigation they mention. Example questions might include:
 - How does raw pumpkin taste?
 - How long does it take for a pumpkin to decompose?
 - From what height must we drop the pumpkin in order for it to crack?
 - How many pumpkins tall am I?

