

IT'S THE GREAT PUMPKIN, 4-H BROWN

Forms of Measurement

Aaron Spurling, UT-TSU Extension 4-H Youth Development
Alexis N. Hall, Student Assistant, Tennessee 4-H Youth Development
Jennifer Richards, Assistant Professor, 4-H Youth Development



It's the Great Pumpkin, 4-H Brown

Forms of Measurement

Skill Level

Beginner, 4th Grade

Learner Outcomes

The learner will be able to:

- Identify measurements of weight and circumference.
- Calculate volume.

Educational Standard(s) Supported

Math

- 4.MD.A.1

Success Indicator

Learners will be successful if they:

- Take and record different forms of measurement.

Time Needed

- 30 minutes

Materials List

- Kitchen scale or bathroom scale, depending on the weight of the pumpkin.

One per group of the following:

- Student Handout — Pumpkin Measurement.
- A pumpkin, large or small, real or decorative.
- Fabric or paper tape measure (it needs to be flexible).
- Paper.
- Pencil.
- Calculator.

Introduction to Content

This lesson gives a hands-on demonstration of measurement with seasonal manipulatives. Students will take multiple forms of measurement by exploring with the provided tools.

Introduction to Methodology

This lesson uses exploration and a hands-on approach to aid students' comprehension. The lesson begins with assessing students' prior knowledge of measurement before encouraging students to creatively measure a pumpkin.

Author

Spurling, Aaron. UT-TSU Extension, 4-H Youth Development

Hall, Alexis N. Student Assistant, Tennessee 4-H Youth Development.



Terms and Concepts Introduction

Measurement — A figure, extent or amount obtained by measuring.

Weight — The heaviness of an object.

Length — A measured distance or dimension.

Setting the Stage and Opening Questions

Show students the following video of how to measure a giant pumpkin: tiny.utk.edu/pumpkin. Discuss as a group why judges measure pumpkins in a certain way.

Then, ask students about their experiences with measurement. Ask if they have measured things while making crafts or other projects. Briefly discuss the systems of measurement, but try to not lead the students by discussing different types of measurement.

Discuss how we observe measurement. Point out there are many ways to measure, but do not list them to encourage student discovery.

After sharing with the students, ask questions to assess prior knowledge.

- What is a measurement?
- What is a length?
- What is a weight?

Experience

Divide students into groups of four or five. Give each group a pumpkin and measuring tools. Ask students to measure the pumpkin and record their results on a blank piece of paper. After they have taken the measurements, discuss the following:

- The **height** of the pumpkin is how tall it is top to bottom.
- The **width** is how wide it is by measuring across the top.
- The **depth** is how deep it is front to back.
- The **circumference** is its measurement all the way around.
- The **weight** is how heavy it is.
- The **volume** is how much space it takes up.

Pass out the Student Handout — Pumpkin Measurements and instruct students to measure the height, width, depth, circumference and weight of a pumpkin, recording the measurements as they go. When they write down each number, include the unit of measurement. For example, write “10 inches” instead of just “10.”

Be sure to save volume until last. After you have recorded the other measurements, calculate the volume. Students might need the aid of a calculator and a little help to do this. Take the height, width and depth of the pumpkin and multiply these numbers together (height x width x depth).

Tips for Engagement

Provide direction for this activity, but keep the results open-ended to encourage unique and independent thinking.

Ask leading questions to provoke student discovery.

Remember to become comfortable with this content to put students at ease and instill confidence in your instruction.

Share

Ask the students the following questions:

- Do you think you took all the measurements you could?
- Why did we not list all the ways to measure?

Process

- What did you notice when recording your results?
- What is the most defining measurement of a pumpkin to you?

Generalize

- How can we use measurement in everyday life?
- What measurement systems do we use compared to other countries?

Apply

Tell students to find another object of their choosing in the classroom and measure it.

Life Skill(s) 4th Grade

Participate in 4-H club meetings by saying pledges, completing activities, and being engaged. (Head)

Follow instructions. (Heart)

Gather relevant information for decision-making. (Hands)

Communicate information effectively about a given topic. (Hands)

Show use of good judgment. (Health)

Supplemental Information

Educational Standards Met

Math Measurement and Data

4.MD.A.1: Measure and estimate to determine relative sizes of measurement units within a single system of measurement involving length, liquid volume, and mass/weight of objects using customary and metric units.



Pumpkin Measurement

The height of the pumpkin is how tall it is top to bottom.

Height: _____

The width is how wide it is by measuring across the top.

Width: _____

The depth is how deep it is front to back.

Depth: _____

The circumference is its measurement all the way around.

Circumference: _____

The weight is how heavy it is.

Weight: _____

The volume is how much space it takes up.

Volume = Length x Width x Height

Volume = _____ x _____ x _____ = _____