

Material Needed

- Common items to use as measuring tools (paperclips, pennies, craft sticks, straws, etc.)
- Items to be measured (pencils, boxes, caps, dishes, etc.)

Grade Range

Pre-K
K-2

Topics/Skills

Math: Classifying and describing objects based on measurable attributes in common

Learning Standards

Common Core Math:
[Measurement and Data](#)

Duration

10-15 minutes

Prep Time

5 minutes

Measure Up

Creative Measurement Using Non-Standard Measurement Tools



Many standardized units of measurements are arbitrary, just agreed upon. For young learners, measuring is the important thing, not what they use as a “ruler”.

Activity Challenge

Use common items to measure the relative lengths of everyday objects.

Preparation

1. Review the materials list and gather the necessary items.
2. Identify a workspace with a flat surface.
3. Choose an item to serve as a non-standard measurement tool and an object to be measured.

To Do

1. Lay the materials on a flat surface.
2. Estimate the length of the object in terms of the chosen measurement tool. For example, measure the length of a pencil using paperclips. Determine how many “paper clip units” long the pencil is.
3. Estimate and measure other objects using different non-standard measurement tools.

Observations

- Which measurement tool was the longest/shortest?
- How many of each tool was needed to measure the object(s)?
- How might these numbers change with the size of the measurement tool used?

Extensions

- Use cardboard or paper along with glue or tape to make a “ruler” using a measurement item. For example, tape paperclips end to end on a strip of cardboard and use it to measure various objects around the house.
- Use non-standard measurement tools to make a simple bar graph showing an object’s length as measured using the tools.

The Content behind the Activity

Describing measurable attributes of objects, such as length, allows young students to directly compare two or more objects. While there is an explicit emphasis on these concepts around measurement in kindergarten, exposure and practice with these concepts in preschool provide a solid foundation for understanding their application in more complex problems in later grades.

Using a variety of measurement tools reinforces the concept of measurement, rather than specific units. The units themselves, even in the metric system, are arbitrary; everyone just agrees to use the standardized units. Allowing students to use common items as units of measure leads them towards drawing important conclusions regarding measurements: 1) Writing measurement units is important, 2) it makes sense to use larger units to measure longer items, 3) calibrated tools (such as rulers) can make measuring quicker and easier.