



Activity

Instruments and Units of Measurement

MATERIALS

- Measuring instruments (metre stick, measuring tape, scale, measuring cup and pot or jar graduated in liters, water basin).
- Bags for transporting objects
- Natural objects

DURATION
60 MINUTES

Activity Summary

This activity introduces students to instruments and units for measuring distance, area, weight and volume. Students practice estimating the distance, area, weight or volume of various objects. After estimating measurements using an instrument, they calculate the difference between their estimate and the result given by the instrument. To take this activity further, students can also convert each measurement into a larger and smaller measurement.

Preparation

- Gather the materials needed for the activity and choose a suitable space outdoors.
- Read the document *Units of Measurement Used in Mathematics*
<https://www.alloprof.qc.ca/en/students/v/mathematics/units-of-measurement-used-in-mathematics-m1278>
- Students can work alone or in teams.



Steps

A. Search

During the outing, collect a few stones of different sizes, some branches of different lengths, a few pieces of bark and some small logs. Place all objects on the ground.

Say:

Find three, four, or five objects similar to these, i.e., objects of similar weight, length, or volume. You can pick up these objects to help you in your search.

B. Estimate

Say:

- *What do you want to measure for each object?*
- *Estimate the weight, length or volume occupied by the items you have collected.*
- *Write your estimate on a sheet of paper.*

C. Measure

Put out measuring instruments for students to use.

Say:

- After deciding and estimating what you chose to measure for each of the objects you have collected, compare your estimates to their actual measurements.
- This is why measuring instruments and units of measurement were invented, to compare the size or weight of objects with a reference quantity.
- Which measuring instrument will you use?

RETURN
TO GROUP

- Was there a difference between your estimate and the value measured by the measuring instrument?
- Which units of measurement did you use?
- Can you now convert your measurements to larger and smaller equivalent measures?

REINVESTMENT:

On a separate outing, students can estimate distances and check their estimates using measuring instruments.

How far is this tree from the next?

How far is it from the school to our outdoor playground?

How deep is this stream?

Students can also practice converting centimeters to meters.



Adapted from:

© Wauquiez, S., Barras, N., & Henzi, M. (2020). *L'école à ciel ouvert: 200 activités de plein air pour enseigner* (pp. 72-75). Silvana: France.

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