



What you will need:

- Tape Measure
- Calculator
- Notebook
- Pen or pencil



Measuring with Shadow Height

Overview and Objective

Measuring tall items or buildings is possible for you to do, even if you don't have a ladder. But how? In this experiment you will be using shadow heights created by the sun to measure!

You will create a formula, or proportion, based on measuring a shorter item, and then comparing it to the measurement of the nearby taller item. This is possible because the sun's rays will create parallel shadows.

Process:

1. Go outside to a sunny spot, where shadows are clearly visible.
2. Decide what tall item you want to measure (a building, tree, flagpole, etc.). In our experiment we chose a tree.
3. Choose a nearby item that is shorter, that you can measure the top of. We used Lily for our shorter measurement.
4. First measure the shadow length of the shorter item. Then measure it's actual height.
5. Divide the height by the length of the shadow to get a proportion.
6. Now measure the shadow height of the tall item you selected.
7. Multiply the length of the shadow by the proportion we created measuring the shorter item. You can divide by twelve to get the measurement in feet.

What have you found?

What did you decide to measure and how tall was it?

Share with us what you measured!

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