

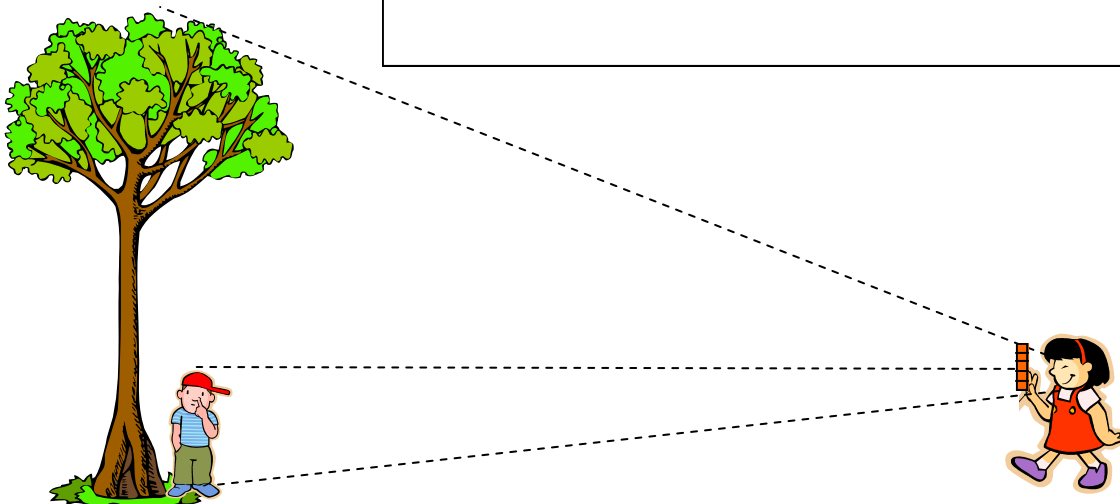
How Tall is That Tree?

Knowledge of the tree heights is important for a variety of reasons. Resource managers, for example, combine the knowledge of tree heights with other information to determine how much wood exists in a given area. Knowing wood volumes helps resource managers manage forests sustainably.

Forest workers have special tools to help them determine how tall a tree is. But guessing tree height doesn't need fancy tools, you can use simple math and a ruler! Try out the method below to see how big a tree near your house or in a local park is.

Instructions:

- Step 1** Do an eyeball estimate first. The tree appears to be ____ metres tall.
- Step 2** Have one of your friends stand at the base of the tree to be measured.
- Step 3** Now walk away from the tree to a point at which a ruler (e.g. 30 cm) held at arm's length "fits" the tree. This means that the top and bottom of the ruler line up with the top and bottom of the tree. Before moving, look at where your friend measures up on the ruler (Students height is e.g. 5 cm).
- Step 4** To find out how tall the tree is, divide the length of your ruler (i.e. 30 cm) by the height of your friend on the ruler (e.g. 5 cm). So the calculation would look something like this:
 $30\text{cm} / 5\text{cm} = 6$.
- Step 5** Measure your friend's real height and multiply the partner's height by the figure in step 4. For example, if the partner's height was 1.5 m, then the height of the tree would be:
 $1.5 \times 6 = 9$ metres.
- Step 6** Show your work here:



- Step 7** Using the Proportional Method, the tree is actually ____ metres tall.