

NAME _____ DATE _____

ESTIMATING TREE HEIGHT

METHOD 1

1. Have a friend stand at the tree's base.
2. Hold a ruler at arm's length and walk backward, keeping your arm stiff, until the top and bottom of the ruler line up with the top and bottom of the tree.
3. Note where the top of your friend's head appears on the ruler (for example, at 2 in or 5 cm). _____
4. Divide the length of the ruler by this number.

$$\frac{\text{ruler length}}{\text{friend's head height}} = \text{answer}$$

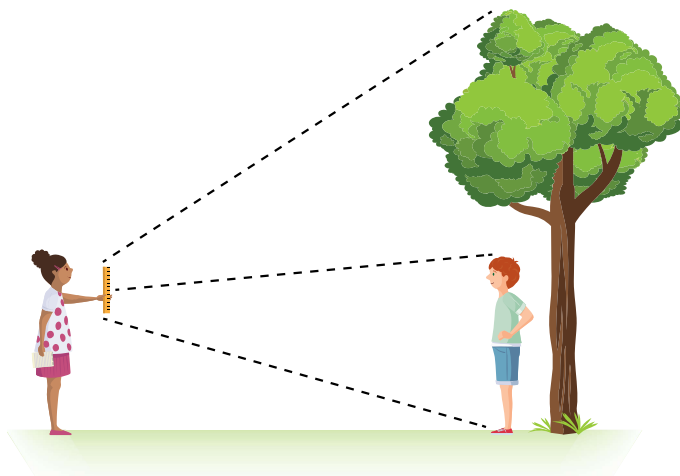
5. Multiply your friend's actual height by your answer to number 4:

$$\text{friend's height} \times \text{answer to number 4} = \text{tree height}$$

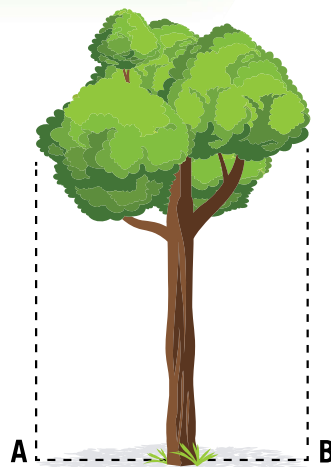
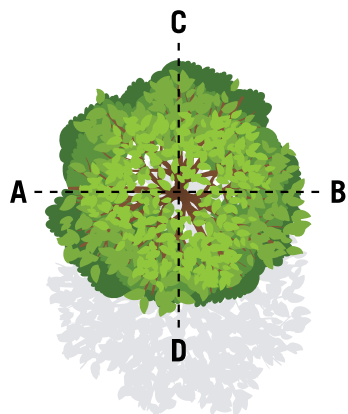
METHOD 2

1. Measure the length of the tree's shadow and measure the length of your shadow, both in inches (cms).
2. Calculate the height of the tree using this formula:

$$\text{height of tree} = \frac{\text{length of tree's shadow} \times \text{your height}}{\text{length of your shadow}}$$



ESTIMATING CROWN SPREAD



To find the tree's average crown spread, measure the width of the crown at two different places (A-B and C-D). Add these two numbers together and divide by two for the average crown spread.

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CAREER CORNER

FOREST TECHNICIANS help to maintain forestland. They may conduct a forest survey—or “cruise”—to estimate the size, quality, and species of trees and timber in an area.





NAME _____ DATE _____

Record each of the estimates and measurements for your tree below. Compare your tree with the biggest tree in the world, the General Sherman Tree. It's the largest giant sequoia—and the largest known living plant—on Earth!

	Your Tree		General Sherman
	Estimate	Measurement	
Circumference (at breast height)			79 feet (24.1 m)
Height			275 feet (83.8 m)
Average crown spread			106.5 feet (32.5 m)
Leaf or needle length (from base of stem to tip)			.25 inches (6 mm)



- How many of your trees would you have to stack on top of one another to equal the height of the General Sherman Tree?

- Which is taller: The General Sherman Tree or the Empire State Building? How much taller?

- Which is taller: The General Sherman Tree or the tallest tree in your community? How much taller?

- Which is longer: Your tree's leaf or the leaf (needle) of the giant sequoia? How many times longer is it?

- How many of you would it take to wrap your arms around the General Sherman Tree? (You'll need to measure the distance of your outstretched arms from fingertip to fingertip.) How about your tree?

- Which is bigger, the average crown spread of your tree or that of the General Sherman Tree? How much bigger is it?

CAREER CORNER

FORESTRY ENGINEERS design and supervise the building of roads, trails, bridges, and other construction projects in managed forests. They must understand forest ecosystems and the impacts of projects on forest resources.

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