❧ How Tall is that Tree?
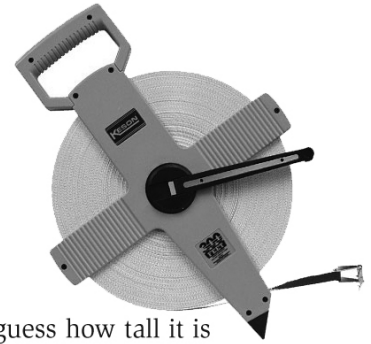
Objective: To measure the height of a large tree.
Time: 20 minutes.
Materials: Pencil, measuring tape.

Take the group outside and have them find a tall tree. Ask the gardeners to guess how tall it is from the base to its top leaves. Have them take turns measuring each other and ask them how they think they might measure something as tall as a large tree. Pick two volunteers from the group to demonstrate an easy way to measure a tree's height.

Stand at a point where you can see the entire height of a tree, and have one of the gardeners hold a pencil at arm's length and look at the tree behind the pencil. The pencil should be pointing up and the tip of the pencil should "touch" the tip top of the tree. The gardener can then slide his or her thumb down the pencil until it "touches" the base of the truck.

Keeping the arm straight, the child should rotate his or her wrist so the pencil becomes horizontal and the child's thumb is still touching the tree's base. A second volunteer should now stand in the distance so that the point of the pencil is right on his or her toes. This gardener is now the same distance from the tree as the tree is tall! Using a tape measure, the group can measure the distance from the tree to the gardener standing at the pencil point. This measurement is the height of the tree.

Have the group choose partners and estimate and measure the heights of other trees. The group can then rank the trees from short to tall.

In the Classroom

Pose the following word problems for the gardeners to solve using the data they collected about trees in your area. Have them create additional problems for each other.

1. What is the difference between the height of the tallest and shortest trees?
2. How many trees are more than 20 feet tall?
3. What is the sum of the heights of the three tallest trees?
4. How many more trees are taller than 20 feet than are shorter than 20 feet?
5. What is the average height of all the trees measured?

How Tall is that Tree,
JMG Level One Teacher/Leader Guide, p127-128.