



Plant Conservation Day is a joint project of the Association of Zoological Horticulture Inc. and Botanic Gardens Conservation International.

Website: www.plantconservationday.org

Email: info@plantconservationday.org

Copyright © 2006 BGCI

Outdoor Science & Math Activity

The Tallest Tree

Background information

Whether in cities or towns, country or suburbs, kids will find trees growing in their neighborhood. Trees provide us with food, shelter, fibers and fuel. They also pump oxygen into the atmosphere. Today, however, trees need our help! More than half of the world's forests have been destroyed, and more than 7,000 tree species are on the World List of Threatened Trees. This activity gets kids up close and personal to trees in your botanic garden or zoo. You can also structure this activity as a contest—kids measure one designated tree at your site using the method outlined in the activity, and the closest measurer wins a plant prize! Note: This activity is best suited for children ages 9 and up.

Materials

For each participant, you will need

- One yardstick (or meter stick if you want to use metric.)
- The Tallest Tree Worksheet
- Pencil

Procedure

In this activity, you will use simple geometry to determine the height of a tree. In fact, this same technique can be used to find the height of almost anything *if* the ground is level. Can you find the tallest tree in your botanic garden or zoo?

Locate a tree in your botanic garden or zoo. *Remember—the ground around the tree needs to be level, and you need to be able to see the top of the tree.* Find a spot where you can stand and see the top of the tree. You should be at least 20 feet from the base of the tree. Mark that exact spot.

Using the yardstick, measure the distance from the base of the tree's trunk to your marked spot in feet (one yard = three feet). Write down that number as Measurement #1 on the activity worksheet.

Lay on the ground near the tree, with your feet facing the trunk and your head on your marked spot. Stand the yardstick vertically (straight up and down) on your stomach, close one eye, and note the point on the yardstick that lines up with the top of the tree (for example, 2 feet, 6 inches). That is the vertical yardstick distance. This is easier if you have a friend to hold the yardstick when you are lying on your back. Write down that number as Measurement #2 on the activity worksheet.

Measure the distance from your eye to the base of the yardstick on your stomach (for example, 2 feet). That is the yardstick-to-eye distance. Write down that number as Measurement #3 on the activity worksheet.

The final step requires a little math. Just fill in the rest of the blanks on the worksheet. A calculator may help. Be sure all your measurements are in feet or fractions of feet. (To convert inches to a fraction of a foot, divide the number of inches by 12. For example, 3 inches divided by 12 = .25 feet.) When you are finished, you will have the height of your tree! Now you can find the height of almost anything!

For more art and science activities for kids, visit Planet Plant -- www.planetplant.org



Plant Conservation Day is a joint project of the Association of Zoological Horticulture Inc. and Botanic Gardens Conservation International.

Website: www.plantconservationday.org
Email: info@plantconservationday.org

Copyright © 2006 BGCI

The Tallest Tree Worksheet

Measurement #1

Distance from the tree: _____ feet _____ inches

Convert this number to a decimal. Divide the number of inches by 12 and add this decimal to the number of feet.

Measurement #1 as a decimal = _____

Measurement #2

Vertical yardstick distance: _____ feet _____ inches

Convert this number to a decimal. Divide the number of inches by 12 and add this decimal to the number of feet.

Measurement #2 as a decimal = _____

Measurement #3

Yardstick-to-eye distance: _____ feet _____ inches

Convert this number to a decimal. Divide the number of inches by 12 and add this decimal to the number of feet.

Measurement #3 as a decimal = _____

Product #1

Measurement #3 divided by Measurement #2 = _____

Height of the Tree

Multiply Product #1 by Measurement #1 = _____

This is the tree's height in feet!

For more art and science activities for kids, visit Planet Plant -- www.planetplant.org