

Lesson: How Big is Big?

Grade(s): 3rd and 4th

CA Standards Addressed:

3rd:

Investigation and Experimentation: 5.c

Number Sense: 2.1, 2.4,

Measurement and Geometry: 1.1, 1.4

Mathematical Reasoning: 2.1

4th

Investigation and Experimentation: 6.b

Number Sense: 2.1

Measurement and Geometry: 3.2

Mathematical Reasoning: 2.1

Setting: Classroom

Duration: 45-60 minutes

Objectives:

Upon completion of this lesson students will:

Be able to compare various known measurements to those of the General Sherman tree's measurements.

Calculate the difference between these measurements and those of the General Sherman Tree.

Vocabulary: Height, volume, circumference, diameter, measurement, compare, difference

Materials:

Three pieces of string: 36 ½ feet, 103 feet.

Measuring tape

Pencils and student worksheet

Reference sheet: Student Giant Sequoia Fun Facts, Biggest Trees Sheet, Teacher giant Sequoia background information.

Procedure:

NOTE: Adjust activity and worksheet for grade level introducing appropriate vocabulary and math concepts.

1. Lay the 36 ½ ft piece of string in a straight line and have students walk its length to see how wide the General Sherman tree is. (diameter)
2. Lay the 103 ft piece of string in a circle on the ground and have the students walk it to see how big around (the circumference) of the General Sherman is. Students can also stand around in a circle holding hands to see if they can equal the circumference.

3. Have students define diameter, circumference, volume, and height. Student can answer orally or you can have them write down definition on worksheet.
4. Ask students if they have seen anything as tall as the General Sherman Tree? Ask for some examples to help students associate the measurements of the General Sherman tree with familiar items.

Examples:

- Football field "Length:360 feet or 120 yards or Width: 160 feet or 53 ½ yards"
- Statue of Liberty--Foundation of pedestal to torch 305 ft.
- A local building in your
- Use something around your school for comparison.
- Now have each student measure their height to the nearest foot, then have them complete the worksheet.

Extension:

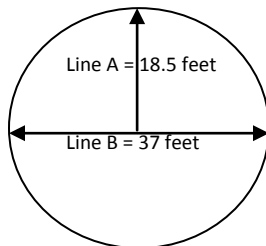
1. Have students research and find the height or length of various items, such as a blue whale, Statue of Liberty, Empire State Building, California State Capitol, etc. And create math equations word problems using these measurements with the measurements of the General Sherman Tree. Once they have created them have them exchange their math problem with classmates.
2. Have students use the Biggest Trees fact sheet to generate more math problems or use Biggest Trees worksheet for extra homework.

Name _____

How Big is Big?



1. Measure your height. A) How tall are you in feet and inches? (Write your answer with the number of feet then the number of inches— example 6 feet 4 inches) B) From that answer, round up or down to the nearest foot and record it below.
2. How many times taller is the General Sherman Tree than you are? Show how you came up with your answer below.
3. The giant sequoia drawing on this worksheet represents how a mature sequoia looks. Imagine that this tree is 250 feet. How much taller is this tree than your height (use your height answer from 1B in feet)? Draw a picture of yourself at the base of this tree. Remember you might as small as a mouse!
4. If the General Sherman Tree is 275 feet how many inches is that?
5. Looking at the base image of the base of the tree on the left (circle image). Which line represents the diameter? Which line represents the radius?



6. The largest branch diameter is almost 7 feet. How many branch diameters would it take to come close to 37 feet?

Hey students here are some
Giant Sequoia Fun Facts!

Did you know if you were 6 ft. tall and stood at the base of the General Sherman Tree it is the same as a mouse looking up at a 6 ft. tall human! Look at the base of this giant sequoia tree to give you an idea of how that might look.

A cone from a giant sequoia is about the size of chicken egg and can have up to 200 seeds.



General Sherman Tree Facts:

1. The diameter of the base is 36 ½ feet.
2. The circumference is 103 feet.
3. It weighs 1,385 tons!
4. It is 275 feet tall.
5. The largest branch diameter is almost 7 feet.
6. If you filled the trunk of the General Sherman Tree with water it would hold enough water to fill 8, 844 bathtubs! In volume terms that is 52,500 cubic feet.
7. It is 2,200 years old.

Bonus Questions!

How many cones would you need to get a 1,000 seeds?

The average bath tub holds 67 gallons of water. If the General Sherman Tree trunk was filled with water it would provide enough water for 9, 844 bath tubs! How many gallons of water would that be?



Hey, we aren't mice,
we are people!