



Shadows

Math – Grade 4-6

Students use shadows to measure the heights of tall outdoor objects.

Materials:

- Poles
- Measuring stick or tape
- Pens or pencils, or responsible use of technology (i.e. using iPod touch or mobile computing device to record data).
- Paper

Instructions:

1. Have students take a pole and a measuring tape outside.
2. Students should choose an outdoor object (trees, buildings, etc) with a visible shadow that they would like to measure.
3. Have students draw a side view of the pole and its shadow. Consider these two sides of a triangle. Draw the third side. Draw another triangle representing the tree and its shadow.
4. Have students answer the following questions:
 - a. Do you need to check that all three pairs of corresponding angles are equal in size before you can conclude that the triangles are similar? Explain your answer.
 - b. Suppose you found that the height of the pole is 1.65 m, the shadow of the pole is 2.15 m, and the shadow of the tree is 7.80 m. Find the height of the tree.