

# Where is the Sun?

## Washington

### Materials needed?

- 8 feet PVC pipe
- yard stick
- protractor
- a piece of rope
- ruler
- marker/chalk
- group of 4 students
- **sun**

### Lab procedures:

#### Step 1

Form a group of 4 people, one will hold the pipe, one will stand 5 feet from the pipe and the other two will mark the position and make the measurement.

#### Step 2

The lab should be done on a sunny day and in the open field.

#### Step 3

One student will hold the 8 ft pipe with the back facing the sun and one student will take the measurement of the shadow on the ground.

#### Step 4

While the student holding the pipe remains stationary, another student will stand 5 feet in front of the pipe and line up with the shadow line of the pipe.

#### Step 5

Record student's shadow distance from where he stands.

#### Step 6

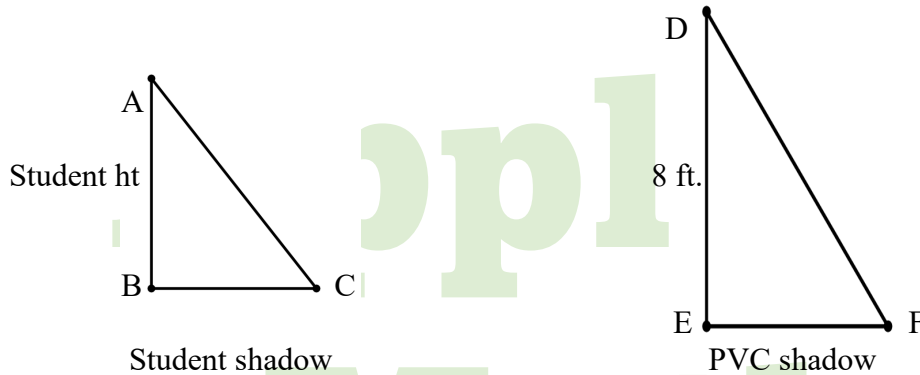
Record the data and return to classroom.

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	Vertical distance PVC height	Horizontal distance PVC shadow	Vertical distance Student height	Horizontal distance Student shadow
Length in feet				

Step 7

Use scale of 1 inch to 1 foot; draw two separate triangles by using the two set of data from the data table. Label the triangles ABC and DEF as shown.



Step 8

Measure distance AB, BC, AC, DE, EF and DF and record the information in the data table. Calculate the corresponding ratios. Measure each angle and record the data in the same table.

	AB	BC	AC	DE	EF	DF
Length						
Ratio	$\frac{AB}{DE}$ =		$\frac{BC}{EF}$ =		$\frac{AC}{DF}$ =	
Angle measure	Angle A =	Angle B =	Angle C =	Angle D =	Angle E =	Angle F =

**Similar triangles are triangles in similar shapes but of different sizes. Furthermore, if two triangles are similar, the corresponding sides should have the same ratio and corresponding angles should be equal to each other.**

Are these two triangles similar?

Yes or no? Please explain.

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