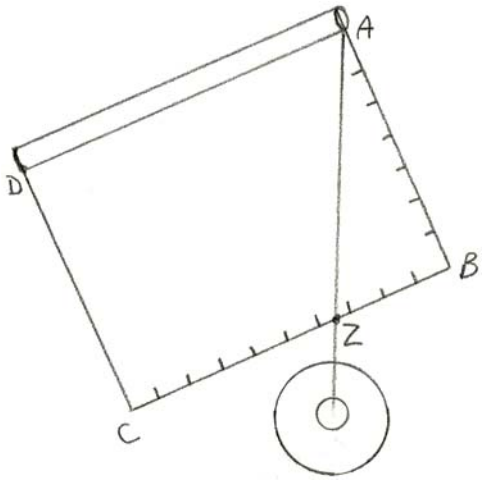
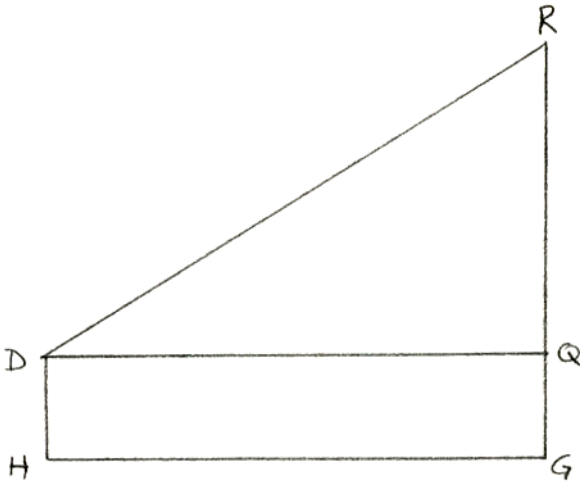
Making and Using a Hypsometer

A hypsometer can be constructed using a piece of cardboard (such as an index card), a drinking straw, some string, a small washer, and tape.



1. On the 5 x 8 index card make marks ¼ inch apart; be consistent in your measurements.
2. Tape a piece of string at corner A.
3. Tie a washer on the loose end of the string.
4. Tape a drinking straw along one side of the index card from points A to D.

The Hypsometer can be used to gather information by following the directions below:



1. Segment RG represents the object you are going to measure. Point D is the location of your eye when you position the hypsometer. Point H is the location of your feet.
2. Hold the hypsometer, viewing through point D and looking-up with point A directed towards the top of the object (point R). Point D on both drawings are the same point!
3. Hold the string down tight to the index card so that you can note the distance from points B to Z. Mark this distance in the appropriate column on the Data Table.
4. When marking the distance, in the Data Table, from points A to B should be the same for all your objects measured.
5. Using the tape measure, measure the distance from points G to H. Enter that distance in the appropriate column of the Data Table.
6. Measure the distance from points D to H. Enter that distance in the appropriate column of the Data Table.

Data Table

Name of Object	Length of AB	Length of BZ	Length of GH	Length of DH	*Length of QR	*Height of object RG = DH + QR

* These columns will be calculated in the classroom.

Completing the calculations:

1. Upon returning to the classroom you will need your Data Table, scratch paper, a pencil, and a calculator.

2. Use the following formula to calculate the value of QR:

$$\frac{BZ}{QR} = \frac{AB}{GH}$$

3. Calculate the height of the object (RG) by adding DH and QR.

