

The Height of a Tree

Purpose

- To determine the height of a tree without climbing it!!

Materials

- Paper plate
- Straw
- Protractor
- Washer
- Scotch tape
- Measuring tape
- Clipboard

Procedure

1) Make a paper plate clinometer.

This is a device that relies on trigonometry.

A simple model can be made with a paper plate, a straw, some string and a weight (washer).

Cut the plate in half and glue a straw along the cut edge.

This is a sighting guide.

Exactly half way along the cut plate edge stick a piece of string with a weight on the end so that it dangles beyond the edge of the plate.

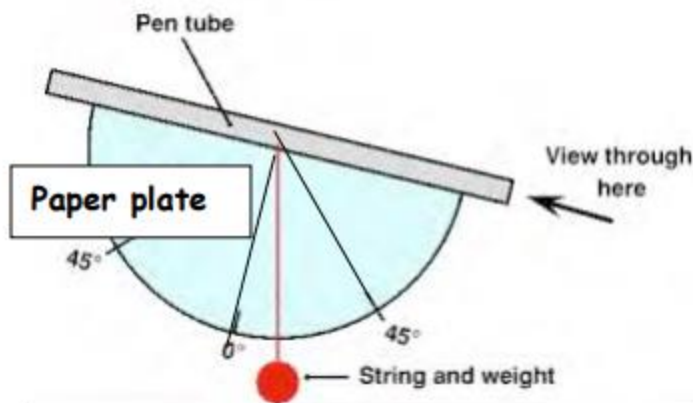


Figure 2. Paper plate clinometer

You now need to be able to find the line that is 45° to the straw.

If there is a pattern of crenulations along the outer curved edge of the plate it may be possible to calculate this position.

Count the crinkles and locate the middle one.

A line from here to where the string is attached will be 0° .

A position exactly half way between 0° and the cut edge of the plate is 45° .

Alternatively use a protractor (in fact the clinometer can be made using a protractor to replace the paper plate).

2) Labeled sketch of what you will do outside—go big or go home—big enough to show your work!

Answer: _____

Conclusion
