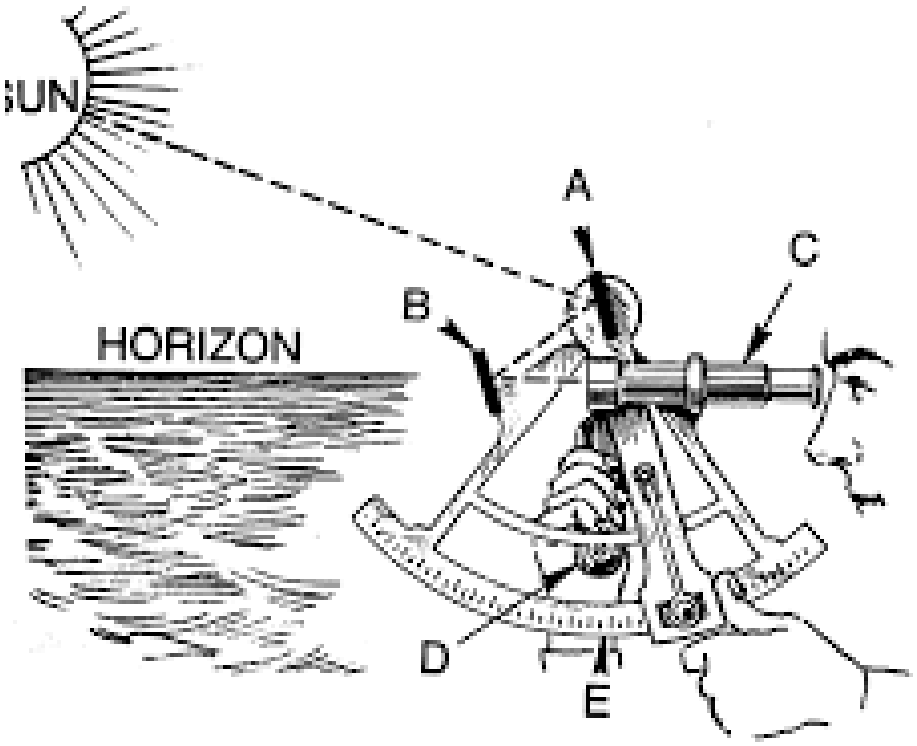
NAVIGATION – Teachers Notes – Make Your Own Sextant

Make your own Sextant – A device used for measuring angles above the horizon.

Teachers notes -

This practical task involves pupils in pairs using basic readily available resources to make sextants to measure angles of things from their eye



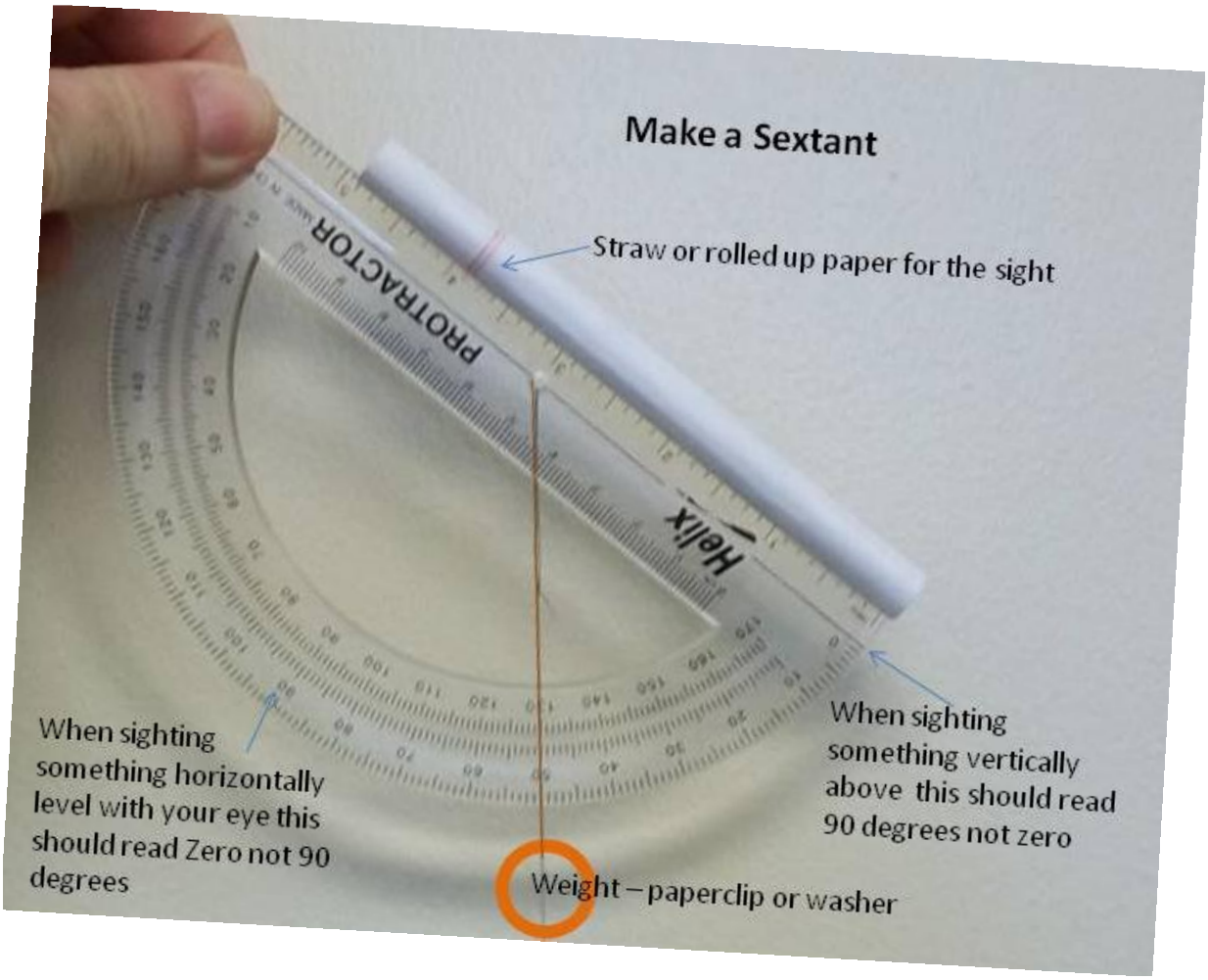
Work in pairs

You need -

- A paper straw or rolled up paper to make the sight
- A protractor to measure the angle
- A paperclip or washer, swinging as a weight to find vertical
- Tape to hold the straw along the straight edge of the protractor
- A partner to read the angle when you are sighting the object

On a standard protractor you will need to mark the angles up differently. You will need to

- Zero degrees to be horizontal. The protractor will have this as 90 degrees change it to zero
- 90 degrees to be vertical. the protractor will have this as Zero degrees change it to 90 degrees
- Mark up every 10 degrees on the protractor from Zero to 90



The string tells us that this sextant or protractor is being held at 40degrees from the horizontal. (Remember to switch the markings or it will read 50 degrees like the one in this picture!)

Measure the angle to the top of a tree (or another high object) from various distances. If you are right under the tree looking straight up the tree's trunk what will the sextant read?

Answer. *Zero*

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Suppose you get an angle of 15 Degrees to the top of the tree. Plot your position on this diagram.

The pupil can use a

You are out in the ocean and you see two islands on the horizon. You can use your sextant device on its side to find out how far away you were from them?

You know you are heading south and measure the angle between the two mountain tops as 37 Degrees. Plot your position on the map