



5th & 6th Class
Science



Cliona's Clinometer

Today we learned that a clinometer is a handy piece of equipment used for measuring angles and calculating approximate heights. It is used frequently in forestry, engineering and astronomy. It was invented over 1,000 years ago and was an important piece of equipment for early navigators.



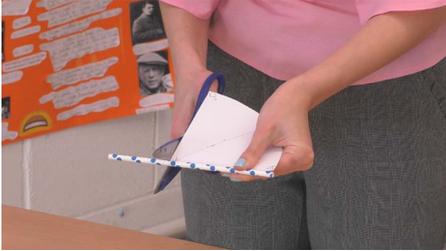
What you will need – Card or paper (2 pieces stuck together), pencil, tape, straw, compass (not essential), protractor*, thread, plasticine / dough / blue tack. *you can print the clinometer template at the bottom of the instructions if you do not have a protractor, just stick it on to some card and cut it out and follow the instructions from step 3.

- 01** Use a compass or side of a plate to draw the curved edge and then mark in 0 degree, 90degree on the two ends of the curve.
- 02** Line up your protractor with 0 degrees and 90 degrees and mark in the 45 degrees angle and draw a line from it into the corner.
- 03** Cut out the clinometer.



Cliona's Clinometer

04 Attach your straw along the top. Cut the straw to same size as card.



05 Attach some plasticine to a piece of string and hang it so the thread and plasticine hang freely. And now your clinometer is ready to use.



How to use your clinometer:

01 Face the tree whose height you want to measure.

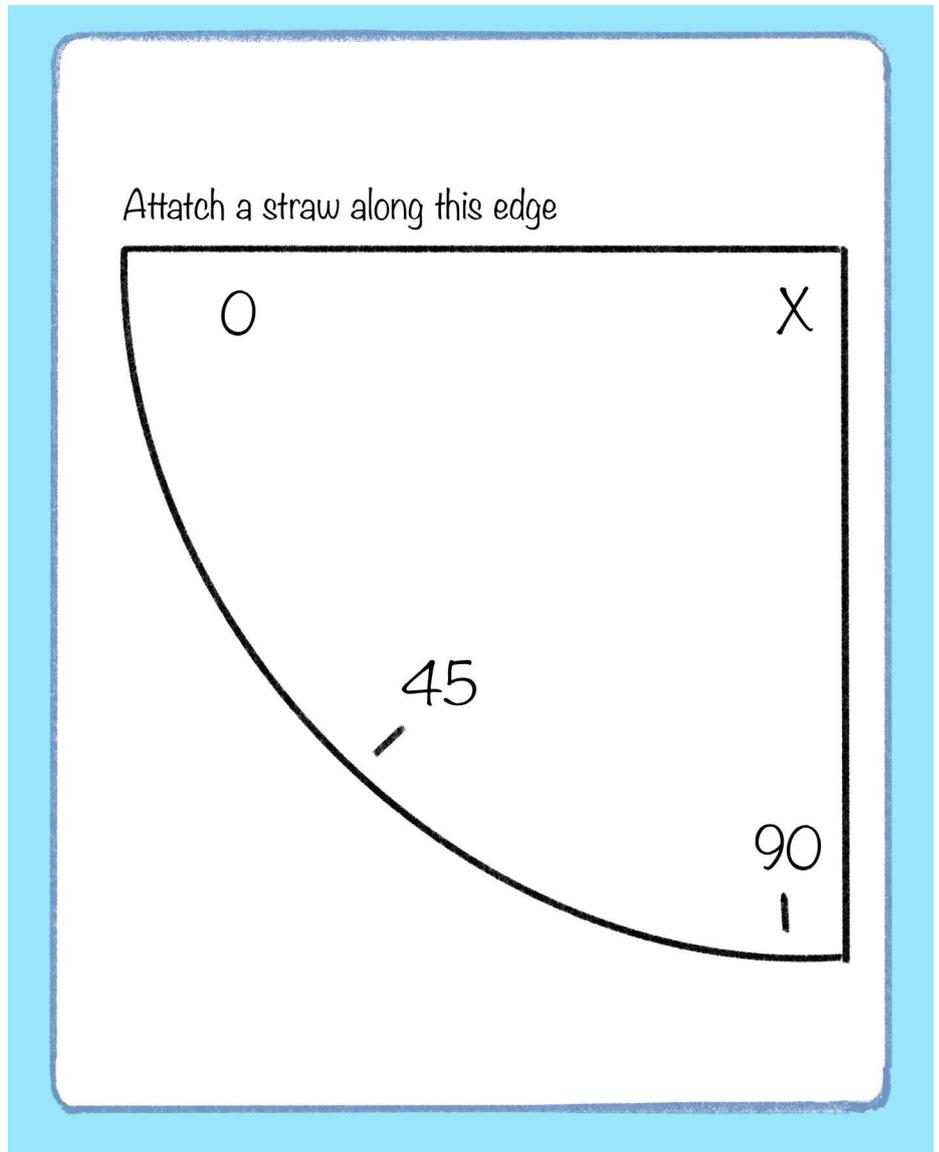
02 Looking through the straw at the end away from the string, change the angle of the card until the string hangs at 45° .

03 Now walk towards or away from the tree until you see the top of the tree through the straw. (It's handy to have a buddy to help keep an eye on the string for you).

04 Measure the distance from you to the base of the tree and that is the approximate height of the tree.



Clinometer Template



Tree ID

While you're out measuring the height of trees, here's some tips on how to identify some common Irish trees by looking at their leaves.

Tree: Common Oak

Description:

-Oak leaves have a tough texture, dark green colour, and wavy edges.

Fruit: acorns

(fruits of most trees are mainly seen in Autumn)

Leaf:



Tree: Ash

Description:

-An Ash's green leaves are oval and pointed with jagged edges. There can be 9 - 15 leaflets on each stalk.

Fruit - winged seeds that look like a big bunch of keys.

Leaf:



Tree: Silver Birch

Description:

-Silver Birch have light green, pointed, triangular shape leaves with jagged edges. White bark with wrinkles of black

Fruit: Catkins

Leaf:



Tree: Horse Chestnut

Description:

-The leaves of the horse chestnut are divided into 5 - 7 leaflets that look like long, green fingers that spread out of the central stem.

Fruit: Shiny brown chestnuts most people call "conkers". They grow inside a spiky green case.

Leaf:



Tree: Sycamore

Description:

-A Sycamore's broad leaves are on long stalks and have 5 jagged, pointed lobes.

Sycamore fruit produce winged seeds that are known to most people as "helicopters".

Leaf:





Tree-rific Jokes!

How do trees access the internet?

They log on!

What's a tree's favourite subject in school?

Geometree



What did the tree say to the bully?

Leaf me alone

What type of tree fits in your hand?

A palm tree



What happened to the wooden car with wooden wheels and a wooden engine?

It wooden go.

Why are Christmas trees terrible at sewing?

Because they keep dropping their needles.



Silly Riddles

What weighs more, a pound of leaves or a pound of logs?

What animals can jump higher than a tree?

Answers Riddles: (1) They both weigh the same, they're both a pound! (2) All animals can jump higher than a tree; trees can't jump!