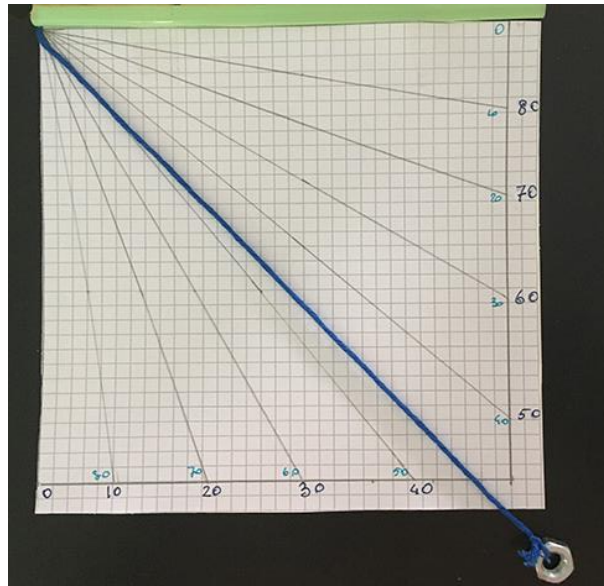


## Quadrant



Historically, quadrants are measuring and calculating devices that was developed over one thousand years ago to measure time and to calculate a person's location on the earth.

Quadrants may have originated with ancient Greeks. The earliest surviving examples, constructed by Arab and Persian craftsmen, come from the 9<sup>th</sup> through the 11<sup>th</sup> centuries. The early astronomical instruments were able to measure the angular height, or altitude, of stars above the horizon. Also an observer could use a single quadrant measurement to calculate the time of night if he or she knew the current date.

The quadrant we will construct will measure the altitude of objects above the horizon.

### Science theme

Astronomy and geometry

### Science skills

Following procedure

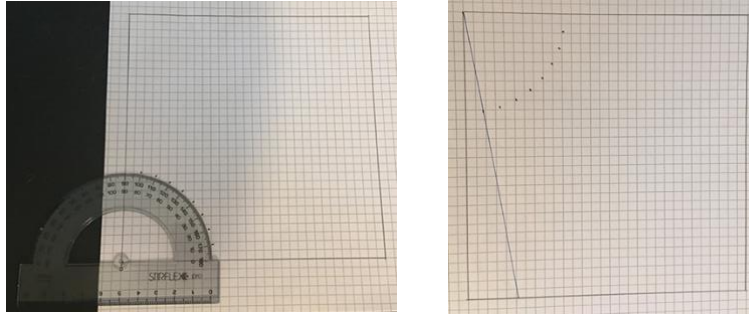
Instrument-making

### Materials

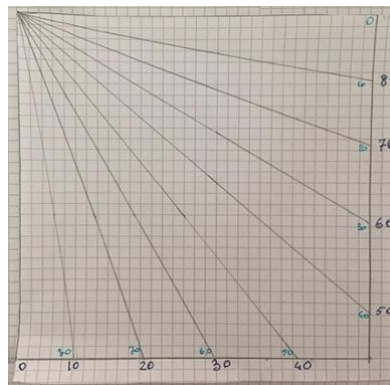
- Erasmus Cardboard
- Erasmus Squared Sheet
- Erasmus Drinking straw
- Erasmus Small weight
- Erasmus Piece of dark thread or a string, 40 cm long
- Erasmus Pencil
- Erasmus Eraser
- Erasmus Ruler
- Erasmus Protractor
- Erasmus Scissors
- Erasmus adhesive tape

### Procedure

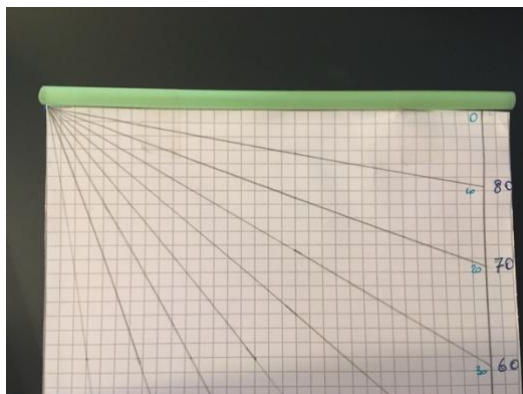
Drawing a 15 cm square on squared paper. With a protractor, mark angles from  $0^\circ$  to  $90^\circ$  as in figures.



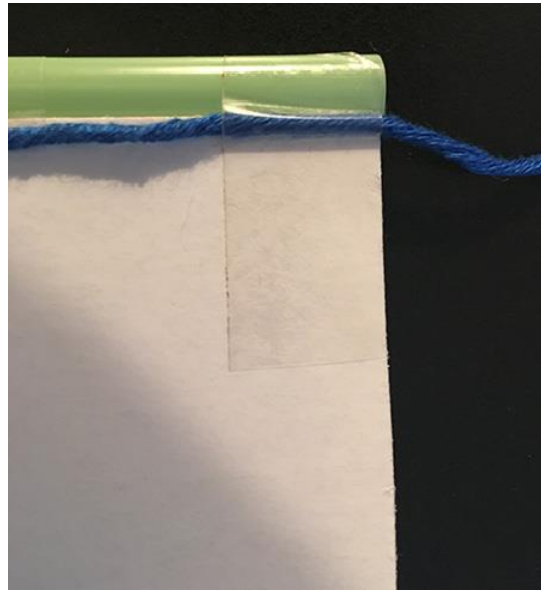
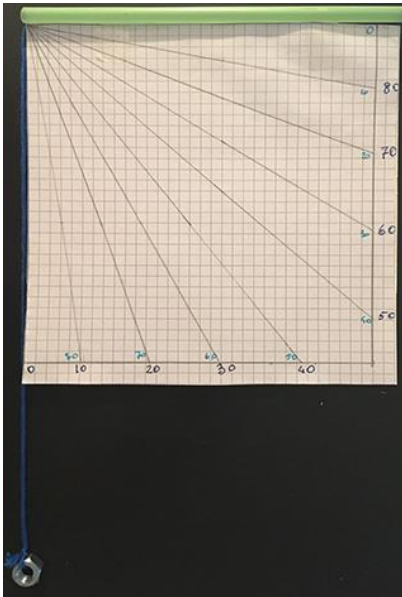
Write angles clockwise and counterclockwise.



Secure the straw with an adhesive tape on one edge where there aren't indications of angle as in figure.



Tie the small weight to one end of the string. Put the string along the other edge where there aren't indications of angle and secure it in quadrant back.



How to use:



Authors: Valeria Greco

If you like you can construct the quadrant explain here  
<http://www.arvindguptatoys.com/toys/simplesextant.html>

Credit

Last image from <http://www.arvindguptatoys.com/toys/simplesextant.html>