TELL THE TIME ... WITH SHADOWS

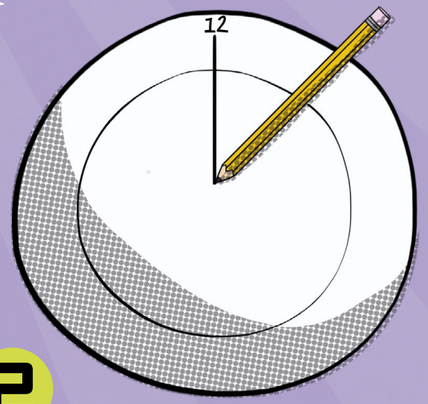
We know that Earth takes one day to spin on its axis. This regular and predictable pattern is incredibly useful. Long before clocks and watches were invented to tell the time, people used the Sun to work out the time of day.

Sundials use the movement of the Sun in the sky to cast a shadow, usually from a vertical part called a gnomon on to a flat plate, called a dial. In this activity you will make a sundial with a pencil and a paper plate.

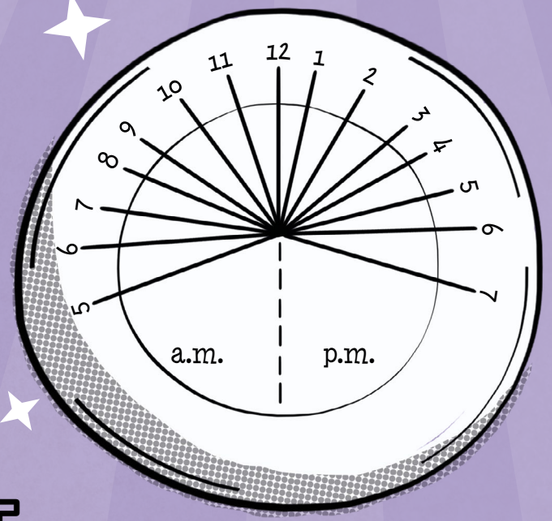
YOU WILL NEED:

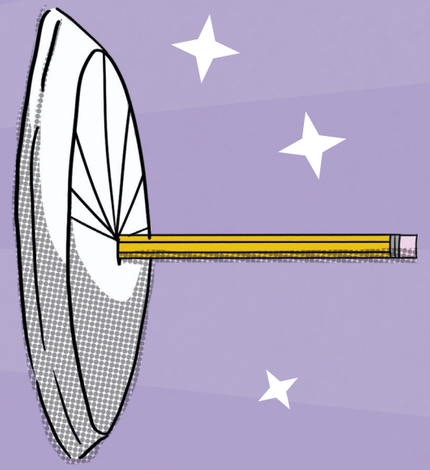
- a paper plate
- a ruler
- a pencil
- a protractor
- modelling clay
- a compass

1 Turn the paper plate upside down. Use the ruler to draw a straight line from the centre to the edge. Write the number 12 at the edge.



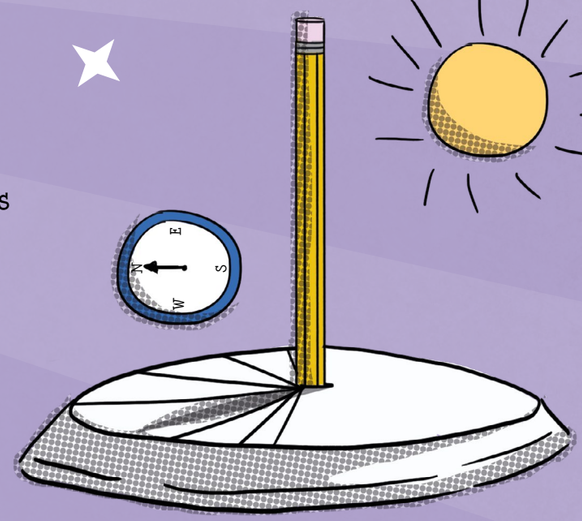
2 Use a protractor to mark off lines around the plate every 15 degrees. Draw seven lines to the left of the number 12 and seven lines to the right. Add the numbers and 'a.m.' and 'p.m.' as shown.



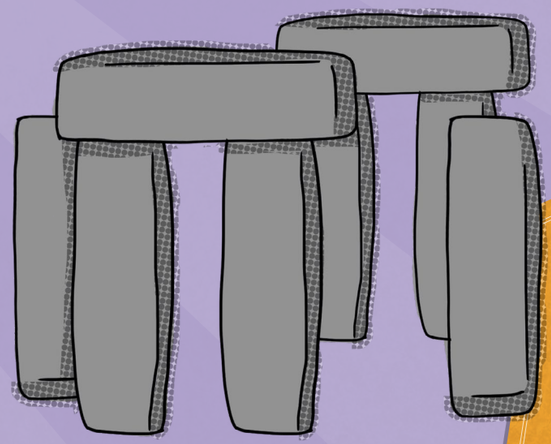


3 Poke the pencil through the centre of the plate, leaving most of it above the plate as shown. Use the modelling clay to hold the pencil in place if it is a bit wobbly.

4 On a sunny day, take your sundial outside. Use a compass to find north. Place your sundial on a flat surface with number 12 pointing north.



5 You should be able to read the time from the sundial by looking at where the shadow of the pencil lies.



HISTORY FACT

Stonehenge is an ancient circle of massive stones in Wiltshire, UK. They are thought to have been used along with the position of the Sun to work out what time of year it was.