

Make a sundial

Build an ancient clock that tells the time using the Sun.

What you need

- A piece of cardboard
- Paintbrush
- White paint
- Ruler
- Pencil
- Nail
- Plasticine
- A sunny spot
- Stones

How does it work?

Almost all sundials have two key parts, a pointer, called a style, and a numbered dial. The style casts a shadow on to the dial to show the hour. Every morning, the Sun rises in the east, passes the highest point at 12pm, then sets in the west. The shadow moves around the dial in a clockwise direction. The time indicated by most sundials is called apparent solar time. Because we shift our clocks backwards and forwards during the year, apparent solar time can be different to the time kept by most clocks.

Sundials have been used for thousands of years.



DID YOU KNOW?

The earliest type of sundial, which was just a vertical stick in the ground, dates back to 3,500BC.

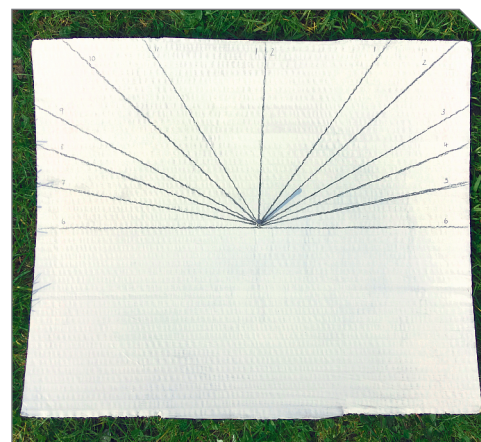
WARNING!
Ask an adult to help insert the nail.



1 Cut out a piece of cardboard from the side of a box. It needs to be about 40 centimetres wide and 60 centimetres long. Use a paintbrush to cover one side of the card with white paint. Wait for the paint to dry.



2 Measure roughly the centre of the cardboard with a ruler, and mark it with a dot using a pencil. Push a nail into the card. Cover the sharp tip of the nail underneath the card with plasticine. Then, first thing in the morning, move the sundial outside to a bright spot that gets sunlight all day. Place stones on it to weigh it down.



3 At exactly 8am, make a pencil mark on the sundial where the shadow of the nail falls on the surface. Repeat this process every hour until sunset. Make a note of which mark refers to which hour. Draw lines connecting the pencil marks with the nail in the centre and number them. Your sundial is now ready to tell the time.