

Making a Sundial Activity



What is a sundial?

Have you ever played outside all day and noticed that the length and location of your shadow changed as the hours went by? You probably also noticed that the sun changed location in the sky throughout the day too. The sun's change in location caused a difference in the size, shape and direction of your shadow.



What is a sundial?

This is similar to how a tool known as a sundial works. A **sundial** is an instrument with a pole, or **gnomon**, in its centre and markings that tell the time like a clock. When the sun shines on the gnomon, shadows are **cast**, or appear at different markings on the sundial.

People are able to tell the time based on the particular mark of time that the sun's shadow falls on.



Have you ever been outside around noon and noticed that the sun seemed to be right above your head? People in the past knew that it was noon when the shadow was at its shortest length on the sundial and the sun was straight above them as well.

Who invented the sundial and why was it invented?

Historians do not know exactly who invented the sundial, since it occurred so long ago around 1500 B.C. However, archaeologists did discover what is thought to be the first sundial in Egypt made of stone. Other historians believe that people in Greece, Rome or Babylonia could have been the first inventors of sundials as well.

Can you imagine planning your day for school, playing out with friends, or even going to the shops without a way to tell time? It would be very difficult or impossible to coordinate all of these plans without a clock. People long ago also made plans and wanted to have a convenient way to arrange times to do things. Therefore, communities began to create sundials for people to know the time of the day.



Making a Sundial



You will need:

- Large, straight stick
- Stones
- Chalk/paint
- Clock
- Sunny day

Making a Sundial

1. Find a spot outside that is not sheltered and that the sun will be able to shine on easily.
2. Place your stick vertically in the centre of this area (on a concrete area, you could create a small mound of dirt and push your stick into this).
3. On each hour, look at where the shadow of your stick falls. Place a stone at the end of each shadow. Use your chalk or paint to mark the stone with the time.
4. Repeat on the hour every hour for as long as you can for one day (this can be done over a few days, you don't have to mark every hour in one day).

Things to think about

- Did you find the shadows all the same length? Why or why not?
- How are shadows created?
- In what direction does the sun rise and set?

Think about these questions as you are building your sundial. Look at what you can observe from your own creation and do some research to explore the reasons more.

These two videos will help you.

<https://www.tigtagworld.co.uk/film/spot-the-shadows-PRM00006/>

<https://www.tigtagworld.co.uk/film/the-sun-and-shadows-PRM00008/>

Making a Sundial



When you have created your very own sundial take a photo and post it on the IDL channel if you would like to share with the class what you have done. You could also write a few sentences about how your sundial works if you would like to share what you have found out.