

## Your Moondial

### What Are the 'Phases of the Moon'?

It takes the Moon around 27 days to orbit around the Earth, during this time we see the Moon go through a series of different shapes, known as the "phases" of the Moon.

It takes around 29.5 days for the Moon to get back to exactly the same phase, this is a little longer than it takes it orbit the Earth, due to the fact that the Earth is also moving around the Sun at the same time.

To find out more, see <http://www.schoolsobservatory.org.uk/astro/esm/moonphase>

### What will your Moon Dial do?

Like the sun, the Moon appears to rise in the east, move across the southern sky and set in the west. This is because of the way the Earth rotates on its axis.

You can use your Moon dial to work out

- 1) where to look in the sky to find the Moon at a given time and its phase
- 2) the approximate time of moonrise and moonset (the times when the moon can be seen appearing above the horizon and disappearing beneath it).

### How to Make your Moon dial

Cut out the Moon dial from Sheet A.

Cut out the envelope from Sheet B. Remember to cut out the diamond shaped window where it says 'Time' and leave the tabs. Fold along the line between the pink and white sections to create an 'envelope' and stick the tabs down on the back.

Place the Moon Dial inside the 'envelope' and use your paper fastener to fix the dial in place. The dial should rotate freely within the envelope and the time should appear in the window.



### To Work out the current moon phase and approximate position in the sky

1. Count the number of days since the last full moon (use a calendar to find this out or search online for a lunar calendar).
2. Count that number of days on from 15 (full moon) on the dial. A picture of the phase on today's date is shown beneath that number.
3. Decide what time of the day or night you want to look at the moon. Move the moon dial so that the time you want to look at the moon is showing in the diamond shaped 'time' window. If you can see your moon (clear sky and above the horizon line) then you can work out in which direction you need to look to see the moon at that time using the compass points.

### To Work out the approximate time of moonrise and moonset

1. For a given moon phase, turn the moon dial so that the Moon appears above the Eastern horizon. Note the time which appears in the time window – this is the time of moonrise.
2. Turn the Moon dial so that the same moon phase touches the Western horizon. Note the time which appears on the time window – this is the time of moonset.