Sky diary: the moon and shadows

Name: Class: Month:

Look at the real sky with an adult. Never look straight at the sun: it can hurt your eyes.

PART 1 My moon diary

Look for the moon every day for a month. Before the full moon, look in the evening; after the full moon, look in the morning. Draw its shape in the box for that day. If you can't see it, write no moon, or cloudy if clouds hide it.

Moon shapes:



no moon | crescent | half moon | nearly full | full moon

After the full moon, the lit side is on the right.

Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
Day 7	Day 8	Day 9	Day 10	Day 11	Day 12
Day 13	Day 14	Day 15	Day 16	Day 17	Day 18
Day 19	Day 20	Day 21	Day 22	Day 23	Day 24
Day 25	Day 26	Day 27	Day 28	Day 29	Day 30

1. What happened to the moon's shape after the full moon?

2. Predict: what will the moon look like 30 days after your day 8?

Answers (turn the page round). Part 1: the moon grows from a thin crescent to a full moon, then shrinks to a crescent again, and on a few days there is no moon to see; after the full moon, less of it is lit each day; 30 days after day 8 it looks much the same as on day 8, because the pattern repeats about every 29 and a half days. **Part 2:** the shadow is longest in the morning and the afternoon, when the sun is low, and shortest in the middle of the day, when the sun is high; it points away from the sun, towards the west in the morning and towards the east in the afternoon; answers to question 3 vary.

PART 2 Shadow watch

Aim: To find out how a shadow changes during the day.

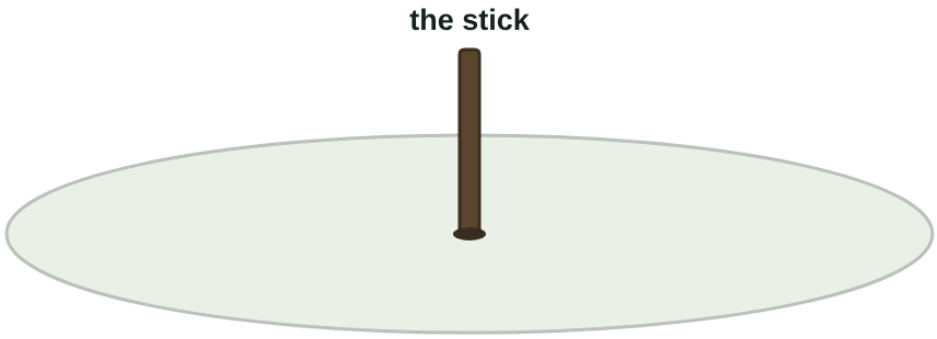
You need: A stick or a cone in a spot that is sunny all day, chalk or small stones to mark the shadow, and blocks to measure with, or your feet.

> **Safety.** Never look straight at the sun. Look at the shadow on the ground, not up at the sun, and follow your school's sun-safe rules.

1. Stand the stick upright in the ground, or put out a cone, in a spot that is sunny all day.
2. In the morning, mark the end of the shadow with chalk or a stone. Measure the shadow with blocks, or with your feet, heel to toe. Write it in the table.
3. Predict: will the shadow be longer or shorter in the middle of the day? Write your prediction in the table.
4. Measure the shadow again in the middle of the day and in the afternoon. Each time, mark the end of the shadow and see which way it points.
5. Draw the stick and its three shadows in the box. Write the time beside each shadow.

Time	We predict: long or short?	Shadow length (blocks or feet)	Which way does the shadow point?
Morning			
Middle of the day			
Afternoon			

Draw the three shadows



1. When was the shadow shortest?

2. Which way did the shadow point in the morning, and in the afternoon?

3. Did your results match your predictions? What was different?