

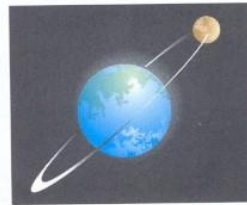
20 How does the Moon move?

- The Moon orbits the Earth about once a month.
- The shape of the Moon appears to change as it goes around the orbit.

If there is a clear sky, watch out for the Moon tonight. How much of it will be lit up? Is it bigger or smaller than last night? Do you know when there will next be a full Moon? As the Moon orbits the Earth, we see different amounts of the Moon lit by the Sun. These are called the phases of the moon.

How often does the Moon orbit the Earth?

The word 'month' comes from the word 'Moon', because it takes about a month for it to go around once.



How does the Moon look at different times of the month?

A full Moon (Wed 9th):

The Moon at the first point in its orbit. The sun is shining straight onto the face of the Moon.

A new Moon (Wed 23rd):

The Moon is now halfway round its orbit. The Sun is more or less behind it so it looks dark.

Sun	Mon	Tue	Wed	Thur	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

A waning Moon (Wed 16th):

The Moon has gone a quarter of the way round the Earth. Sunshine hits it from the left-hand side.

A waxing half Moon (Wed 30th):

When the Moon is three-quarters of the way around its orbit. The sunshine is lighting it from the right-hand side.

Gibbous Moon

When more than one half of the Moon is bright, but it is not completely lit up.

Crescent Moon

When less than half of the Moon is bright, but it is not completely dark.



On track

1 This calendar shows the phases of the Moon over three months. On the 11th October there was a new Moon. Spot the pattern and then answer the questions.

	October					November					December				
Mon	2	9	16	23	30	6	13	20	27	4	11	18	25		
Tue	3	10	17	24	31	7	14	21	28	5	12	19	26		
Wed	4	11	18	25	1	8	15	22	29	6	13	20	27		
Thur	5	12	19	26	2	9	16	23	30	7	14	21	28		
Fri	6	13	20	27	3	10	17	24	1	8	15	22	29		
Sat	7	14	21	28	4	11	18	25	2	9	16	23	30		
Sun	1	8	15	22	29	5	12	19	26	3	10	17	24	31	

Key ● = New Moon ○ = Full Moon

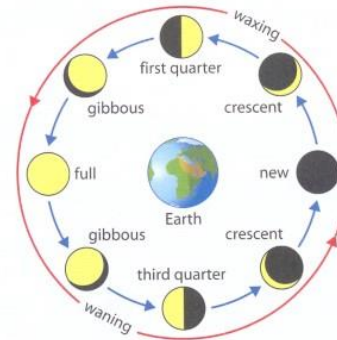
- (a) On what dates was there a full Moon?
- (b) Give two dates in December when the Moon was half lit up.
- (c) How many orbits of the Earth did the Moon make between 11th October and 8th December?



Aiming higher

2 This diagram shows the Moon making one complete orbit of the Earth.

- (a) How long does it take the Moon to go through one complete cycle of its phases?
- (b) Explain the difference between a gibbous and a crescent Moon.
- (c) What do the words 'waxing' and 'waning' mean when we are talking about the appearance of the moon?
- (d) Explain why a full moon is bright and a new moon is dark.



How well am I doing?

On track

I can state how long it takes for the Moon to make one complete orbit of the Earth.

Aiming higher

I can explain why the appearance of the Moon changes over a month.