



St. Antony's Catholic College

Aspire - Believe - Achieve

Year 7 Science – Zones 3 & 4

Instructions for the week beginning Monday 4th of May 2020

Once your work is completed you do not need to submit it. You can mark it in green when the answers are published and keep it neatly and safely until you return to school. If you wish to submit a **good** piece of work, **after** you have marked it yourself, please do so using the SUBMIT button on ShowMyHomework.

See <https://help.teamsatchel.com/en/articles/2912000-submitting-my-work-online> for instructions on how to do this.

If you've any issues with your work please comment on Showmyhomework and we will respond to you.

If you don't have the textbook, I have attached images of these pages at the end of this document.

Watch

<https://www.youtube.com/watch?v=f4ZHdzl6ZWg>

7Lb Moonshine

Why does the shape of the Moon seem to change?

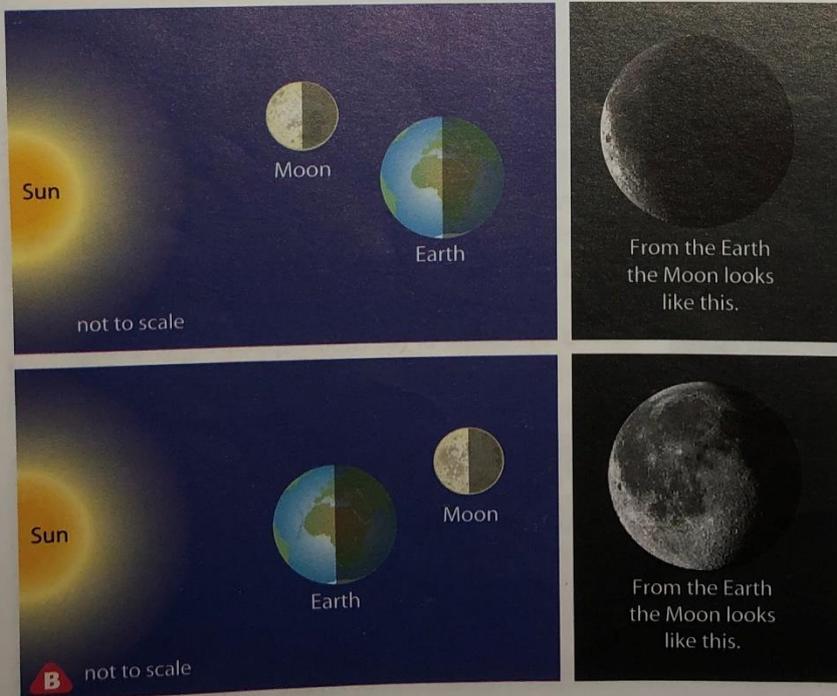
The Moon is the Earth's only natural satellite. It has no atmosphere. This means that there is no air, no wind and no rain. There is no life on the Moon.

The Moon is much smaller than the Earth. Like the Earth, it does not produce its own light. We can only see the Moon because it reflects sunlight back towards the Earth.

- 1 How big is the Moon compared with the Earth?
- 2 How are we able to see the Moon? Draw a diagram to explain your answer. (Hint: you may need to look back at the model on page 165.)
- 3 How do you think scientists know what it is like on the Moon?



The shape of the Moon seems to change as it orbits the Earth. The different shapes are called **phases of the Moon**. Half of the Moon is always lit by the Sun, but we cannot always see all of the lit part.



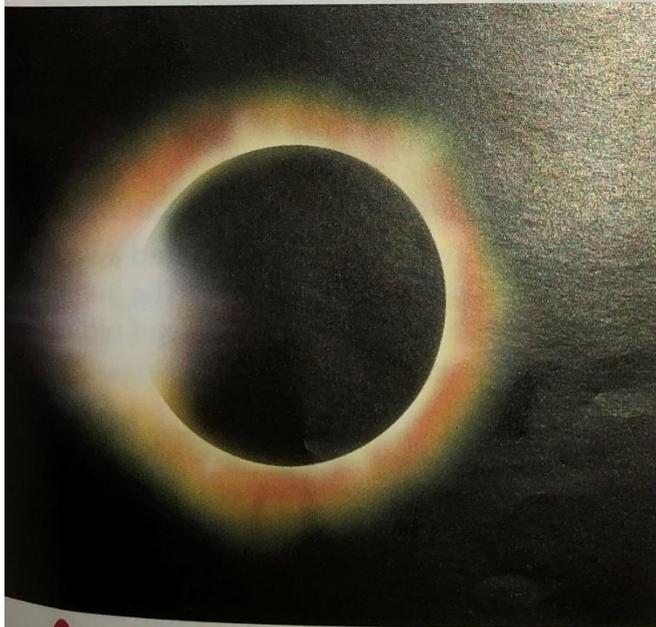
H S W 
Thomas Hariot (1560–1621) observed the Moon using a telescope in 1609. He made the first detailed drawings of the Moon.

When the Moon is between the Sun and the Earth we cannot see any of the lit part. This is called the **new moon**. When we can see all of the lit part, the Moon looks like a complete circle. This is called a **full moon**. It takes 29.5 days for the Moon to orbit the Earth once. It is 29.5 days, or one lunar month, between one full moon and the next.

Eclipses

Sometimes the Moon is directly between the Sun and the Earth. Some places on the Earth are in the shadow of the Moon. People standing in the shadow see a **solar eclipse**. If the Sun is completely blocked out, we see a **total eclipse**. If only part of the Sun is blocked out, we see a **partial eclipse**.

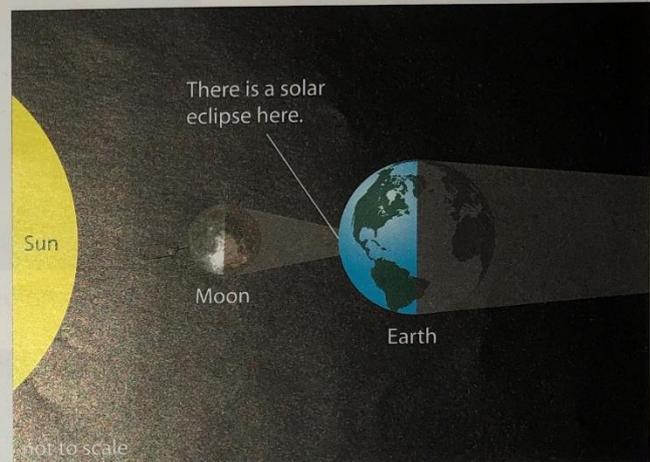
Sometimes the Moon moves into the shadow of the Earth. When this happens the Moon looks very dark. This is a **lunar eclipse**. We do not get an eclipse every month because the orbit of the Moon is tilted compared to the orbit of the Earth.



D The last total eclipse visible in the UK happened on 11 August 1999. During an eclipse scientists can study the Sun's atmosphere, which cannot normally be seen because it is not as bright as the Sun.

4 How many days are there between one full moon and the next?

5 a Where is the Moon when there is a new moon?
b Is a full moon visible during the day or at night? Explain your answer.



6 Would a solar eclipse happen at full moon or new moon? Explain your answer.

7 Draw a diagram to show the positions of the Earth, the Moon and the Sun when there is a lunar eclipse. Show the rays from the Sun and where the shadow is.

H S W

I CAN...

- explain how we can see the Moon.
- explain why the shape of the Moon seems to change as it moves around the Earth.
- use a model to show the arrangement of the Sun, Earth and Moon during a solar eclipse and a lunar eclipse.

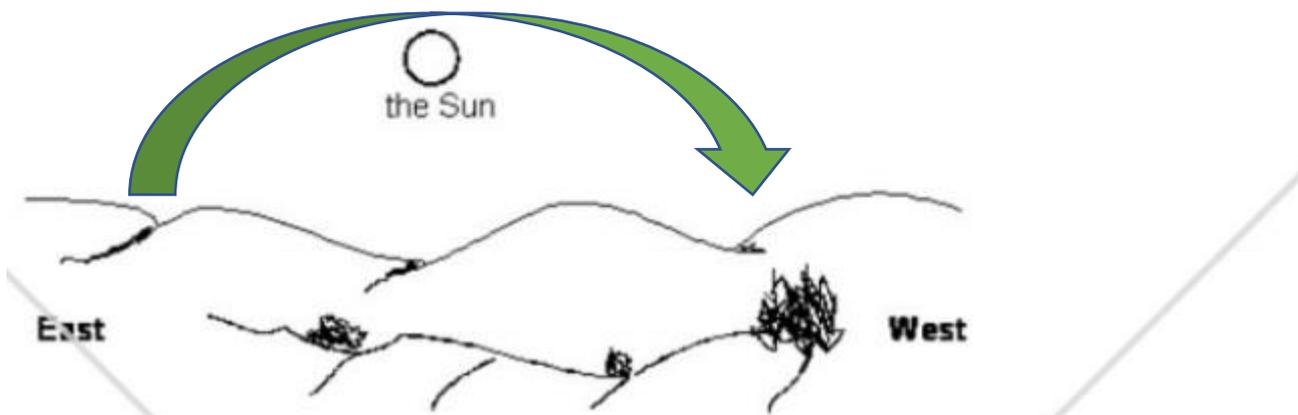
H S W

Do

Self- assess last week's work

Can you explain why we have daytime and night-time? Use the word bank to help you!

During the daytime, our side of the Earth is facing the Sun so we receive its light. There is so much light we can't see the Moon. Night-time happens because as the Earth spins our side ends up facing away from the Sun so we receive no light (darkness). At this point we are able to see the Moon.



- (a) (i) Draw the path which the Sun appears to take **from sunrise to sunset** on the 21st March. Label the path 'March'.
- (ii) Put an arrow on the line you have drawn to show the direction in which the Sun appears to move across the sky.

Is the earth flat or round? What is the evidence for your answer?

There are many answers you could have given to this. The most obvious from the book is that we have taken pictures from space of the Earth which clearly shows that the Earth is a sphere (oblate).

Questions:

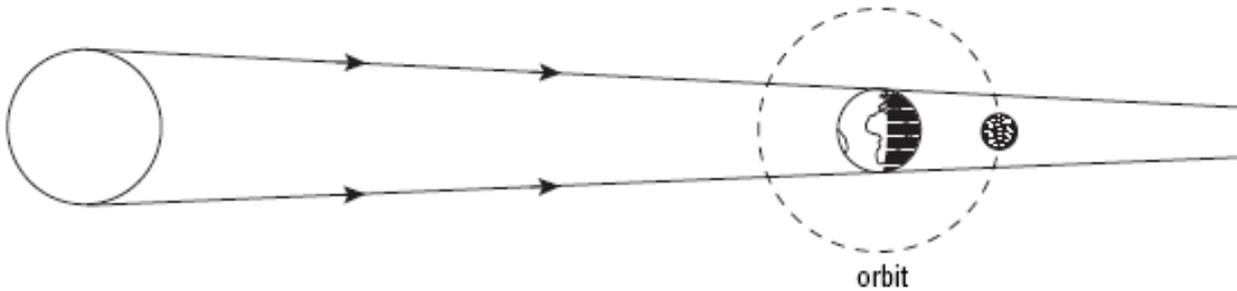
1. The Sun provides the Earth with heat and light.
2. It takes the Earth 24 hours to complete a full rotation around its axis.
3. Shadows move because as the Earth rotates the position of the Sun in the sky appears to change so the shape of the shadow is changed.
4. A) A year is how long it takes for the Earth to complete one orbit of the Sun.
B) An Earth year is 365.25 Earth days long.
C) A leap year is an extra day that is added to every 4th year to make up for the extra 0.25 days it takes the Earth to orbit the Sun each year.

5. A) During the daytime, our side of the Earth is facing the Sun so we receive its light. There is so much light we can't see the Moon. Night-time happens because as the Earth spins our side ends up facing away from the Sun so we receive no light (darkness). At this point we are able to see the Moon.
B) It takes 365 days between each midsummer because it takes 365(.25) days for the Earth to orbit the Sun and arrive back at that same position from the Sun.
6. A satellite is anything that orbits a planet. They can be natural like the moon or artificial like mobile phone satellites.
7. A lunar month is how long it takes for the Moon to completely orbit the Earth.
8. A) The moon appears to travel across the sky every 24 hours because the Earth is spinning on its axis.
B) The moon appears to change shape every 29.5 days because it takes this time for the Moon to orbit the Earth.

Eclipses

Eclipse of the Moon

- On the diagram below, label the Sun, the Moon and the Earth.
- Use a yellow crayon to shade in the parts of the diagram which are in sunlight.
Use a black crayon to shade in the parts of the diagram which are in shadow.



- Explain why you can't see the Moon clearly in an eclipse. Use page 163 to help you.

- What is another name for an eclipse of the Moon? _____

Eclipse of the Sun

- On the diagram below, label the Sun, the Moon and the Earth.
- Use a yellow crayon to shade in the parts of the diagram which are in sunlight.
Use a black crayon to shade in the parts of the diagram which are in shadow.



An

- Fill in the spaces below using the words in the box.

shadow	solar	dark	Moon	Sun
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eclipse of the Sun happens when the Moon comes directly between the _____ and the Earth. Part of the Earth is in the Moon's _____. The sky goes _____ even though it is daytime, because the _____ is blocking the Sun's rays.

Another name for an eclipse of the sun is a _____ eclipse.

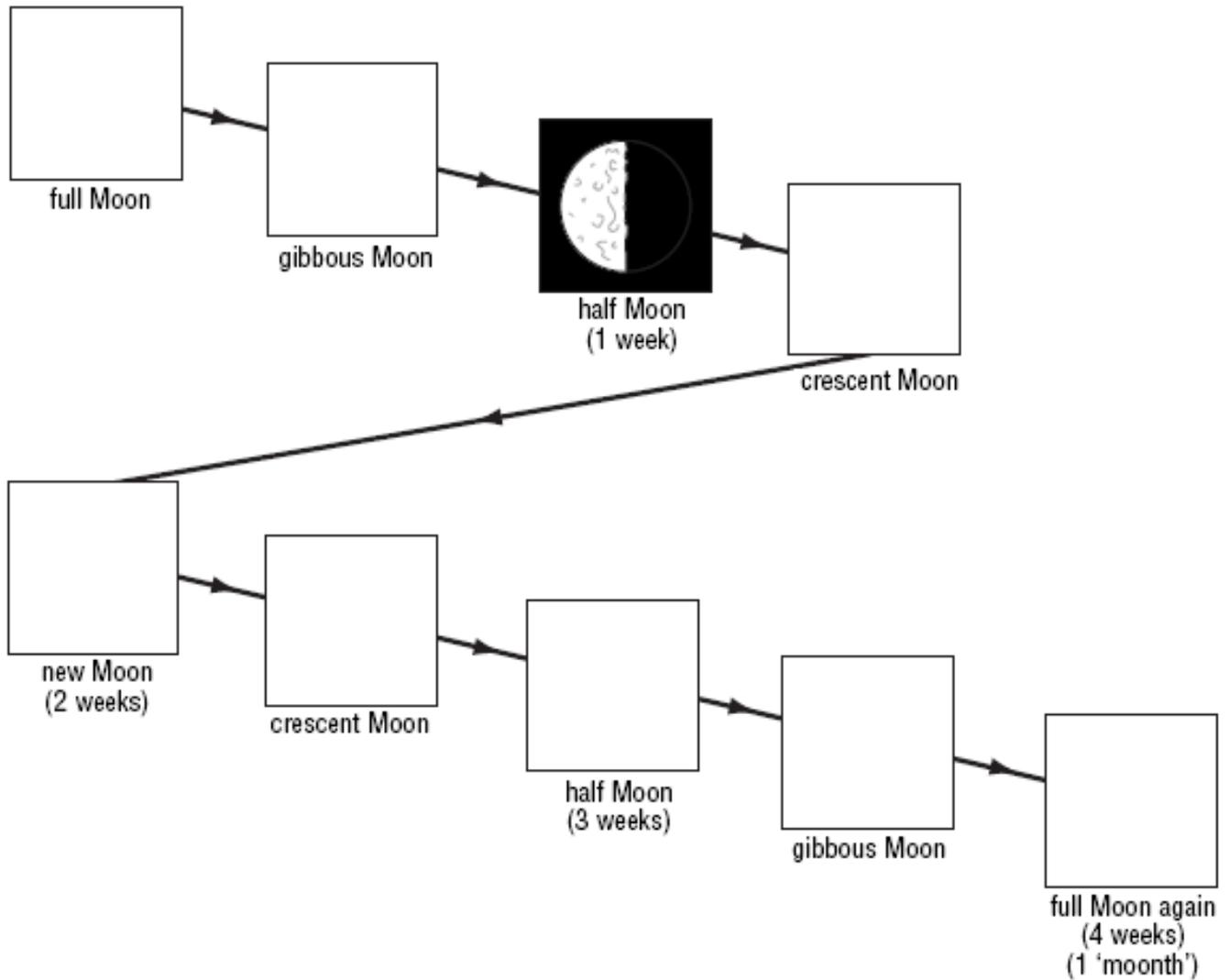
Put an X on the diagram to label the part of the Earth which is in the eclipse.

Phases of the Moon

The diagrams below show the 'phases' of the Moon.

Cut them out and stick them on the correct positions on this time-chart:

(One of them has been done for you.)



Then complete the questions on pages 166 and 167 of your textbook (as per the above pages). Answers will be shared at the end of the week.

Optional Activities

Go to

<https://quizlet.com/au/456871672/day-and-night-day-and-night-day-and-night-flash-cards/>

Complete the learn activity and then the test.

Or

Go to <https://app.senecalearning.com/classroom/course/419c7523-d408-4bc7-9b96-f7f12abdacae/section/4a6ee968-ad87-46c8-8428-0c52ed6d1cc7/session>

Or

Go to <https://www.bbc.co.uk/bitesize/tags/zf9yy9q/year-7-lessons/1> and work through the Science lessons set each week.

Or

Go to <https://www.thenational.academy/online-classroom/year-7/science/#subjects> and work through the Y7 science lessons shared there.

Or

Complete the wordsearch below.

Fantastic Friday – Please email Mrs Wright (f.wright@st-antony.com) by 12pm on a Friday if you'd like to share some of your best work of the week with her. She'd love to see it!