



St. Antony's Catholic College

Aspire - Believe - Achieve

Year 7 Science – Zones 1 & 2

Instructions for the week beginning Monday 11th 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=FqqKb0WmZ-0>

Self-assess last week's work:

Eclipses

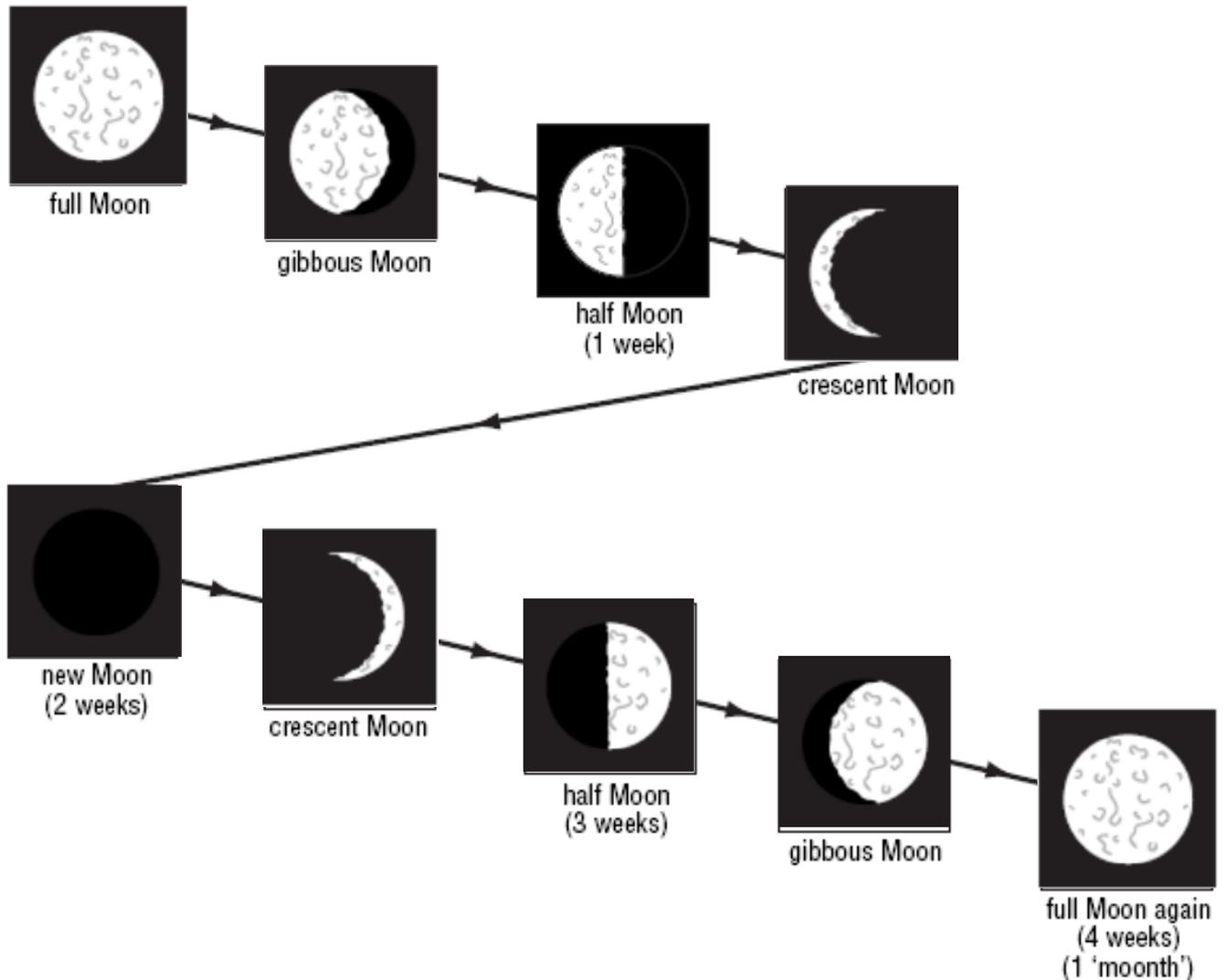
- Fill in the spaces below using the words in the box.

shadow	solar	dark	Moon	Sun
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An eclipse of the Sun happens when the Moon comes directly between the _____ ^{Sun} and the Earth. Part of the Earth is in the Moon's _____ ^{Shadow}. The sky goes _____ ^{dark} even though it is daytime, because the _____ ^{Moon} is blocking the Sun's rays. Another name for an eclipse of the sun is a _____ ^{Solar} 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.

1. The Moon is much smaller than the earth.
2. We can see the Moon at night as the light from the sun is reflected by the surface of the moon (like a mirror) on to the Earth.
4. Between one full Moon and the next there are 29.5 days.

7Lc A plan for all seasons

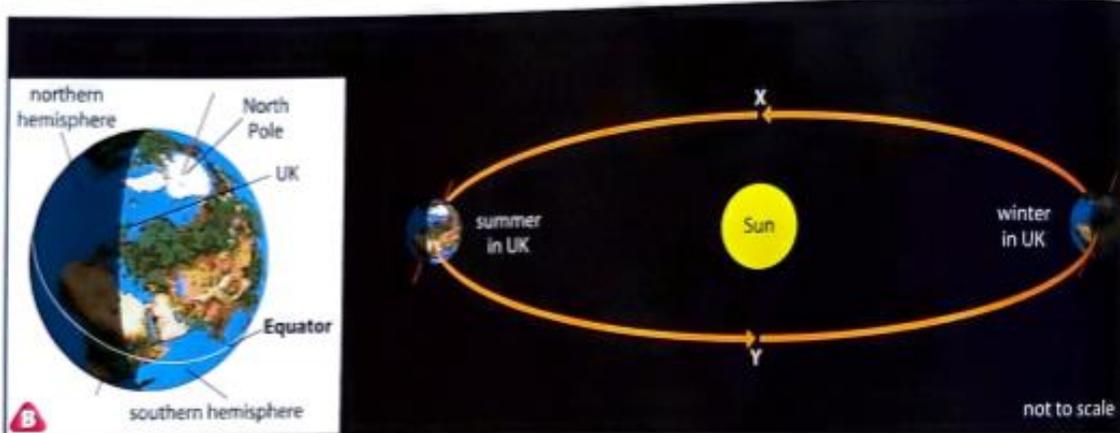
Why are summer and winter different?

The weather in Europe is very different at different times of the year. These changes happen because the Earth's axis is tilted.



A These photos show the same place in summer and winter.

- 1 Describe the differences between summer and winter for:
 - a the length of daylight
 - b the temperature.



The Earth has two halves or **hemispheres**. Europe is in the northern hemisphere. When the **northern hemisphere** is tilted towards the Sun it is summer in Europe. The Sun is high in the sky at midday, and days are longer than nights.

When the northern hemisphere is tilted away from the Sun it is winter in Europe. The Sun is not very high in the sky at midday, and nights are longer than days.

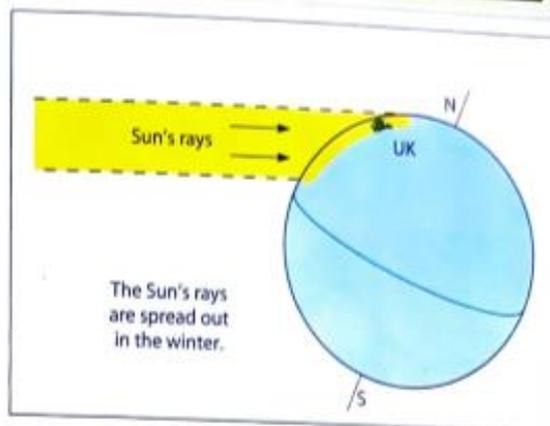
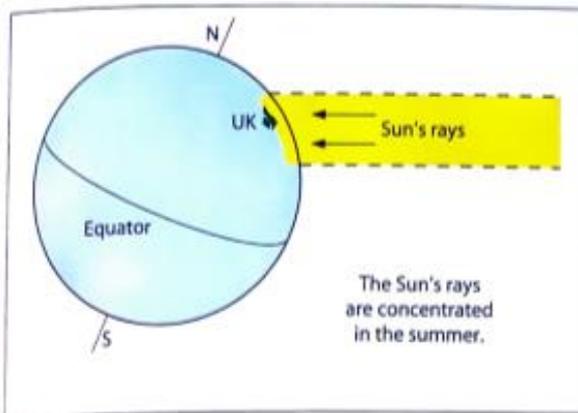
- 2 Explain what a hemisphere is.
- 3 Look at diagram B.
 - a What season will it be in the UK when the Earth is at position X?
 - b What season will it be in the UK when the Earth is at position Y?
 - c Explain your answers.

H W

In Roman times, the calendar was getting out of step with the seasons. Julius Caesar introduced a new calendar with 365 days in each year, and an extra day every fourth year (a leap year). The calendar got out of step again, and in 1582 Pope Gregory XIII amended it to remove some of the leap years. The Gregorian calendar was introduced in England in 1752, when 2 September was followed by 14 September.

- 4 Photo C shows the Earth from above the North Pole in July. Explain why days are longer than nights in summer. H S W

The Sun feels hotter in the summer than it does in the winter. Some people think that this is because the Earth is closer to the Sun in summer, but this is not true in the northern hemisphere. The northern hemisphere is slightly closer to the Sun in winter. This means that the southern hemisphere is closer to the Sun during its summer, which is one reason why summers are often a little hotter in the southern hemisphere than they are in the northern hemisphere.



D The Sun feels hotter in our summer because it is higher in the sky. This means the heat from the Sun is more concentrated. Summer days are also warmer than winter days because the Sun is shining for longer, and has more time to warm up the air and the ground.

- 5 Draw a diagram looking at the Earth from above the North Pole in winter (similar to photo C). Label your diagram to help you to explain why nights are longer than days in winter. H S W
- 6 Australia is on the opposite side of the Earth to the UK. Which season is it in Australia when it is summer in the UK?
- 7 a If you were near the North Pole, how long would daylight last in summer? H S W
 b What would happen in winter? H S W
 c Draw labelled diagrams to explain your answers to parts a and b. H S W
- 8 If you live near the Equator, the Sun always feels hotter than it does in the UK. Use a diagram to help you to explain why. H S W

I CAN...

- list the differences between summer and winter in Europe.
- use a model to explain that we have seasons because the Earth's axis is tilted. H S W
- recall that the northern hemisphere is tilted towards the Sun in the summer.

Reason For Season

S U Y S H U H B O A N L J B T R E W N W G O W T
W W B Z W I G U R R H S S K Z E Q I F E I W E W
W T H T U H I C S E B L Q A X V U N S P R I N G
J H R N W T G W K C C W E N D O I T U C A V K Q
O Y O K H X N G F I N U X W E L N E J D L Y X D
A S T R O N O M Y T H Z V G M U O R N S H M Z N
K F A F Y Z K V L S U G T N A T X Z F O R F U N
H Z T T B Y I A K L B Q I C K I U A L L W Z R O
A X I G R W V V P O T C C E U O S E R S T J W R
S S O L O G V E S S C U R D J N I O V T D L I T
D M N A D G Y R Z R Z O N G Q X E J A I K R M H
J C B L E A N N I E C P Z T B A F Y M C K Z C E
B F Z C R O J A Y T H T V Z S K L I D E C G O R
X O N I U Q E L A N M U T U A T H G I N U D M N
I I S K C B R E Y I J I J I X H R M X L L A F H
O H E H S F D Q X W P S L Y P A G S G A X A R E
R G Z V U G I U I E C I T S L O S R E M M U S M
X P B H M E R I R A M X G N J C A S B J F Y M I
B Y H B M P L N R X C A G U X E Z Q Y J J Y O S
R W O B E M N O G H N D C A L E N D E R R I G P
Z G B U R A B X O D F G O K H J F T T I B R O H
L Q Q I D O A G R A Y L N V S M Y Y R C S S F E
W P Y A D V B U F S J X C N X P N U N R U E R R
T N O D B S O U T H E R N H E M I S P H E R E E

- | | | | |
|---------------------|---------------------|------------|-----------------|
| astronomy | autumnal equinox | axis | calender |
| day | equinox | fall | night |
| northern hemisphere | orbit | revolution | rotation |
| solstice | southern hemisphere | spring | summer |
| summer solstice | vernal equinox | winter | winter solstice |

- Circle the correct answer: The UK is in the Northern / Southern hemisphere.
- Complete the following gap fills using the keywords at the bottom of this question:

Days, Nights and Years

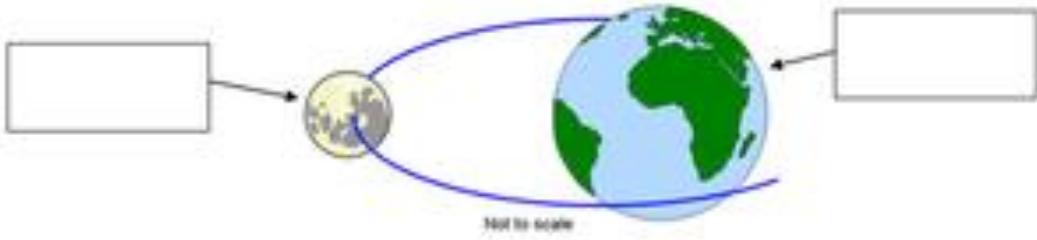
We experience day and night here on _____ because the planet _____ (spins). Countries having day-time are the ones that are _____ the Sun. No light reaches the countries not facing the Sun (on the 'Dark Side') and so it is _____ - _____. Those countries in daylight will be in darkness 12 hours later.

Every day the Earth spins on it's _____. It takes ___hrs for one whole spin.



Draw the diagram and shade on where it is night

Every ___ days the _____ orbits the Earth.



A year is _____ days. The _____ orbits the _____ once a year.

Key Words:
 24, moon, rotates, Earth, 28, axis, night-time, Earth, facing, 365, sun

- Match up the beginnings and the endings of these sentences.

<u>Sentence beginnings.</u>	<u>Sentence endings.</u>
1. The Earth takes 365 ¼ Earth-days to . . .	-towards the sun.
2. We have seasons because the Earth's axis is . . .	- orbit ("go around") the sun.
3. During summer in the northern hemisphere, the Earth is tilted . . .	- less sunlight.
4. The UK therefore gets . . .	- longer and warmer.
5. The days are . . .	- shorter and colder.
6. During winter in the northern hemisphere, the Earth is tilted . . .	- more sunlight
7. So, the UK gets . . .	- tilted at an angle of about 23°.
8. The days now are . . .	- 12 hours of night-time
9. 'Equinox' means "equal night", that is, 12 hours of day-time and . . .	- away from the sun.

Answer questions 1, 2 and 6 on pages 168-169 in the How science works textbook.

The answers to these questions will be posted on SMHK on the 15th May 2020.

Optional Activities

Go to

<https://quizlet.com/502618873/seasons-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.

Fantastic Friday – Please email Mrs Wright (f.wright@st-antonys.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!