

E&S4. Develop and use a model of Earth-Sun-Moon system to describe predictable phenomena observable on Earth, including seasons, lunar phases, and eclipses of the Sun and the Moon

1: Match the correct boxes to each other to complete the statement correctly:

Day and night happen...

...for the earth to spin one full rotation on its axis

We get heat and light...

...once every 24 hours

A year is 365 days because

...you are in the shadowed part of the Earth

24 hours is the time taken...

...from the sun

It is night when...

...is facing towards the sun

Day is when the part of the Earth...

...that's how long it takes to orbit the sun

2: Study the following diagram and match the labels to the diagram:

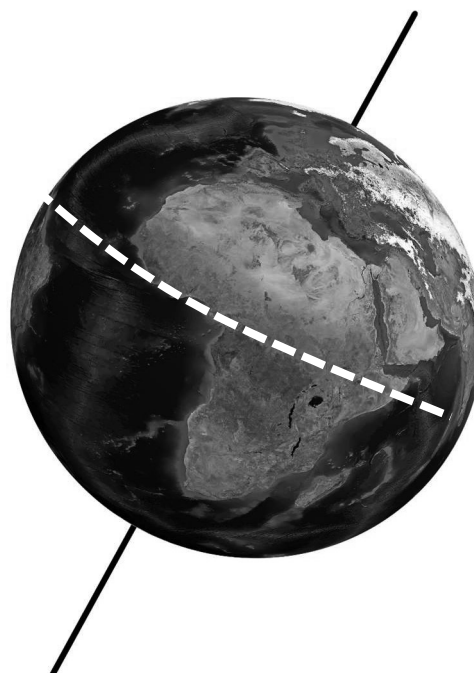
SOUTH POLE

EQUATOR

NORTH POLE

**NORTHERN
HEMISPHERE**

**SOUTHERN
HEMISPHERE**



3: Fill in the blanks using the words below:

SPRING
23°

24
WINTER

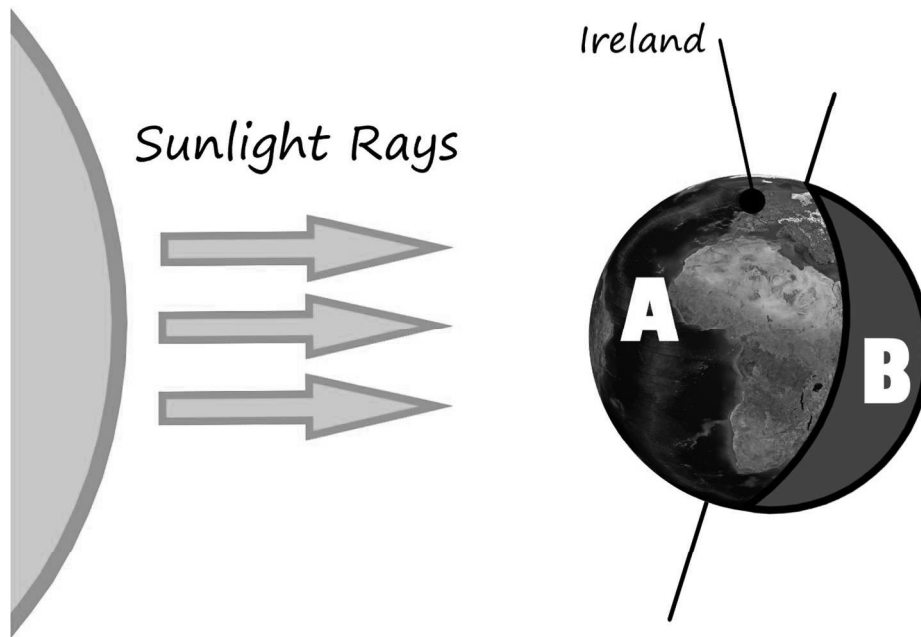
TILTED
AUTUMN

SUMMER
LONGER

DAY-TIME
SHORTER

The Earth spins one full rotation every _____ hours. We call this one day. In one full rotation a particular spot will experience night-time and _____. We have seasons because the earth's axis is _____ at an angle of _____ degrees. There are four seasons, _____, Summer, _____ and Winter. In summer the days are _____ than the nights. While in winter, the days are _____ than the nights. When one hemisphere has summer, the other has _____. For example, when it is _____ in Ireland, it is winter in Australia. And similarly, when it is _____ in Ireland, it is spring in Australia.

4: The following diagram shows a model of the sun and the earth.

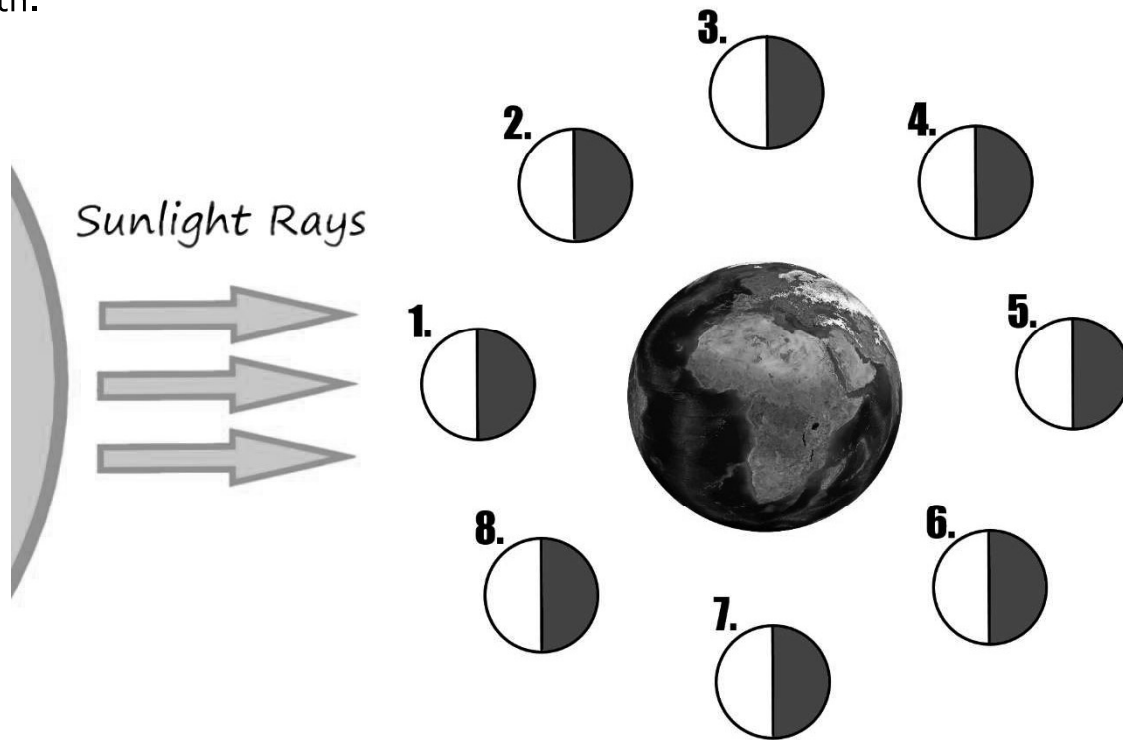


According to the diagram, is it winter or summer in Ireland? _____

Place to correct letter (A or B) in the following boxes:

	A or B
Night time	
Day time	

5: The diagram below shows the moons orbit around the Earth in one lunar month.

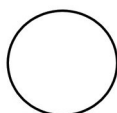


Draw what each position looks like to people on Earth and name each phase. Use the diagram below to help you.

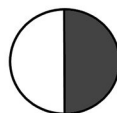
1:		2:		3:		4:	
Name:		Name:		Name:		Name:	
5:		6:		7:		8:	
Name:		Name:		Name:		Name:	



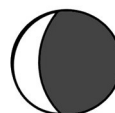
Gibbous



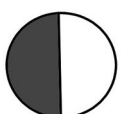
Full Moon



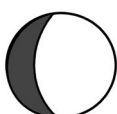
**Half Moon
First Quarter**



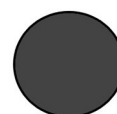
Crescent



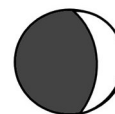
**Half Moon
Third Quarter**



Gibbous



New Moon



Crescent

6: Answer the following questions about eclipses.

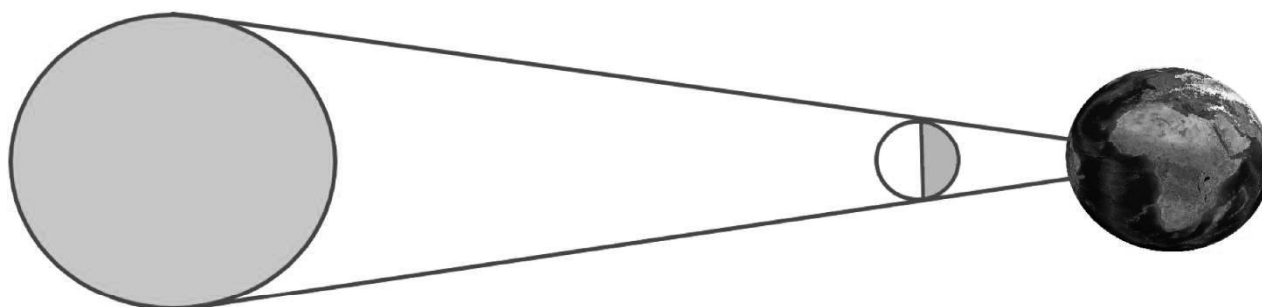
A. What is a Solar eclipse?

B. What is a lunar eclipse?

C. Why doesn't a lunar eclipse occur every full moon?

D. Which is rarer, a lunar eclipse or a solar eclipse? Why?

E. The picture below is a Solar Eclipse. Describe what is happening during a solar eclipse and what would be seen on earth?

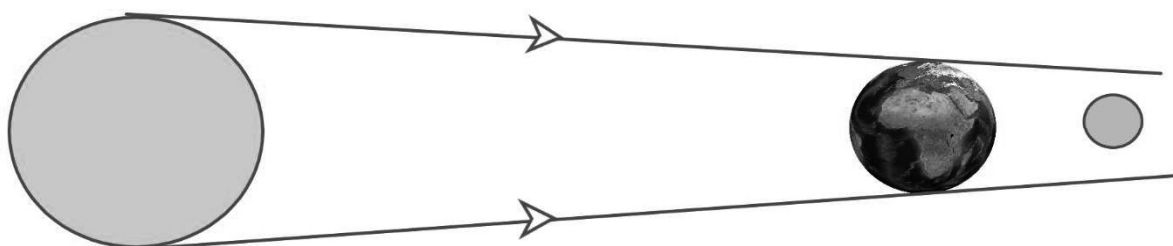


7: A student recorded what happened during a solar eclipse. Rearrange the sentences so they are in the correct order:

- *The moon starts to move across the sun.*
- *Full Sun.*
- *The Sun appears again as the Moon continues to move across.*
- *A total eclipse. The moon is completely blocking the Sun's light. A corona can be seen around the eclipse.*
- *Full Sun again, the moon has completely moved across.*
- *The moon is blocking out nearly all of the Sun's light.*

- (i) _____
- (ii) _____
- (iii) _____
- (iv) _____
- (v) _____
- (vi) _____

8: The picture below is a Lunar Eclipse. Describe what is happening during a lunar eclipse and what would be seen on earth.



9: Match the name to its correct definition:

Earth	the natural satellite of the Earth
Moon	the area in which the shadow of an object (the moon on the Earth) is total, and the area in which a total solar eclipse is experienced.
Penumbra	the planet on which we live
Sun	the area in which the shadow of an object (the moon on the Earth) is partial, and the area in which a partial solar eclipse is experienced.
Umbra	Plasma surrounding the sun, best seen during an eclipse
Corona	the star in our Solar System

10: Highlight the correct answer:

- 1) A solar eclipse occurs when the moon moves
 - a) between the sun and the earth
 - b) between the earth and the moon
 - c) between the sun and moon

- 2) The earth's axis is tilted
 - a) 15 degrees
 - b) 90 degrees
 - c) 23.5 degrees

- 3) During the summer, the days are
 - a) shorter than the nights
 - b) longer than the nights
 - c) the same length as the nights

- 4) What phase of the moon would you see on this night?
 - a) First quarter moon
 - b) Third quarter moon
 - c) New moon
 - d) Full moon

