

## EXTENSION TASK

**LO: To recap what causes day/night and the seasons.**

Connect: Watch the following clip which introduces why we have day and night.

<https://www.youtube.com/watch?v=l0OCX3pBcJg>

This clip introduces why we have seasons and briefly recaps why we have day/night.

<https://www.youtube.com/watch?v=KUU7lyfR34o>

### Recap of Days and nights

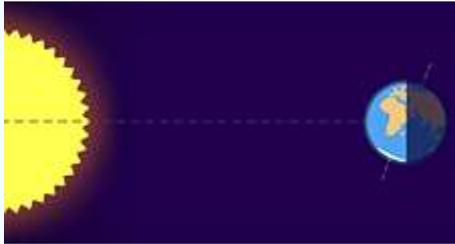
**Questions** Read the above information and then answer these questions in **full sentences**

- 1) What causes day and night?
- 2) On Earth the length of the day is 24hours; each planet has a different day length.  
What causes each planet to have a different number of hours in its day?
- 3a) In what direction does the sun rise?
- 3b) In what direction does the sun set?
- 3c) Draw a diagram to show how the sun moves across the sky?
- 4) In what direction does the Earth spin? How can we remember this?

The planets **spin** as they orbit the Sun. It takes the Earth 24 hours to make one complete turn on its axis, so an Earth day is 24 hours long.

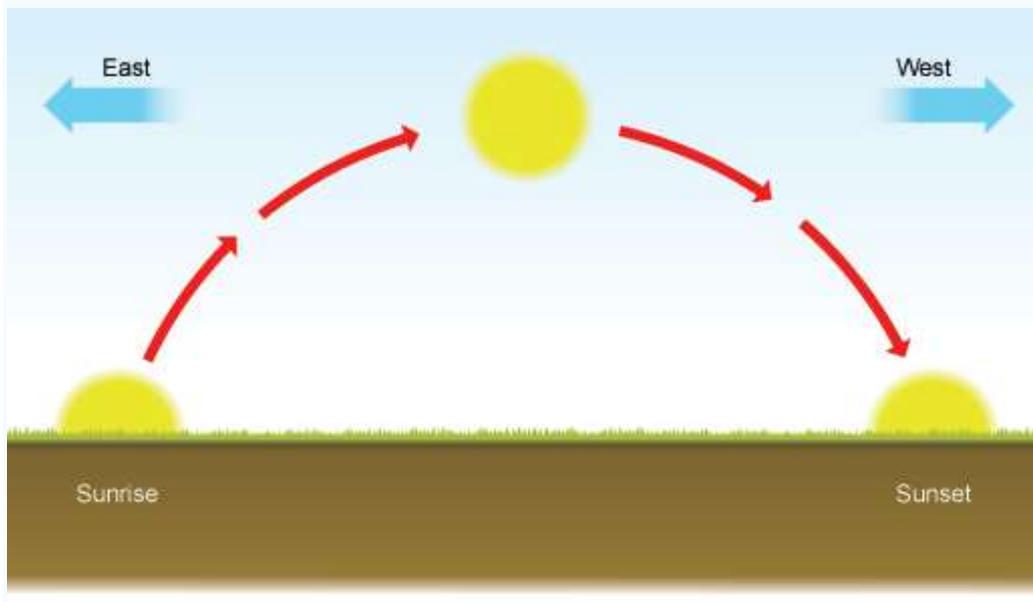
Different planets take different amounts of time to make one complete turn, so they have different lengths of day.

### Day and night



The Sun lights up one half of the Earth, and the other half is in shadow. As the Earth spins we move from shadow to light and back to shadow and so on. It is daytime in the UK when our part of the planet is in the lit by the Sun. And it is night-time in the UK when our part of the planet is facing away from the Sun.

**Path of the Sun** During the day, the Sun appears to move through the sky. Remember that this happens because the Earth is spinning on its axis. In the UK if we look south and follow the path of Sun in the sky during the day, it looks like this:



## The sun rises in the east and sets in the west

The Sun appears to move from **east to west**. That's because the Earth is spinning towards to the east, so we see the Sun first appear there at the start of the day. The Sun 'rises' in the east and 'sets' in the west.

One way to remember which way the Earth turns is to remember "**w.e. spin**", which means the Earth spins from west to east.

## Recap of years and seasons

**Questions** Read the above information and then answer these questions in **full sentences**

- 1) How many days are there in a year on Earth?
- 2) Why do different planets have different number of days in the year?
- 3a) What causes our seasons on Earth?
- 3b) Draw a diagram to show why we get autumn, winter, spring and summer.
- 4) Draw a diagram and add a short description to explain why the sun is higher in the sky in summer.

## Years

A planet's year is the time it takes to make **one complete orbit** around the Sun. The Earth goes once round the Sun in one Earth year. That's 365 Earth days.

We've seen already that different planets take different lengths of time to orbit the Sun. That means their years are different lengths. Mercury has a year of just 88 Earth days, and Neptune has a year of 164 Earth years.

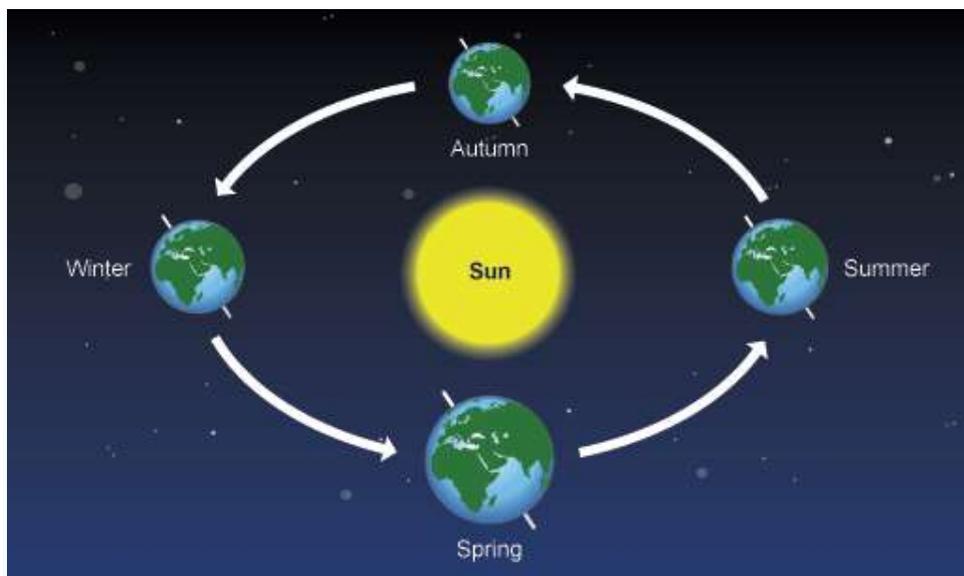
## Seasons

The Earth's axis is the imaginary line through the centre of the Earth between the South and North poles. This axis is **tilted** slightly compared to the way the Earth orbits the Sun.

We get different seasons (winter, spring, summer and autumn) because the Earth is tilted.

This is how it works:

- When the northern hemisphere is tilted towards the Sun it is summer in the UK.
- When the northern hemisphere is tilted away from the Sun it is winter in the UK.



**When it is summer in the northern hemisphere, it is winter in the southern hemisphere.**

Because of the tilt of the Earth's axis the Sun moves higher in the sky in summer, when we tilt towards it, than in winter.

