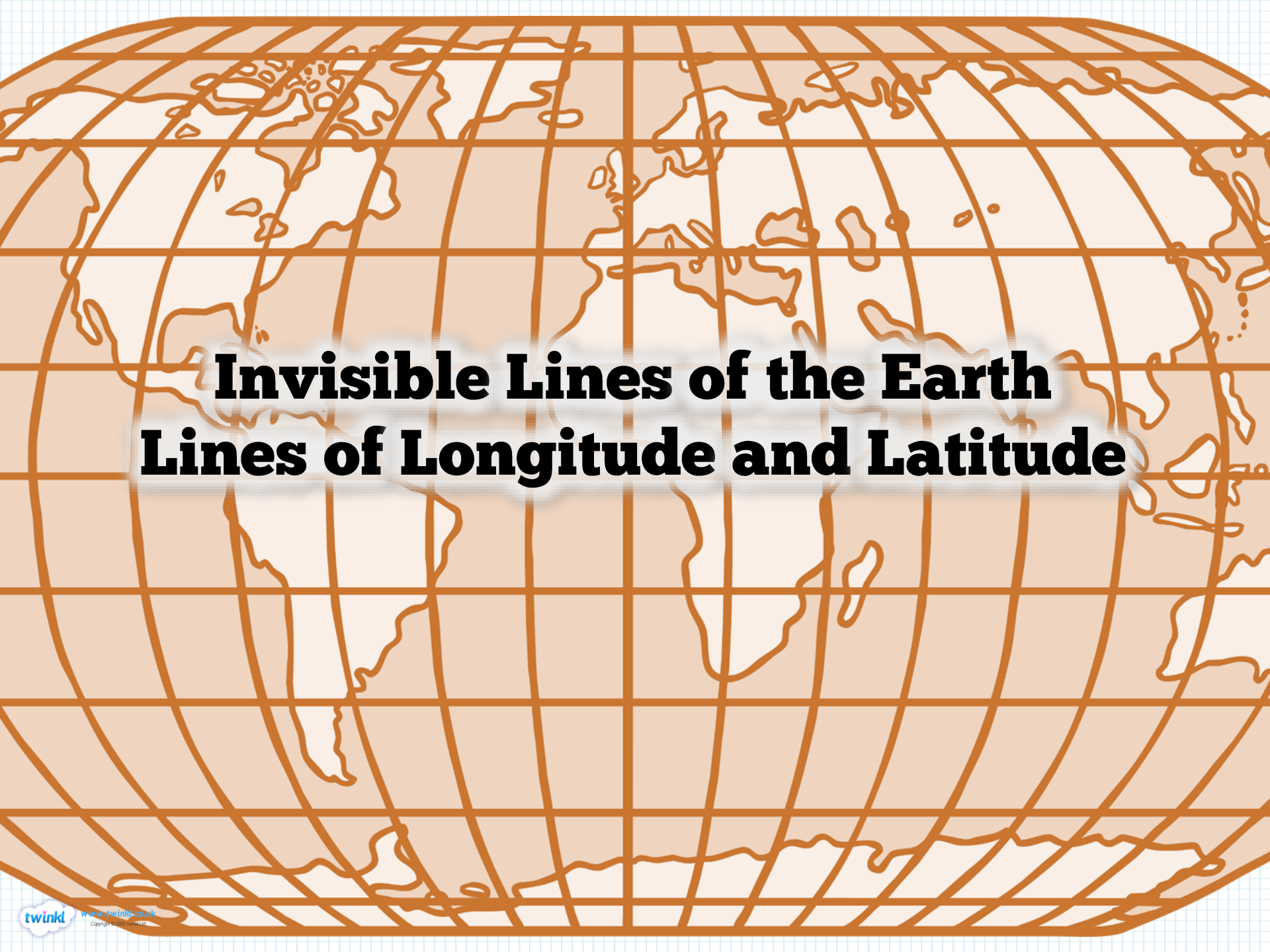


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KWL Grid

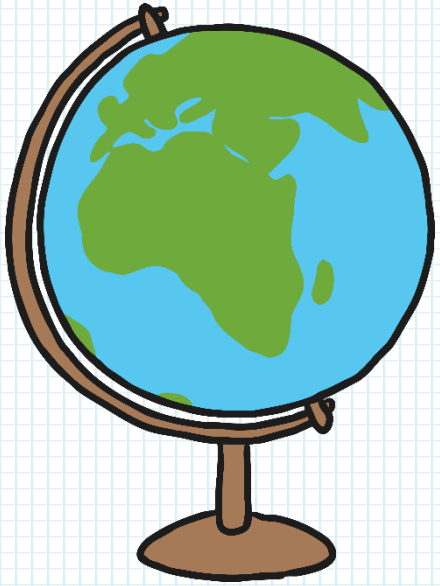
What I already know	What I would like to know	What I know now



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Learning Objective

- To learn to identify the position and significance of latitude, longitude, Equator, the Northern Hemisphere, the Southern Hemisphere, the Tropics of Cancer and Capricorn, the Arctic and Antarctic Circles, the Prime/Greenwich Meridian and time zones (including day and night).



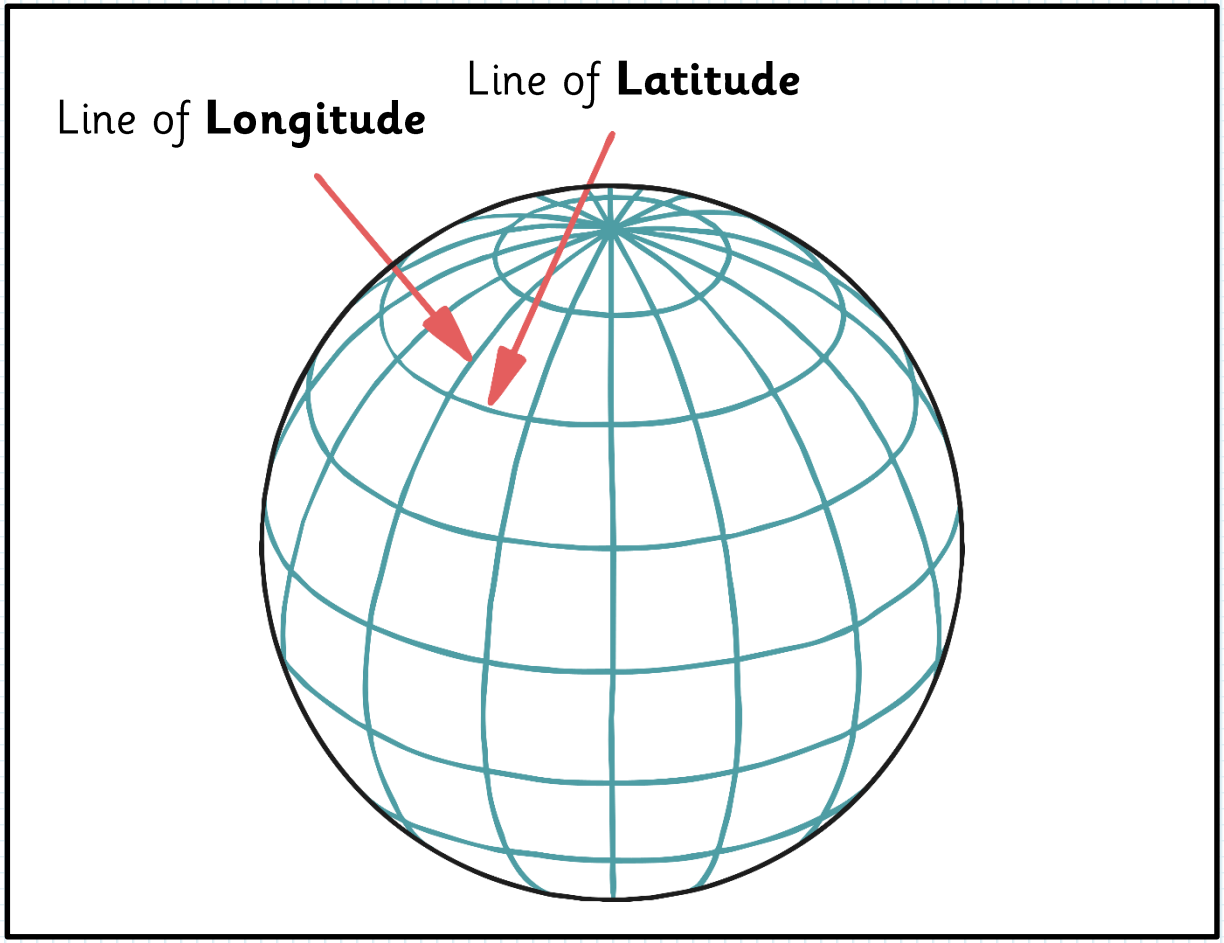
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How is it possible to find the exact location of a place on Earth?

Latitude and Longitude

Invisible lines of latitude and longitude form a grid over the Earth.

These lines help to create a co-ordinate to locate a place accurately.

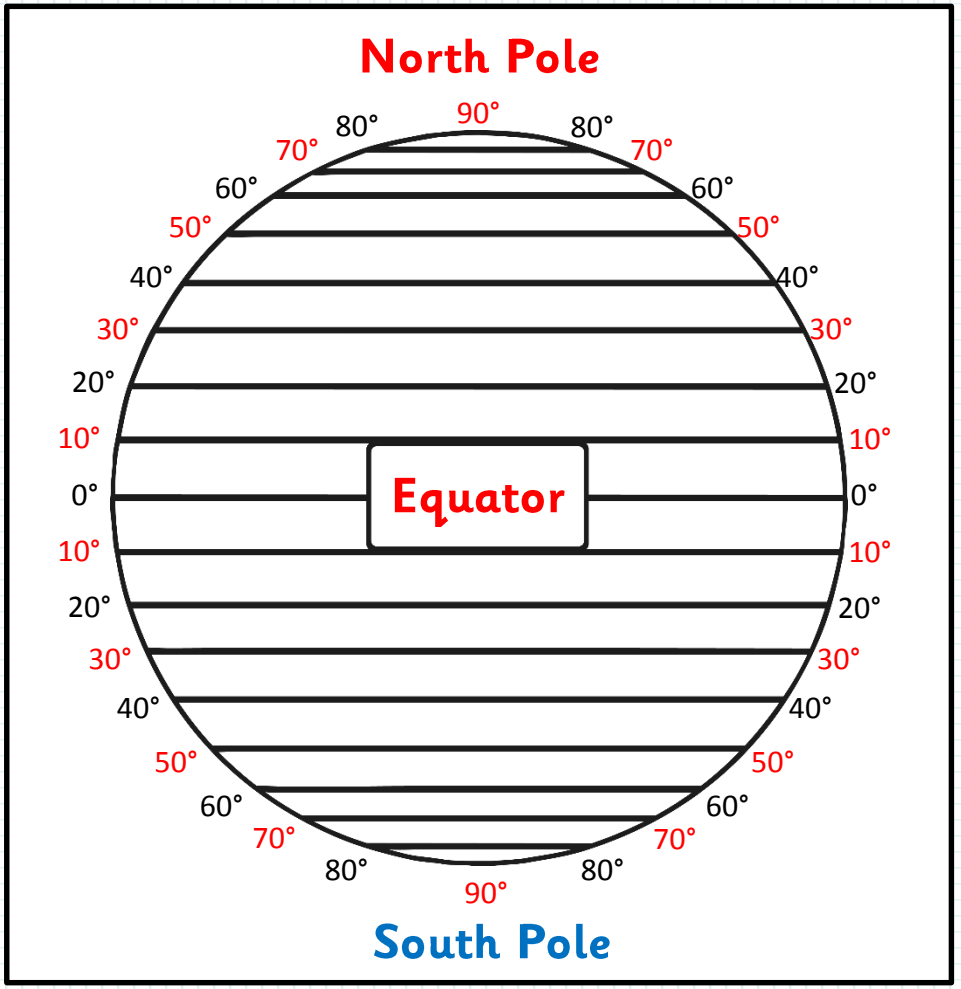


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Latitude

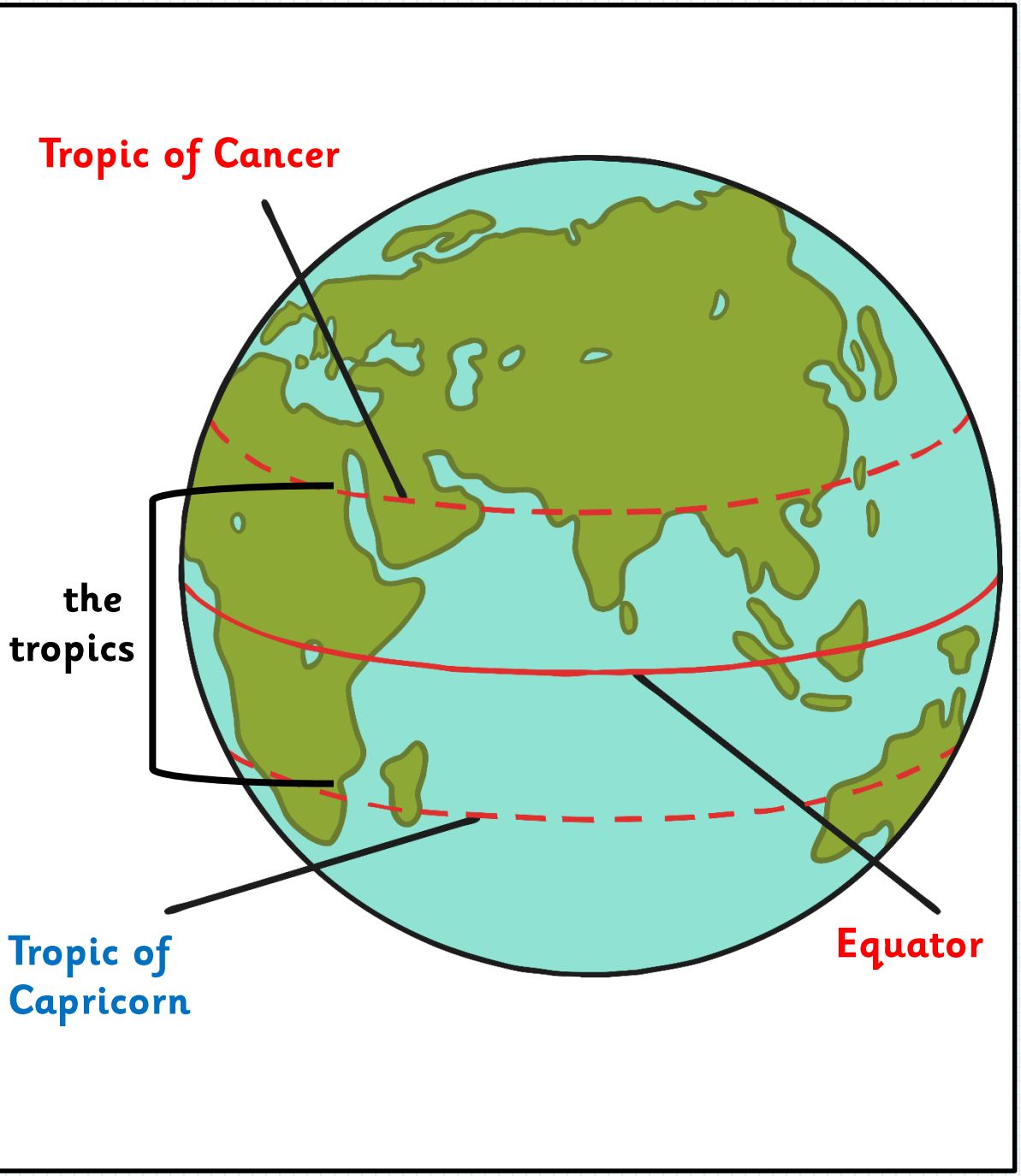
Lines of latitude (also known as **parallels**) circle the Earth from east to west. These invisible lines are all the same distance apart. One line to the next is known as 1 degree.

- Each degree of latitude is separated into smaller divisions called minutes.
- There are 60 minutes in 1 degree.
- Each minute is divided into 60 seconds (not always included within the co-ordinate).
- As you can see from the diagram, the Equator lies at 0 degrees.



The Equator is an important line of latitude. It is an imaginary line half way between the North and South Poles. Countries near to the Equator are very hot as this is the Earth's closest point to the Sun.

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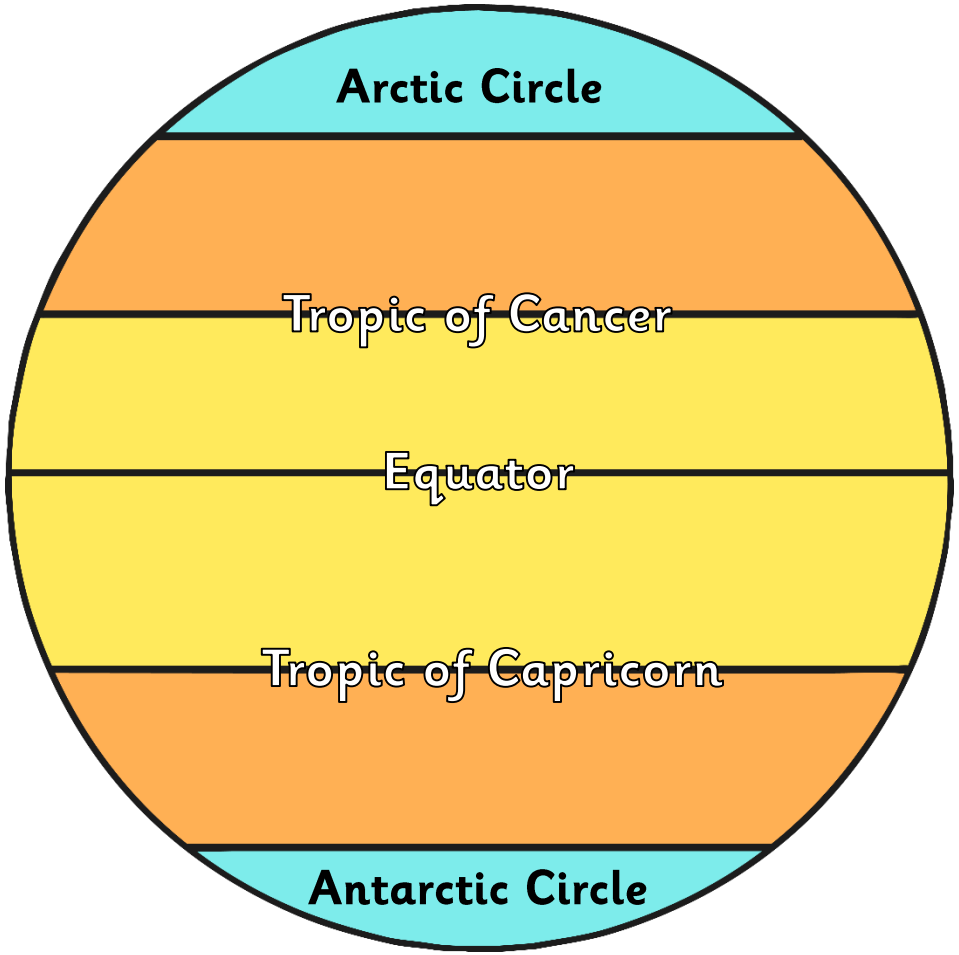


Other Important Lines of Latitude

The Tropic of Cancer lies at **23.5 degrees north** and the **Tropic of Capricorn** lies at **23.5 degrees south** of the **Equator**.

The area of the Earth which lies between both of these lines is called **the tropics.**

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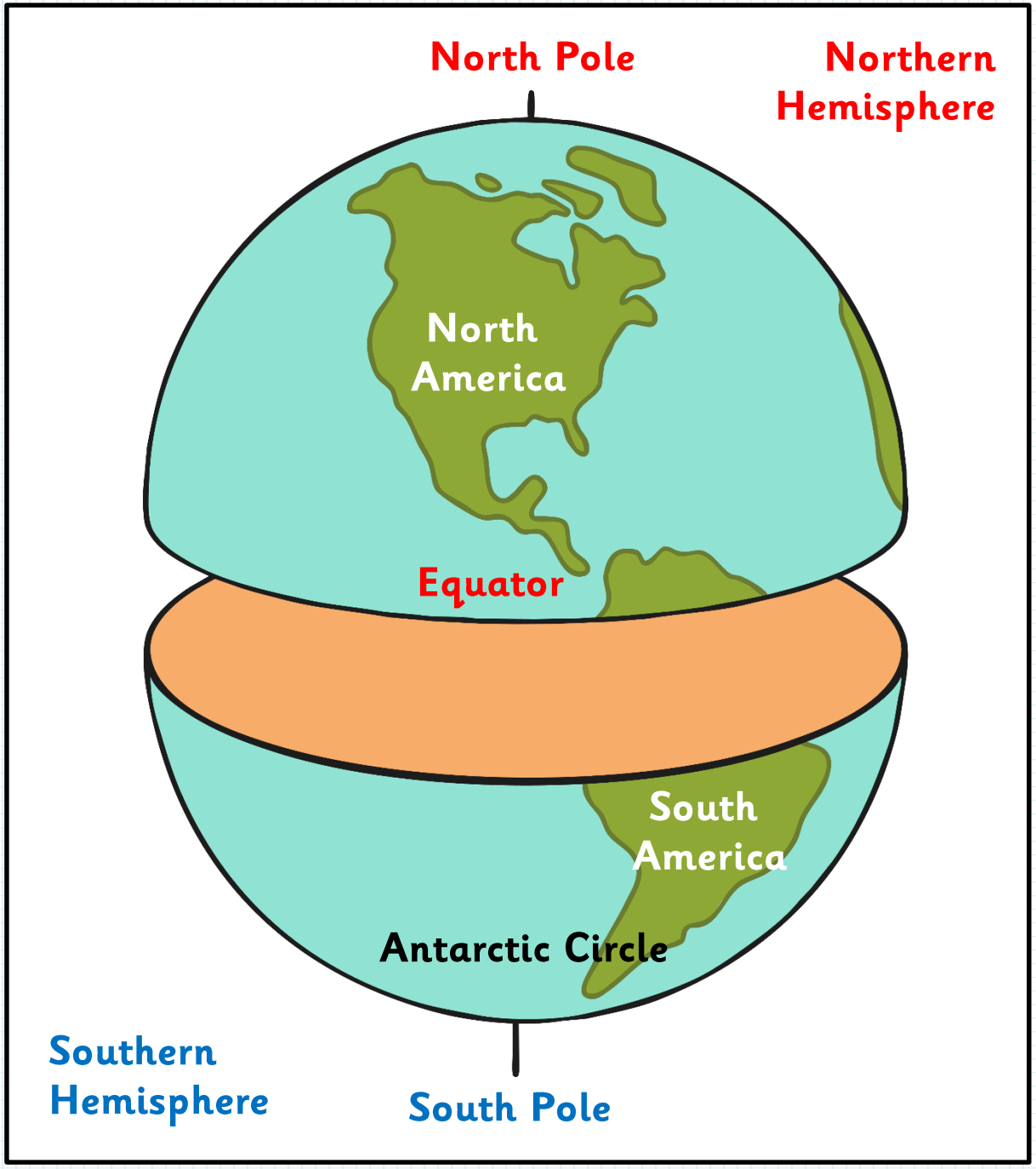


Other Important Lines of Latitude

The **Arctic Circle** lies at **66.5 degrees north** whilst the **Antarctic Circle** likes at **66.5 degrees south**.

The areas in blue and orange are those which have 4 distinct seasons.

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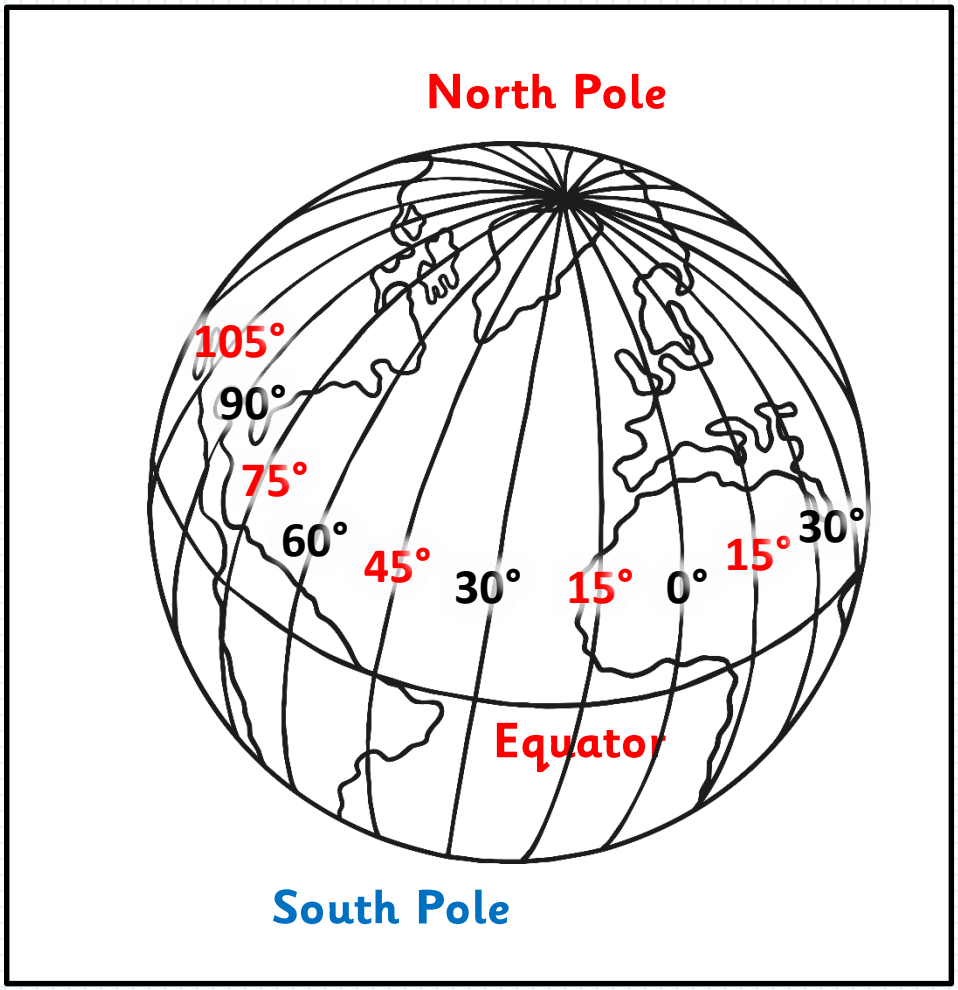
Imagine the Earth cut in half...

The **Northern Hemisphere** is anywhere north of the Equator whilst the **Southern Hemisphere** is anywhere south of the Equator.

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Longitude

- These are the lines which run north and south and are known as lines of longitude or meridians of longitude. These lines are measured in the same way as the lines of latitude.
- Lines of longitude are not equal distances (equidistant) from each other.
- The Prime Meridian or Greenwich Meridian line is a line of longitude at 0 degrees.
- It passes right through Greenwich in London.



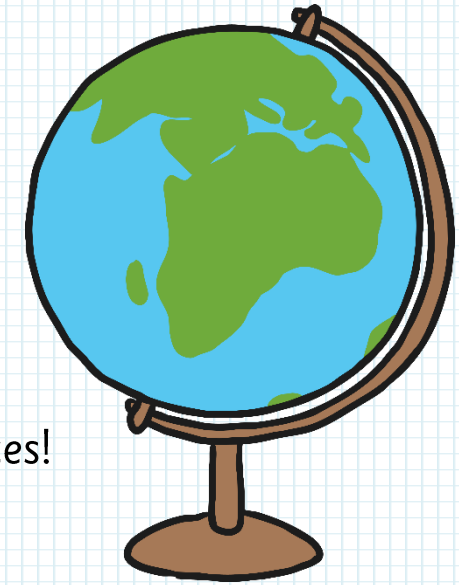
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How do we use this information to locate a place?

- We use numbers and letters to create a co-ordinate.
- Within the co-ordinate, the ° stands for degrees and the ‘ stands for minutes.
- The letters relate to north, south, east or west and are shown as capitals.
- The latitude is always given first.
- To locate Florida, USA using this principle we would say it has the following co-ordinates: 28°00′N 82°00′W.

Other cities:

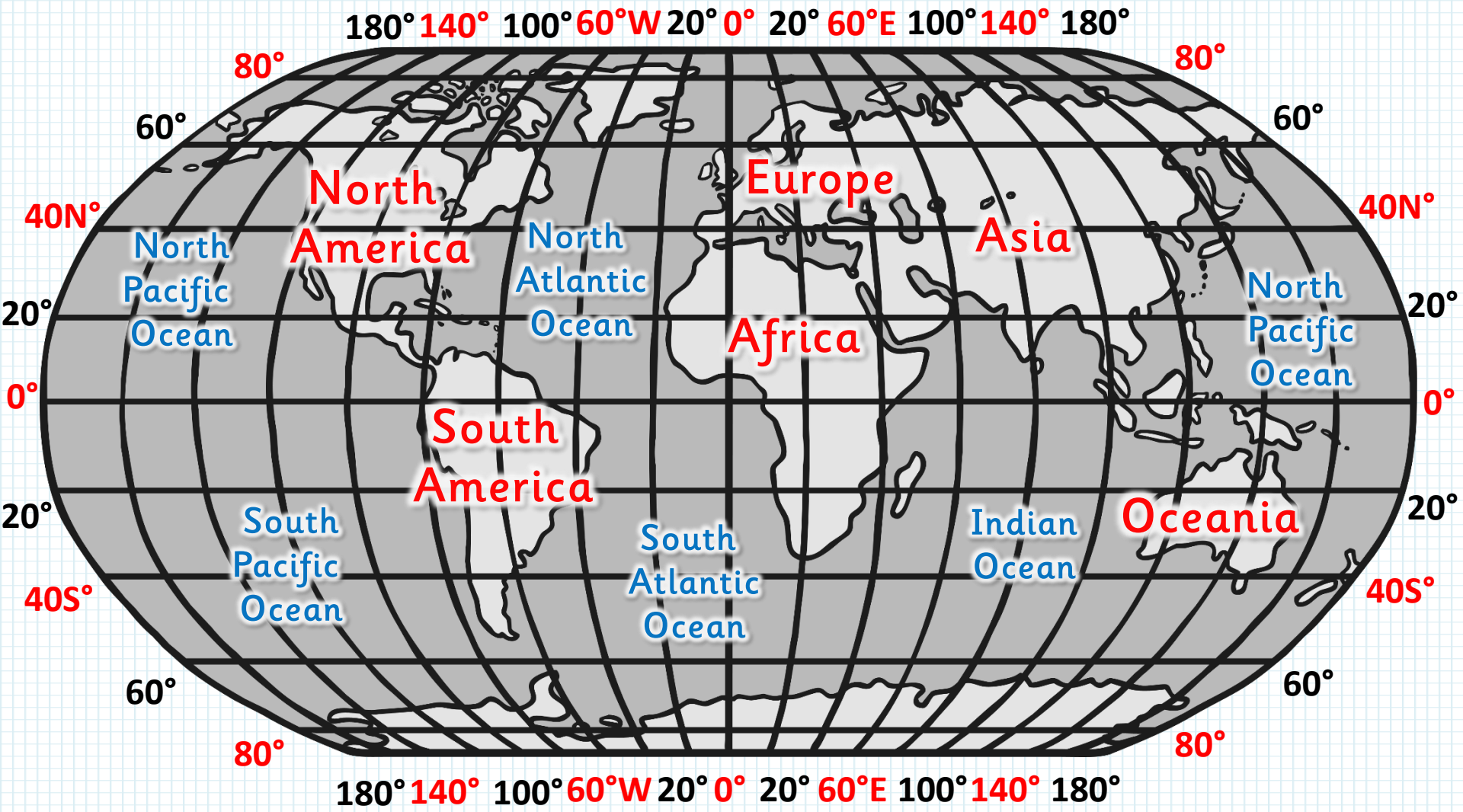
- Edinburgh - 55° 57 ′ N 03° 17′ W
- Canberra - 35° 15′ S 149° 8′ E
- Yamoussoukro - 6° 49′ N 5° 17′ W
- Madrid - 40°25′N 03°45′W



Look at the map on the next slide and see if you can find these places!

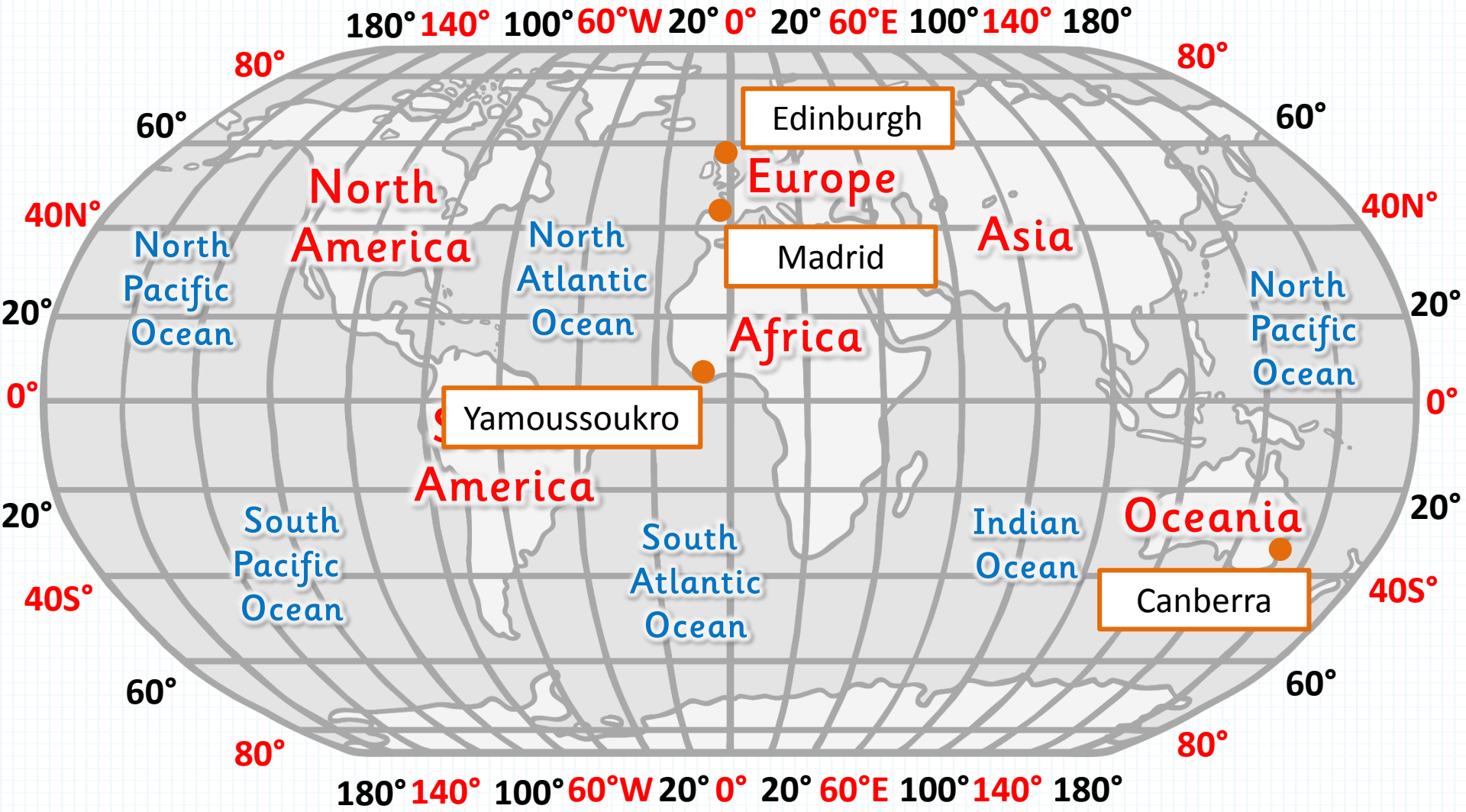
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The World



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The World Answers

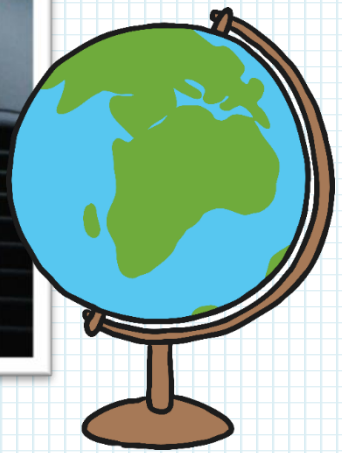


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Using Latitude and Longitude to Locate Places

- Satellite Navigation systems, or 'Sat Navs' as they are sometimes called, allow you to input latitude and longitude co-ordinates instead of an address.
- These co-ordinates will get you to your destination just as easily.





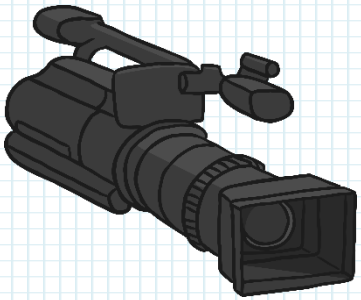
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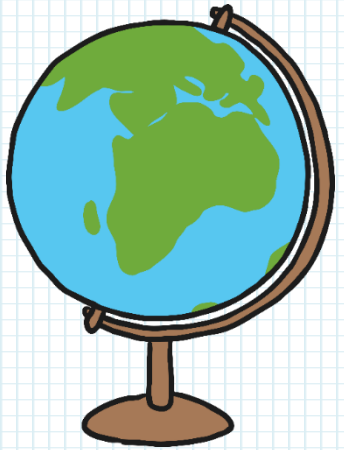
What do you remember about day and night?

Helpful Video:

http://www.bbc.co.uk/learningzone/clips/the-sun-day-and-night-pt-2-3/8954.html



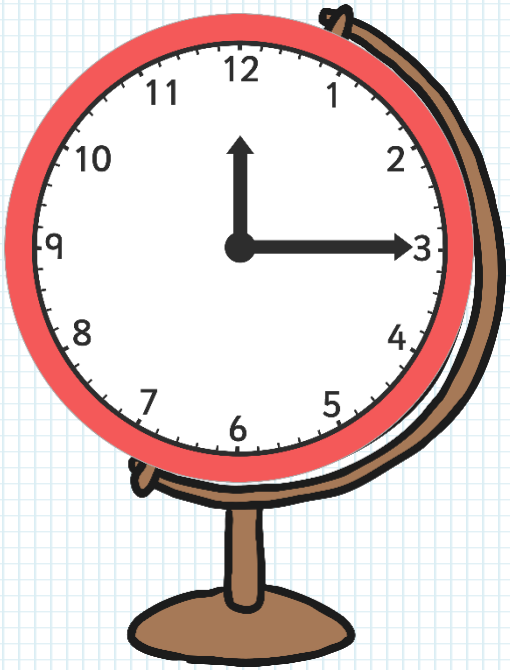
Source: bbc.co.uk/learningzone © 2014 BBC



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Time Zones

Time is different depending on where you are in the world. If it is daytime in the UK, it will be night-time in Australia.



How do time zones work?

- Midday (12 noon) is the time when the sun is highest in the sky. The sun is highest in the sky at different times in different places in the world. So for every place in the world to have midday when the sun is highest, we have to divide the world into time zones.
- The Earth is a sphere divided into 360 degrees. The Earth turns 360 degrees in 24 hours. 360 divided by 24 is 15 degrees so the Earth turns 15 degrees each hour.
- The Earth has 24 different time zones and local time depends on which time zone you are in.

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Time Zones

All time zones are measured from a starting point at England's Greenwich Observatory. This point is known as the Greenwich Meridian or the Prime Meridian. Time at the Greenwich Meridian is known as Greenwich Mean Time (GMT) or Universal Time.

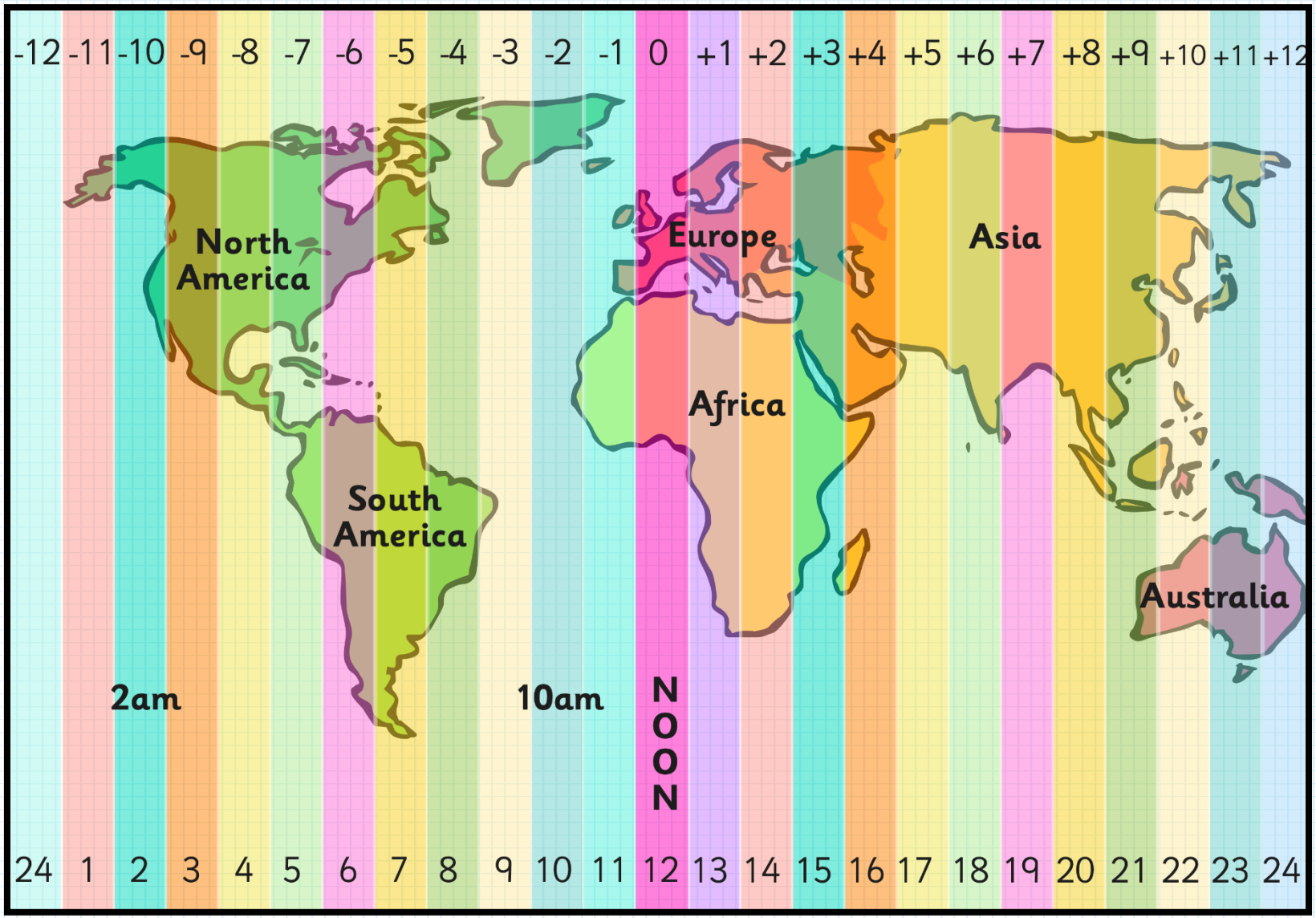
The Eastern time zone in the United States is known as GMT minus five hours (see map on the next slide). This means that when it is noon in the Eastern USA, it is 5pm in Greenwich.

The International Date Line (IDL), another 'invisible' line, is located on the opposite side of the planet from the Greenwich Observatory.



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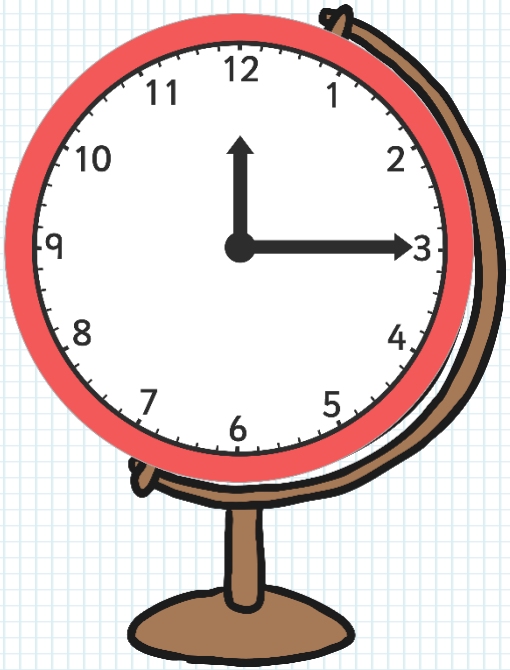
World Time Zones: How it Works



24hr time

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Activity



- When do we change our clocks in the UK?
  (Is there a way to remember?)
- Why do we do it? Do you agree with it?
- How does the time change in the UK?
- Does this change impact the UK world time zone?
- On what date will we next change our clocks in the UK?
- Do other countries do the same?

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Plenary

Which are lines of latitude and which are longitude?

Prime Meridian

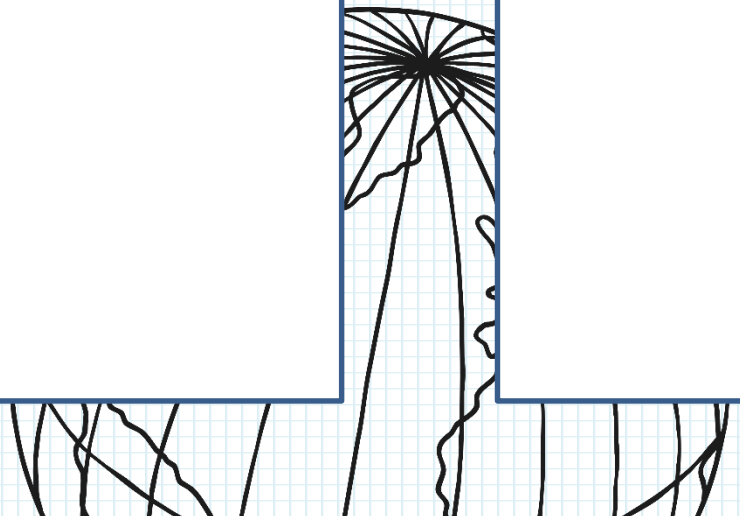
Equator

Tropic of Cancer

Tropic of Capricorn

Greenwich Meridian

Lines of Latitude	Lines of Longitude



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Plenary

What have you learned?

Can you write a fact you have learned beginning with each of the following letters?



E.G **E**arth turns 15 degrees each hour.

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THE END

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