Where on Earth are we?

Year 3
Autumn Term

In this unit, the children will understand the Earth better as a sphere, learning to rotate it mentally in 3D. They will explore its representation in 2D maps, and learn about the imaginary lines used (Equator, latitude, longitude, tropics and the International Date Line) to pinpoint global locations.

Background Information

Different ways of describing a location on the Earth's surface depend on scale. Locally, children know some compass points and the address defining the location of their home. Maps use grid systems, from alpha-numeric to OS grid references. Global Positioning Systems (GPS) use national grid references and angular measurement with imaginary lines drawn on the Earth's surface: lines of latitude and longitude are used together to describe precise location on the Earth's surface, forming a geographic coordinate system.

In this unit, the children will:

- Improve their locational knowledge through identifying the position and significance of latitude, longitude, Equator, Northern Hemisphere, Southern Hemisphere, the Tropics of Cancer and Capricorn, Arctic and Antarctic Circle, the Prime/Greenwich Meridian and time zones (including day and night)
- Practise geographical skills through using maps, atlases, globes and digital/computer mapping to locate features studied
- Use the eight points of the compass to build their knowledge of the wider world.

Map Work

This unit focuses on the use of maps, atlases and globes with an opportunity for making a map in the Big Finish.

Children will be comparing how globes and different types of map represent our world

By the end of the unit

All children can:

- Use world maps and globes
- Describe the relationship between globes and world maps
- Locate the Equator, Northern and Southern hemispheres, Tropics of Cancer and Capricorn, North and South Poles and Arctic and Antarctic Circles on world maps and globes
- Correctly use some of the key vocabulary.

Most children can:

- Explain the relationship between globes and maps
- Describe longitude and latitude
- Locate the Prime/Greenwich Meridian on a globe and world map
- Describe day and night in relation to the Earth's rotation on its own axis
- Correctly use most of the key vocabulary.

Some children can:

- Understand the significance of longitude and latitude for defining location
- Locate the International Date Line on a globe
- Understand day and night
- Describe and explain time zones
- Correctly use all the key vocabulary.

Key Vocabulary:

Antarctic Circle: imaginary line/circle about 66.5° south of the Equator

Arctic Circle: imaginary line/circle about 66.5° north of the Equator

Compass points: the four main directions on a magnetic compass and some of the divisions in between: N, NE, E, SE, S, SW. W. NW

Day: time from sunrise to sunset each day, in relation to the Earth's rotation on its axis

Equator: imaginary line/circle of latitude around the Earth, midway between North and South Poles, dividing the Earth into Northern and Southern Hemispheres. The Equator lies at 0° latitude: the midday Sun is always high in the sky. Because the sun is never far from being overhead, the suns rays are very concentrated and so temperatures are high

Global Positioning Systems (GPS): internationally used way of pinpointing an exact location on the Earth's surface using space-based satellite technology

International Date Line (IDL): a line of latitude. It is an imaginary north-to-south line/circle running through the Pacific Ocean, approximately along the 180° meridian from avoiding land

Lines of latitude: imaginary parallel lines/circles, horizontal to the Equator, that never meet, and get smaller towards the Poles

Lines of longitude: imaginary north-to-south lines/ circles, meeting at the North and South Poles to make segments. They are all the same length and go from pole to pole

Night: time from sunset to sunrise each day, in relation to the Earth's rotation on its axis

Northern Hemisphere: half of the Earth north of the Equator

North Pole: point where the northern end of the Earth's axis of rotation meets the Earth's surface

Ordnance Survey (OS) grid references: the UK is covered by a grid of maps that are given letters. A grid system of numbers are used to locate places on each map

Prime Meridian (Greenwich Meridian, PM): imaginary line/circle passing through the Royal Observatory at Greenwich, London, marking 0° longitude

Southern Hemisphere: half of the Earth south of the Equator

South Pole: point where the southern end of the Earth's axis of rotation meets the Earth's surface

Time zone: area between lines of longitude following a standard time

Tropic of Cancer: imaginary line/circle about 23.5° north of the Equator; the furthest north where the Sun appears overhead once a year

Tropic of Capricorn: imaginary line/circle about 23.5° south of the Equator; the furthest south that the Sun appears overhead once a year.

Key Content:

- The world is a sphere.
- 2D maps and spherical 3D globes all represent our world, but in different ways.
- The world has got land and sea, seven continents and five oceans.
- The five oceans: Pacific, Atlantic, Indian, Artic and Southern.
- The seven continents: Asia, Africa, North America, South America, Antarctica, Europe and Australia.
- The UK is in Europe.
- *hemi* and *sphere* mean half-sphere.
- There is much more land, and many more countries, in the Northern hemisphere than in the Southern hemisphere.
- Some continents and countries straddle the Equator.
- Scale is the relationship between the size of something on the map or a globe and its size in the real world.
- Our home addresses describe exactly where we live.
- The circles of latitude get smaller from the Equator to the poles.
- The Earth's axis is tilted at 23.5 degrees in relation to the Sun.
- The Sun rises higher in the sky in our summer (when the Sun is above the Tropic of Cancer).
- The Sun is lower in the sky in our winter (when it is above the Tropic of Capricorn).
- The Polar circles are cold. The Tropic circles are hot.
- The Earth spins on its axis every 24 hours, causing day and night.
- The Earth makes one rotation every 24 hours.
- Imaginary lines, called lines of longitude, are drawn from pole to pole to measure how much the Earth has rotated on its axis. They are used to measure East-West position on the Earth.
- Latitude measures North-South.
- To describe a location on the Earth's surface, we need both an E-W and N-S position.
- The line of longitude that passes through the Royal Observatory at Greenwich, London, was chosen as the E-W position starting at 0. This is called the *Prime* or *Greenwich Meridian*.
- The International Date Line is where the date changes.
- Because of the Earth's rotation, parts of the world are having daytime while others are having night.
- When it is daytime in the UK, it is night-time in Australia. When it is afternoon in the UK, it is morning in the USA.
- Our clocks 'spring' forward an hour in springtime and 'fall' back an hour in autumn.