

Medium term planning: Geography Cycle B Aut 2 Spatial Sense

Year 5 and 6

<p>yr5</p>	<p>Use physical and political maps and atlases and computer mapping to locate some of the world's countries, major cities, key human and physical characteristics and environmental regions.</p> <p>Use globes and atlases to locate places studied in relation to the equator, Tropics of Cancer and Capricorn and their latitude and longitude.</p> <p>Use 4 figure grid references with increasing confidence and begin to use 6 figure grid references.</p> <p>Use OS map symbols and atlas symbols.</p> <p>Use maps at different scales.</p> <p>Recognise that contours show height.</p>	<p>Make a sketch map with symbols, a key and beginning to use scales.</p> <p>Use a digital map to identify human and physical features of an area.</p> <p>Present information gathered in fieldwork in graphs.</p> <p>Carry out fieldwork in an urban area and/or a rural area, using appropriate techniques.</p>	<p>Locate and describe some physical environments in the UK and how they change.</p> <p>Locate the UK's regions and major cities.</p> <p>Begin to recognise broad land-use patterns in the UK.</p>	<p>Understand that climate and vegetation are connected in an example of a biome.</p> <p>Understand that animals and plants are adapted to the climate.</p> <p>Understand that our food is grown in many different countries because of climate.</p> <p>Understand some of the key physical processes and the resulting landscape features. Eg. understand the characteristics of a mountain region and how it was formed.</p>	<p>Know and understand what life is like in and villages.</p> <p>Know the journey of a product in detail.</p> <p>Describe some renewable and non-renewable energy sources.</p> <p>Describe different types of industry currently in the local area.</p> <p>Know where some of our main natural resources come from.</p>
------------	---	---	--	--	---

Medium term planning: Geography Cycle B Aut 2 Spatial Sense

Year 5 and 6

<p>yr6</p>	<p>Use physical and political maps and atlases and computer mapping to describe key physical and human characteristics of Europe or North or South America.</p> <p>Locate cities, countries and regions of Europe and South America on physical and political maps.</p> <p>Use globes and atlases to locate places studied in relation to the equator, the tropics of Cancer and Capricorn, longitude and latitude and relate this to their time zones, climate, seasons and vegetation.</p> <p>Use thematic maps for specific purposes.</p> <p>Use four and find six figure grid references.</p> <p>Describe height and slope from a map.</p> <p>Read and compare map scales.</p>	<p>Make a sketch map with symbols, a key and a scale.</p> <p>Use a digital map to investigate the human and physical features of an area.</p> <p>Present information gathered in fieldwork, using a range of graphs.</p> <p>Plan and carry out a fieldwork investigation in an urban area and/or rural area using appropriate techniques.</p>	<p>Locate and describe several physical environments in the UK and how they change.</p> <p>Locate the UK's regions and major cities, knowing some of their distinct characteristics and how some of these have changed over time.</p> <p>Recognise broad land-use patterns in the UK.</p>	<p>Understand how a climate and vegetation are connected in an example of a biome.</p> <p>Describe what the climate of a region is like and how plants and animals adapt to it.</p> <p>Understand how food production is influenced by climate.</p> <p>Describe a range of key physical processes and the resulting landscape features. Eg. understand the characteristics of a mountain region and how it was formed.</p>	<p>Know and understand what life is like in cities and villages and c</p> <p>Know and understand that the products we use are imported as well as locally produced.</p> <p>Explain how the types of industry in the area have changed over time.</p> <p>Understand where our energy and natural resources come from.</p>
------------	--	---	---	--	--

Medium term planning: *Geography Cycle B Aut 2* Spatial Sense

Year 5 and 6

--	--	--	--	--	--

Medium term planning: *Geography Cycle B Aut 2* Spatial Sense

Year 5 and 6

--	--	--	--	--	--

Unit 1- Cycle B-

Context for Study:

This unit builds on the geography knowledge and skills taught in previous spatial sense units. Children will again look at the lines that cartographers use to divide the world into sections in order to locate places accurately. They will study lines of longitude and latitude and the points at which they intersect; co-ordinates. Studying these lines will help children to understand that from our knowledge of the location of places, we can make educated guesses about the climate, as we know the further from the equator, the colder the climate will be. Children will look at the Arctic and Antarctic Circles and will learn more about the climate in these regions. They will look at diagrams to explain why there are points in the year where the sun does not set, and other points where the sun does not rise. Building on knowledge of longitude, children will look at time zones and how they differ around the world, following lines running pole to pole. They will identify the Prime Meridian line and will learn it is a reference point for measuring time. They will identify the international date line, found at 180 degrees and will learn that crossing it going east changes Monday to Sunday, but crossing it going west turns Sunday into Monday. Deepening knowledge of cartography and how maps are made, children will learn about map projection and how our round earth is represented on a flat piece of paper. They will understand that there are different approaches to map projection, each creating a slightly different end result. Finally, the unit ends with a look at different maps of the world and what we can learn from them

National Curriculum Coverage

identify 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)

Key Vocabulary:

- 1) longitude, latitude, Prime meridian.
- 2) Arctic circle, Antarctic circle
- 3) Prime Meridian, Time Zone
- 4) projection, distortion
- 5) data, gross domestic product

Key Knowledge:

Lines of longitude run from the North Pole to the South Pole.

Lines of latitude run parallel to the equator. The points where lines of longitude and latitude intersect are co-ordinates.

The Arctic Circle is a region around the North Pole. The Antarctic Circle is a region around the South Pole.

In the Arctic and Antarctic Circles there are winter days when the sun doesn't rise, and summer days when the sun doesn't set.

Polar Night and Midnight Sun are caused by the tilt of the earth on its axis.

The Prime Meridian is the point where the world begins to be divided into 24 sections called time zones.

Within a time zone, people observe the same time as it is convenient for business, trade and communications.

Cartographers have tried different ways to represent our round earth on a flat map.

The Mercator projection has been used for a long time, but land near the poles appears larger than it should.

The Peters projection tries to show the correct size of countries in relation to each other.

Maps can help us to understand data about people, places and the environment.

Wealth distribution around the world is uneven.

What you need to know:

Geographers use latitude to divide the earth into bands that run parallel to the equator.

These bands tell us a lot about the climate of the regions. The further from the equator in either direction, the colder the climate tends to be.

At around 67 degrees North latitude, there is an imaginary boundary called the Arctic Circle. Above 67 degrees there will be at least one day in the summer when the sun does not set and one day in winter when it does not rise. The closer to the pole, the more such days there will be.

Medium term planning: Geography Cycle B Aut 2 Spatial Sense

Year 5 and 6

In the Southern Hemisphere there is another imaginary circle called the Antarctic Circle located about 67 degrees latitude. The Antarctic climate is even colder than the Arctic climate and most of Antarctica is buried under a permanent ice cap.

23 degrees from the equator are the tropics. The Tropic of Cancer is in the northern hemisphere and the Tropic of Capricorn is in the south. Between the tropics the sun can pass directly overhead at midday.

Lines of latitude are connected to the time of day. As the earth rotates on its axis, different parts of the earth point towards the sun, only half of Earth faces the sun at any given time, the other half is experiencing night time. When it is noon at the Prime Meridian, it is midnight at the 180 degrees meridian on the other side of Earth.

Using the Prime Meridian, we can divide the world into 24 time zones to match the 24-hour cycle of Earth's rotation on its axis. Some countries change their clocks forwards or backwards to get lighter mornings in the winter, or longer evenings in the summer.

Map projection is the stretching of the globe to fit a flat page.

If you compare a globe and a flat map, you may notice countries are different sizes. On some maps, the country of Iceland looks very large, larger than Italy, but Italy is three times the size of Iceland.

Gerhardus Mercator was a Flemish cartographer who first projected the Earth's surface onto a flat map in the 1500s. Generally his map projection is accurate between the tropics of Cancer and Capricorn, however the landmasses nearer the poles look larger than they are. Greenland looks larger than Australia when it is not the case.

Teacher knowledge:

Lesson 1: Latitude and Longitude

Cartographers draw imaginary lines and divide the world into sections in order to locate places accurately. The lines running parallel to the equator are called parallels or lines of latitude; they measure degrees of latitude north and south of the Equator. The lines that run from pole to pole are meridians, or lines of longitude; they measure degrees of longitude east and west of the prime meridian. Where the lines intersect, the points are co-ordinates. Pupils studied latitude and longitude in Year 5 in the Spatial Sense unit. This lesson offers an opportunity to recap on previous learning and clarify understanding. If pupils are confident with their understanding of this, the task could be extended by asking pupils to identify locations that meridians and parallels run through.

Lesson 2: Arctic and Antarctic circles

Lines of latitude or parallels tell us about the climate of regions, the further from the equator the region, the colder the climate will be. Far north, at about 67 degrees north, there is an imaginary boundary called the Arctic Circle. Further north from this point, there will be at least one day in summer where the sun does not set, and one day in winter when it does not rise. The closer to the pole, the more such days there will be. The land and water to the north of the Arctic Circle are called the Arctic Region. There is a

thick polar ice cap at the North Pole. In the Southern Hemisphere, there is another imaginary circle called the Antarctic Circle located at about 67 degrees latitude. The Antarctic climate is even colder than the arctic. The Arctic is ocean surrounded by land, but the Antarctic is land surrounded by ocean. The land in Antarctica is colder than in the Arctic because the Arctic sea retains heat and warms the surrounding land slightly. Parts of Antarctica are high above sea level, there are mountains, and the higher the land, the colder it is.

Lesson 3: Time Zones

As the Earth rotates on its axis, different parts of the earth point towards the sun. Only half of the Earth faces the sun at any one time, this half will experience daytime, whilst the other half experiences night time. When it is noon at the Prime Meridian, it is midnight on the opposite side of the Earth. The Prime Meridian is the point from which east and west are measured, and it is also a reference point for measuring time. The Prime Meridian is the point from which the world is divided into 24 hourly time zones. This matches the 24-hour cycle of the Earth's rotation on its axis. Within the 24-hour time zones, sometimes countries adjust their times for daylight saving schemes which involve putting the clock forward or backwards to get lighter mornings or longer evenings depending on the season. The line of longitude at 180 degrees is called the international date line. If you cross this line, going east, Monday becomes Sunday, if you cross it going west, Sunday becomes Monday. Pupils will learn about the introduction of British Summer Time in History- WWI. Greenwich Mean Time (GMT) is the standard time at the Royal Observatory in Greenwich, where the Prime Meridian line passes through London. British Summer time is GMT + 1 hour.

Lesson 4: Map Projection

Map projection is a method that involves representing our round Earth onto a flat piece of paper. There are different approaches to map projection, each creating a slightly different end result. In the 1500s, Gerhardus Mercator was the first cartographer to project the Earth's surface onto a flat map. He projected the continents and oceans onto a cylinder, which can then be laid flat. This was a relatively accurate way to create a flat map of the earth, however this method makes landmasses nearer the poles look larger than they are, so Greenland looks larger than Australia, which is not the case. Other methods of map projection include the cone and the plane methods. The Peters projection, the work of a German historian Arno Peters, is a map that tries to correct the distortion of traditional maps, the countries are all correct in size in relation to each other. The Peters projection also gets us to question our assumptions about the sizes of countries and helps us to see there are different ways to view the world.

Lesson 5: Maps of the World

Medium term planning: Geography Cycle B Aut 2 Spatial Sense

Year 5 and 6

This lesson will show pupils that maps can help us to interpret data and help us to understand how many things in the world are unevenly distributed. Using the maps on page 82 of the Oxford School Atlas, pupils need to apply their knowledge of locations around the globe to read the maps focussing on world development. They will see how maps can show us the distribution of wealth, literacy skills, life expectancy and more. This will help children to understand how maps can be used to communicate information and will feed into their understanding of Geographical Information Systems (GIS).

Week	Knowledge (Subject leader)	Skills (Subject leader)	Lesson content (Class teacher)
1	<p>Lines of longitude and latitude divide the world into sections.</p> <p>Key Vocabulary: Longitude Latitude</p> <p>Other vocabulary: Parallel Meridian Co-ordinates</p>	<p>Lines of longitude run from the North Pole to the South Pole.</p> <p>Lines of latitude run parallel to the equator. The points where lines of longitude and latitude intersect are co-ordinates.</p> <p>Use a map to identify and locate the lines of latitude, longitude, tropics of Capricorn and cancer and meridians.</p> <p>Understand why they are used.</p>	<p>Prior Learning: Recap equator, poles and hemispheres. Introduce knowledge organiser.</p> <p>Vocabulary: (Recap) Longitude: Imaginary lines running from north to south around the globe that help map makers locate places with accuracy. (Vertical lines, sometimes called meridians) Lines of longitude are not parallel due to the curve of the earth. Latitude: Imaginary lines parallel to the equator that help map makers to locate places with accuracy. (Horizontal lines, sometimes called parallels)</p> <p>Teach: Cartographers draw imaginary lines to divide the world into sections. This helps to locate specific places. The lines running parallel to the equator are called parallels; they measure degrees of latitude north and south of the Equator. The lines that run from pole to pole are meridians; they measure degrees of longitude east and west of the prime meridian. Where the lines intersect, the points are co-ordinates. Model how to find co-ordinates of places using a globe or a mapping tool. The Tropic of Capricorn is a line of latitude in the southern hemisphere. It is the most southern point at which the sun can be seen directly overhead. The Tropic of Cancer is a line of latitude in the northern hemisphere and is the</p>

Medium term planning: Geography Cycle B Aut 2 Spatial Sense

Year 5 and 6

			<p>most northern point at which the sun can be seen directly overhead. Talk task: Why might co-ordinates be useful for ships in open ocean? (There are no landmarks for navigation) Task: Label a map of the world with the Equator, the Prime Meridian, the tropic of Capricorn, the tropic of Cancer and using the School Atlas, draw some lines of longitude and latitude by hand, noting the curve of the earth. Partner teach/Plenary: What is the difference between a parallel and a meridian? Step for Depth: Using the map, identify some locations that the Prime Meridian runs through. Then locate some places that the equator runs through.</p> <p>Use a map of the world showing the parallels and meridians. Use a Globe/Google Earth to ensure children understand the relationship between the Earth and the flat map. Oxford Schools Atlas page 72</p>
2	<p>The Arctic and Antarctic circles are regions close to the Earth's Poles.</p> <p>Key Vocabulary: Arctic Circle Antarctic Circle</p> <p>Other vocabulary: Arctic Antarctic Polar</p>	<p>The Arctic Circle is a region around the North Pole. The Antarctic Circle is a region around the South Pole. In the Arctic and Antarctic Circles there are winter days when the sun doesn't rise, and summer days when the sun doesn't set. Polar Night and Midnight Sun are caused by</p>	<p>Arctic winter: What's life like in darkness? - CBBC Newsround</p> <p>Prior Learning: Check knowledge organiser. Why do geographers use parallels and meridians?</p> <p>Vocabulary: The Arctic is a region around the north pole. The Antarctic (meaning opposite the arctic) is a region around the south pole.</p> <p>Teach: Lines of latitude or parallels tell us about the climate of regions, the further from the equator the region, the colder the climate will be. At about 67 degrees north, there is an imaginary boundary called</p>

Medium term planning: Geography Cycle B Aut 2 Spatial Sense

Year 5 and 6

	<p>Axis</p>	<p>the tilt of the earth on its axis.</p> <p>Use a map to locate the Arctic and Antarctic circles</p> <p>Explain why it is dark in the winter and light in the summer in the Arctic circle</p>	<p>the Arctic Circle. Further north from this point, there will be at least one day in summer where the sun does not set, and one day in winter when it does not rise. The closer to the pole, the more such days there will be. This is known as polar night. Polar night occurs due to the Earth's tilt on its axis. Demonstrate with a globe. Show the boundaries of the Arctic and Antarctic circles. The boundary of the Antarctic Circle can be found at 67 degrees south of the equator. Draw a diagram to model task; track the sun's rays and explain why it is dark during the winter in the Arctic Circle. Watch newsround clip. Explain the opposite phenomena is 'midnight sun' where the sun does not set at night-time in high summer at the poles.</p> <p>Talk task: With a partner, complete this sentence; Polar Night occurs because...</p> <p>Task: Draw a diagram to show why 'polar night' occurs and write an explanation.</p> <p>Partner teach/Plenary: What do lines of latitude tell us about the climate of different regions?</p> <p>Step for Depth: Use the atlas to find and describe geographical features of the Arctic and Antarctic regions.</p>
3	<p>To know the world is divided into 24 hourly time zones.</p> <p>Key Vocabulary:</p>	<p>The Prime Meridian is the point where the world begins to be divided into 24 sections called time zones.</p>	<p>Prior Learning: Use Knowledge Organiser or mini multiple choice questions to recap prior learning.</p> <p>Vocabulary:</p>

Medium term planning: Geography Cycle B Aut 2 Spatial Sense

Year 5 and 6

	<p>Prime Meridian Time Zone</p> <p>Other vocabulary: Rotate Axis Greenwich Mean Time British Summer Time</p>	<p>Within a time zone, people observe the same time as it is convenient for business, trade and communications.</p> <p>Some countries adjust their clocks for daylight saving time.</p>	<p>A time zone is a geographical region that shares the same time. People in the same region find it useful to have one, shared, time for legal, business and social purposes.</p> <p>Teach: The world is divided up into 24 time zones. It is not the same time across the world at any given time. Whilst one part of the world experiences night time, another part of the world is experiencing day time. Give examples. The world takes 24 hours to spin on its axis, so when divided into 24, each time zone changes by one hour as you travel around the world. If we didn't have time zones, it would be difficult to coordinate travel and communications. In 1840, local regions had their own times, the Great Western Railway began following a standard time so trains would leave and arrive on time and everyone could be clear on times for travelling. Explore time zones with children. Explain that GMT is Greenwich Mean Time (children know about the Prime Meridian) which is the time zone we are in. In the summer we adjust our clocks and align to British Summer Time which is one hour ahead of GMT. We do this to maximise the hours of sunlight. As people prefer to be awake and work in the daytimes, time zones allow us to do this.</p> <p>Talk task: Look at the map on page 85 of the Oxford School Atlas - or the Collins equivalent. Find the line showing Greenwich Mean Time. If it is midday in London (the line runs through Greenwich) what time is it in: Mumbai, Wellington, Santiago and Vancouver?</p> <p>Task: Why is it necessary to have time zones? Use a labelled map to support your answer.</p> <p>Partner teach/Plenary: What are time zones and why are they helpful?</p> <p>Step for Depth:</p>
--	--	---	--

Medium term planning: Geography Cycle B Aut 2 Spatial Sense

Year 5 and 6

			<p>The United Nations are going to debate this statement: 'The world must all be using the same time to allow for better communication'. What are the advantages and disadvantages of this?</p>
4	<p>Map projection is a method that involves representing our round Earth on a flat piece of paper</p> <p>Key Vocabulary: Projection Distortion</p> <p>Other vocabulary: Cartographer</p>	<p>Cartographers have tried different ways to represent our round earth on a flat map. The Mercator projection has been used for a long time, but land near the poles appears larger than it should. The Peters projection tries to show the correct size of countries in relation to each other.</p>	<p>The Man Behind Mercator Projections - Stuff of Genius - YouTube</p> <p>Prior Learning: What would a geographer say about time zones?</p> <p>Vocabulary: 'Projection' is the presentation of an image on a surface. The word comes from the Latin 'proicere' meaning to throw forth. Map projection is when we create a flat image of our spherical earth. (A 2D representation of a 3D object) 'Distortion' from the Latin 'distorquere' meaning to twist different ways, is when something becomes changed from the original.</p> <p>Teach: In the 1500s, Gerhardus Mercator was the first cartographer to project the Earth's surface onto a flat map. The problem with the map he produced was that it distorted the size of land masses further away from the equator. Map projection is difficult because you can't just take a 3D image and replicate it exactly on a 2D surface, changes occur in the size and shape of land masses, this is called distortion. Show images of the Mercator projection and Peter's projection. Note differences in country shape and size (distortion). Draw some continents onto an orange using a marker pen. Carefully peel the orange and try to lay the pieces flat on the table. What is the problem with doing this? (This can either be completed individually, in pairs or modelled by the teacher) Talk task: How would you explain map projection to someone who hasn't heard of it?</p>

			<p>Task: Complete a written explanation of why it is difficult to turn a 3D globe into a 2D map. Ensure children are focussed on the difficulty of piecing together something that was 3D on a flat surface and try to minimise discussion about the orange itself.</p> <p>Partner teach/Plenary: Complete this sentence: Map projection is...</p> <p>Step for Depth: Why do some map projections make the world look different?</p>
<p>5</p>	<p>Maps can help us to understand data about places, people and the environment.</p> <p>Key Vocabulary: Data Gross domestic product (GDP)</p> <p>Other vocabulary: Wealth Literacy Skills Life Expectancy</p>	<p>Maps can help us to understand data about people, places and the environment.</p> <p>Wealth distribution around the world is uneven. (Change as appropriate to the maps you are using)</p> <p>Food consumption around the world is uneven.</p>	<p>Prior Learning: Use Knowledge Organiser to recap all previous learning from this unit.</p> <p>Vocabulary: Gross Domestic Product (GDP) is the value of all the goods and services produced in a country in one year. GDP per person is that total divided by how many people live in the country. Geographers use this data as an indicator of standards of living. A high GDP per person indicates a country is developed.</p> <p>Teach: Geographers use the term, 'development' to describe the changes in standards of living and quality of life for the people of the world. Geographers look at data on wealth, literacy skills, life expectancy, food consumption and many other areas. Around the world, locations can be very different, but these indicators tell us something about the people living there. Data on areas such as these can be shown using a map. Select one of the maps from page 82 of the Oxford atlas/Collins Atlas page ? and model how to read it. Look at Food Distribution and discuss what the map shows. Explain that there are huge collections of information that geographers collate with maps</p>

Medium term planning: Geography Cycle B Aut 2 Spatial Sense

Year 5 and 6

			<p>called Geographical Information Systems so that they can ask and answer questions about the world. Geographers look at patterns and spatial relationships; data is a very important part of the work they do.</p> <p>Talk task: Look at the maps on page 82 of the Oxford School Atlas or Collins equivalent. Using your knowledge of places around the world, what can you find out about life expectancy?</p> <p>Task: Human life on planet Earth is diverse. Use the information from the maps to prove or disprove this statement. (This task can be written as notes or presented in small groups or individually)</p> <p>Partner teach/Plenary: Why is it useful to show data on a map?</p> <p>Step for Depth: Using your knowledge of the world, why do you think world food distribution is uneven?</p>
6	<p>Fieldwork Lesson - Field trip to local area/country park(schedule as appropriate)</p> <p>Carry out fieldwork in an urban area,, collecting and analysing data.</p>	<p>Plan an investigation identifying data to be collected</p> <p>Make sketch maps to identify landscape features using keys and appropriate scale</p> <p>Collect data about land features and present them in graphs</p>	
7	Assessment		<p>Complete the multiple choice quiz</p> <p>Maps: Label a map of the world with the following: -Equator -Poles -Tropic of Cancer -Tropic of Capricorn -Prime Meridian -International Date Line</p>

Medium term planning: *Geography Cycle B Aut 2* Spatial Sense Year 5 and 6