



SCIENCE

PROGRESSION FRAMEWORK

**EYFS**

ELG- Understanding the World	People and Communities	Children at the expected level of development will: <ul style="list-style-type: none"><li>• Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps</li><li>• Explain some similarities and differences between life in this country and life in other countries, drawing on knowledge from stories, non-fiction texts and – when appropriate – maps</li></ul>
	The Natural World	Children at the expected level of development will: <ul style="list-style-type: none"><li>• Explore the natural world around them, making observations and drawing pictures of animals and plants</li><li>• Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class</li></ul>

Key Stage 1 National Curriculum Expectations	Key Stage 2 National Curriculum Expectations
<p>Pupils should develop knowledge about the world, the United Kingdom and their locality. They should understand basic subject-specific vocabulary relating to human and physical geography and begin to use geographical skills, including first-hand observation, to enhance their locational awareness.</p> <p>Pupils should be taught to:</p> <p>Locational knowledge name and locate the world’s seven continents and five oceans name, locate and identify characteristics of the four countries and capital cities of the United Kingdom and its surrounding seas.</p> <p>Place knowledge understand geographical similarities and differences through studying the human and physical geography of a small area of the United Kingdom, and of a small area in a contrasting non-European country</p> <p>Human and physical geography identify seasonal and daily weather patterns in the United Kingdom and the location of hot and cold areas of the world in relation to the Equator and the North and South Poles use basic geographical vocabulary to refer to: key physical features, including: beach, cliff, coast, forest, hill, mountain, sea, ocean, river, soil, valley, vegetation, season and weather and key human features, including: city, town, village, factory, farm, house, office, port, harbour and shop.</p> <p>Geographical skills and fieldwork use world maps, atlases and globes to identify the United Kingdom and its countries, as well as the countries, continents and oceans studied at this key stage use simple compass directions (North, South, East and West) and locational and directional language [for example, near and far; left and right], to describe the location of features and routes on a map use aerial photographs and plan perspectives to recognise landmarks and basic human and physical features; devise a simple map; and use and construct basic symbols in a key use simple fieldwork and observational skills to study the geography of their school and its grounds and the key human and physical features of its surrounding environment.</p>	<p>Pupils should extend their knowledge and understanding beyond the local area to include the United Kingdom and Europe, North and South America. This will include the location and characteristics of a range of the world’s most significant human and physical features. They should develop their use of geographical knowledge, understanding and skills to enhance their locational and place knowledge.</p> <p>Pupils should be taught to:</p> <p>Locational knowledge locate the world’s countries, using maps to focus on Europe (including the location of Russia) and North and South America, concentrating on their environmental regions, key physical and human characteristics, countries, and major cities name and locate counties and cities of the United Kingdom, geographical regions and their identifying human and physical characteristics, key topographical features (including hills, mountains, coasts and rivers), and land-use patterns; and understand how some of these aspects have changed over time 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)</p> <p>Place knowledge understand geographical similarities and differences through the study of human and physical geography of a region of the United Kingdom, a region in a European country, and a region within North or South America</p> <p>Human and physical geography describe and understand key aspects of: physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle and human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water</p> <p>Geographical skills and fieldwork use maps, atlases, globes and digital/computer mapping to locate countries and describe features studied use the eight points of a compass, four and six-figure grid references, symbols and key (including the use of Ordnance Survey maps) to build their knowledge of the United Kingdom and the wider world</p>

	use fieldwork to observe, measure, record and present the human and physical features in the local area using a range of methods, including sketch maps, plans and graphs, and digital technologies.
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Locational Knowledge – World						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Skill	Name and locate the world's seven continents on a world map.	Name and locate seas surrounding the UK, as well as oceans around the world on a world map or globe.	Locate countries in Europe (including Russia) on a world map.	Locate the countries of North America on a world map, atlas or globe and to name the states of the USA.	Locate the countries and major cities of Asia on a world map, atlas or globe.	Locate the countries of Central and South America on a world map, atlas or globe
Substantive Knowledge	<p>A continent is a large area of land.</p> <p>The world's seven continents are Africa, Antarctica, Asia, Australia, Europe, North America and South America.</p>	<p>An ocean is a large sea. A sea is smaller than an ocean and is usually partially enclosed by land.</p> <p>There are five oceans on our planet called the Arctic, Atlantic, Indian, Pacific and Southern Oceans.</p> <p>The United Kingdom is an island surrounded by the Atlantic Ocean, English Channel, Irish Sea and North Sea.</p>	<p>Countries in Europe include the United Kingdom, France, Spain, Germany, Italy and Belgium. Russia is part of both Europe and Asia.</p>	<p>The North American continent includes the countries the USA and Canada.</p> <p>The states of the USA include California, Florida, Nevada, Texas and New York.</p>		<p>Countries in Central America include Mexico, Guatemala, Honduras, Nicaragua and Costa Rica.</p> <p>The South American continent includes the countries of Brazil, Argentina, Chile, Colombia, Peru, Venezuela, Uruguay, Ecuador, Bolivia and Paraguay.</p>
Locational Knowledge - The UK						
Skill	Name and locate the four countries of the UK and their capital cities on a map, atlas or globe.	Identify characteristics of the four countries and capital cities of the UK.	Name, locate and describe some major cities in the UK.	To name and locate counties and significant mountains and rivers of the UK.	To name and locate the geographical regions of the UK and to identify key topographical features of these regions.	Describe patterns of land use across different geographical regions in the UK and how they have changed over time.
Substantive Knowledge	The United Kingdom (UK) is a union of four countries: England, Scotland, Wales and Northern Ireland.	The characteristics of countries include their size, landscape, capital and major cities.	Major cities of the United Kingdom include London, Birmingham, Manchester, Glasgow, Edinburgh and Cardiff.	Significant mountains and mountain ranges include Ben Nevis, Snowdon, Helvellyn, and the Pennines.	The geographical regions of the UK are the North East, North West, Yorkshire and the Humber, East of England, East Midlands, London, South East, South West, West Midlands and Wales.	The most common types of land use in the UK are agriculture, forest, open land and urban areas.

	<p>Northern Ireland, Scotland and Wales.</p> <p>A capital city is a city that is home to the government and ruler of a country.</p> <p>London is the capital city of England, Belfast is the capital city of Northern Ireland, Edinburgh is the capital city of Scotland and Cardiff is the capital city of Wales.</p>	<p>city, language, currency and key landmarks.</p> <p>England is the biggest country in the United Kingdom.</p>	<p>Swansea, Liverpool, Exeter and Newcastle</p>	<p>Scafell Pike, the Scottish Highlands and the Pennines.</p> <p>Counties in the UK include Buckinghamshire, Cumbria and North Yorkshire.</p>	<p>The Humber, East Midlands, West Midlands, East of England, London, South East and South West</p>	<p>and water, residential and outdoor recreation.</p>
<b>Locational Knowledge – The Earth</b>						
Skill	<p>Locate hot and cold areas of the world in relation to the equator.</p>	<p>Locate the equator and the North and South Poles on a world map or globe.</p>	<p>Locate the Arctic and Antarctic Circles on a world map or globe.</p>	<p>Identify the location of the Tropics of Cancer and Capricorn on a world map.</p>	<p>Identify the location and explain the function of the Prime (or Greenwich) Meridian and different time zones (including day and night).</p>	<p>Locate significant places using latitude and longitude.</p>
Substantive Knowledge	<p>The equator is an imaginary line that divides the Earth into two parts: the Northern and Southern Hemispheres.</p> <p>Warmer areas of the world are closer to the equator and colder areas of the world are further from the equator.</p>	<p>The North Pole is the most northern point on Earth. The South Pole is the most southern point on Earth.</p> <p>Continents have different climates depending on where they are in the world.</p>	<p>The Arctic Circle includes parts of Norway, Sweden, Iceland, Finland, Canada, Greenland, Russia and the United States. There are no countries within the Antarctic Circle.</p>	<p>The Tropic of Cancer is 23.4 degrees north of the equator and Tropic of Capricorn is 23.4 degrees south of the equator.</p>	<p>The Prime (or Greenwich) Meridian is an imaginary line that divides the Earth into eastern and western hemispheres.</p> <p>The time at Greenwich is called Greenwich Mean Time (GMT). Each time zone that is 15 degrees to the west of Greenwich is another hour earlier than GMT. Each time</p>	<p>Latitude is the distance north or south of the equator and longitude is the distance east or west of the Prime Meridian.</p>

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Place Knowledge – Geographical similarities and differences						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Skill	Identify the similarities and differences between two places.	Describe and compare the human and physical similarities and differences between an area of the UK and a contrasting non-European country.	Classify, compare and contrast different types of geographical feature in Europe.	Describe and compare aspects of physical features.	Identify and describe the similarities and differences in physical and human geography between continents.	Describe the human, physical and climatic similarities and differences between two regions.
Substantive Knowledge	Lidlington and London can be compared by size, landmarks, transport, location.	UK and Kenya can be compared by physical features (beaches, mountains) and human features (houses, schools, towns)	The three classic types of volcanoes are: Cinder Cone Volcanoes. Composite Volcanoes (Stratovolcanoes) Shield Volcanoes.  Human features in Europe include Eiffel Tower and Leaning Tower of Pisa, physical features include River Seine and Danube.	A physical feature of USA include Grand Canyon, Niagra Falls and Rocky Mountains.  There are five basic kinds of mountains: Fold Mountains, Fault-block Mountains, Dome Mountains, Volcanic Mountains and Plateau Mountains.	Europe and Asia vary in size, shape, location, population, and climate.	Mexico and UK can be compared by climate, land use, natural resources, physical features and human geography.
Place Knowledge – Significance						
Skill	Name important buildings and places and explain their importance.	Name, locate and explain the significance of a place in our local area.	Name and locate significant volcanoes and plate boundaries and explain why they are important.	Name, locate and explain the importance of significant mountains.	Name, locate and explain the importance of significant rivers.	Name and locate significant rainforests and explain their importance.
Substantive knowledge	A place can be important because of its location, buildings, landscape, community, culture and history.  Important buildings in London include Big Ben, Buckingham		Significant volcanoes include Mount Vesuvius in Italy, Laki in Iceland, Mount Etna in Sicily and Krakatoa in Indonesia.  Over three-quarters of the world's earthquakes and volcanic eruptions	Significant mountain ranges include the Himalayas, Urals, Andes, Alps, Atlas, Pyrenees, Apennines, Balkans and Sierra Nevada.	Humans use rivers for irrigation in agriculture, for drinking water, for transportation, to produce electricity and for leisure activities like swimming and	North America, Europe and East Asia are the main industrial regions of the world due to a range of factors (access to raw materials, transportation, fresh water, power and labour supply).



	Palace, The Shard and The London Eye.		happen along the Ring of Fire located on the edge of the Pacific Ocean.		boating (Ganges, Nile and Amazon)	
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**Human and Physical Geography – Human Geography**

	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>
<b>Skill</b>	Name and describe features and differences between village, town and city.	Use geographical vocabulary to describe how and why people use a range of human features.	Describe the distribution of natural resources including food.	Describe the type and characteristics of settlement or land use in an area or region.	Explain ways that settlements, land use or water systems are used in different parts of the world.	Explore the impact that globalisation has had on local and international trade and how it has changed through time.
<b>Substantive Knowledge</b>	People can live in villages, towns or cities. These can have different houses or features such as barns, churches and skyscrapers.	Human features are man-made and include castles, towers, schools, hospitals, bridges, shops, tunnels, monuments, airports and roads.  Land can be used for recreational, transport, agricultural, residential and commercial purposes, or a mixture of these	Different types of food are grown in different countries due to climate and food type. Food is imported from around the world.	Different types of settlement include rural, urban, hamlet, town, village, city and suburban areas.	Land uses include agricultural, recreational, housing and industry. Water systems are used for transport, industry, leisure and power.	Mexico is one of the world's most trade dependent countries and exports include coffee, avocados, corn and wheat.  Trade has changed a lot through history due to developments in Transportation and changing relationships.  Fair trade between companies in developed countries and producers in developing countries in which fair prices are paid to the producers

Human and Physical Geography – Celebrating cultures						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Skill	To describe the culture of the UK.	To describe the culture of a non-European country.	To describe the culture of a European country.	To describe the culture of the USA.	To describe the culture of a country in Asia.	To describe the culture of a central American country.
Substantive Knowledge	Sport and physical activity are a significant part of British culture and therefore have many significant British athletes.	Art is a significant aspect of African culture that include sculpture, weaving, beading, painting, pottery, jewellery, headgear and dress.	Art and Architecture is a significant aspect of European culture and there are many famous buildings and landmarks in Europe.	The USA, due to its size, has a vast and diverse cultural identity and features traditions from all regions of the world.	India has one of the oldest cultures in the world that heavily centres around food, music, dance and religious festivals.	Tourism is an industry that involves people travelling for recreation and leisure. It has had an environmental, social and economic impact on many regions and countries

Human and Physical Geography – Physical Features						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Skill	Identify patterns in daily and seasonal weather.	Describe simple weather patterns of hot and cold places.	Name and describe properties of the Earth's four layers.  Identify the five major climate zones on Earth.	Identify, describe and explain the formation of different mountain types.	Identify and describe some key physical features and environmental regions of North and South America and explain how these, along with the climate zones and soil types, can affect land use.	Describe the physical processes, including weather, that affect two different locations
Substantive Knowledge	There are four seasons in the UK: spring, summer, autumn and winter. Each season has typical weather patterns.  Types of weather include sun, rain, wind, snow, fog, hail and sleet. Symbols are used to show different types of weather.	A weather pattern is a type of weather that is repeated. Different countries experience different weather patterns depending on their location near the equator.	The Earth is made of four different layers. The inner core, outer core, the mantle and the crust (broken into large pieces called tectonic plates)  The Earth has five climate zones: desert, equatorial, polar, temperate and tropical.	Mountains form over millions of years. They are made when the Earth's tectonic plates push together or move apart. Mountains are also formed when magma underneath the Earth's crust pushes large areas of land upwards.	North America is broadly categorised into six major biomes: tundra, coniferous forest, grasslands (prairie), deciduous forest, desert and tropical rainforest. South America has a vast variety of biomes, including desert, alpine, rainforest and grasslands.	A vegetation belt is an area with distinct plant types, determined by climate, soil, drainage and elevation.  There are at least three habitat zones in the Galapagos: the coastal zone (dominated by salt-resistant plants), arid zone (succulent cacti and leafless shrubs), and the highlands (lush Scalesia forests)

Human and Physical Geography – Physical Processes						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Skill			Explain the physical processes that cause earthquakes and volcanic eruptions.	Use specific geographical vocabulary and diagrams to explain the water cycle.	Explain how the climate affects agricultural land use.	Describe the physical processes, including weather, that affect two different locations.
Substantive Knowledge			<p>Volcanic eruptions and earthquakes happen when two tectonic plates push into each other, pull apart from one another or slide alongside each other. The centre of an earthquake is called the epicentre.</p> <p>A volcano is an opening in the Earth's surface from which gas, hot magma and ash can escape. When a volcano erupts, liquid magma collects in an underground magma chamber. The magma pushes through a crack called a vent and bursts out onto the Earth's surface. Lava, hot ash and mudslides from volcanic eruptions can cause severe damage.</p>	Water cannot be made. It is constantly recycled through a process called the water cycle. The four stages of the water cycle are evaporation, condensation, precipitation and collection. During the water cycle, water changes state due to heating and cooling.	Changes to the weather and climate (temperature, weather patterns and precipitation) can affect land use. Farmers living in different countries adapt their farming practices to suit their local climate and landscape.	Physical processes that can affect a landscape for example, The Galapagos Islands were formed through the layering and lifting of repeated volcanic action.

Human and Physical Geography – Environment						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Skill	Describe how pollution and litter affect the local environment and school grounds.	Describe ways to improve the local environment	Identify how food waste can be reduced in order to positively impact the environment.	Describe how water pollution can have a negative impact on the environment.	Explain how climate change affects climate zones and biomes across the world.	Explain how the production of energy is becoming more sustainable and environmentally friendly.
Substantive Knowledge	Litter and pollution have a harmful effect on the areas where we live, work and play.	The local environment can be improved by picking up litter, planting flowers and improving amenities.	Food waste can be reduced by encouraging people to shop smarter, freezing food, and by composting leftovers to keep them out of landfill.	Altitudinal zonation describes the different climates and types of wildlife at different altitudes on mountains. Examples include forests that grow at low altitudes and support a wide variety of plants and animals, tundra that is found at higher altitudes and supports plants and animals that are adapted to harsher environments and the summits of mountains, which are usually covered in ice and snow and don't support any life.	Climate change is the long-term change in expected patterns of weather that contributes to the melting of polar ice caps, rising sea levels and extreme weather. Climate change is caused by global warming.  Human activity, such as deforestation and habitat destruction all contribute to global warming.	Ways to reduce our carbon footprint include reducing energy use, travel smart and reducing waste. Carbon neutrality is a state of net-zero carbon dioxide emissions

Geographical skills and fieldwork – Maps Skills						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Skill	Draw or read a simple picture map of the school.	Draw or read a range of simple maps of the local area that use symbols and a key.	Draw sketch maps to present physical and human features in the local area.		Identify elevated areas of land on a relief map using contour lines.	Use grid references and symbols in maps and on globes to understand and record the geography of an area.
Substantive Knowledge	A map is a picture or drawing of an area of land or sea that can show human and physical features. A map has symbols to show where things are located.	Maps use symbols and a key. A key is the information needed to read a map and a symbol is a picture or icon used to show a geographical feature.	A sketch map is a simple drawing used to roughly show a landscape.	Topography is the arrangement of the natural and artificial physical features of an area.	The geographical term 'relief' describes the difference between the highest and lowest elevations of an area.  Contour lines show the elevation of the land; lines close together represent steep ground and lines far apart show gently sloping or flat.	Grid references can be used to locate a geographical area.  A geographical area can be understood by identifying the physical and human features.
Geographical Skills and Fieldwork – Position						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Skill	Use simple directional and positional language to give directions, describe the location of features and discuss where things are in relation to each other.	Use simple compass directions to describe the location of features or a route on a map.	Use compass points and grid references to interpret maps, including Ordnance Survey maps, with accuracy.	Use the eight points of a compass to locate a geographical feature or place on a map.	Use four-figure grid references to describe the location of objects and places on a simple map.	Use four or six-figure grid references and keys to describe the location of objects and places on a map.
Substantive Knowledge	Positional language includes behind, next to and in front of. Directional language includes left, right, straight ahead and turn.	The four cardinal points on a compass are north, south, east and west.  A route is a set of directions that can be	Compass points can be used to describe the relationship of features to each other or describe the direction of travel.	The eight points of a compass are north, south, east, west, north-east, north-west, south-east and south-west.	A four-figure grid reference contains four numbers. The first two numbers are called the easting and are found along the top and bottom	A six-figure grid reference contains six numbers and is more precise than a four-figure grid reference. The first three figures are called the

		used to get from one place to another.			of a map. The second two numbers are called the northing and are found up both sides of a map. Four-figure grid references give specific information about locations on a map.	easting and are found along the top and bottom of a map. The second three figures are called the northing and are found up both sides of a map. Six-figure grid references give detailed information about locations on a map.
<b>Geographical Skills and Fieldwork - Investigation</b>						
	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>
Skill	Identify features and landmarks on an aerial photograph or plan perspective.	Study aerial photographs to describe the features and characteristics of an area of land.	Analyse maps, atlases and globes, including digital mapping, to locate countries and describe features studied.	Study and draw conclusions about places and geographical features using a range of geographical resources (maps, atlases, globes and digital mapping).	Analyse and compare a place or places using aerial photographs, atlases and maps.	Use satellite imaging and maps of different scales to find out geographical information about a place.
Substantive Knowledge	An aerial photograph or plan perspective shows an area of land from above.	An aerial photograph can be vertical (an image taken directly from above) or oblique (an image taken from above and to the side).	Maps, globes and digital mapping tools can help to locate and describe significant geographical features.	An atlas is a collection of maps and information that shows geographical features, topography, boundaries, climatic, social and economic statistics of an area.	Aerial photography is used in cartography, land-use planning and environmental studies. It can be used alongside maps to find out detailed information about places.	Satellite images are photographs of Earth taken by imaging satellites.



Geographical Skills and Fieldwork – Data Analysis						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Skill	Collect simple data during fieldwork activities.	Collect and analyze simple data in charts and tables from primary sources (fieldwork and observation) and secondary sources (maps and books).	Analyse primary data, identifying any patterns observed.	Collect and analyse primary and secondary data, identifying and analyzing patterns and suggesting reasons for them.	Summarise geographical data to draw conclusions.	Analyse and present increasingly complex data, comparing data from different sources and suggesting why data may vary.
Substantive Knowledge	Data is information that can be collected when conducting a geographical enquiry.	Data can be recorded in different ways, including tables, tally charts and pictograms.	Sources of primary data include surveys, observations, experiments and questionnaires.	Data can also be gathered from a range of secondary sources such as surveys, maps, research, books and the internet.	Geographical data, such as demographics or economic statistics, can be used as evidence to support conclusions.	Data helps us to understand patterns and trends but sometimes can have variations due to numerous factors (human error, incorrect equipment, different time frames, different sites, environmental conditions and unexplained anomalies).