



Climate change and Pollution



Year: Five
Term: Autumn

Background information for teachers

The children have previously learnt about the lines of latitude and how these areas make up the world's climate zones. They will have discovered which countries are in each zone and studied some of characteristics within these areas, e.g. types of vegetation. In this topic the children will be building on their knowledge of the lines of longitude and latitude and now be discovering how these determine the time zones across the world. Children will become aware of parts of the world that are being polluted at a devastating rate and how this is effecting the environment. Children will know that human choices and decisions can either lead to better cleaner environment or worsen pollution and global warming. Year Five will then explore local pollution and investigate the cleanliness of the local area. They will use fieldwork skills to gather data, display findings and be able to give their opinions using reasons.

Key vocabulary

- **Atmosphere** - the layer of air which surrounds the Earth.
- **Biome** – A major type of environment. The five major types of biomes are aquatic, grassland, forest, desert, and tundra.
- **Carbon dioxide** - a colourless, odourless gas produced by burning carbon and organic compounds and by respiration.
- **Climate change** –
- **Contamination** - the action or state of making or being made impure by polluting or poisoning.
- **Drought** - A prolonged period of dry weather.
- **Flood** - an overflow of a large amount of water beyond its normal limits, especially over what is normally dry land.
- **Fossil fuel** - Non-renewable fuels formed from the remains of dead plants and animals. Coal, oil, natural gas and peat.
- **Global warming** – The slow increase in the world temperature caused by the greenhouse effect.
- **Greenwich Mean Time** - The local time at longitude 0°, which passes through Greenwich, in London.
- **Greenwich Meridian** - the prime meridian, which passes through the Royal Observatory at Greenwich in London. It was adopted internationally as the zero of longitude in 1884.
- **Manufacturing** - to make from raw materials by hand or by machinery
- **Marine** - relating to or found in the sea.
- **Migration** - the permanent change of residence by an individual or group.
- **Nitrogen** - a gas in the Earth's atmosphere.
- **Oxygen** - A colourless tasteless odourless gas which forms about 21%percent of the atmosphere, and is necessary for life.
- **Pollution** – contamination of the environment due to human activity.
- **Prime Meridian** - a planet's meridian adopted as the zero of longitude.
- **Trade** - the action of buying and selling goods and services.
- **Time zones** - a range of longitudes where a common standard time is used.

Year 5 – Climate Change and Pollution

Geography - Know that geography is the study of places and the relationships between people and their environments

Question - How clean is our area and what could be done to make it better?

Fieldwork opportunities

	Key geography Knowledge	Key geography skills
<p>Week 1 (Retrieval)</p>	<ul style="list-style-type: none"> ● Understand lines of latitude (recall names) (https://www.bbc.co.uk/bitesize/topics/zvsfr82/articles/zd4rmfr) and how the Earth can be divided into polar, temperate, sub-tropical and tropical zones and that each tend to have different climates and biomes; Know that a biome is a community of plants and/or animals that share characteristics based on the environment in which they live. The five major types of biomes are aquatic, grassland, forest, desert, and tundra. ● Recognise the names of the seven continents and name on a world map and globe (as a class using a labelled map/globe): Europe, North America, South America, Africa, Asia, Australasia and Antarctica. Be introduced to the North and South Poles and know that they are the cold parts of the Earth ● Know that when areas of land that are usually dry become covered with water, this is called a flood; floods can be caused by heavy rainfall and storms that lead to temporarily higher sea levels along a coast; floods can lead to destruction of property and even death 	<p><u>To locate places</u></p> <ul style="list-style-type: none"> ● I can identify the position and describe the geographical significance of latitude, longitude, the Prime/Greenwich Meridian and time zones (including day and night). <p><u>To understand places and the geographical patterns and processes</u></p> <ul style="list-style-type: none"> ● I can describe how locations around the world are changing and explain some of the reasons for change. ● I can describe links between people, places and the environment.
<p>Week 2</p>	<ul style="list-style-type: none"> ● Know that although lines of latitude can represent a climate zones and biome types, it also can determine time zones across the world. ● Know why we have day and night time. ● The Prime Meridian is at longitude 0°. ● It divides the Earth into two hemispheres, the Eastern Hemisphere and the Western Hemisphere. ● In the Northern Hemisphere, the Prime Meridian passes through the UK, France and Spain in Europe and Algeria, Mali, Burkina Faso, Togo and Ghana in Africa. ● The only landmass crossed by the Meridian in the Southern Hemisphere is Antarctica. ● The Meridian Line is also used as the marker for the Universal Time Zone. All other times are either ahead (+) or behind (-) the time on the Meridian Line, which is called Greenwich Mean Time, or GMT. Provide some examples of how this works, for example if it is 08:00 in London, it is 09:00 in Paris, France. ● Australia, the Russian Federation and the United States of America - some countries are so big they are split across several time zones. (They are usually in remote, unpopulated areas, often near naturally occurring markers like rivers. This avoids problems associated with having more than one time zone in a single area.) ● Describe why their time zones are different. ● Idea - Digimaps- To be able to mark on the flight path from their selected airport in the United Kingdom to another destination within the world (European and/or Non-European) and add an annotation to indicate how many different time zones it passes. 	<p><u>To organise and communicate geographically</u></p> <ul style="list-style-type: none"> ● I can use a range of fieldwork techniques for collecting data. ● I can collect and analyse statistics

Week 3	<ul style="list-style-type: none"> ● Know that biomes are valuable to humans and that they are <u>also</u> worth protecting in their own right (i.e. regardless of their use to humans); understand that our oceans are under threat from pollution in particular plastics; know that while some plastic ends up in the ocean due to intentional dumping, large amounts are blown into the sea from the land; know that the plastic in the oceans can be deadly to marine life and that once it has entered the food chain it can cause health problems for humans ● Know that there are massive ‘garbage patches’ in the Atlantic, Pacific and Indian oceans and that all of the world’s oceans are affected by plastic pollution 	<p>and other information in order to draw clear conclusions about locations.</p> <ul style="list-style-type: none"> ● I can explain my own views about locations, giving reasons and recognise why others might have different opinions.
Week 4/5	<ul style="list-style-type: none"> ● Know that human choices and decisions can lead to better or worse outcomes, for example by exploring the local area and looking for... <ul style="list-style-type: none"> (a) examples of plastic and other waste (b) local centres of trade that might be hot spots of refuse (c) local distribution of rubbish bins and recycling bins (d) where extra bins might be included in the local area to support local people in making better decisions ● Know that a lot of plastic can be recycled, but that creating less plastic waste in the first place is even better solution than recycling ● Create a sketch map of the area including (a), (b), (c) and (d) ● Question: How clean is our area and what could be done to make it better? (Fieldwork and brief write up) Children to give their opinion on the area, giving reasons for their opinions and recognise why others might have different opinions. 	
Week 6	<ul style="list-style-type: none"> ● Know that Earth is surrounded by a layer of gases called the atmosphere that is roughly 500 km high above Earth but most of it is within 15 km of the Earth’s surface ● Know that the most common gas in the atmosphere is nitrogen, but that other important gases in our atmosphere include oxygen and carbon dioxide ● Know that our atmosphere acts like a blanket that traps the Sun’s heat; know that people on Earth are making carbon dioxide, mainly through transport, manufacturing and agriculture; know that this extra carbon dioxide is leading to global warming as the world heats up ● Know that manufacturing involves the creation of products for people to use; these are made from natural resources that are distributed unevenly across the planet; know that oil – from which plastics and fuels are both made – is an example of such a resource ● Know that oil is an example of a fossil fuel, meaning that it is a finite resource made naturally over millions of years from the remains of living things ● Know that global warming is leading to more extreme weather events including floods and droughts; this is making certain parts of the world much harder to live in leading to increased movement of people, called migration; know that the availability and contamination of water is a major reason for this migration ● Know that global warming is also leading to degradation of many habitats, and that the loss of polar ice which threatens polar bears is an example of this 	

	<ul style="list-style-type: none">● Know that the population of the world is currently increasing; know that the global population is currently close to 8 billion and is projected to peak at 11 billion in around the year 2100.	
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