		Knowledge to be reviewed	Knowledge to be explicitly taught	How knowledge will be built upon
Substantive	All pupils:	• Key human and physical features (Y1-4) • Rivers, lakes, seas and oceans are all bodies of water. Rivers flow into lakes and seas; seas connect to oceans. (Y1-2) • Rivers travel from highland areas (the source) to lowland areas (the mouth) (Y1-2) • Land use is how land is used by humans, and can include economic, leisure, or settlements. (Y1-2) • Humans use seas and oceans for economic and leisure uses (Y1-2) • It is important to protect our rivers, seas, and oceans, and there is a range of ways that we can take action (Y1-2) • Tourism is the business of supporting and encouraging people to visit a place for fun (Y3-4 • **Science:** The water cycle relies on evaporation and condensation. Water is collected in the oceans from rivers and seas; it evaporates and then condenses to form clouds; it then precipitates and the cycle begins again (Y3-4	• The amount of water on Earth is constant. Most is **saltwater** stored in oceans, and most **freshwater** is stored as ice or underground. • Water cycle: Evaporation from the air, and **transpiration** from trees means that water vapour rises into the air. It condenses to form clouds and precipitation occurs when the clouds get heavy. **Surface runoff** is the flow of water overground; **throughflow** is the flow of water underground. • The **upper course** of a river is in high, mountainous ground and the river is narrow and fast-flowing; the **lower course** of a river is in low, flat ground and the river is wide and slow-flowing; the **middle course** is between the two. • Location of Mississippi, Amazon, Nile, Danube, Severn, Yangtze and Murray rivers. • **Waterfalls** are formed in the upper course of the river when water gradually erodes soft rock and are found all over the world. • **Meanders** are bends in the river that form in the middle and lower courses. • **Floodplains** are flat land either side of a river, on which the river deposits nutrients when it floods. They are formed in the lower course of the river. • **Land use** is how humans use land, and includes agriculture, recreation (including tourism), housing, industry and forestry. • Land use is different around the lower, middle and upper courses of a river.	• Carrying out fieldwork around a river (Y6) • Formation of other river features (KS3)
	Year 5 age pupils:			
	Year 6 age pupils:	• **Science:** When a solute dissolves in a solvent, a solution is formed. A solution is a mixture (Y5-6 CB Aut1)	• Discuss the nature of saltwater as a solution of salt (solute) and water (solvent)	

		Knowledge to be reviewed	Knowledge to be explicitly taught	How knowledge will be built upon
Disciplinary	All pupils:	• **Mathematics:** Read scales/ number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts (Y3); Convert between units of measure, including m to km (Y4); Recognise % and know it means parts per 100 (Y5) • Explain similarities and differences, using geographical knowledge (Y3-4 • Interpretation: Political maps show human boundaries and features; physical maps show physical boundaries and features (Y3-4) **Using maps:** • Satellite images (Google Earth) • Photographs of places in oblique /plan views • OS maps • Junior atlas		
	Year 5 age pupils:		• Calculate distances on a map using scale (1 unit : 1, 2, 4, 5 or 10 units)	• Draw a basic map using scale of 1 unit : 1, 2, 4, 5 or 10 units (Y5-6 CB Sum)
	Year 6 age pupils:	• Calculate distances on a map using scale (1 unit : 1, 2, 4, 5 or 10 units) (Y5-6 CB Sum)	• Draw a basic map using scale of 1 unit : 1, 2, 4, 5 or 10 units	
Vertical concepts		• **Location & place:** Five oceans (Y1-2) • **Location & place:** Locating countries in Europe and South America (Y3-4) • **Location & place:** Rivers of the UK (Y3-4)	• **Location & place:** Human and physical features around a local river and Danube, Mississippi and Severn rivers. • **Location & place:** Distribution of the world's water.	• **Location & place:** Building locational knowledge of Asia and Africa (KS3)

A Year 5-6: Spring 1

Climate across the world

		Knowledge to be reviewed	Knowledge to be explicitly taught	How knowledge will be built upon
Substantive	**All pupils:**	• The Serengeti is a grassland, with habitats home to animals like zebras, lions, giraffes, hippos, vultures, snakes, toads and scorpions (N3-4 Sum2) • The Congo Basin is a tropical rainforest, with habitats home to animals like gorillas, chimpanzees, elephants, crocodiles, leopards, peafowl, frogs, lots of fish and spiders (N3-4 Sum2) • **Science:** Daytime happens when we are facing the sun; nighttime happens we are facing away from the sun (Y1-2) • The North Pole and the South Pole are at the top and bottom of the Earth (Y1-2) • **Science:** Animals and plants have adapted to life in a hot desert: **camels** and **cacti** (Y1-2) • **Science:** Animals and plants have adapted to life in a cold desert: **Arctic fox** and **shrubs** (Y1-2) • The weather is short-term. Climate is long-term summary of the weather conditions (Y1-2) • Hot deserts have a very hot and dry climate; cold deserts have a very cold and dry climate (Y1-2) • Lines of longitude and latitude are imaginary lines that help us locate places on Earth: Equator, Tropics of Cancer and Capricorn, Arctic and Antarctic Circle; Prime Meridian; Northern and Southern and Eastern and Western Hemispheres (Y3-4 • A symbiotic relationship is a long-term relationship between one or more species. Mutualism is where this both species in the relationship receive benefits (Y3-4) • Rainforests provide the Earth with many benefits, including releasing lots of oxygen, having plants that can be used to make medicine, and they are the only home to lots of species. Chopping down trees is called deforestation (Y3-4)	• Vertical lines called **meridians** split the Earth is split into 24 different **time zones**. Each time zone is a number of hours ahead or behind London, at the **Prime Meridian**. Some countries are too large for one zone and operate in multiple time zones • **Climate zones** share long-term weather patterns. Six main ones: **polar**, **temperate**, **arid**, **tropical**, **Mediterranean** and **mountains** • Climate zones are usually found in more than one continent; and continents of Europe, North America and South America have several climate zones Some climate zones (e.g. temperate) usually have a much higher **population density** than others • **Biomes** are areas of the world that, because of similar climates, have similar landscapes, animals (**fauna**) and plants (**flora** or **vegetation belt**): **tundra**, **tropical rainforests**, **coral reefs**, **temperate forests** and **hot deserts** • Flora and fauna that have adapted to life in the tundra (Arctic hare, polar bear) hot desert (cactus, camel, Saharan silver ant, cape ground squirrel) temperate forest (deciduous and coniferous trees with thick bark, red squirrels, hedgehogs, and southern wood ants) coral reefs (soft coral, pistol shrimp & goby fish, octopus & grouper) • **Global warming** relates to an increase in Earth's temperature only; it causes **climate change** which relates to a broader set of changes. Global warming and climate change both happen naturally but both have been accelerated by **human activity** • Global warming is caused by too many **greenhouse gases** in the atmosphere from burning **fossil fuels**, **agriculture**, **deforestation** We can prevent further climate change by using less electricity, **reforestation** and **afforestation**, and by using less and **recycling more**. If humans do not act now, global warming and climate change will continue and have major impacts.	• In addition to global warming, plastic waste and pollution are damaging habitats across the world (Y5-6 CA Sum) • **Science:** Adaptations can be behavioural, physiological or structural (Y5-6 CA Spr1) • **Science:** Adaptations that provide an organism with an advantage are more likely survive and reproduce. This is how species evolve (Y5-6 CA Spr1) • **Science:** The Earth's tilt creates seasons, and different day lengths and different times of the year (KS3)
	Year 5 age pupils:		• Fossil fuels are materials made from fossils of organisms over millions of years, like coal and oil.	
	Year 6 age pupils:	• Fossil fuels are materials made from fossils of organisms over millions of years, like coal and oil (Y5-6 CB Aut)		

A Year 5-6: Spring 1

Climate across the world

		Knowledge to be reviewed	Knowledge to be explicitly taught	How knowledge will be built upon
Disciplinary	All pupils:	• **Mathematics:** Number of mins in an hour; hours in a day (Y2); Interpret and construct bar graphs (Y3) and line graphs (Y4) • World maps can be drawn from different perspectives, including the Pacific-centred map (Y3-4) • Use an atlas to find the right map (Y1-2) • Explain similarities and differences, using geographical knowledge (Y3-4) **Using maps:** • Satellite images (Google Earth); range of photographs • Junior atlas • Globe	• The Mercator projection is what is commonly use but distorts continents to make European countries look larger. Peters projection shows continents on a more accurate scale • Interpret and construct climate graphs **Using maps:** • Thematic maps (showing climate zones and population density)	• Using a wider range of thematic maps (KS3) • Recognise other map projections (KS3)
	Year 5 age pupils:		• Express opinions about environmental issues with reasons.	• Express opinions about environmental issues with reasons, in the context of Fair Trade (Y5-6 CB Aut)
	Year 6 age pupils:	• Express opinions about environmental issues with reasons, in the context of Fair Trade (Y5-6 CB Aut)		
Vertical concepts		• **Location & place:** Seven continents, five oceans (Y1-2) • **Location & place:** Longitude/latitude (Y3-4)	• **Location & place:** Locating climate zones and biomes across the world; time zones	• **Location & place:** Building locational knowledge of Asia and Africa (KS3)

A Year 5-6: Summer 1

Improving the environment

		Knowledge to be reviewed	Knowledge to be explicitly taught	How knowledge will be built upon
Substantive	**All pupils:**	• There are five oceans in the world. These are different to seas (Y1-2) • It is important to protect our rivers, seas, and oceans, and there is a range of ways that we can take action (Y1-2) • Fossil fuels are materials made from fossils of organisms over millions of years, like coal and oil (Y5-6 CA Spr1) • Global warming relates to an increase in Earth's temperature only; it causes climate change which relates to a broader set of changes. Global warming and climate change both happen naturally but both have been accelerated by human activity (Y5-6 CA Spr1) • We can prevent further climate change by using less electricity, reforestation and afforestation, and by using less and recycling more. If humans do not act now, global warming and climate change will continue and have major impacts (Y5-6 CA Spr1) • **Science**: A non-renewable energy source is one where we have a fixed amount of the source, and where it would take too long for more to be formed. Burning fossil fuels to transfer electrical energy is an example of a non-renewable energy source (Y5-6 CA Spr2) • **Science**: Renewable energy sources quickly refill replenish themselves, meaning that we can use them again and again/Wind, solar, geothermal and hydrological power are all examples of renewable energy sources (Y5-6 CA Spr2) • **Science**: Power stations can use both renewable and non-renewable sources of energy (Y5-6 CA Spr2)	• Some locations are better suited to some renewable energy sources than others, based on their **physical** and **climate** features. • **Plastics** take hundreds of years to break down. They can kill **organisms** directly or indirectly by destroying **habitats.** • Plastic waste is created across the world, and often ends up in oceans. • The **Great Pacific Garbage Patch** is an area of plastic waste in the Pacific Ocean, three times the size of Spain and Portugal combined. • Plastic **pollution** can be reduced by using less single-use plastic (e.g. plastic bags, straws) and **recycling** more plastic. • **Sustainable cities** limit damage to their environment. • Sustainable cities are found across the world including: Beddington (UK, Europe); Curitiba (Brazil, South America); Dongtan City (China; Asia); Melbourne (Australia, Oceania); Vancouver (Canada, North America); and Cape Town (South Africa, Africa).	• Carrying out fieldwork (Y5-6 CB Sum) • The Earth's changing climate from the Ice Age to now (KS3)
	Year 5 age pupils:			
	Year 6 age pupils:			

A Year 5-6: Summer 1

Improving the environment

		Knowledge to be reviewed	Knowledge to be explicitly taught	How knowledge will be built upon
Disciplinary	All pupils:	• **Mathematics**: Coordinates in the first quadrant (Y4) • Express opinions about environmental issues with reasons (Y5-6 CA Spr) **Using maps:** • Simple (Google maps) map; satellite image (Google Earth); junior atlas; globe; photographs of places in plan and oblique view; OS maps; thematic maps	• Locate places on a world map using longitude and latitude • Evaluate responses to environmental issues	• Use Geographical Information Systems (GIS) to view, analyse and interpret places and data (KS3)
	Year 5 age pupils:			• Location: Locate places and features using 4-figure grid references (Y5-6 CB Aut)
	Year 6 age pupils:	• Location: Locate places and features using 4-figure grid references (Y5-6 CB Aut)		
Vertical concepts		• **Geographical scale:** While physical effects are felt most predominantly at the local or national scale, the response can be at the global scale (Y3-4)	• **Geographical scale:** Actions at the local or national scale can have a huge impact on the global scale, particularly on the Earth's climate	• **Geographical scale:** Use scales more mathematically, measuring and carefully calculating distances (KS3)