CARR HILL HIGH SCHOOL
Commitment Aspiration Resilience Respect

Timeline	Topic	Key concepts and knowledge	Skills development	Rationale
12 lessons	The USA	• What are the key features of the site and situation of the USA? • What factors can lead to rivers flooding? • How did flooding in 2021 affect New York? • How can date about flooding be presented using a storm hydrograph? • What problems can the extraction of fossil fuels cause? (Deepwater Horizon) • What is an unconventional method of extracting energy? • Why is there controversy about hydraulic fracturing? • What can population pyramids tell us about development? • What can we learn about development from Rostow's model? • What is the Black Lives Matter movement and how has it grown from the USA? • How can government policies impact migration? • Why is Antarctica valuable? What role does the USA have in the protection of this continent?	• Map skills (Use of Atlas) • Use and interpretation of storm hydrographs • Use and interpretation of population pyramids (divergent bar charts) • Use and interpretation of Rostow's model of development. <u>British values</u> • Rule of law • Democracy • Tolerance of different cultures and religions • Mutual respect • Individual liberty <u>Employability skills</u> • Self-management • Informed • Numeracy • Communication • Digital skills	We are learning this to develop our understanding of developed countries and superpowers. The USA is considered to be the World's only superpower country, this topic will allow students to develop an understanding of a country at a different level of development from the countries / regions studied up to this point which have all been emerging / developing. Learning in this unit will consolidate and build on students understanding of key physical and human concepts such as rivers, energy, population, development and migration covered in Year 7 and 8.

6 lessons	Humans and our world	• What global factors affect biome distribution and characteristics? • How can we explain the distribution and characteristics of biomes? • What local factors affect biomes? • How do the biotic and abiotic components of biomes interact? • How does the biosphere act as a life support system? • How can increasing use of resources lead to over exploitation? • Malthus or Boserup: Whose theory of population and resources is most convincing?	• Comparing climate graphs for different biomes. • Use of world maps to show the location of different biomes. • Use and interpretation of line graphs showing the range of future population in relation to likely available resources. • Justification of opinion – analysis of the theories of Malthus and Boserup. <u>British values</u> • Tolerance of different cultures and religions • Mutual respect <u>Employability skills</u> • Numeracy • Digital skills	We are learning this to understand how vital the biosphere is to human existence. Students will appreciate that people have been exploiting the biosphere throughout history for resources and will appreciate the services provided to us by the biosphere. It is important that students develop and understanding of the stresses that the biosphere is being placed under in recent times, their role in this and potential future scenarios. Having studied named countries / regions throughout KS3 up to this point this topic allows students to take a world view and place themselves at the centre of this. It brings together knowledge from previous topics about biomes and energy and allows students to consider the relationship between the two and the role they play in this.

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15 lessons	Forests under threat	• How does the tropical rainforest reflect the equatorial climate? • How does the taiga reflect the sub arctic climate • How different are the climates of the tropical rainforest and the taiga? • What are the threats to the tropical rainforest? • What are the threats to the taiga? • How can tropical rainforests be protected? • How can taiga forests be protected?	• Use and interpretation of nutrient cycle diagrams and food web diagrams. • Use of GIS to identify the pattern of forest loss. <u>British values</u> • Tolerance and respect for other cultures. • Mutual respect • Rule of law • Democracy <u>Employability skills</u> • Numeracy • Digital skills • Problem solving	We are learning this because two of the main biomes in the world are forest biomes. Both tropical rainforest and taiga forest biomes are under threat because of commercial development by humans and because of indirect threats such as climate change. Students will learn about their role in the destruction of these biomes as well as consider what could or should be done to protect them. Having studied tropical rainforest biomes in Year 7 (India) and taiga biomes in Year 8 (Russia) this topic allows students to bring together this knowledge to form a world view about the threats world forests are facing today and challenges them to consider what could be done to face these challenges.

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14 lessons	Energy	• How can we classify energy resources? • What are the environmental impacts of extracting these resources? • Why is access to energy resources uneven around the world? • Can we cope with rising demand for oil? • How are oil supplies and prices affected by geopolitics? • Why are we exploiting ecologically and environmentally sensitive areas? • How can we be energy efficient? • What are the costs and benefits of alternatives to fossil fuels? • How are attitudes to energy and environmental issues changing?	• Use and interpretation of world maps showing the distribution of energy resources. • Use of oil price and oil production data to identify trends over time. • Calculation of carbon and ecological footprints. <u>British values</u> • Democracy • Mutual respect • Tolerance of different cultures • Rule of law • Respect • Individual liberty <u>Employability skills</u> • Problem solving • Self-management • Informed • Numeracy • Digital skills • Creativity	We are learning this because as the population of the world increases and nations are becoming increasingly wealthy the need for energy supplies is placing pressure on the planet. This is impacting the ability of the biosphere to provide vital services and is damaging world biomes. (including tropical and taiga forests) This topic continues our focus on global issues, placing students and their experiences and actions at the centre of this. It builds on earlier learning from year 9 about the biosphere and forests.

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	Biomes, weather and climate	Rivers, coasts and glaciation	Tectonics and geology
7	Definition of 'ecosystem' and named examples Definition of 'biome' Where the World's main biomes are located. The climate of the tropical rainforest biome. (temperature and rainfall) How high rainfall has led to a unique structure in the Tropical Rainforest How the Lion Tailed Macaque has adapted to thrive in the tropical rainforest. The evidence for global warming The Human causes of global warming (CO2) The impacts of global warming How temperature and precipitation are measured How geographical information on weather is presented on a climate graph Where tropical cyclones form The impacts of tropical cyclones (Cyclone Fani)	What the long profile of a river looks like. Identification of river landforms found in the upper, middle and lower course (source, waterfalls, v-shaped valleys, meanders, flood plains, deltas, mouth) How the height above sea level of a river changes from source to mouth. How the width of the river changes from source to mouth. Human uses of rivers (The River Ganges) Definition and recognition of a glacier How glaciers have shaped our land in the past (UK – Lake District) Identification of glacial landforms (U shaped valleys, Corries, Arêtes, Peaks)	Volcanoes and earthquakes happen at tectonic plate boundaries. Impacts of tectonic hazards. (China earthquake) How the Richter scale is used to measure the impact of earthquakes. Rock types (igneous, metamorphic, and sedimentary.) Mountains are found in certain locations around the globe. The formation of sedimentary rock including limestone. The features of limestone landscapes including sink holes, resurgences, caves and limestone pavements. (China and UK (Malham)).
8	How latitude influences the location of the Worlds biomes. How atmospheric circulation influenced the location of dry biomes (Arabian desert) The climate of the taiga biome. Soils in the Taiga are thin and nutrient poor. Plant adaptations (including to the taiga biome (Reindeer moss))	How water is transported through the hydrological cycle and Lake Baikal as a freshwater store. How erosion leads to the formation of waterfalls (weak rock Vs hard rock. Formation of Iguazu falls) How erosion and deposition leads to the formation of meanders and ox bow lakes (The River Nile)	The structure of the Earth (inner core, outer core, mantle crust including temperature and physical state) How convection currents are the drivers of tectonic plate movement. The Pacific Ring of Fire is a tectonically significant location.

	The resources humans take from biomes (softwood from the Taiga) How we, as individuals, contribute to the enhanced greenhouse effect How global warming has affected biomes (desertification in Sub-Saharan Africa) How humans can manage desertification (The Great green wall) How the temperate grassland, desert and semi desert biomes compare (climate, vegetation, animals). How Hadley cells lead to the formation of deserts in the Middle East.	How deposition leads to the formation of deltas (Nile delta) Rivers, coasts and glaciers all erode. How erosion takes place (abrasion) How coastal landscapes can vary (Coastlines of Africa) How coastal erosion can lead to the formation of arches, stacks and stumps on headlands.	How tectonic plates move at a converging plate boundary. (The Kamchatka peninsula Russia) Composite volcanoes are a feature of converging plate boundaries. Main characteristics of composite volcanoes. How tectonic plates move at diverging plate boundaries. (The great Rift Valley, Africa) The formation of igneous rocks including Basalt and Granite Mountains are formed by the movement of tectonic plates. Landscapes formed by sedimentary rocks.
9	How altitude and soil type have played a role in biome distribution How the biosphere regulates the atmosphere How nutrients move round in a cycle. How nutrient cycling varies in contrasting biomes (Taiga and the TRF) The main threats to TRF and taiga biomes (deforestation, commercial agriculture, urbanisation, climate change) How humans can manage threats to biomes (CITES and REDD, national parks) The role of methane in the enhanced greenhouse effect.	How physical factors can affect storm hydrographs (geology and slopes) How high rainfall can lead to river floods. The impacts of river floods on people (New York 2021). How the exploitation of energy resources can lead to the pollution of river systems in Canada's Taiga forest.	How geology can affect the likelihood of a river flooding (impermeable rocks Vs permeable rocks) How access to energy resources is affected by geology. How geology can influence the location of biomes locally (Eg alkaline soil in limestone areas eg Malham)

	The role of deforestation in the enhanced greenhouse effect. The impact of climate change on tropical rainforest biomes The impact of climate change on taiga biomes?		