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| **What will we be learning?**  **Challenge of Natural Hazards:**  **Climate Change** | **Why this? Why now?**  The focus in Year 9 is **INTERACTIONS.** Climate Change is the greatest issue humans face; therefore an understanding of this issue is vital to be a global citizen. In this topic we will be exploring the interactions humans can have with the climate and how this feedbacks to interact with humans. Climate Change also influences the intensity and frequency of Weather Hazards – our next topic! |
| **What will I learn?**   |  |  |  | | --- | --- | --- | | **Lesson Question** | **Date** | **Retrieval Practice** | | 1. How has our climate **changed over time**? |  |  | | 1. What are the **physical causes** of climate change? |  |  | | 1. What are the **human causes** of climate change? |  |  | | 1. What are the **impacts** of climate change? |  |  | | 1. What is an **ecological breakdown**? |  |  | | 1. What made the **islands disappear**? |  |  | | 1. What is a climate change **refugee**? |  |  | | 1. What **evidence** is there of climate change in the **UK**? |  |  | | 1. What can **we do** about climate change? |  |  | | 1. What can **Tuvalu do** about climate change? |  |  | | |
| **What opportunities are there for wider study?**  **Links in School**: Numerous topics on your Learning Journey link to Climate Change in some form. e.g. GCSE topic of Resource Management & A Level Water & Carbon Cycles topic.  **Careers:** Climate Analyst/Scientist, Sustainability Consultant, Environmental Consultant, Environment Agency, Meteorological Office, Policymakers, Renewable Energy Engineer.  **Brilliant Websites for Revision & Wider Study:** regularly featured in news stories and documentaries   * <https://www.bbc.co.uk/news/topics/cmj34zmwm1zt> * <https://www.bbc.co.uk/bitesize/guides/zx234j6/revision/1> * <https://www.internetgeography.net/topics/climate-change/> * <https://earth.org/climate-change-books/> <https://fivebooks.com/category/environment/climate-change/>   **How will I be assessed?**  You will be assessed by answering questions in your End of Year exam to help you get “**GCSE Ready**.” You will further be assessed on this topic at GCSE by completing SAPS and MAPs. To help you prepare for this in class we will be attempting GCSE style exam questions. | |
| **Key Words:**  **Climate Change:** A long-term shift in global or regional climate patterns, especially a change due to an increase in the Earth's average temperature.  **Global Warming:** The recent and ongoing rise in global average temperatures, largely caused by increased levels of greenhouse gases from human activities.  **Global Cooling:** A period when global temperatures decrease over time, often linked to natural factors.  **Interglacial Period:** A warmer phase between glacial periods (ice ages) during which glaciers retreat and global temperatures rise. We are currently in an interglacial period.  **Evidence:** Data or observations used to support the existence of climate change, such as temperature records, ice core samples, and sea level measurements.  **Physical Causes:** Natural factors that influence climate change, including volcanic eruptions, solar output, and changes in the Earth's orbit.  **Milankovitch / Orbital Cycles:** Natural variations in the Earth's orbit and tilt that affect how much solar energy the Earth receives, influencing long-term climate patterns.  **Volcanic Eruptions:** Large eruptions release ash and gases like sulphur dioxide into the atmosphere, which can reflect sunlight and temporarily cool the Earth.  **Sunspots:** Dark areas on the Sun’s surface that indicate increased solar activity. More sunspots can lead to a slight warming of the Earth.  **Greenhouse Effect:** A natural process where greenhouse gases trap heat in the Earth’s atmosphere, keeping the planet warm enough to support life.  **Enhanced Greenhouse Effect:** An increase in the natural greenhouse effect caused by human activities, leading to more heat being trapped and global temperatures rising.  **Greenhouse Gas:** Gases such as carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) that trap heat in the atmosphere and contribute to global warming.  **Fossil Fuels:** Non-renewable energy sources like coal, oil, and natural gas formed from ancient organic matter. Burning them releases greenhouse gases.  **Anthropogenic Causes:** Human activities that contribute to climate change, such as burning fossil fuels, deforestation, and industrial processes.  **Ecological Breakdown:** The collapse or severe disruption of ecosystems due to environmental stress, due to climate change and human activity.  **Sea Level Rise:** An increase in the average level of the world’s oceans, caused by melting ice sheets and the thermal expansion of seawater.  **Thermal Expansion:** The process where water expands as it warms, contributing to sea level rise.  **Climate Change Refugee:** A person forced to leave their home due to the impacts of climate change, such as flooding, drought, or extreme weather events.  **Low Elevation Coastal Zone (LECZ):** Coastal areas less than 10 metres above sea level that are especially vulnerable to sea level rise and storm surges.  **Mitigation:** Strategies aimed at reducing or preventing the causes of climate change.  **Adaptation:** Actions taken to adjust to the effects of climate change, such as changing farming practices. | |