Subject: Geography

Year: 10

Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
Ecosystems **Ecosystems exist at a range of scales and involve the interaction between biotic and abiotic components.** An **example** of a small scale UK ecosystem to illustrate the concept of interrelationships within a natural system, an understanding of producers, consumers, decomposers, food chain, food web and nutrient cycling. The balance between components. The impact on the ecosystem of changing one component. An overview of the distribution and characteristics of large scale natural global ecosystems. **Tropical rainforest ecosystems have a range of distinctive characteristics.** The physical characteristics of a tropical rainforest. The interdependence of climate, water, soils, plants, animals and people. How plants and animals adapt to the physical conditions. Issues related to biodiversity. **Deforestation has economic and environmental impacts.**	**Natural Hazards** **Natural hazards pose major risks to people and property.** Definition of a natural hazard. Types of natural hazard. Factors affecting hazard risk. **Tectonic Hazards** **Earthquakes and volcanic eruptions are the result of physical processes.** **Plate tectonics theory.** Global distribution of earthquakes and volcanic eruptions and their relationship to plate margins. Physical processes taking place at different types of plate margin (constructive, destructive and conservative) that lead to earthquakes and volcanic activity. **The effects of, and responses to, a tectonic hazard vary between areas of contrasting levels of wealth.** Primary and secondary effects of a tectonic hazard.	**Cold Environments** **Cold environments (polar and tundra) have a range of distinctive characteristics.** The physical characteristics of a cold environment. The interdependence of climate, permafrost, soils, plants, animals and people. How plants and animals adapt to the physical conditions. Issues related to biodiversity. **Development of cold environments creates opportunities and challenges.** A case study of a cold environment to illustrate: • Development opportunities in cold environments: mineral extraction, energy, fishing and tourism • challenges of developing cold environments: extreme temperature, inaccessibility, provision of buildings and infrastructure. **Cold environments are at risk from economic development.**	**Glacial landscapes** **The UK has a range of diverse landscapes.** An overview of the location of major upland/lowland areas and river systems. Glacial landscapes in the UK Ice was a powerful force in shaping the physical landscape of the UK. Maximum extent of ice cover across the UK during the last ice age. Glacial processes: • freeze-thaw weathering • erosion – abrasion and plucking • movement and transportation – rotational slip and bulldozing • deposition – why glaciers deposit sediment (till and outwash). **Distinctive glacial landforms result from different physical processes.** Characteristics and formation of landforms resulting from erosion – corries, arêtes, pyramidal peaks, truncated spurs,	**River landscapes in the UK** **The shape of river valleys changes as rivers flow downstream.** The long profile and changing cross profile of a river and its valley. Fluvial processes: • erosion – hydraulic action, abrasion, attrition, solution, vertical and lateral erosion • transportation – traction, saltation, suspension and solution • deposition – why rivers deposit sediment. **Distinctive fluvial landforms result from different physical processes.** Characteristics and formation of landforms resulting from erosion – interlocking spurs, waterfalls and gorges. Characteristics and formation of landforms resulting from erosion and deposition – meanders and ox-bow lakes. Characteristics and formation of landforms	**Weather Hazards** **Global atmospheric circulation helps to determine patterns of weather and climate.** General atmospheric circulation model: pressure belts and surface winds. **Tropical storms (hurricanes, cyclones, typhoons) develop as a result of particular physical conditions.** Global distribution of tropical storms (hurricanes, cyclones, typhoons). An understanding of the relationship between tropical storms and general atmospheric circulation. Causes of tropical storms and the sequence of their formation and development. The structure and features of a tropical storm. How climate change might affect the distribution, frequency and intensity of tropical storms. **Tropical storms have significant effects on people and the environment.**

Changing rates of deforestation. A **case study** of a tropical rainforest to illustrate: • causes of deforestation – subsistence and commercial farming, logging, road building, mineral extraction, energy development, settlement, population growth • impacts of deforestation – economic development, soil erosion, contribution to climate change. **Tropical rainforests need to be managed to be sustainable.** Value of tropical rainforests to people and the environment. Strategies used to manage the rainforest sustainably – selective logging and replanting, conservation and education, ecotourism and international agreements about the use of tropical hardwoods, debt reduction.	Immediate and long-term responses to a tectonic hazard. Use **named examples** to show how the effects and responses to a tectonic hazard vary between two areas of contrasting levels of wealth. **Management can reduce the effects of a tectonic hazard.** Reasons why people continue to live in areas at risk from a tectonic hazard. How monitoring, prediction, protection and planning can reduce the risks from a tectonic hazard.	The value of cold environments as wilderness areas and why these fragile environments should be protected. Strategies used to balance the needs of economic development and conservation in cold environments – use of technology, role of governments, international agreements and conservation groups.	glacial troughs, ribbon lakes and hanging valleys. Characteristics and formation of landforms resulting from transportation and deposition – erratics, drumlins, types of moraine. An **example** of an upland area in the UK affected by glaciation to identify its major landforms of erosion and deposition. **Glaciated upland areas provide opportunities for different economic activities, and management strategies can be used to reduce land use conflicts.** An overview of economic activities in glaciated upland areas – tourism, farming, forestry and quarrying. Conflicts between different land uses, and between development and conservation. An **example** of a glaciated upland area in the UK used for tourism to show: • the attractions for tourists • social, economic and environmental impacts of tourism • strategies used to manage the impact of tourism.	resulting from deposition – levées, flood plains and estuaries. An **example** of a river valley in the UK to identify its major landforms of erosion and deposition. **Different management strategies can be used to protect river landscapes from the effects of flooding.** How physical and human factors affect the flood risk – precipitation, geology, relief and land use. The use of hydrographs to show the relationship between precipitation and discharge. The costs and benefits of the following management strategies: • hard engineering – dams and reservoirs, straightening, embankments, flood relief channels • soft engineering – flood warnings and preparation, flood plain zoning, planting trees and river restoration. An **example** of a flood management scheme in the UK to show: • why the scheme was required • the management strategy	Primary and secondary effects of tropical storms. Immediate and long-term responses to tropical storms. Use a **named example** of a tropical storm to show its effects and responses. How monitoring, prediction, protection and planning can reduce the effects of tropical storms. **The UK is affected by a number of weather hazards.** An overview of types of weather hazard experienced in the UK. **Extreme weather events in the UK have impacts on human activity.** An **example** of a recent extreme weather event in the UK to illustrate: • causes • social, economic and environmental impacts • how management strategies can reduce risk. Evidence that weather is becoming more extreme in the UK. **<u>Climate change</u>** **Climate change is the result of natural and human factors, and has a range of effects.**

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				• the social, economic and environmental issues.	Evidence for climate change from the beginning of the Quaternary period to the present day. Possible causes of climate change: • natural factors – orbital changes, volcanic activity and solar output • human factors – use of fossil fuels, agriculture and deforestation. Overview of the effects of climate change on people and the environment. **Managing climate change involves both mitigation (reducing causes) and adaptation (responding to change).** Managing climate change: • mitigation – alternative energy production, carbon capture, planting trees, international agreements • adaptation – change in agricultural systems, managing water supply, reducing risk from rising sea levels.

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