KS4 Geography Curriculum Coverage: Living with the physical environment AQA exam board

Year 10

	Section A: The challenge of natural hazards	*Section B: The living world*	*Section C: Physical landscapes in the UK*
Key Knowledge	***To know:*** ***Tectonic hazards*** • Definition of a natural hazard. • Types of natural hazard. • Factors affecting hazard risk • 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. • Primary and secondary effects of a tectonic hazard. • Immediate and long-term responses to a tectonic hazard. • Use named examples show how the effects and responses to a tectonic hazard vary between two areas of contrasting levels of wealth. • 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. ***Weather hazards*** • General atmospheric circulation model • 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. • 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. • An overview of types of weather hazard experienced in the UK. • 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.	***To know:*** ***Ecosystems*** • 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. ***Rainforests*** • 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 • 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.* • 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 ***Deserts*** • The physical characteristics of a hot desert. • The interdependence of climate, water, soils, plants, animals and people. • How plants and animals adapt to the physical conditions. • Issues related to biodiversity. • A case study of a hot desert to illustrate: *Development opportunities in hot desert environments: mineral extraction, energy, farming, tourism* *Challenges of developing hot desert environments: extreme temperatures, water supply, inaccessibility.* • Causes of desertification – climate change, population growth, removal of fuel wood, overgrazing, over-cultivation and soil erosion. • Strategies used to reduce the risk of desertification – water and soil management, tree planting and use of appropriate technology.	***To know:*** ***Coasts*** • Wave types and characteristics. • Coastal processes: *weathering processes – mechanical, chemical* *mass movement – sliding, slumping and rock falls* *erosion – hydraulic power, abrasion and attrition* *transportation – longshore drift* *deposition – why sediment is deposited in coastal areas.* • How geological structure and rock type influence coastal forms. • Characteristics and formation of landforms resulting from erosion – headlands and bays, cliffs and wave cut platforms, caves, arches and stacks. • Characteristics and formation of landforms resulting from deposition – beaches, sand dunes, spits and bars. • An example of a section of coastline in the UK to identify its major landforms of erosion and deposition. • The costs and benefits of the following management strategies: *hard engineering – sea walls, rock armour, gabions and groynes* *soft engineering – beach nourishment and reprofiling, dune regeneration, managed retreat & coastal realignment.* • An example of a coastal management scheme in the UK to show: *the reasons for management* *the management strategy* *the resulting effects and conflicts.* ***Rivers*** • 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. • 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 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. • 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:

	Climate change • 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: mitigation – alternative energy production, carbon capture, planting trees, international agreements - adaptation – change in agricultural systems, managing water supply, reducing risk from rising sea levels.		*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* *the social, economic and environmental issues.*
Key Skills (AOs)	**Skills relating to:** **Cartographic, map and photographs, graphical, numerical, statistical.** ● Numerical and statistical data ● Recognise and describe distributions and pattern of physical features. ● Annotated diagrams. ● Analyse inter-relationship between physical and human factors on maps and establish associations between observed patterns on thematic maps ● Use and understand coordinates – four and six-figure grid references ● Use and interpret ground, aerial and satellite images ● Interpret and analyse a range of graphs including line, bar ● Latitude and longitude	**Skills relating to:** **Cartographic, map and photographs, graphical, numerical, statistical.** ● Analyse inter-relationship between physical and human factors on maps and establish associations between observed patterns on thematic maps ● Use and interpret ground, aerial and satellite images ● Inter human activity from map evidence including tourism. ● Annotating photograph ● Scale ● Describe human and physical landscapes using photographs. ● Latitude and longitude	**Skills relating to:** **Cartographic, map and photographs, graphical, numerical, statistical.** ● Numerical and statistical data ● Recognise and describe distributions and pattern of physical features. ● Annotated diagrams. ● Analyse inter-relationship between physical and human factors on maps and establish associations between observed patterns on thematic maps ● Use and understand coordinates – four and six-figure grid references ● Use and interpret ground, aerial and satellite images ● Interpret and analyse a range of graphs including line, bar ● Interpret cross sections and transects of physical and human landscapes ● Describe the physical features as they are shown on large scale maps of fluvial and coastal landscapes. ● Identify basic landscape features and describe their characteristics from map evidence. ● Describe human and physical landscapes using photographs. ● Label and annotate diagrams maps and photographs. ● Use and understand gradient, contour and spot height
	Tier 3 key vocabulary	**Tier 3 key vocabulary**	**Tier 3 key vocabulary**
Subject specific	*Atmospheric Hazards, Composite Volcanoes, Conservative Plate Margin, Constructive Plate Margin, Continental Crust, Convection Currents, Destructive Plate Margin, Distribution, Earthquake, Epicentre, Fertile Soil, Focus, Geological Hazards, Geophysical Measurements, Geothermal Power, Hazard Risk, High Income Country, Hot Spots, Immediate Responses, Lahar, Lava, Long-term responses, Low Income Country, Mantle, Mercalli Scale, Monitoring, Natural Disaster, Natural Hazard, Newly Emerging Economy, Oceanic Crust, Planning, Plate Margin, Poverty, Prediction, Primary Effects, Protection, Pyroclastic Flow, Richter Scale, Secondary Effects, Seismic Waves, Seismometer, Shield Volcanoes, Social Impact, Subduction, Tectonic Hazard, Tectonic Plate, Tourism, Tsunami, Urbanisation, Viscous, Volcano, Vulnerability, Ground Deformation, Adaptation, Aid, Alternative Energy, Atmosphere, Axial Tilt, Carbon Capture & Storage, Climate Change, Coral Bleaching, Coriolis Effect, Drought, Eccentricity, Enhanced Greenhouse Effect, Evacuation, Evidence, Extreme Weather, Eye, Eye Wall, Flood, Fossil*	*Adaptation, Agriculture, Aphid, Biodiversity, Biome, Canopy layer, Carnivore, Cattle ranching, Clear-fell logging, Climate, Climate graph, Consumer, Conservation, Commercial farming, Cultivation, Deciduous woodland, Decomposer, Debt relief, Deforestation, Distribution, Ecosystem, Economic development, Eco-tourism, Emergent layer, Equator, Food chain, Food web, Global impact, Infrastructure, Producer, Photosynthesis, Herbivore, Hydro-electricity, Interdependence, Latitude, Local impact, Logging, Natural selection, Omnivore, Selective logging, Soil erosion, Shrub layer, Subsistence farming, Sustainable development, Survival of the fittest, Stewardship, Temperate, Transpiration, Tropics, Understory/canopy, Appropriate technology, Aquifer, Arid, Boreholes, Contour traps, Drip irrigation, Extreme temperatures, Fuelwood, Irrigation, Human challenge, Physical challenge, Nocturnal, Over-cultivation, Overgrazing, Stomata, Salinisation, Succulents, Sustainability, Xerophytes*	*Abrasion, Arch, Attrition, Backwash, Bar, Bay, Beach, Beach Nourishment, Berm, Biological Weathering, Carbonation, Cave, Chemical Weathering, Cliff, Coastal Management, Coastal Realignment, Concordant Coastline, Constructive Waves, Deposition, Destructive Waves, Discordant Coastline, Dune, Dune Regeneration, Erosion, Fetch, Freeze-Thaw Weathering, Frequency, Gabions, Geology, Glaciated, Groyne, Hard Engineering, Headland, Holderness Coast, Hydraulic Action, Landform, Landscape, Longshore Drift, Lowland, Mass Movement, OS Map, Physical Weathering, Relief, Reprofiling, Resistant Rock, River System, Rock Armour, Rockfall, Rotational Slip, Saltation, Saltmarsh, Sea Wall, Sliding, Solution, Spit, Soft Engineering, Stack, Suspension, Swash, Traction, Transportation, Upland, Waves, Wave-cut Platform, Wave Refraction, Alluvium, Channel, Channel straightening, Confluence, Course, Cross profile, Cumec, Dam, Discharge, Embankment, Estuary, Flood relief channel, Floodplain, Gorge, Gradient, Hydrograph, Impermeable, Infiltration, Interlocking spurs, Lag time, Lateral erosion, Levee, Load, Long profile,*

	Fuel, Frequency, Global Warming, Greenhouse Effect, Greenhouse Gases, Grid Reference, Heatwave, Ice Cores, Intensity, Latitude, Levee, Milankovitch Cycles, Mitigation, Precession, Prolonged Rainfall, Quaternary Period, Saffir-Simpson Scale, Sediment Cores, Solar Flare, Storm Shelter, Storm Surge, Sunspots, Track, Tropical Storm, Tropics, Weather Hazard, Weather Warning		*Meander, Mouth, Ox-bow lake, Percolation, Permeable, Plunge pool, Source, Surface runoff, Tributary, Velocity, Vertical erosion*