

Year 10 Topics

In year 10 we teach the following topics over the course of the year. Each topic draws on prior learning from previous years and builds on understanding from the KS3 programme of study. Each topic develops and deepens the Core knowledge that will underpin all areas of the curriculum at KS4 and KS5.

Topic	Rationale	Knowledge acquisition	Key vocabulary	Skills and enrichment
1 The Challenge of Natural Hazards	Compulsory element of AQA GCSE 1-9	<p>Natural hazards pose major risks to people and property.</p> <ul style="list-style-type: none"> • Definition of a natural hazard. • Types of natural hazard. • Factors affecting hazard risk. 	Natural hazard, social impact, disaster, volcanic eruptions, earthquakes, storms, tsunami, landslides, floods risk, affects, urbanisation, poverty, climate change, farming.	<ul style="list-style-type: none"> • Cause, effect • Human processes • Explanation • Significance • Comparison • Applying case study knowledge • Analysis • Evaluation • Numeracy • Literacy • Data interpretation
		<p>Earthquakes and volcanic eruptions are the result of physical processes.</p> <ul style="list-style-type: none"> • Plate tectonics theory – convection and ridge push slab pull • 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) • How these lead to earthquakes and volcanic activity. 	Distribution patterns, earthquakes, volcanoes, plate margins, plate tectonics, continental crust, oceanic crust, mantle, core, constructive plate margin, destructive plate margin, conservative plate margin, Collision zones, hot spots, subduction zone, slab pull, convection currents, faults, Seismometers, Richter Scale, North America, Europe, Asia, South America, Africa, Australasia, Antarctica.	
		<p>The effects of, and responses to, a tectonic hazard vary between areas of contrasting levels of wealth.</p> <ul style="list-style-type: none"> • Primary and secondary effects of a tectonic hazard. • Immediate and long-term responses to a tectonic hazard. 	Primary effects, secondary effects, Low Income Countries (LIC), High Income Countries (HIC), Immediate response, Lon-term response, Human Development Index	

		<ul style="list-style-type: none"> • Use named examples to show how the effects and responses to a tectonic hazard vary between two areas of contrasting levels of wealth. HIC – Kobe LIC - Haiti 		
		<p>Management can reduce the effects of a tectonic hazard.</p> <ul style="list-style-type: none"> • 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. 	<p>Risk assessment, Poverty, monitoring, prediction, earthquake proof building design, economic benefits, Protection, Remote sensing, seismicity, Ground deformation, Hydrology, Planning</p>	
		<p>Global atmospheric circulation helps to determine patterns of weather and climate.</p> <ul style="list-style-type: none"> • General atmospheric circulation model: pressure belts and surface winds. 	<p>Atmospheric circulation, Global, Polar cell, Polar high, Sub polar low, Ferrel cell, Sub tropical high, Hadley cell, trade winds, Equatorial low, High pressure, low pressure, surface winds, arid, overcast, North America, Europe, Asia, South America, Africa, Australasia, Antarctica.</p>	
		<p>Tropical storms (hurricanes, cyclones, typhoons) develop as a result of particular physical conditions.</p> <ul style="list-style-type: none"> • What are the global distribution of tropical storms (hurricanes, cyclones, typhoons). • What and why is the relationship between tropical storms and general atmospheric circulation. • What are the causes of tropical storms and the sequence of their formation and development? 	<p>Hurricanes, Cyclones, Typhoons, Tropical storms, Coriolis effect, evaporation, vapour, thunderclouds, wind speed, eye of the storm, friction, prevailing winds, precipitation, Heavy rain, Eye wall, Category storms, Season, Distribution, Frequency, Intensity, Primary effects, Secondary effects, Immediate responses, Long-term responses, monitoring, prediction, protection, planning, storm track</p>	

		<ul style="list-style-type: none"> • What is the structure and features of a tropical storm? • How might climate change affect the distribution, frequency and intensity of tropical storms? 		
		<p>The UK is affected by a number of weather hazards.</p> <ul style="list-style-type: none"> • What are the types of weather hazard experienced in the UK? 	<p>Extreme weather, Thunderstorms, Prolonged rainfall, Drought, Extreme heat, Heavy snow, extreme cold, Strong winds, Artic air,</p>	
		<p>Extreme weather events in the UK have impacts on human activity.</p> <ul style="list-style-type: none"> • How has a recent extreme weather event Impacted the UK: <ul style="list-style-type: none"> a) causes b) social, economic and environmental impacts c) how management strategies can reduce risk. • Is there evidence that weather is becoming more extreme in the UK? 	<p>Physical flood factors, Human flood factors, impacts, Social, economic, environmental, immediate response, Long-term response, weather patterns,</p>	
		<p>Climate change is the result of natural and human factors, and has a range of effects.</p> <ul style="list-style-type: none"> • What evidence is there that climate change has occurred over time from the beginning of the Quaternary period to the present day? • What possible causes of climate change are there: 	<p>Climate change, temperature, quaternary period, average global temperature, global effects, glaciers, rising sea levels, seasonal changes, evidence, natural causes, orbital change, eccentricity, axial tilt, precession, solar activity, volcanic activity. Greenhouse effect, long wave radiation, short wave radiation,</p>	

		<ul style="list-style-type: none"> a) natural factors – orbital changes, volcanic activity and solar output b) human factors – use of fossil fuels, agriculture and deforestation. • Overview of the effects of climate change on people and the environment. 	carbon dioxide, greenhouse gases, fossil fuels, deforestation, methane, biomass, agriculture, fertilisers	
		<p>Managing climate change involves both mitigation (reducing causes) and adaptation (responding to change).</p> <ul style="list-style-type: none"> • What are the ways of managing climate change: <ul style="list-style-type: none"> a) mitigation – alternative energy production, carbon capture, planting trees, international agreements b) adaptation – change in agricultural systems, managing water supply, reducing risk from rising sea levels 	Alternative energy sources, hydro-electricity, nuclear power, solar, wind, tides, carbon capture, planting trees, economic impacts, environmental impacts, adaptation, managing, reducing risks, sea levels,	
2 The Physical Landscapes of the UK	Compulsory element of AQA GCSE 1-9	<p>The UK has a range of diverse landscapes.</p> <ul style="list-style-type: none"> • What is the location of major upland/lowland areas and river systems? 	Relief, landscapes, river systems, longitude, latitude, coastline, North Sea, Irish Sea, English Channel, Atlantic Ocean, height above sea level, mountain ranges, high lands, low lands, coasts, Scotland, England, Wales, Northern Ireland, Ireland.	<ul style="list-style-type: none"> • Cause, effect • Human processes • Explanation • Significance • Comparison • Applying case study knowledge • Analysis
		<p>The coast is shaped by a number of physical processes.</p>	Characteristics, eaves, friction, winds, fetch, tsunami, tidal wave, seabed,	

		<ul style="list-style-type: none"> • What are the different wave types and characteristics? • What are the coastal processes: <ul style="list-style-type: none"> a) weathering processes – mechanical, chemical b) mass movement – sliding, slumping and rock falls c) erosion – hydraulic power, abrasion and attrition d) transportation – longshore drift e) deposition – why sediment is deposited in coastal areas. 	<p>swash, backwash, crest, wave break, constructive, destructive, cliff collapse, mechanical weathering, chemical weathering, biological weathering, freeze-thaw, salt weathering, carbonation, mass movement, sliding, rockfall, landslide, mudflow, rotational slip, solution, corrasion, hydraulic power, abrasion, attrition, suspension, saltation, traction, longshore drift, deposition.</p>	<ul style="list-style-type: none"> • Evaluation • Numeracy • Literacy • Data interpretation
		<p>Distinctive coastal landforms are the result of rock type, structure and physical processes.</p> <ul style="list-style-type: none"> • How geological structure and rock type influence coastal forms? • What are the characteristics and formation of landforms resulting from erosion – headlands and bays, cliffs and wave cut platforms, caves, arches and stacks? • What are the characteristics and formation of landforms resulting from deposition – beaches, sand dunes, spits and bars. • Give an example of a section of coastline in the UK to identify its major landforms of erosion and deposition. 	<p>Geological structure, faults, headlands, bays, wave refraction, resistant rock, wave cut notch, wave cut platform, caves, arches, stacks, stump, sand, shingle, beach, sand dunes, embryo dune, high tide berm, storm berm, fore dune, yellow dune, grey dune, dune slack, mature dune, spit, bars, tombolo, salt marsh, habitat, deposit, prevailing wind, hooked end,</p>	

		<p>Different management strategies can be used to protect coastlines from the effects of physical processes.</p> <ul style="list-style-type: none"> • What are the costs and benefits of the following management strategies: <ul style="list-style-type: none"> a) hard engineering – sea walls, rock armour, gabions and groynes b) soft engineering – beach nourishment and reprofiling, dune regeneration c) managed retreat – coastal realignment. • Give an example of a coastal management scheme in the UK to show: <ul style="list-style-type: none"> a) the reasons for management b) the management strategy c) the resulting effects and conflicts 	<p>Engineering, management, hard engineering, soft engineering, groynes, advantages, disadvantage, sea wall, rock armour, gabions, beach nourishment, reprofiling, dune regeneration, dune fencing, managed retreat, monitoring, adaptation, positive outcomes, negative outcomes</p>	
		<p>The shape of river valleys changes as rivers flow downstream.</p> <ul style="list-style-type: none"> • What is the long profile and changing cross profile of a river and its valley? • What are the fluvial processes of: <ul style="list-style-type: none"> a) erosion – hydraulic action, abrasion, attrition, solution, vertical and lateral erosion 	<p>Valley, drainage basin, confluence, tributary, source, mouth, watershed, v-shaped valley, floodplain, levees, steep gradient, gentle gradient, upper course, middle course, lower course, downstream, river bed, river bank, cross profile, vertical erosion, lateral erosion, hydraulic action, abrasion, attrition, solution, traction, saltation, suspension, friction, deposit</p>	

		<p>b) transportation – traction, saltation, suspension and solution</p> <p>c) deposition – why rivers deposit sediment.</p>		
		<p>Distinctive fluvial landforms result from different physical processes.</p> <ul style="list-style-type: none"> • What are the characteristics and formation of landforms resulting from erosion – interlocking spurs, waterfalls and gorges. • What are the characteristics and formation of landforms resulting from erosion and deposition – meanders and ox-bow lakes. • What are the characteristics and formation of landforms resulting from deposition – levées, flood plains and estuaries. • Give an example of a river valley in the UK to identify its major landforms of erosion and deposition. 	<p>Interlocking spurs, waterfall, gorge, meander, ox-bow lake, v-shaped valley, floodplain, levees, steep gradient, gentle gradient, upper course, middle course, lower course, downstream, river bed, river bank, cross profile, resistant rock, plunge pool, undercutting, pebbles, stones, boulders, pools, riffles, thalweg, bluff, flooding, estuaries, transitional zones, saltmarshes, mudflats</p>	
		<p>Different management strategies can be used to protect river landscapes from the effects of flooding.</p> <ul style="list-style-type: none"> • How physical and human factors affect the flood risk – precipitation, geology, relief and land use. • How the use of hydrographs shows the relationship between precipitation and discharge. 	<p>Flooding, causes, precipitation, geology, steep slopes, urbanisation, deforestation, agriculture, hydrograph, lag time, rising limb, rainfall, discharge, peak, falling limb, storm flow, baseflow, groundwater, throughflow, basin size, drainage density, land use, relief, soil moisture, hard engineering, soft engineering, costs, benefits, dams, reservoirs,</p>	

		<ul style="list-style-type: none"> • What are the costs and benefits of the following management strategies: <ol style="list-style-type: none"> a) hard engineering – dams and reservoirs, straightening, embankments, flood relief channels. b) soft engineering – flood warnings and preparation, flood plain zoning, planting trees and river restoration. • Give an example of a flood management scheme in the UK to show: <ol style="list-style-type: none"> a) why the scheme was required b) the management strategy c) the social, economic and environmental issue. 	<p>flood prevention, irrigation, water supply, hydro-electricity, recreation, channel straightening, embankments, flood relief channels, wetlands, flood storage, floodplain zoning, river restoration, preparation, planning, prediction</p>	
<p>3 Living World</p>	<p>Compulsory element of AQA GCSE 1-9</p>	<p>Ecosystems exist at a range of scales and involve the interaction between biotic and abiotic components.</p> <ul style="list-style-type: none"> • Give 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. • What is the balance between components? What is the impact on the ecosystem of changing one component? 	<p>Ecosystem, Producers, consumers, decomposers, food chains, food web, nutrient cycle, decaying, biotic, abiotic, impacts, natural change, human activities, fertilisers, deforestation, habitat, aquatic, distribution, tropic of cancer, tropic of Capricorn, equator, Tropical rainforest, Desert, Polar, Deciduous forests, coniferous forest, temperate grasslands, Mediterranean, Tropical grasslands, tundra, Latitude, longitude, Ocean currents, prevailing winds, North America, Europe, Asia,</p>	<ul style="list-style-type: none"> • Cause, effect • Human processes • Explanation • Significance • Comparison • Applying case study knowledge • Analysis • Evaluation • Numeracy • Literacy • Data interpretation

		<ul style="list-style-type: none"> • What is the overview of the distribution and characteristics of large scale natural global ecosystems? 	<p>South America, Africa, Australasia, Antarctica.</p>	
		<p>Tropical rainforest ecosystems have a range of distinctive characteristics.</p> <ul style="list-style-type: none"> • What is the physical characteristics of a tropical rainforest? • What is the interdependence of climate, water, soils, plants, animals and people? • How do plants and animals adapt to the physical conditions? 	<p>Characteristics, climate, temperature, soil, rainfall, nutrient cycle, plants, animals, biodiversity, adaptation, shrub layer, lower tree canopy, middle tree canopy, top canopy, stratification, vegetation, tropical rainforest, epiphytes, buttresses, lianas</p>	
		<p>Deforestation has economic and environmental impacts.</p> <ul style="list-style-type: none"> • What are the changing rates of deforestation? • Give a case study of a tropical rainforest to illustrate: <ul style="list-style-type: none"> a) What are the causes of deforestation – subsistence and commercial farming, logging, road building, mineral extraction, energy development, settlement, population growth? b) What are the impacts of deforestation – economic development, soil erosion, contribution to climate change? 	<p>Deforestation, environmental, economic, impacts, logging, selective logging, road building, energy development, mineral extraction population pressure, commercial farming, subsistence farming, soil erosion, biodiversity, climate change, development, High Income Country, Low Income County, infrastructure, pollution, extinction, habitat.</p>	

		<p>Tropical rainforests need to be managed to be sustainable.</p> <ul style="list-style-type: none"> • What is the value of tropical rainforests to people and the environment? • What are the 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? 	<p>Deforestation, biodiversity, climate change, medicine, resources, water, population, sustainable managements, selective logging, replanting, conservation, ecotourism, international agreements, hardwood, debt reduction, carbon sinks</p>	
		<p>Hot desert ecosystems have a range of distinctive characteristics.</p> <ul style="list-style-type: none"> • What are the physical characteristics of a hot desert? • What is the interdependence of climate, water, soils, plants, animals and people? • How do plants and animals adapt to the physical conditions? 	<p>Arid, desert, environment, temperature range, precipitation, Tropic of Cancer, Tropic of Capricorn, Equator, North America, Europe, Asia, South America, Africa, Australasia, Antarctica, adaptation plants, animals, climate</p>	
		<p>Development of hot desert environments creates opportunities and challenges.</p> <ul style="list-style-type: none"> • Give a case study of a hot desert to illustrate: <ul style="list-style-type: none"> a) What are the development opportunities in hot desert environments: mineral extraction, energy, farming and tourism? 	<p>Opportunities, challenges, mineral extraction, tourism, energy, farming, water conservation, commercial farming, subsistence farming, extreme temperatures, water supply, water sources, accessibility,</p>	

		<p>b) What are the challenges of developing hot desert environments: extreme temperatures, water supply, and inaccessibility?</p>		
		<p>Areas on the fringe of hot deserts are at risk of desertification.</p> <ul style="list-style-type: none"> • What are the causes of desertification – climate change, population growth, removal of fuel wood, overgrazing, over-cultivation and soil erosion? • What are the strategies used to reduce the risk of desertification – water and soil management, tree planting and use of appropriate technology? 	<p>Desertification, overgrazing, North America, Europe, Asia, South America, Africa, Australasia, Antarctic, Tropic of Cancer, Tropic of Capricorn, Equator, Atlantic Ocean, Pacific Ocean, Indian Ocean, soil erosion, climate change, population pressure, over cultivation, managements, national parks, afforestation, appropriate technology</p>	
Topic	Rationale	Knowledge acquisition	Key vocabulary	Skills and enrichment
4 Fieldwork	Compulsory element of AQA GCSE 1-9	<p>Suitable question for geographical enquiry</p> <ul style="list-style-type: none"> • What are the factors that need to be considered when selecting suitable questions/hypotheses for geographical enquiry? • What is the geographical theory/concept underpinning the enquiry? • What appropriate sources of primary and secondary evidence, including locations for fieldwork can be used? 	Geographical, enquiry, hypothesis, primary, secondary, evidence, risk	<ul style="list-style-type: none"> • Geographical enquiry • Independent learning • Description • Explanation • Justification • Evaluation

		<ul style="list-style-type: none"> • What are the potential risks of both human and physical fieldwork and how could these risks be reduced? 		
		<p>Selecting, measuring and recording data appropriate to the chosen enquiry</p> <ul style="list-style-type: none"> • What is the difference between primary and secondary data? • How can we identify and select appropriate physical and human data? • How can you measure and record data using different sampling methods? • How can we describe and justify data collection methods? 	Human, physical, sampling, measure, data collection	
		<p>Selecting appropriate ways of processing and presenting fieldwork data</p> <ul style="list-style-type: none"> • What data presentation methods are available which would be suitable to the data collected? • How can we select accurate and appropriate presentation methods? 	Presentation, accurate, appropriate	

		<ul style="list-style-type: none"> • What does our data presentation show? How can it be explained and how could the methods of presentation be adapted? 		
		<p>Describing, analysing and explaining fieldwork data</p> <ul style="list-style-type: none"> • How would you describe the data? • What does the data show and why might this be the case? • How do your data sets link? • Can statistical techniques be applied? • Are there any anomalies in the data? 	Analysis, statistics, anomalies	
		<p>Reaching conclusions</p> <ul style="list-style-type: none"> • How does your data meet the original aims of the enquiry? 	Conclusion, aims	
		<p>Evaluation of geographical enquiry</p> <ul style="list-style-type: none"> • What were the problems with your data collection methods? • What are the limitations of the data collected? • What different data could have been useful? • How reliable were your conclusions? 	Evaluation, strengths, weaknesses, reliable, limitations	

