

## Unit 1: Living with the Physical Environment

### 3.1.1.1 Natural Hazards

Key Ideas	Specification Content	😊	😐	☹️	Revision Materials Complete
Natural hazards pose major risks to people and property	I can define a natural hazard				
	I can describe the different types of hazard				
	I can describe the factors affecting hazard risk				
	I can explain the factors affecting hazard risk				

### 3.1.1.2 Tectonic Hazards

Key Ideas	Specification Content	😊	😐	☹️	Revision Materials Complete
Earthquakes and volcanic eruptions are the result of physical processes.	I can describe the different types of crust				
	I can describe and explain how the tectonic plates move using convection currents, slab push and ridge pull theory.				
	I can describe the global distribution of earthquakes and volcanoes				
	I can explain the link between plate boundaries and earthquakes/volcanoes.				
	I can explain how volcanoes and earthquakes are formed at constructive plate margins.				
	I can name landforms found at plate margins				
	I can explain how volcanoes and earthquakes are formed at destructive plate margins.				
	I can explain how volcanoes and earthquakes are formed at conservative plate margins.				
	I can describe the different features of earthquakes – epicentre, focus, shock waves				
	I can describe the two ways in which earthquakes are measured using the Richter and Mercalli Scales.				
The effects of and responses to a tectonic hazard vary between areas of contrasting levels of wealth.	I can describe what an earthquake is.				
	I can describe and explain a case study of an earthquake in a rich part of the world – their specific causes; primary and secondary effects; immediate and long term responses. (Chile)				
	I can describe and explain a case study of an earthquake in a poorer area of the world - their specific causes; primary and secondary effects; immediate and long term responses. (Nepal)				
	I can 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.	I can explain why people continue to live in areas at risk from tectonic hazards.				
	I can describe and explain how tectonic hazards are monitored.				
	I can describe and explain how tectonic hazards are predicted				
	I can describe and explain how tectonic hazards are planned for.				
	I know how protection can reduce the risks from a tectonic hazard.				

## Unit 1: Living with the Physical Environment

<b>Atmospheric hazards</b>	natural hazards associated with Earth's atmosphere, such as hurricanes, tornadoes, wind, snow, drought, lightning and rain
<b>Drought</b>	a long, continuous period of dry weather
<b>Earthquake</b>	a sudden or violent movement within the Earth's crust followed by a series of shocks
<b>Fatalities</b>	deaths caused by disasters or accidents
<b>River flood</b>	where river discharge exceeds river channel capacity and water spills onto the floodplain
<b>Geological hazards</b>	natural hazards associated with Earth's geological processes, such as volcanoes, landslides, mudflows, avalanches and earthquakes
<b>Hazard risk</b>	the probability or chance that a natural hazard may take place
<b>Landslides</b>	the movement of rock, earth or debris down the slope of a hill
<b>Mudflow</b>	when saturated soil and weak rock flow down a slope
<b>Natural disaster</b>	when a natural event, or hazard, impacts on human activities
<b>Natural hazard</b>	a natural event that poses a threat to humans and/or property
<b>Poverty</b>	deprivation in well-being, such as lack of access to wealth, food, shelter, water and education
<b>Social impact</b>	the effect of an event on the lives of people or community
<b>Tropical storm</b>	an area of low pressure with winds moving in a spiral around a calm central point called the eye of the storm – winds are powerful and rainfall is heavy
<b>Tsunami</b>	huge waves caused by earthquakes
<b>Urbanisation</b>	when an increasing percentage of a country's population comes to live in towns and cities
<b>Volcano</b>	a large landform, typically conical in shape, formed by a series of volcanic eruptions over a long period of time
<b>Composite volcanoes</b>	steep-sided volcanoes found at constructive plate margins
<b>Conservative plate margin</b>	two plates sliding alongside each other, in the same or different directions
<b>Constructive plate margin</b>	tectonic plate margin where rising magma adds new material to plates that are diverging or moving apart
<b>Continental crust</b>	the low density, thick outer layer of Earth which forms our continents
<b>Convection currents</b>	circular movement of heat within Earth which drive the movement of tectonic plates
<b>Destructive plate margin</b>	tectonic plate margin where two plates are converging and oceanic plate is subducted – there could be violent earthquakes and explosive volcanoes
<b>Earthquake</b>	a sudden or violent movement within the Earth's crust followed by a series of shocks
<b>Fold mountains</b>	uplifted land that is crumpled by the collision of two plates
<b>Geophysical measurements</b>	measurements taken at the surface of the Earth to detect changes below, such as detecting changes in gravity as magma rises to the surfaces
<b>Ground deformation</b>	changes in the shape of volcanoes which is closely monitored to predict eruptions
<b>Hot spots</b>	where the Earth's crust is thin so magma is able to break through the surface, forming volcanoes
<b>Immediate responses</b>	reaction of people as the disaster happens and in the immediate aftermath
<b>Landslide</b>	the movement of rock, earth or debris down the slope of a hill
<b>Lava</b>	magma that has erupted from a volcano
<b>Long-term responses</b>	later reactions that occur in the weeks, months and years after the event
<b>Magma</b>	molten rock beneath the Earth's surface
<b>Management strategies</b>	techniques of controlling, responding to, or dealing with an event
<b>Mantle</b>	a hot, dense layer of Earth found between the crust and core
<b>Monitoring</b>	recording physical changes, i.e. detecting heat and shape changes of volcanoes using remote sensing, to help forecast when and where a natural hazard might strike
<b>Oceanic crust</b>	the dense, thin outer layer of Earth that lies underneath the ocean
<b>Disaster planning</b>	actions taken to enable communities to respond to, and recover from, natural disasters

## Unit 1: Living with the Physical Environment

<b>Plate margin</b>	the border between two tectonic plates
<b>Prediction</b>	using historical evidence and monitoring, scientists can make predictions about when and where a hazard may happen
<b>Primary effects</b>	initial impact of a natural event on people and property, caused directly by it, i.e. the buildings collapsing following an earthquake
<b>Protection</b>	actions taken before a hazard strikes to reduce its impact, such as educating people or improving building design
<b>Remote sensing</b>	satellites detect heat and changes to a volcano's shape
<b>Search and rescue</b>	an immediate response to a disaster where people are removed from danger and aid is provided
<b>Secondary effects</b>	after-effects that occur as indirect impacts of a natural event, sometimes on a longer timescale, i.e. fires due to ruptured gas mains, resulting from the ground shaking
<b>Seismicity</b>	the frequency and distribution of earthquakes in a certain area, recorded by seismographs
<b>Shield volcano</b>	broad, flat volcano with non-violent eruptions formed at constructive margins and at 'hot spots'
<b>Subduction</b>	at a destructive margin, where the denser oceanic plate moves beneath the less dense continental plate
<b>Tectonic hazard</b>	natural hazard caused by the movement of tectonic plates (i.e. volcanoes and earthquakes)
<b>Tectonic plate</b>	section of the Earth's crust about 100km thick
<b>Tsunami</b>	huge waves caused by earthquakes
<b>Volcano</b>	an opening in the Earth's crust from which lava, ash and gases erupt

## Unit 1: Living with the Physical Environment

### 3.1.1.3 Weather Hazards

Key Ideas	Specification Content	☺	☹	☹	Revision Materials Complete
Global atmospheric circulation helps determine patterns of weather and climate.	I can describe the features of global atmospheric circulation and how it works.				
	I can describe how global circulation affects the world's weather.				
	I can explain how global circulation affects the world's weather.				
	I can explain how global pressure and surface winds influence precipitation.				
Tropical storms (hurricanes, cyclones, typhoons) develop as a result of particular physical conditions.	I can describe what a tropical storm is.				
	I can describe the global distribution of tropical storms and where they form.				
	I can name some tropical storms.				
	I can explain why tropical storms are distributed where they are				
	I can explain how tropical storms relate to global atmospheric circulation.				
	I can describe how tropical storms are formed				
	I can explain how tropical storms are formed				
	I can describe the features of a tropical storm				
Tropical Storms have significant effects on people and the environment	I can describe primary and secondary effects of tropical storms (Typhoon Haiyan)				
	I can explain primary and secondary effects of tropical storms				
	I can describe immediate and long-term responses to tropical storms.				
	I can explain immediate and long-term responses to tropical storms.				
	I can use a named example of a tropical storm to show its effects and responses.				
	I can describe how monitoring, prediction, protection and planning can reduce the effects of tropical storms.				
	I can explain how monitoring, prediction, protection and planning can reduce the effects of tropical storms.				
The UK is affected by a number of weather hazards.	I can describe the types of weather hazard experiences in the UK.				
	I can explain why extreme weather occurs in the UK				
Extreme weather events in the UK have impacts on human activity	I can describe the causes of flooding in Cumbria				
	I can explain the causes of flooding in Cumbria				
	I can describe the social, economic and environmental impacts				
	I explain describe the social, economic and environmental impacts				
	I can describe how managements strategies can reduce risk				
	I can explain how managements strategies can reduce risk				
	I can describe how the weather is becoming more extreme in the UK				
I can describe and explain how the weather is becoming more extreme in the UK					

## Unit 1: Living with the Physical Environment

<b>Aerial photo</b>	an image taken from above ground-level looking down on a landscape, they can either be (1) Vertical – looking directly down to the ground or, (2) Oblique – looking sideways
<b>Aid</b>	Money, goods and services given by single governments or an organisation like the World Bank or IMF to help the quality of life and economy of another country
<b>Atmosphere</b>	a highly complex mass of gases, liquids and solids that envelopes the Earth
<b>Atmospheric circulation</b>	circular movement of air within Earth's atmosphere
<b>Cells</b>	section of Earth's atmosphere where air moves in circular motions, together these form the overall circulation of Earth's atmosphere
<b>Climate</b>	the average weather over a long period of time
<b>Climate change</b>	a long-term change in the earth's climate, especially a change due to an increase in the average atmospheric temperature
<b>Coriolis effect</b>	the spinning effect caused by the rotation of the Earth
<b>Cyclone</b>	the term given to a tropical storm in south-east Asia and Australia
<b>Cyclone shelter</b>	accommodation for people who have been evacuated from areas threatened by yclones (tropical storms), often built from strong concrete and on stilts to prevent flooding
<b>Depressions</b>	areas of low atmospheric pressure
<b>Dredging</b>	the removal of silt deposited on the river bed to increase river capacity
<b>Drought</b>	a long, continuous period of dry weather
<b>Equator</b>	an imaginary line that divides Earth's surface into a northern and southern hemisphere
<b>Evacuation</b>	movement of people away from danger to a place of safety
<b>Extreme weather</b>	when a weather event is significantly different from the average or usual weather pattern, and is especially severe or unseasonal
<b>Eye (of the storm)</b>	a small area at the centre of a storm where relatively cold air descends rapidly
<b>Eye wall</b>	the outer edge of the eye of a storm where the most intense weather conditions occur
<b>Flood risk</b>	the predicted likelihood and frequency of floods in an area
<b>Flood</b>	where river discharge exceeds river channel capacity and water spills onto the floodplain
<b>Global warming</b>	the increase of global temperatures
<b>Grid reference</b>	a map reference that indicates a location using numbered vertical and horizontal lines that run up and down, and increase in value from bottom to top of the map
<b>Heatwave</b>	an extreme weather event of very high temperatures
<b>Hurricane</b>	the term given to a tropical storm in the USA and Caribbean
<b>Immediate response</b>	reaction of people as the disaster happens and in the immediate aftermath
<b>Jet stream</b>	a narrow ribbon of air in Earth's atmosphere that encircles the globe, which create that cause weather systems to cross over the UK mainly from west to east
<b>Latitude</b>	lines that run parallel to Earth's Equator, measured in degrees
<b>Long-term response</b>	later reactions that occur in the weeks, months and years after the event
<b>Monitoring</b>	recording physical changes, i.e. tracking a tropical storm by satellite, to help forecast when and where a natural hazard might strike;
<b>Planning</b>	actions taken to enable communities to respond to, and recover from, natural disasters
<b>Hazard prediction</b>	using historical evidence and monitoring, scientists can make predictions about when and where a hazard may happen
<b>Pressure belts</b>	zones of either high or low pressure that encircle the Earth between circulation cells
<b>Primary effects</b>	initial impact of a natural event on people and property, caused directly by it, i.e. the buildings collapsing following an earthquake
<b>Protection</b>	actions taken before a hazard strikes to reduce its impact, such as educating people or improving building design
<b>Saffir-Simpson Scale</b>	scale used to measure the strength of hurricanes based on wind speed
<b>Secondary effects</b>	after-effects that occur as indirect impacts of a natural event, sometimes on a longer timescale, i.e. fires due to ruptured gas mains, resulting from the ground shaking

## Unit 1: Living with the Physical Environment

<b>Storm surge</b>	a wall of water often 3-5 metres high, driven onshore by a tropical storm. The most destructive hazard associated with tropical storms
<b>Trade winds</b>	easterly winds that blow towards the Equator
<b>Tropical storm</b>	an area of low pressure with winds moving in a spiral around a calm central point called the eye of the storm – winds are powerful and rainfall is heavy
<b>Tropics</b>	regions either side of the Equator where the Sun moves directly overhead from its farthest point in the North and the South
<b>Weather</b>	the day to day conditions of the atmosphere, for example, temperature, winds and rainfall
<b>Weather warning</b>	advance information that helps people prepare for potential threats and hazards
<b>Weather hazard</b>	extreme weather events that pose a threat to humans and/or property

## Unit 1: Living with the Physical Environment

### 3.1.14 Climate Change

Key Ideas	Specification Content	😊	😐	☹️	Revision Materials Completed
Climate change is the result of natural and human factors and has a range of effects	I can describe the evidence for climate change from the beginning of the quaternary period to the present day.				
	I can explain the evidence for climate change from the beginning of the quaternary period to the present day.				
	I can describe the natural causes of climate change- orbital changes, volcanic activity and solar output.				
	I can explain the natural causes of climate change				
	I can describe the human causes of climate change-use of fossil fuels, agriculture and deforestation.				
	I can explain the human causes of climate change				
	I can describe some of the effects of climate change on people and the environment.				
	I can explain some of the effects of climate change on people and the environment.				
Managing climate change involves both migration (reducing causes) and adaptation (responding to change).	I can define the term mitigation and adaptation				
	I can describe mitigation- alternative energy production, carbon capture, planting trees, international agreements.				
	I can explain mitigation- alternative energy production, carbon capture, planting trees, international agreements.				
	I can describe adaptation-change in agricultural systems, managing water supply, reducing risk from rising sea level.				
	I can explain adaptation-change in agricultural systems, managing water supply, reducing risk from rising sea level.				
	I can describe and explain how a city in the world is being sustainable to reduce climate change.				

## Unit 1: Living with the Physical Environment

<b>Adaptation</b>	actions taken to adjust to natural events such as climate change, to reduce damage, limit the impacts, take advantage of opportunities, or cope with the consequences
<b>Alternative energy</b>	sources of energy that are not produced from the burning of fossil fuels, such as hydro-electricity, nuclear power and solar power
<b>Atmosphere</b>	a highly complex mass of gases, liquids and solids that envelopes the Earth
<b>Axial tilt</b>	the angle of Earth's axis
<b>Carbon capture and storage (CCS)</b>	technology that captures CO <sub>2</sub> produced from the burning of fossil fuels, which is compressed, transported and then injected underground into suitable geological reservoirs
<b>Carbon sinks</b>	the removal of CO <sub>2</sub> from the atmosphere
<b>Climate change</b>	a long-term change in the earth's climate, especially a change due to an increase in the average atmospheric temperature
<b>Eccentricity</b>	the path of the Earth as it orbits the Sun
<b>Enhanced greenhouse effect</b>	the increased effectiveness of the greenhouse effect, believed to be the cause of recent global warming
<b>Fossil fuel</b>	a natural fuel such as coal or gas, formed in the geological past from the remains of living organisms
<b>Global warming</b>	the increase of global temperatures
<b>Greenhouse effect</b>	the blanketing effect of the atmosphere in retaining heat given off from the Earth's surface
<b>Greenhouse gases</b>	atmospheric gases such as carbon dioxide and methane that can absorb heat
<b>Ice cores</b>	columns of ice that are extracted from ice sheets and used to reconstruct temperature patterns from the past 400,000 years
<b>Milankovitch cycles</b>	three distinct cycles of Earth's orbit around the Sun (Eccentricity, Precession, Axial tilt) which scientists believe affect the timings and seasons of Earth's climate
<b>Mitigation</b>	action taken to reduce the long-term risk from natural hazards, such as earthquake-proof buildings or international agreements to reduce greenhouse gas emissions
<b>Precession</b>	the natural 'wobble' of Earth's axis as it orbits around the Sun
<b>Quaternary period</b>	the geological time period that covers the last 2.6 million years
<b>Renewable energy</b>	a resource that cannot be exhausted, i.e. wind, solar and tidal energy
<b>Solar flare</b>	large explosions on the surface of the Sun
<b>Sunspots</b>	a dark patch that occasionally appears on the surface of the Sun
<b>Volcanic eruption</b>	when volcanoes blast ash, gases and liquids onto the Earth's surface and atmosphere



## Unit 1: Living with the Physical Environment

### 3.1.2.1 Ecosystems

Key Ideas	Specification Content	☺	☹	☹	Revision Materials Completed
Ecosystems exist at a range of scales and involve the interaction between biotic and abiotic components.	An example of a small-scale UK ecosystems to illustrate the concept of inter-relationships 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.				

### 3.1.2.2 Tropical rainforests

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.	I can describe the changing rates of deforestation				
	I can describe the causes of deforestation – subsistence and commercial farming, logging, road building, mineral extraction, energy development, settlement, population growth.				
	I can explain the causes of deforestation – subsistence and commercial farming, logging, road building, mineral extraction, energy development, settlement, population growth.				
	I can describe the impacts of deforestation – economic development, soil erosion, contribution to climate change.				
	I can explain the impacts of deforestation – economic development, soil erosion, contribution to climate change.				
Tropical rainforests need to be managed to be sustainable.	I can describe the value of tropical rainforests to people and the environment.				
	I can explain the value of tropical rainforests to people and the environment.				
	I can describe 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.				
	I can explain 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.				

## Unit 1: Living with the Physical Environment

<b>Abiotic</b>	components in an ecosystem that are non-living environmental factors such as climate (temperature and rainfall), soil, water temperature and light
<b>Biome</b>	global-scale ecosystems such as a tropical rainforest or deciduous woodland
<b>Biotic</b>	components in an ecosystem that are living such as plants and fish
<b>Component</b>	an individual part or element of a wider system
<b>Consumer</b>	organism that eats herbivores and/or plant matter
<b>Decomposer</b>	organisms such as bacteria or fungi that break down plant and animal material
<b>Ecosystem</b>	a community of plants and animals that interact with each other and their physical environment
<b>Food chain</b>	connections between different organisms (plants and animals) that rely upon one another as their source of food
<b>Food web</b>	a complex hierarchy of plants and animals relying on each other for food
<b>Global atmospheric circulation</b>	large scale circulation (movement) of the atmosphere
<b>Global ecosystems</b>	large scale ecosystem, such as tropical rainforest or tundra
<b>Lines of latitude</b>	lines that run parallel to Earth's Equator, measured in degrees
<b>Nutrient cycle</b>	on-going recycling of nutrients between living organisms and their environment
<b>Producer</b>	an organism or plant that is able to absorb energy from the sun through photosynthesis
<b>Biodiversity</b>	the variety of life in the world or a particular ecosystem
<b>Canopy</b>	the continuous layer of branches in a forest, which in tropical rainforests hosts the majority of plant and animal species
<b>Carbon sink</b>	the removal of CO <sub>2</sub> from the atmosphere
<b>Climate</b>	the average weather over a long period of time
<b>Climate change</b>	a long-term change in the earth's climate, especially a change due to an increase in the average atmospheric temperature
<b>Conservation</b>	managing the environment in order to preserve, protect or restore it
<b>Debt reduction</b>	countries are relieved of some of their debt in return for an agreement that they preserve and protect their natural environments
<b>Deforestation</b>	the cutting down and removal of forest
<b>Ecotourism</b>	nature tourism usually involving small groups with minimal impact on the environment
<b>Equator</b>	an imaginary line that divides Earth's surface into a northern and southern hemisphere
<b>Global warming</b>	the increase of global temperatures
<b>Hardwood</b>	important resource provided by tropical rainforests
<b>Indigenous tribes</b>	native to a particular place, usually living in harmony with the natural environment, using resources without causing long-term harm
<b>Infertile soil</b>	soil which is unable to reproduce or sustain life
<b>International agreements</b>	promises made between countries and/or organisations to mitigate the destruction of natural habitats
<b>Leaching</b>	heavy rainfall quickly dissolves and carries away nutrients in rainforest soils, leaving behind infertile red, iron-rich soil called <i>latosol</i>
<b>Mineral extraction</b>	the removal of solid mineral resources from the earth
<b>Oil palm</b>	raw material extracted from tropical rainforests
<b>Protection</b>	actions taken before a hazard strikes to reduce its impact, such as educating people or improving building design
<b>Selective logging</b>	sustainable forestry management where only carefully selected trees are cut down
<b>Slash and burn</b>	a method of land clearing that involves the use of fire, which creates valuable nutrients to help plants grow, but can grow out of control and destroy large areas of forest
<b>Soil erosion</b>	removal of topsoil faster than it can be replaced, due to natural (water and wind action), animal, and human activity
<b>Subsistence farming</b>	a type of agriculture producing only enough food and materials for the benefit of a farmer and their family
<b>Sustainability</b>	actions that meet the needs of the present without reducing the ability of future generations to meet their needs
<b>Transmigration</b>	people removed from one place and moved to another
<b>Tropical rainforest</b>	global-scale ecosystem mainly found close to the Equator, characterised by high temperatures, high rainfall and huge biodiversity

## **Unit 1: Living with the Physical Environment**

## Unit 1: Living with the Physical Environment

### 3.1.2.3 Hot deserts

Key Ideas	Specification Content	😊	😐	☹️	Revision materials completed
Hot desert systems have a range of distinctive characteristics.	I can describe the physical characteristics of a hot desert.				
	I can explain the physical characteristics of a hot desert				
	I can describe the interdependence of climate, water, soils, plants, animals and people.				
	I can explain the interdependence of climate, water, soils, plants, animals and people.				
	I can describe how plants and animals adapt to the physical conditions.				
	I can explain how plants and animals adapt to the physical conditions.				
	I can describe issues related to biodiversity.				
	I can explain issues related to biodiversity.				
Development of hot desert environments creates opportunities and challenges.	I can describe development opportunities in hot desert environments: mineral extraction, energy, farming, tourism				
	I can explain development opportunities in hot desert environments: mineral extraction, energy, farming, tourism				
	I can describe challenges of developing hot desert environments: extreme temperatures, water supply, and inaccessibility.				
	I can explain challenges of developing hot desert environments: extreme temperatures, water supply, and inaccessibility.				
Areas on the fringe of hot deserts are at risk of desertification.	I can describe the causes of desertification – climate change, population growth, removal of fuel wood, overgrazing, over-cultivation and soil erosion.				
	I can explain the causes of desertification – climate change, population growth, removal of fuel wood, overgrazing, over-cultivation and soil erosion.				
	I can describe the strategies used to reduce the risk of desertification – water and soil management, tree planting and use of appropriate technology.				
	I can explain the strategies used to reduce the risk of desertification – water and soil management, tree planting and use of appropriate technology.				

## Unit 1: Living with the Physical Environment

<b>Adaptation</b>	actions taken to adjust to natural events such as climate change, to reduce damage, limit the impacts, take advantage of opportunities, or cope with the consequences
<b>Appropriate technology</b>	technology suited to the needs, skills, knowledge and wealth of local people and their environment
<b>Aquifer</b>	underground water source
<b>Arid</b>	dry, with little or no rainfall
<b>Commercial farming</b>	growing crops or raising livestock for profit, often involving vast areas of land
<b>Contour traps</b>	embankments built along the contours of slopes to prevent soil from being washed down during heavy rainfall
<b>Evaporation</b>	the process of water changing from liquid to vapour
<b>Extreme temperatures</b>	temperatures that present challenges for people, animals and plants living in in certain environments
<b>Fuelwood</b>	wood that is burnt as fuel
<b>Irrigation</b>	artificial application of water to the land or soil
<b>Johads</b>	man-made drinking water source found in the Thar Desert, Pakistan
<b>Nocturnal</b>	active during the night
<b>Over-cultivation</b>	where the intensive growing of crops exhausts the soil leaving it barren
<b>Overgrazing</b>	feeding too many livestock for too long on the land, so it is unable to recover its vegetation
<b>Ponding banks</b>	areas of land enclosed by low walls to store water
<b>Salinisation</b>	a constant flow of water containing salts combined with high rates of evaporation leads to a build-up of salts on the land surface, often the result of over-irrigation in arid regions
<b>Soil erosion</b>	removal of topsoil faster than it can be replaced, due to natural (water and wind action), animal, and human activity
<b>Sustainability</b>	actions that meet the needs of the present without reducing the ability of future generations to meet their needs
<b>Tobas</b>	a natural drinking water source found in the Thar Desert, Pakistan

## Unit 1: Living with the Physical Environment

### 3.1.3.1 UK physical landscapes

Key Ideas	Specification Content	😊	😐	😞
The UK has a range of distinctive landscapes				
Development of hot desert environments creates opportunities and challenges.				
Areas on the fringe of hot deserts are at risk of desertification.				

<b>Cross-section</b>	an imaginary 'slice' through a landscape which helps to visualise what we cannot see
<b>Geology</b>	the rock type that forms the landscape
<b>Landscape</b>	an extensive area of land regarded as being visually and physically distinct
<b>Relief</b>	the height of the land and the different landscape features created by changes in height
<b>Resistant rock</b>	tough rock such as granite and slate
<b>River system</b>	the complete river network from its source to mouth
<b>Spot height</b>	indication of land height, usually represented on OS maps as black dots with height above sea level written alongside

## Unit 1: Living with the Physical Environment

### 3.1.3.2 Coastal landscapes in the UK

Key Ideas	Specification Content	😊	😐	😞
The coast is shaped by a number of physical processes.				
Distinctive landforms are the result of rock type, structure and physical processes				
Different management strategies can be used to protect coastlines from the effects of physical processes.				

## Unit 1: Living with the Physical Environment

<b>Abrasion</b>	(1) rocks carried along a river wear down the river bed and banks (2) the sandpaper effect of glacial ice scouring a valley floor and sides
<b>Adaptation</b>	actions taken to adjust to natural events such as climate change, to reduce damage, limit the impacts, take advantage of opportunities, or cope with the consequences
<b>Aerial photo</b>	an image taken from above ground-level looking down on a landscape, they can either be (1) <i>Vertical</i> – looking directly down to the ground or, (2) <i>Oblique</i> – looking sideways
<b>Arch</b>	a wave-eroded passage through a small headland. This begins as a cave which is gradually widened and deepened until it cuts through
<b>Attrition</b>	rocks being carried by the river smash together and break into smaller, smoother and rounder particles
<b>Backwash</b>	water that flows back towards the sea after the swash has moved upshore
<b>Bar</b>	where a spit grows across a bay, a bar can eventually enclose the bay to create a lagoon
<b>Barrier beach</b>	coastal landform that runs parallel to the coastline, often created when offshore bars are driven onshore by rising sea levels
<b>Bay</b>	a wide coastal inlet, often with a beach, where areas of less resistant rock have been eroded by the sea
<b>Beach</b>	a zone of deposited material that extends from the low water line to the limit of storm waves
<b>Beach nourishment</b>	adding new material to a beach artificially, through the dumping of large amounts of sand or shingle
<b>Berm</b>	a low ridge on a sandy beach created by swash, usually marks the high tide line
<b>Biological weathering</b>	a type of weathering caused by flora and fauna, such as plant roots growing in cracks in the rock or animals burrowing into weak rocks



## Unit 1: Living with the Physical Environment

<b>Carbonation</b>	weathering of limestone and chalk by acidic rainwater
<b>Cave</b>	a large hole in a cliff caused by waves forcing their way into cracks in the cliff face
<b>Cavitation</b>	the explosive force of air trapped in the cracks of rock
<b>Chemical weathering</b>	the decomposition (or rotting) of rock caused by a chemical change within that rock
<b>Cliff</b>	a steep high rock face formed by weathering and erosion
<b>Coastal management</b>	strategies used to defend coastal environments, divided into three different approaches: <i>hard engineering</i> , <i>soft engineering</i> and <i>managed retreat</i>
<b>Coastal realignment</b>	the establishment of a new coastline as part of managed retreat, often allowing flooding to occur over low-lying land to protect farmland, roads and settlements
<b>Concordant coastline</b>	a straight coastline with a single rock running parallel to the coast
<b>Constructive waves</b>	a powerful wave with a strong swash that surges up a beach
<b>Corrosion</b>	chemical erosion caused by the dissolving of rocks and minerals by sea water
<b>Deposition</b>	occurs when material being transported by the sea is dropped due to the sea losing energy
<b>Destructive waves</b>	a wave formed by a local storm that crashes down onto a beach and has a powerful backwash
<b>Discordant coastline</b>	an indented coastline made up of headlands and bays formed when different rocks reach the coast
<b>Dune</b>	deposit of sand which has been blown inland by onshore winds
<b>Dune fencing</b>	fences constructed on sandy beaches to encourage the formation of new sand dunes to protect existing dunes
<b>Dune regeneration</b>	building up dunes and increasing vegetation to prevent excessive coastal retreat
<b>Erosion</b>	wearing away and removal of material by a moving force, such as a breaking wave
<b>Fault</b>	a crack or line of weakness in rock
<b>Fetch</b>	the distance of open water over which the wind can blow
<b>Freeze-thaw weathering</b>	a common process of weathering in a glacial environment involving repeated cycles of freezing and thawing that can make cracks in rock bigger
<b>Gabions</b>	steel wire mesh filled with boulders used in coastal defences
<b>Geological structure</b>	the way that layers of rock are folded or tilted
<b>Grid reference</b>	a map reference that indicates a location using numbered vertical and horizontal lines that run up and down, and increase in value from bottom to top of the map
<b>Groyne</b>	a wooden barrier built out into the sea to stop the longshore drift of sand and shingle, and allow the beach to grow
<b>Headland</b>	a rocky coastal promontory (highpoint of land) made of rock that is resistant to erosion: headlands lie between bays of less resistant rock where the land has been eroded by the sea
<b>Hydraulic power</b>	process where breaking waves compress pockets of air in cracks in a cliff; the pressure may cause the crack to widen, breaking off rock
<b>Jurassic Coast</b>	a 154km stretch of coast in East Devon and Dorset which was made a World Heritage Site in 2001 because of its geological importance
<b>Landform</b>	a physical feature of the Earth's surface
<b>Landslide</b>	the movement of rock, earth or debris down the slope of a hill. Also known as a <i>landslip</i>
<b>Longshore drift</b>	transport of sediment along a stretch of coastline caused by waves approaching the beach at an angle
<b>Marram grass</b>	type of grass that is adapted to windy, exposed conditions and is used in coastal management to stabilise sand dunes
<b>Mass movement</b>	downhill movement of weathered material under the force of gravity
<b>Mechanical weathering</b>	physical disintegration or break up of exposed rock without any change in its chemical composition, i.e. freeze-thaw
<b>Mudflats</b>	areas of fine sediment deposits which over time can develop in saltmarshes
<b>Mudflow</b>	when saturated soil and weak rock flow down a slope
<b>OS map</b>	highly accurate maps drawn by Ordnance Survey, the national mapping agency for Great Britain
<b>Recurved end</b>	strong winds or tidal current cause the end of a spit to become curved
<b>Reprofiling</b>	increasing the height and width of beaches by dumping and shaping of dredged sand or shingle

## Unit 1: Living with the Physical Environment

<b>Rock armour</b>	large boulders deliberately dumped on a beach as part of coastal defences
<b>Rockfall</b>	a fragment of rock breaks away from the cliff face, often due to freeze-thaw weathering
<b>Rotational slip</b>	slump of saturated soil and weak rock along a curved surface
<b>Salt weathering</b>	a weathering process where salt crystals grow and expand in the cracks and holes of rock, creating pressure which eventually causes fragments of rock to break away
<b>Saltation</b>	hopping movement of pebbles along a river or sea bed
<b>Saltmarshes</b>	important natural habitats often found in sheltered river estuaries behind spits where there is very little flow of water
<b>Scree</b>	accumulation of fragments of weathered rock
<b>Sea wall</b>	concrete wall aiming to prevent erosion of the coast by reflecting wave energy
<b>Sliding</b>	loose surface material becomes saturated and the extra weight causes the material to become unstable and move rapidly downhill
<b>Solution</b>	the dissolving of rocks such as limestone and chalk by sea water
<b>Spit</b>	depositional landform formed when a finger of sediment extends from the shore out to sea, often at a river mouth
<b>Stack</b>	isolated pillar of rock left when the top of an arch has collapsed
<b>Suspension</b>	small particles carried in river flow or sea water, i.e. sands, silts and clays
<b>Swash</b>	the forward movement of a wave up a beach
<b>Traction</b>	heavy particles rolled along the sea bed
<b>Transportation</b>	the movement of eroded material
<b>Tsunami</b>	huge waves caused by earthquakes
<b>Wave refraction</b>	wave energy is reduced in bays as the water gets shallower
<b>Waves</b>	ripples in the sea caused by the transfer of energy from the wind blowing over the surface of the sea
<b>Wave-cut platform</b>	rocky, level shelf at or around sea level representing the base of old, retreated cliffs



# RIVERS

Key Ideas	Specification Content	☺	☹	⊗	Revision Materials Completed
The shape of river valleys changes as rivers flow downstream.	The long profile and changing cross profile of a river and its valley.				
	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 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 • the social, economic and environmental issues.				

<b>Abrasion</b>	rocks carried along a river wear down the river bed and banks
<b>Aerial photo</b>	an image taken from above ground-level looking down on a landscape, they can either be (1) Vertical – looking directly down to the ground or, (2) Oblique – looking sideways
<b>Alluvium</b>	a sediment deposited by a river when it floods
<b>Attrition</b>	rocks being carried by the river smash together and break into smaller, smoother and rounder particles
<b>Benefits</b>	financial savings made by preventing flooding, along with any environmental improvements
<b>Channel</b>	the main water course
<b>Channel straightening</b>	removing meanders from a river to make it straighter
<b>Confluence</b>	where a tributary joins a larger river
<b>Costs</b>	the financial cost of a scheme, and any negative impacts on the environment and on people's lives
<b>Course</b>	the path of the river from its source to mouth
<b>Cross profile</b>	a cross section of a river channel or its valley
<b>Dam</b>	a barrier built across a valley to interrupt river flow
<b>Deposition</b>	occurs when material being transported by the sea is dropped due to the sea losing energy
<b>Discharge</b>	quantity of water that passes a given point on a stream or riverbank within a given period of time
<b>Drainage basin</b>	an area of land drained by a river and its tributaries
<b>Embankment</b>	artificially raised river banks often using concrete walls
<b>Estuary</b>	tidal mouth of a river where it meets the sea – wide banks of deposited mud are exposed at low

	tide
<b>Flash flood</b>	a very sudden flood event resulting from a torrential rainstorm
<b>Flood</b>	where river discharge exceeds river channel capacity and water spills onto the floodplain
<b>Flood relief channel</b>	artificial channels that are used when a river is close to maximum discharge; they take the pressure off the main channels when floods are likely
<b>Flood risk</b>	the likelihood of a flood event occurring in a certain area
<b>Flood storage areas</b>	water is deliberately allowed to flood wetlands to reduce the risk of flooding further downstream
<b>Flood warnings</b>	providing reliable advance information about possible flooding
<b>Floodplain</b>	relatively flat area forming the valley floor either side of a river channel that is sometimes flooded
<b>Floodplain zoning</b>	identifying how a floodplain can be developed for human uses
<b>Flow control</b>	specially designed aperture (opening) in a river channel which controls the rate of flow downstream. Excess water is stored behind the structure in a reservoir
<b>Gorge</b>	a narrow steep-sided valley – often formed as a waterfall retreats upstream
<b>Gradient</b>	the height and angle of a slope
<b>Hydraulic action</b>	power of the water eroding the bed and banks of a river
<b>Hydrograph</b>	a graph which shows the discharge of a river, related to rainfall, over a period of time
<b>Interlocking spurs</b>	outcrops of land along the river course in a valley
<b>Knick point</b>	a step or drop in a river's bed which often cause waterfalls
<b>Lateral erosion</b>	erosion of river banks rather than the bed – helps to form the floodplain
<b>Levee</b>	raised bank found on either side of a river, formed naturally by regular flooding or built up by people to protect the area against flooding
<b>Load</b>	material transported by a river
<b>Long profile</b>	the gradient of a river, from its source to its mouth
<b>Meander</b>	a wide bend in a river
<b>Mouth</b>	the end of a river, usually where a river joins the sea
<b>Mudflats</b>	areas of fine sediment deposits which over time can develop in saltmarshes
<b>Ox-bow lake</b>	an arc-shaped lake on a floodplain formed by a cut-off meander
<b>Plunge pool</b>	a deep and turbulent area of water where the river 'plunges' over a waterfall
<b>Pools and riffles</b>	alternating sequence in the course of a river or stream that carry coarse sediment, where shallow fast-flowing sections are called <i>riffles</i> and deeper slower-moving sections are called <i>pools</i>
<b>Precipitation</b>	moisture falling from the atmosphere – rain, sleet or snow
<b>Prediction</b>	using historical evidence and monitoring, scientists can make predictions about when and where a hazard may happen
<b>Reservoir</b>	A large natural or artificial lake used as a source of water supply
<b>River restoration</b>	modifying the course of a river to return it to its natural state
<b>Saltation</b>	hopping movement of pebbles along a river or sea bed
<b>Saltmarshes</b>	important natural habitats often found in sheltered river estuaries behind spits where there is very little flow of water
<b>Solution</b>	dissolved rocks and minerals often derived from limestone or chalk
<b>Source</b>	the start of a river
<b>Suspension</b>	small particles carried in river flow or sea water, i.e. sands, silts and clays
<b>Thalweg</b>	the course of the fastest flow (velocity) within a river
<b>Time lag</b>	the time in hours between the highest rainfall and the highest (peak) discharge
<b>Traction</b>	where material is rolled along a river bed or by waves
<b>Transportation</b>	the movement of eroded material
<b>Tributary</b>	a small stream that joins a larger river
<b>Velocity</b>	rate of the river flow
<b>Vertical erosion</b>	downward erosion of the river bed
<b>V-shaped valley</b>	steep-sided valley
<b>Waterfall</b>	a step in the long profile of a river usually formed when a river crosses over a hard (resistant) band of rock
<b>Watershed</b>	the edge of the river basin
<b>Wetlands</b>	saturated areas of land, often found on river floodplains