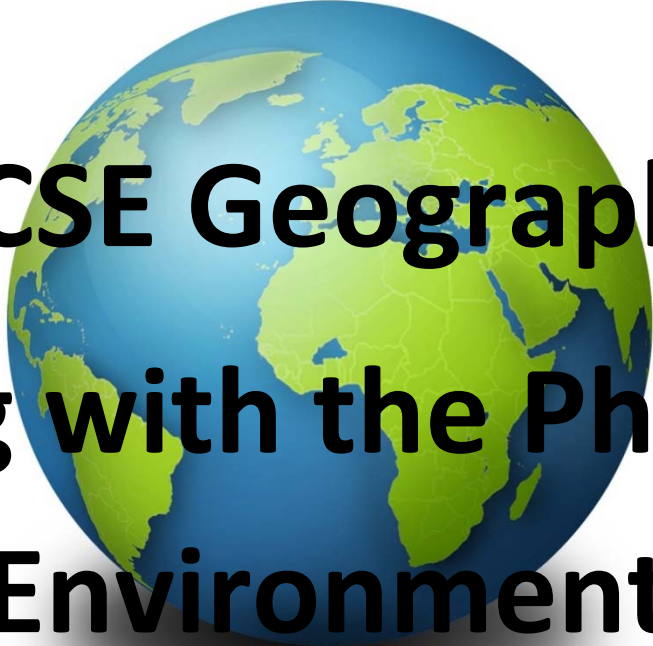




Geography Department



# GCSE Geography

## Living with the Physical Environment

### Core Knowledge

Name:

Class:

Teacher:

**Paper 1:**

3.1.1 The challenge of natural hazards (Tectonics, Weather and Climate Change) (p.2-8)

3.1.2 The living world (Tropical Rainforest and Desert) (p.9-14)

3.1.3 Physical landscapes in the UK (Coasts and Rivers) (p.15-23)

## The Challenge of Natural Hazards (Tectonics, Weather and Climate Change)

### Tectonic Hazards Glossary

<b>Keyword</b>	<b>Definition</b>
<b>Aid</b>	Money, food, training and technology given by richer countries to poorer countries after a natural hazard.
<b>Constructive plate margin</b>	When plates pull apart.
<b>Convection currents</b>	Circular pockets of heat that move in the mantle.
<b>Conservative plate margin</b>	Plates slide past each other. Plates can slide in opposite directions OR in the same direction at different speeds.
<b>Constructive plate margin</b>	Plates move apart allowing rising magma to come to the surface.
<b>Crust</b>	The layer of the Earth that we live on.
<b>Destructive plate margin</b>	Plates move together. Oceanic plate is subducted (pushed under) underneath the continental plate.
<b>Earthquake</b>	A sudden or violent movement within the Earth's crust followed by a series of shocks.
<b>Epicentre</b>	Point directly above the focus on the earth's surface.
<b>Focus</b>	Point in the earth's crust where the earthquake starts.
<b>Geothermal power</b>	Energy harnessed from super-heated water beneath the ground.
<b>Hazard risk</b>	The probability or chance that a natural hazard may take place.
<b>Immediate response</b>	Response that happens immediately e.g. rescuing people.
<b>Long-term response</b>	Happen months/years after the disaster.

<b>Mantle</b>	The layer underneath the crust.
<b>Monitoring</b>	Recording physical changes, such as earthquake tremors around a volcano, to help forecast when and where a natural hazard might strike.
<b>Natural hazard</b>	A natural event (for example an earthquake, volcanic eruption, tropical storm, flood) that threatens people or has the potential to cause damage, destruction and death
<b>Planning</b>	Earthquake drills, survival kits etc. so people know what to do in a natural disaster.
<b>Plate margins (boundary)</b>	Place where two plates meet <i>e.g. North American plate and the Eurasian plate.</i>
<b>Prediction</b>	Predicting events e.g. earthquakes, volcanoes, tsunamis.
<b>Protection</b>	Making buildings stronger so that they are safe to live in.
<b>Primary effects</b>	Immediate effects of an eruption/earthquake, e.g. buildings collapsing following an earthquake.
<b>Richter scale</b>	Logarithmic scale which measures the magnitude of the earthquake.
<b>Rift valley</b>	Found at a constructive plate margin where two continental plates have pulled apart. <i>Forms a steep valley where the land has dropped as the plates have moved apart.</i>
<b>Secondary effects</b>	After effects of an eruption/earthquake, e.g. fires occurring due to ruptured gas mains damaged by an earthquake.
<b>Seismic waves</b>	Seismic waves that travel through the earth's crust after an earthquake.
<b>Shield volcano</b>	Typically found at constructive plate margins.  They have a wide base and gentle slopes. Erupt frequently and non-explosive.
<b>Subduction zone</b>	The point where the oceanic crust gets pushed underneath continental crust.
<b>Tectonic hazard</b>	A natural hazard caused by movement of tectonic plates including volcanoes and earthquakes.
<b>Tectonic plate</b>	A section of the Earth's crust.
<b>Volcano</b>	An opening in the Earth's crust from which lava, ash and gases erupt.

## Weather Hazards Glossary

<b>Keyword</b>	<b>Definition</b>
<b>Economic impact</b>	The effect of an event on the wealth of an area or community.
<b>Environmental impact</b>	The effect of an event on the landscape and ecology of the surrounding area.
<b>Extreme weather</b>	When a weather event is significantly different from the average or usual weather pattern. <i>A severe snow blizzard or heat wave are two examples for UK weather.</i>
<b>Global atmospheric circulation</b>	The worldwide systems of wind which transports heat from tropical to polar latitudes.
<b>Hazard risk</b>	The probability or chance that a natural hazard may take place.
<b>Immediate responses</b>	The reaction of people as the disaster happens and in the immediate aftermath.
<b>Long-term responses</b>	Later reaction of people as the disaster happens and in the immediate aftermath.
<b>Management strategies</b>	Techniques of controlling, responding to, or dealing with an event.
<b>Monitoring</b>	Recording physical changes, such as tracking a tropical storm by satellite, to help forecast when and where a natural hazard might strike.
<b>Natural hazard</b>	A natural event (for example an earthquake, volcanic eruption, tropical storm, flood) that threatens people or has the potential to cause damage, destruction and death
<b>Planning</b>	Actions taken to enable communities to respond to and recover from natural disasters. <i>These might be evacuation plans or warning systems.</i>
<b>Prediction</b>	Attempts to forecast when and where a natural hazard will strike based on current knowledge.
<b>Primary effects</b>	The initial impact of a natural event on the people and property, caused directly by it, for instance buildings being partially destroyed by a tropical storm
<b>Protection</b>	Actions taken before a hazard strikes to reduce its impacts, such as educating people or improving building design.

<b>Secondary effects</b>	The after-effects that occur as indirect impacts of a natural event, sometimes on a longer timescale, for instance, impact on access to clean water can lead to spread of disease and malnutrition.
<b>Social impact</b>	The effect of an event on the lives of people or community effected.
<b>Tropical storm</b>	An area of low pressure with winds moving in a spiral around a calm central (the eye).

### Climate Change Glossary

<b>Key Word</b>	<b>Definition</b>
<b>Adaption</b>	Actions taken to adjust to natural changes in the environment such as climate change. <i>Adaption takes place to reduce, limit or take advantage of opportunities or cope with consequences.</i>
<b>Climate change</b>	Increasing temperature and the overall impacts <i>E.g. sea level rise and shifting weather patterns</i>
<b>Enhanced greenhouse effect</b>	
<b>Global warming</b>	An increase in the overall temperature of the Earth's atmosphere due to the greenhouse effect
<b>Greenhouse effect</b>	
<b>Mitigation</b>	Action taken to reduce or eliminate long term risk to human life and property from natural hazards, such as building earthquake proof buildings or making international agreements about pollution targets.
<b>Orbital change</b>	Changes in pathway of the earth around the sun.
<b>Quaternary period</b>	The period of geological time about 2.6 million years ago to present. <i>It has seen the appearance and development of humans.</i> <i>It includes smaller epochs, the Pleistocene and Holocene.</i>

## The Challenge of Natural Hazards Pop Quiz

<b>What is a natural hazard?</b>	A natural hazard is any natural event that has the potential to endanger human life, the economy and property
<b>What are the three types of plate boundary called?</b>	Destructive, constructive, conservative
<b>At which two plate boundaries are volcanoes created?</b>	Destructive and constructive
<b>Where is the largest band of active volcanoes found?</b>	The Ring of Fire around the entire Pacific Ocean
<b>Where do earthquakes normally occur?</b>	In long narrow bands on all types of plate boundary
<b>Where was the epicentre of the earthquake in Japan in 2011?</b>	62 miles north east of coastline in the Pacific Ocean
<b>What was the magnitude of the Haiti earthquake in the Caribbean?</b>	7.0
<b>What was the magnitude of the Japan earthquake?</b>	9.0
<b>How many people died in the Haiti earthquake?</b>	316,000
<b>How many people died in the Japan earthquake?</b>	15,854
<b>How much money did the EU give Haiti to help recover from the earthquake?</b>	\$330 million
<b>Name two building features that would help in an earthquake</b>	<p>Lattice work steel cage to stabilise building</p> <p>Rubber shock absorbers between foundations and building</p> <p>Latticework steel foundations into the bedrock</p> <p>Window shutters that come down automatically</p> <p>Identification numbers for helicopters to identify damaged buildings</p> <p>Reinforced lift shafts with tensioned cables</p>
<b>Give two ways volcanoes can be predicted</b>	<p>Monitoring seismic waves</p> <p>Monitoring gas emissions</p> <p>Looking for ground deformation</p> <p>Satellite images</p> <p>Remote sensing</p>

<b>Name three ways earthquakes can be predicted</b>	Seismometers Laser beams Animal behaviour
<b>What are the names of the three cells that describe the variation in the world's weather?</b>	Polar, Ferrel and Hadley cell
<b>What is PDI?</b>	A measure of maximum surface wind velocity during a storm
<b>Name a cause of damage from Typhoon Haiyan</b>	<ol style="list-style-type: none"> <li>1. The Philippines sits in an area of seasonally warm ocean water which has enough Coriolis Force to create rotating winds over the ocean surface</li> <li>2. Sea level rise is happening globally but is particularly affecting the Philippines – this causes larger storm surges</li> <li>3. Use of groundwater has caused parts of the country to sink</li> <li>4. The worst affected city, Tacloban, is at the end of a bay which funnelled water from the storm stage</li> </ol>
<b>How many people were killed in Typhoon Haiyan?</b>	7400
<b>What are depressions?</b>	Low pressure storm systems bringing unsettled weather to Britain all year round
<b>When was the UK's wettest year and how many mm of rainfall was there?</b>	2000  1337.3mm
<b>What are anticyclones?</b>	Areas of high pressure where air sinks to the earth's surface. As the air sinks it warms so condensation does not occur and there are very few clouds giving clear, settled weather
<b>When did Storm Emma and the Beast from the East occur?</b>	February / March 2018
<b>Name two negative effects of the Beast from the East</b>	Lost sales in supermarkets amounted to £22 million 14 deaths Over 8000 road collisions
<b>What short term responses were there to the Beast from the East?</b>	Red Cross issued blankets to stranded people at Glasgow airport Armed forces helped rescue stranded drivers and transport NHS staff to work

<b>Give an example of an internal factor that causes climate change</b>	Volcanic activity, tectonic activity, albedo, atmospheric gases
<b>Give an example of an external factor that causes climate change</b>	Sunspots, earth's orbit, earth's tilt
<b>State one reason why carbon dioxide is increasing in the atmosphere</b>	More private transport, more tourism creating more flights, greater demand for electricity and heating
<b>How are the people of the Tuvalu islands being negatively affected by climate change?</b>	They are being evacuated to New Zealand as sea levels rise
<b>Which coastal city could be lost by 2100 if sea levels rise?</b>	New York
<b>When was the Kyoto Protocol signed?</b>	1997



## The Living World:

### Ecosystems Glossary

<b>Key Word</b>	<b>Definition</b>
<b>Abiotic</b>	Related to all <b>non-living</b> things.
<b>Biotic</b>	Related to <b>all living</b> things.
<b>Consumer</b>	Creature that eats herbivores and/or plant matter.
<b>Decomposer</b>	An organism such as bacteria or fungus which breaks down dead plant or animal tissue which is recycled into the environment.
<b>Ecosystem</b>	A community of plants and animals that interact with each other and their physical environment.
<b>Food chain</b>	The connections between different organisms (plants and animals) that rely on 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 ecosystem</b>	The large ecological areas on the earth's surface with animals and plants adapting to their environment.
<b>Nutrient global</b>	A set of processes whereby organisms extract minerals necessary for growth from soil or water. Passing them on later through the food chain and ultimately (decomposed) back into the soil.
<b>Producer</b>	An organism or plant that is able to absorb energy from the sun through photosynthesis.

## Hot Deserts Glossary

Key Word	Definition
<b>Appropriate (Intermediate) Technology</b>	Technology best suited to the needs, skills, knowledge and wealth of the locals, often used in LICs. <i>Usually combines simple ideas with cheap, readily available materials.</i>
<b>Biodiversity</b>	The variety of life in the world or a particular habitat.
<b>Desertification</b>	The process where land becomes drier and degraded, as a result of climate change or human activities, or both.
<b>Hot deserts</b>	Parts of the world that have high average temperatures and very low precipitation.
<b>Mineral extraction</b>	The removal of solid mineral resources from the earth. <i>Ores, precious metals or building materials could be dug up, along with fuel mining such as coal or oil shale.</i>
<b>Over cultivation</b>	Exhausting the soil by over-cropping (using) the land on a repeated basis.
<b>Overgrazing</b>	Grazing too many livestock for an extended period of time on a piece of land, meaning it is unable to regrow and recover its vegetation cover.

## Tropical Rainforests Glossary:

Key Word	Definition
<b>Biodiversity</b>	The variety of life in the world or a particular habitat.
<b>Commercial farming</b>	Farming to sell produce for a profit to retailers or food processing companies.
<b>Debt reduction</b>	Countries are relieved of some of their debt in return for protecting their rainforests.
<b>Deforestation</b>	The chopping down and removal of trees to clear an area of the forest.
<b>Ecotourism</b>	Responsible travel to natural areas that conserves the environment and supports the livelihood of locals.

	<i>It sustains the wellbeing of local people, involves educational action and usually carried out in small groups to have minimal shock to the ecosystem it takes place in.</i>
<b>Logging</b>	The business of cutting down trees and transporting timber to mills for processing and sale.
<b>Mineral extraction</b>	Removing mineral resources from the earth. <i>These resources include ore, which contain metals for processing or can involve precious gem stones.</i>
<b>Selective logging</b>	Cutting down trees which are mature or inferior, encouraging the growth of remaining trees within the forest.
<b>Soil erosion</b>	Removal of top soil faster than it can be replenished. <i>This may be due to natural causes such as flooding, or human activity such as farming.</i>
<b>Subsistence farming</b>	A type of agricultural practise to only produce enough food and material to sustain and benefit the farmer.
<b>Sustainability</b>	Actions and forms of progress that meet the needs of the present without reducing the ability of future generations to meet their need.

## The Living World Pop Quiz

<b>What is an ecosystem?</b>	An ecosystem is community of plants and animals living together in a habitat. The lives of the plants and animals are closely linked to each other and the climate and soil of the area that they live in
<b>Name three areas of a freshwater pond ecosystem</b>	Pond margin, pond bottom, mid pond water, pond surface, air above pond
<b>Give an example of a producer in a freshwater pond</b>	Detritus (decaying leaves) Algae
<b>Give an example of a consumer in a freshwater pond</b>	Great diving beetle Heron Fish Midge larvae
<b>What is the difference between a food web and a food chain?</b>	Food chains follow a single path of energy as organisms find food whilst food webs display how plants and animals are connected in many ways to help them all survive
<b>What is a biome?</b>	A biome is a large geographical area of distinctive plant and animal groups, which are adapted to that particular environment
<b>List the structure of a tropical rainforest from the ground up</b>	Shrub layer, lower canopy, canopy, emergent layer
<b>Name two adaptations of vegetation in a tropical rainforest</b>	Lianas, buttress roots, leaves with flexible bases, thin branchless trunks, smooth bark, epiphytes, emergent, drip-tips
<b>Describe the soil in a tropical rainforest</b>	Red in colour due to high iron and aluminium content and is infertile with a thick layer of leaf litter and decomposing organic leaf matter on the surface
<b>What is the soil in rainforests called?</b>	Latosol
<b>Explain the nutrient cycle</b>	<ol style="list-style-type: none"> <li>1. Trees shed leaves all year round</li> <li>2. Decaying vegetation decomposes rapidly releasing nutrients</li> <li>3. Nutrients enter the soil surface but don't get chance to sink in</li> <li>4. Shallow roots quickly take up the nutrients</li> <li>5. The nutrients help the trees to grow rapidly</li> </ol>

<b>State two effects of deforestation</b>	Loss of biodiversity, climate change, conflict between indigenous tribes and newcomers to the area, less CO <sub>2</sub> absorbed from the atmosphere, water pollution, decrease in unemployment rate
<b>What is the percentage change in annual deforestation rate 2000 - 2005 vs 2005 – 2010 in Indonesia?</b>	107%
<b>Between 2000 – 2010, the population in the Amazon increased by what percentage?</b>	23%
<b>What is extracted from mines in the Amazon rainforest?</b>	Iron, nickel, tin, zinc and gold
<b>What is the BR163?</b>	A dirt track that ran through huge sections of untouched forest in the Amazon which was planned to be tarmacked to turn it into a superhighway
<b>Define the term “sustainable use of the rainforest.”</b>	Sustainable uses of the rainforest are uses that allow current generations to make a living from the forest without damaging the forest for future generations to use
<b>What are the five standards for sustainable forest management?</b>	<ol style="list-style-type: none"> <li>1. Clearing of intact rainforests is prohibited</li> <li>2. Sustainable management plan</li> <li>3. Sensitive forest areas are to be preserved</li> <li>4. The rights of indigenous groups are to be protected</li> <li>5. Workers are assured of fair working conditions</li> </ol>
<b>Why was the International Tropical Timber Agreement of 2006 set up?</b>	To "promote the expansion and diversification of international trade in tropical timber from sustainably managed and legally harvested forests and to promote the sustainable management of tropical timber producing forests"
<b>How much rainfall does a desert receive per year?</b>	Less than 250mm
<b>Describe one way that a camel is adapted to live in the desert</b>	Long eyelashes to keep out sand/dust and sun, fat stored in hump so it can survive periods with no food, fur for insulation (cold nights and hot days), nostrils can close to keep out blowing sand and broad feet so they don't sink into sand
<b>Where is the Thar Desert located?</b>	On and around the border between India and Pakistan

<b>What are the main problems in Jaisalmer due to tourism?</b>	The demand for water in the fort in the city has increased 12-fold, and the waste water passes under the foundations and undermines them
<b>What is the benefit of the Indira Gandhi canal in the Thar Desert?</b>	It brings water to major cities such as Bikaner and Jaisalmer, but also water to irrigate the land
<b>Name three development opportunities in hot desert environments</b>	Tourism, subsistence farming, commercial farming, mineral extraction, energy use
<b>How many people in the Sahel region of Africa faced hunger due to desertification in 2014?</b>	20 million
<b>What is the Acacia Project?</b>	In Senegal, FAO and the Forestry Service provided Acacia seeds and seedlings and taught the people how to sow and plant the Acacia trees and extract and market the gum that they extract.

## Physical Landscapes in the UK:

### Coastal Landscapes Glossary

<b>Keyword</b>	<b>Definition</b>
<b>Abrasion (Corrasion)</b>	Rocks are flung at the cliff by powerful waves. They start to erode the cliffs.
<b>Arch</b>	A cave becomes bigger due to hydraulic action and abrasion. Eventually the cave breaks through the headland to create an arch.
<b>Attrition</b>	Pebbles bang together making them smaller and smoother over time.
<b>Backwash</b>	When a wave moves back down the beach.
<b>Bar</b>	A spit which has grown across a bay. <i>It forms a bar of sand with a freshwater lake/lagoon trapped behind it.</i>
<b>Bay</b>	Bays are mainly circular and created out of less resistant (soft) rock. <i>They form between the areas of more resistant rock and often have beaches.</i>
<b>Beach</b>	Deposited sand/rock/pebbles that have built up.
<b>Beach nourishment</b>	Adding new material to a beach artificially, e.g. by dumping sand.
<b>Beach reprofiling</b>	Changing the profile or shape of the beach.
<b>Cave</b>	A large hole in the cliff caused by waves forcing their ways into cracks in the cliff face.
<b>Chemical weathering</b>	The decomposition of rock caused by a chemical change.
<b>Cliff</b>	A steep, high rock face formed by weathering and erosion.
<b>Constructive waves</b>	Powerful wave with a strong swash and weak backwash which deposits material on a beach.
<b>Corrosion (Solution)</b>	Rocks like limestone dissolve.
<b>Crest</b>	Top of a wave.
<b>Deposition</b>	Occurs when material carried by the sea is dropped as energy decreases.
<b>Destructive wave</b>	Formed by storm conditions. Has a weak swash and strong backwash and erodes the beach.
<b>Dune slack</b>	Wind can form depressions in the sand where ponds may form.
<b>Embryo dune</b>	At the front of the dunes is the youngest dune
<b>Erosion</b>	This is the wearing away of the land by moving agents such as the sea, rivers and glaciers
<b>Fetch</b>	The distance that wind blows over the sea before reaching land.

<b>Fore dune</b>	These are older, slightly higher and further from the sea than the embryo dune.
<b>Gabion</b>	A steel wire mesh filled with boulders. It is a type of hard engineering defence.
<b>Groyne</b>	A wooden barrier built out into the sea to stop the longshore drift or sand and shingle, and to help the beach to grow.
<b>Hard engineering</b>	Building artificial structures to reduce or stop the impact of coastal processes.
<b>Hydraulic action</b>	Water is forced in to cracks in the cliff, gradually making the cracks bigger and bigger.
<b>Landslide</b>	Blocks of rock slide downwards.
<b>Longshore drift (LSD)</b>	Transportation of sediment along the coastline. <i>Waves approach the beach at a 45° angle and transport beach material (sediment) up and down the beach.</i>
<b>Managed retreat</b>	Allow the sea to erode the coastline but monitor the retreat occurring.
<b>Mass movement</b>	The movement of material downslope.
<b>Mechanical weathering</b>	Weathering processes that cause physical disintegration or break up of exposed rock without any change in the chemical composition of the rock, e.g. freeze-thaw weathering.
<b>Pioneer plant</b>	Tough plants, such as Marram grass that take root on the dune. These help stabilise the sand and fix the dune in place.
<b>Relief</b>	Relief describes the physical features of a landscape, including its height, steepness and how its features are shaped.
<b>Rockfall</b>	Collapse of a cliff face. Individual rocks fall from a cliff.
<b>Rock armour</b>	Large boulders dumped on the beach as part of the coastal defences.
<b>Saltation</b>	Pebbles bounce along the sea bed in a leap-frogging motion.
<b>Salt marsh</b>	Low lying (below sea level) coastal wetland.
<b>Sand dune</b>	Coastal sand hill above the high tide mark, shaped by wind action, covered with grasses and shrubs.
<b>Sea wall</b>	Concrete wall built to protect the coast by deflecting wave energy.
<b>Slumping</b>	Rapid mass movement where a whole segment of a cliff moves downslope.
<b>Soft engineering</b>	Sustainable approach (using natural resources) to managing the coast. E.g. beach nourishment, dune regeneration and marsh creation.
<b>Solution</b>	Material dissolved in sea water.
<b>Spit</b>	A finger of new land made of sand. It juts out in to the sea from the coast.



<b>Stack</b>	The arch collapses as there is nothing to support it. Leaving an isolated rock stack.
<b>Stump</b>	The stack gets eroded further by erosion and weathering to form a stump.
<b>Suspension</b>	Lighter particles e.g. sand are suspended in the water.
<b>Swash</b>	When a wave moves up the beach
<b>Traction</b>	Heavy rocks (boulders) are rolled along the sea bed.
<b>Transportation</b>	Movement of material along a coastline.
<b>Vegetation Succession</b>	Sequence of vegetation (plants) that colonise (take over) an environment. This takes place over hundreds of years.
<b>Waves</b>	Ripples in the sea caused by the transfer of energy from the wind blowing over the surface of the sea. <i>The largest waves are formed when winds are very strong, blow for lengthy periods and cross large expanses of water.</i>
<b>Wave-cut notch</b>	Small notch (dent) cut in to the cliff at the level of high tide.
<b>Wave-cut platform</b>	Wide sloping surface at the base of a cliff.
<b>Yellow dune</b>	These are taller than the fore dune.

### River Landscapes Glossary

<b>Keyword</b>	<b>Definition</b>
<b>Abrasion (Corrasion)</b>	Stones transported in the river are thrown at the bed and banks
<b>Attrition</b>	Stones in the river bang together making them smaller and smoother over time.
<b>Bankfull discharge</b>	The height at which a flood could occur on a storm hydrograph.
<b>Channel straightening</b>	Removing meanders from a river to make it straighter. This allows it to carry more water quickly downstream.
<b>Confluence</b>	Where two rivers meet.
<b>Corrosion (Solution)</b>	Weak acids within the river water react with the rocks on the beds and banks
<b>Cross profile</b>	The side to side cross section of a river channel.
<b>CUMEC</b>	Cubic metres per second
<b>Dam</b>	A barrier built across a valley to interrupt river flow which creates a man-made lake (reservoir) which stores water and controls the discharge of a river.
<b>Deposition</b>	Occurs when material carried by a river is dropped as energy decreases.

<b>Discharge</b>	Amount of water passing a certain point every second (measured in CUMECs)
<b>Drainage basin</b>	Area of land drained by a river system.
<b>Embankments</b>	Raised banks constructed along a river – they effectively make the river deeper so it can carry more water.
<b>Erosion</b>	This is the wearing away of the land by moving agents such as the sea, rivers and glaciers
<b>Estuary</b>	The tidal mouth of a river (where it meets the sea)
<b>Falling limb</b>	Shows a river as its level falls after a rainfall event (shown on a storm hydrograph).
<b>Flood</b>	Occurs when river discharge exceeds river channel capacity and water spills onto the surrounding land.
<b>Flood relief channels</b>	Building artificial channels to divert rivers away from settlements and areas of value.
<b>Flood risk</b>	The predicted frequency of floods in an area.
<b>Flood warning</b>	Provide reliable advance warning of a flood allowing people time to evacuate if necessary.
<b>Floodplain</b>	Flat land created by deposition on either side a river in the middle and lower valley.
<b>Floodplain zoning</b>	Land close to the river cannot be built upon. It can be used for farming and playing fields.
<b>Fluvial processes</b>	Processes relating to erosion, transport and deposition in a river.
<b>Gorge</b>	A narrow, steep sided valley created as a waterfall retreats upstream.
<b>Hard engineering</b>	Building artificial structures to reduce or stop the impact of river processes.
<b>Hydraulic action</b>	Water is forced in to cracks in the river banks, gradually making the cracks bigger and bigger.
<b>Interlocking spurs</b>	A river winds its way around more resistant rock in the upper valley of river.
<b>Lag time</b>	Difference between peak rainfall and peak discharge on a storm hydrograph.
<b>Landslide</b>	Blocks of rock slide downwards.
<b>Levee</b>	Ridge of higher material at the edge of a river channel in the middle and lower valley.
<b>Long profile</b>	A way to display the channel slope of a river along its entire course.
<b>Mass movement</b>	The movement of material downslope.
<b>Meander</b>	A bend in a river.
<b>Mechanical weathering</b>	Weathering processes that cause physical disintegration or break up of exposed rock without any change in the chemical composition of the rock, e.g. freeze-thaw weathering.

<b>Mouth</b>	End of a river
<b>Ox bow lake</b>	A cut off meander bend.
<b>Plunge pool</b>	At the base of a waterfall.
<b>Relief</b>	Relief describes the physical features of a landscape, including its height, steepness and how its features are shaped.
<b>Rising limb</b>	Indicates how quickly water is reaching a river channel and represents the water rising in a river (shown on a storm hydrograph).
<b>Saltation</b>	Pebbles bounce along the river bed in a leap-frogging motion.
<b>Slumping</b>	Rapid mass movement where a whole segment of a river bank moves downslope.
<b>Soft engineering</b>	Managing a river using natural materials and mimicking natural processes to protect more vulnerable areas.
<b>Solution</b>	Material is dissolved in the water.
<b>Source</b>	Start of a river
<b>Storm hydrograph</b>	A graph to show the discharge of a river and how it changes over time in response to rainfall.
<b>Suspension</b>	Lighter particles e.g. sand are suspended in the water.
<b>Traction</b>	Heavy rocks (boulders) are rolled along the river bed.
<b>Transportation</b>	Movement of material along a river.
<b>Tributary</b>	A smaller river joining a larger river.
<b>Waterfall</b>	Created by erosion in the upper valley of a river. Occur where a band a hard rock overlies a band of soft rock.
<b>Watershed</b>	Edge of a drainage basin.
<b>Water cycle</b>	Series of processes by which water is evaporated and eventually condenses and precipitates over land.

## Physical Landscapes in the UK Pop Quiz

<b>Describe the swash and backwash of constructive waves.</b>	Strong swash, weak backwash.
<b>What type of beach do destructive waves create?</b>	Steep.
<b>How many times per minute do destructive waves break onto a beach?</b>	10-12.
<b>How do neap tides occur?</b>	When the sun's gravity pulls the ocean one side and the moon's gravity pulls it the opposite side, the tidal range is smaller.
<b>At which moons do spring tides occur?</b>	Full Moon and New Moon
<b>When temperatures fall below 0°C, what type of physical weathering may occur?</b>	Freeze-thaw weathering.
<b>What are the two types of mass movement?</b>	Soil creep and slumping.
<b>Material is transported along a coastline. What is this called?</b>	Longshore drift.
<b>What is the difference between erosion and weathering?</b>	Erosion involves weakened material being carried away whereas with weathering, the weakened material does not move.
<b>Name the four types of transport in rivers.</b>	Traction, saltation, solution, suspension.
<b>How does the process of caves, arches, stacks and stumps begin?</b>	Hydraulic action widening cracks in a headland.
<b>What landform will be created along a coastline that has alternating bands of hard and soft rock?</b>	Headlands and bays.
<b>If a wide wave cut platform forms in front of a cliff, what happens to the rate of erosion? Why?</b>	It slows down because the wave's energy is removed from travelling over the material.
<b>How would a spit become a bar?</b>	Form across a bay and link two headlands.

<b>Why do spits often form curved ends?</b>	Secondary wind direction.
<b>Explain how the stems of Marram Grass are adapted to sand?</b>	They can grow quickly and elongate so if they are covered by sand, the stems elongate, which enables the plant to emerge from the deposited sand.
<b>What are sand dunes?</b>	Accumulations of deposited sand and other sediment gathered on a beach.
<b>What is another name for a sand dune system?</b>	Psammosere.
<b>What do four figure and six figure grid references help locate on a map?</b>	Four – a square (e.g. a settlement) Six – A particular point on a map (e.g. a church)
<b>What are contour lines?</b>	Everywhere along a contour line is the same height above sea level. The number on the line shows the height in metres.
<b>Name two types of hard engineering.</b>	Sea wall, revetment, rip rap, gabion, groyne, offshore reef.
<b>Name one type of soft engineering.</b>	Beach nourishment, cliff regrading, managed retreat.
<b>Give three disadvantages of hard engineering.</b>	Expensive, man-made, ugly.
<b>What methods of coastal management were built in Overstrand in 1995?</b>	Cliff regrading Rock armour Revetments
<b>What are the cliffs along the North Norfolk coastline made of?</b>	Soft impermeable clay and permeable sands and gravels
<b>What are the names of the start and end of a river?</b>	Start – source. End – mouth.
<b>What three landforms are found in the upper course of a river?</b>	V-shaped valley, interlocking spurs and waterfalls.
<b>What four landforms are found in the lower course of a river?</b>	Ox-bow lake, floodplains, levees and deltas.
<b>What needs to happen for a waterfall to be created?</b>	A river needs to cross a band of soft rock after flowing over hard rock.
<b>What feature forms on the inside bend of a meander?</b>	Slip off slope.

<b>Name the waterfall in the River Tees.</b>	High Force.
<b>Around which town are there many meanders in the River Tees?</b>	Yarm.
<b>Why does the removal of vegetation increase the chances of flooding?</b>	Because less rainfall is intercepted before it hits the ground, meaning that it moves down towards rivers more quickly.
<b>What is a cloud burst?</b>	A sudden, heavy rainfall over a short period of time.
<b>What types of graph are used on a storm hydrograph? What do they show?</b>	Histogram for rainfall. Line graph for discharge.
<b>How is the normal discharge of river shown on a storm hydrograph?</b>	Base flow (dashed line).
<b>What does the recession limb of a storm hydrograph show?</b>	Falling flood water in a river.
<b>Name three hard engineering river defences.</b>	Embankments, dams, channelisation, flood walls, flood relief channels, storage areas.
<b>Name two soft engineering river defences.</b>	Warning systems, floodplain zoning, afforestation, washlands.
<b>When did the flood of River Wansbeck in Morpeth occur?</b>	6 <sup>th</sup> – 7 <sup>th</sup> September 2008.
<b>How many millimetres of rainfall was recorded between the 5<sup>th</sup> and 6<sup>th</sup> of September in the Wansbeck catchment?</b>	150 millimetres.
<b>How many residents were evacuated as a result of the Wansbeck flood?</b>	400.
<b>Overall how much did the new flood management scheme in Morpeth cost?</b>	£26 million.

## General skills

<b>Even distribution</b>	
<b>Uneven distribution</b>	
<b>Fluctuating</b>	Small increases and small decreases
<b>Plateau</b>	
<b>Correlation</b>	Relationship between two variables (shown on a scattergraph)
<b>Positive correlation</b>	Both variables increase (shown on a scattergraph)
<b>Negative correlation</b>	One variable increases whilst the other decreases (shown on a scattergraph)