

Year 9 exam information (2023):

You need to know:

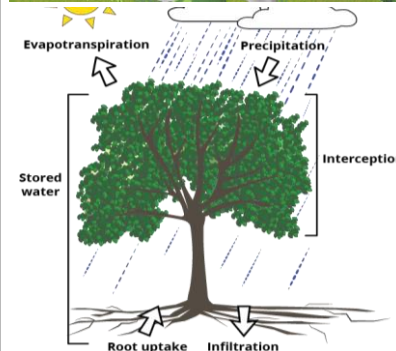
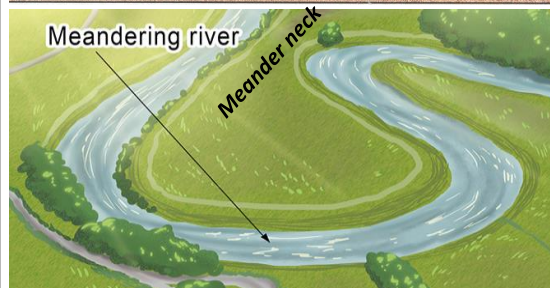
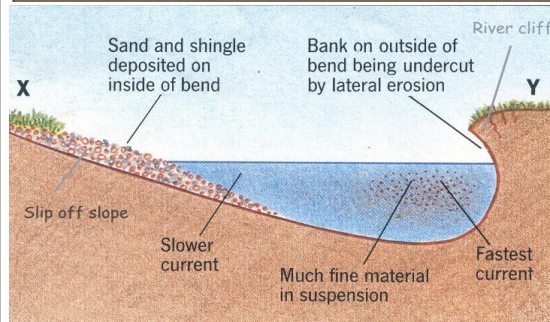
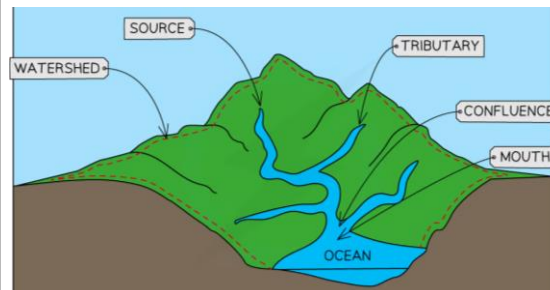
- Core knowledge (rivers and sustainable development)
- Rivers – drainage basins, processes, causes of flooding, landforms
- Sustainability – 3 pillars of sustainability, renewable vs non-renewable resource, homes, cities, food, waste & fairtrade – you need to justify the worst issue
- Year 7 content – desert plants, biome location, deforestation, tundra landscape
- Year 8 content – plate boundaries & features, development indicators
- Skills – grid references

Keywords:

Drainage basin	Erosion
Deforestation	Floods
Deposition	infiltration
Source	Mouth
Meander	social
Environmental	economic
Renewable	non-renewable
Energy	sustainability

Rivers

- Rivers occur within a drainage basin – the area of land drained by a river and joining streams
- Drainage basins include
 - Source – starting point of the river
 - Mouth – where the river meets the sea
 - Watershed – the outer boundary of the drainage basin
 - Confluence – the meeting point of 2 streams/ rivers
 - Tributaries – smaller streams/ rivers feeding larger ones
- Rivers change in characteristic as they flow through the upper, middle and lower course – they widen, deepen, speed up, and vertical erosion changes to lateral erosion before deposition dominates near the mouth
- Rivers carry out processes which are important for shaping the land
 - Erosion – wearing away of the river bed and banks (can be via hydraulic action, abrasion, attrition or solution)
 - Transportation – the movement of eroded material
 - Deposition – the dropping of sediment when the energy of the flow decreases
- Landforms created include:
 - Upper course – waterfalls, gorges, V-shaped valleys and interlocking spurs
 - Middle course – meanders and oxbow lakes
 - Lower course – floodplains, levees and estuaries
- Meanders change & develop over time – you get erosion on the outside bends (due to less friction in the deepest part causing a faster flow) and deposition on the inside bends (where the water is shallow, causing more friction so water loses energy), causing a meander loop to tighten over time. The neck of the meander will get narrower over time and may get eroded through during a flood to start oxbow lake formation.
- If a rivers level exceeds its banks (bankfull discharge), a flood occurs. It can be caused by physical (e.g. heavy rainfall, saturated ground, snow melt, impermeable rocks) and / or human (e.g. building on floodplains, urban impermeable surfaces, farming practices, deforestation) factors
- The more interception and less surface runoff there is, the reduced risk of flooding as it will mean that less water will reach the river & it will get there slowly – this is why trees help to lower flood risk



Sustainability:

- Sustainability is all about meeting the needs of the present, without harming the planet and limiting future generations from meeting their needs
- There are 3 pillars of sustainability – social, environmental and economic
- Renewable resources (e.g. solar, wind, hydro, geothermal) are sustainable as they won't run out so can be used again and again (and they don't generate emissions)
- As time goes on, we are trying to use less non-renewables like fossil fuels (coal, oil gas) as they are getting expensive & causing CO2 emissions, leading to climate change
- UK homes are generally not very sustainable as many are old and built before there were proper regulations in place, so they are not very well insulated, wasting heat – improvements like double glazing, more insulation, LED lighting and solar panels help
- Whole cities can be made to be sustainable like Masdar City or The Sustainable City in The United Arab Emirates – buildings were designed to remain cool to reduce air conditioning, car parks had solar panels over them, the streets were free of cars etc.

Sustainability (continued):

- Our food supply is mostly unsustainable due to the use of plastic packaging and the globalisation of food meaning we import lots of food from other countries, leading to high food miles and lots of fuel needed to transport the food, leading to CO2 emissions
- Food can be more sustainable by – organic farming (using no chemical pesticides or chemical fertilisers), only buying foods that are in season (when they are possible to grow here), reducing plastic packaging, buying 'wonky' fruit and vegetables, growing your own, and fairtrade
- Fairtrade aims to ensure farmers in LICs get a fair price for the goods they sell (guaranteed fair minimum price) and they also get the fairtrade premium as extra money to help support the community (e.g. by building schools or spending it on healthcare). Fairtrade farmers have to look after the environment too.
- Waste is a big issue. Lots of it is produced as many items become waste (broken, rotten, outdated, by-products, packaging etc), but it is not all dealt with sustainably. The main 3 ways we process waste are:
 - Landfill – burying rubbish in a large hole. It is easy to do, but people don't want to live near landfill, methane is given off as waste rots, plastics won't rot and will be there for 1000s of years and a toxic leachate can seep into the ground if they are not lined
 - Incineration – burning rubbish. It can be used to create energy, but leads to harmful emissions which can cause health issues and contribute to climate change.
 - Recycling – reprocessing items into new materials & products. It is less environmentally damaging as it means we don't have to keep finding new materials, but it does use energy, isn't always clear what is recyclable, isn't being done enough, and isn't as good as reusing or reducing the amount of waste.
- Plastics are a big issue – particularly for oceans, where 90% of marine rubbish is plastic. It just breaks into smaller microplastics and there are now over 5 trillion pieces in the ocean, even harming remote areas. Wildlife can consume the plastic and it is very damaging to marine ecosystems



Year 7/8 content - To make the exam more 'realistic' we have included a few questions linking back to your learning in year 7/8. When you do 2 year GCSE courses, you are examined at the end of the 2 years and could get tested on anything you learnt throughout the course. Therefore, revision of content from longer ago is important.

Rainforests

- They are found near the equator - equatorial climate (hot, wet, humid)
- The largest is the Amazon in South America
- They have a layered structure – forest floor, lower canopy, canopy and emergent. Each of these have different characteristics
- Animals and plants have to be well adapted to survive
 - E.g. trees have waxy leaves & drip tips to help the water quickly roll off the leaf to prevent it getting weighed down & damaged
 - E.g. tree frogs have suction cups on their feet which helps them to grip onto leaves and remain in the canopy
- Deforestation is threatening rainforests – the large-scale destruction of forest areas so the land can have new uses (e.g. for farming, roads, palm oil plantations, hydroelectric power, mining etc.)

Deserts

- Places which receive less than 250mm of rainfall per year
- You get hot deserts near the Tropic of Cancer & Tropic of Capricorn; cold deserts include the tundra found north of the arctic circle
- Hot deserts can reach 50°C in the day but can fall to below 0°C at night due to a lack of clouds – plants & animals have to adapt to the climate
 - E.g. plants have waxy leaves to prevent evaporation of moisture through the leaf, helping them to store more water inside whilst preventing water loss
- Cold deserts like the tundra are relatively treeless. They are cold all year, but in summer it can warm enough to melt the top layer of the permafrost, allowing small plants to grow, but for a short growing season. Trees can't properly root into the permafrost

Possible exam questions:

- Describe how river characteristics change in a drainage basin
- Define 'confluence' Define 'infiltration'
- Explain how the inside & outside meander bend are different
- Explain one human cause of flooding
- Explain how houses can be made more sustainable
- Outline one way that food supplies can be more sustainable
- Explain how fairtrade is socially sustainable
- Evaluate which sustainability issue poses the biggest threat
- State one social development indicator
- Describe where you find volcanoes & earthquakes
- Describe the difference between a constructive and destructive plate boundary
- Define 'megacity'
- Explain how species are adapted to the rainforest

Year 7/8 content

Hazards – 4 types of plate boundary:

- Constructive – 2 plates move apart, leading to earthquakes, volcanoes & volcanic islands
- Destructive – 2 plates move towards each other & the oceanic plate subducts below (is forced under) the continental plate. This causes earthquakes, volcanoes and tsunamis
- Conservative – 2 plates slide past each other, leading to violent earthquakes
- Collision – 2 continental plates move towards each other, which buckle and fold upwards to create fold mountains and earthquakes

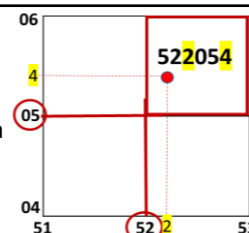
Development – is about the level of wealth of a country (HIC – High Income Country, NEE – Newly Emerging Economy, LIC – Low Income Country).

There are lots of ways to measure development – development indicators [some are economic e.g. employment rate, others are social e.g. Birth rate]

Urban environments – towns, cities & megacities. A megacity has 10 million people or more, and are increasingly found in LICs and NEEs

Map skills

You need to know how to do 4 and 6 figure grid references, and recognise a few map symbols



How should I revise?

- Learn core knowledge for rivers and sustainable development (there is a digital version on Google Classroom)
- Notes in your exercise book
- Practice answering exam questions (see box to the left)
- BBC bitesize – use the links to rivers, grid references, hazards, biomes, development and there are some parts about food & energy resources under 'environment, resources & conflict)

<https://www.bbc.co.uk/bitesize/subjects/zrw76sg>



SCAN ME

- Some people like to do revision mind maps