11.1 - Journey of Knowledge - Geography - AQA GCSE Geography - The Living World [1/3]

CONTEXT & INTRODUCTION TO UNIT

In this unit, you will explore two of the world's most fascinating environments: tropical rainforests and hot deserts. These places are known for their extreme climates — from the constant heat and heavy rainfall of the rainforest to the high temperatures and scarce rainfall of the desert. You will learn about the unique climates, landscapes, and ecosystems found in each, and how plants, animals, and people adapt to survive in such challenging conditions. We'll also look at the threats facing these environments, such as deforestation, desertification, and the impacts of climate change. This unit will help you understand how these ecosystems are connected to global geography, how they are being changed by both natural processes and human activity, and why it is so important to manage and protect them for the future.

Prior Knowledge: KS3 Year 7 Map Skills, Microclimates, Tourism / Year 8 Africa, Glacial Environments / Year 9 Resource Management, Middle East, Extreme Environments

THE BIGGER PICTURE

Personal development opportunities. Career links- Ecologist, Climatologist, Conservation Officer, Environmental Consultant, Botanist, Zoologist, Wildlife Biologist, GIS Specialist, Journalist

CORE KNOWLEDGE

Ecosystems

Ecosystems & Natural Systems

- **Ecosystem:** A community of living (biotic) organisms interacting with non-living (abiotic) elements such as soil, water, & climate.
- **Biotic components:** Plants, animals, fungi, microorganisms.
- **Abiotic components:** Climate, light, water, rocks, soil, temperature.
- Ecosystems can be **local** (e.g. pond) or **global biomes** (e.g. tropical rainforest).

UK Small-Scale Ecosystem

- **Example:** A UK lake ecosystem (e.g. Wicks lake, Formby Woods).
- **Producers:** Pondweed, algae (make their own food via photosynthesis).
- **Consumers:** Snails, insects, frogs, fish, birds.
- **Decomposers:** Bacteria and fungi break down dead material and recycle nutrients.
- **Nutrient cycle:** Nutrients are transferred through food chains & returned to the soil by decomposers.
- **Food chain & web:** Show energy transfer and dependency between species.

Ecosystem Balance & Disruption

- Ecosystems are **interdependent** — changes in one part affect the whole system.
- **Example:** Removing a predator may increase prey populations and reduce vegetation.
- **Human impacts:** Introducing pollution, deforestation, or draining water can disrupt nutrient cycles or food chains.
- **Disease Outbreak:** Squirrel pox disease wiped out many Red squirrels in Formby Woods.

Global Distribution of Biomes

- **Biomes** are large ecosystems defined by climate, vegetation, and animal life.
- **Hot Deserts:** Found 15–30° N & S of the Equator, around the **Tropics of Cancer & Capricorn**.
- **Tropical Rainforests:** Found near the **Equator**.
- Other biomes: Tundra, temperate forests, savannah grasslands, taiga.
- Distribution influenced by latitude, climate, altitude, and ocean currents.

KEY VOCABULARY

Tropical Rainforest	Hot Desert
Biome	Arid
Equator	Tropic of Cancer
Ecosystem	Tropic of Capricorn
Emergent layer	Desertification
Canopy	Climate
Understory	Arid soils
Forest floor	Soil erosion
Adaptation	Xerophyte
Latosol	Cactus
Nutrient cycle	Succulent
Leaching	Nocturnal
Buttress roots	Adaptation
Epiphyte	Nomadic herding
Deforestation	Irrigation
Biodiversity	Salinisation
Subsistence farming	Overgrazing
Commercial farming	Overcultivation
Logging	Soil degradation
Mineral extraction	Sustainable development
Road building	Water conservation
Hydroelectric power (HEP)	Drip irrigation
Ecotourism	Afforestation
Conservation	Appropriate technology
Sustainable management	
Selective logging	
Agroforestry	
Debt-for-nature swap	
Afforestation	

11.1 - Journey of Knowledge - Geography - AQA GCSE Geography - The Living World [2/3]

CORE KNOWLEDGE

Tropical Rainforest

Tropical Rainforest Characteristics

- **Climate:** Hot all year (~27°C) / Very high – between 2000-3000mm / 80% Humidity, daily rainfall
- **High biodiversity:** Many plant & animal species, rapid nutrient cycling.
- **Soils:** Latosols — nutrient-poor due to leaching but thin topsoil is fertile from decaying organic matter.
- **Vegetation layers:**
  - **Emergent:** Tallest trees (up to 50m+). Exposed to sunlight & wind
  - **Canopy**: Dense layer of trees (25–45m). Most biodiversity (birds, insects, monkeys)
  - **Under canopy:** Shady, limited light (2–15%). Large leaf plants to absorb sunlight
  - **Forest floor**: Dark, damp, rapid decomposition of leaf litter. Sometimes Floods. Poor, thin soil (latosol)

Interdependence in the Rainforest

- **Climate, water, soil, plants, animals and people are interdependent**/have a symbiotic relationship in tropical rainforests (they depend on each other).
- Warm, wet climate supports dense vegetation, which in turn supports animals.
- Trees return moisture to the atmosphere through transpiration, driving the water cycle.
- Nutrient cycling is rapid but fragile.
- Indigenous people use rainforest resources sustainably, but commercial activity disrupts balance.
- If climate, water, soils, plants, animals or people change, so will the tropical rainforest. **For example:** more people = more deforestation = more CO2 = global warming = species extinction

Adaptations in the Rainforest

- Adaptations help species compete for **light, food, and space**.
- **Plants:** Drip tips to shed water, buttress roots for support, thin bark, fast-growing species.
- **Animals:** Camouflage, nocturnal behaviour, strong limbs for climbing (e.g. monkeys), slow metabolism (e.g. sloths).

Biodiversity Issues

- **High biodiversity** is threatened by deforestation and climate change.
- Loss of species leads to **ecosystem instability** and affects global gene pools.
- Conservation is crucial for maintaining rainforest resilience.

Deforestation has economic and environmental impacts.

Deforestation Rates

- Around 10 million hectares of tropical forest are lost each year (FAO, 2020 estimate).This is roughly an area the size of Iceland every year.
- Highest rates occur in Brazil, Indonesia, DR Congo & Malaysia.
- Some areas show slowing rates due to conservation efforts (e.g. Brazil after 2004), but there have been recent increases in parts of Africa and Southeast Asia.
- **Malaysia & Southeast Asia rates** - Among the fastest deforestation rates globally due to palm oil plantations, logging, and mining. Malaysia lost about 30% of its rainforest cover since 1970.

Case Study: Malaysia *(Tropical Rainforest)*

- Malaysia is in southeast Asia.
- At 192,838 km², the Malaysian rainforest is the 24th largest in the world.

Causes of Deforestation

- **Agriculture (commercial farming)** – Malaysia is the second-largest producer of palm oil in the world.
- **Logging** – Hardwood (mahogany & teak) valued for furniture. Small trees used for pulp/charcoal.
- **Road building** – Increased accessibility encourages development e.g. in Sarawak.
- **Mineral extraction** – Bauxite mined in Peninsular Malaysia. Oil and Gas in Borneo.
- **Hydroelectric Power Project**– High rainfall creates ideal conditions for HEP e.g. Bakun Dam, Sarawak.
- **Population growth and settlement** – Trans-migration Policy – 15000 ha rainforest cleared.

Impacts of Deforestation:

- **Economic benefits:** Income from exports, job creation, Logging, farming (e.g. palm oil, cattle), mining, energy development, job creation.
- **Environmental Impacts:** Loss of biodiversity, soil erosion, air pollution, disruption of water and nutrient cycle, contribution to climate change.

Sustainable Rainforest Management

Value of rainforests:

- **Biodiversity hotspot**
- **Carbon storage (regulating climate)**
- **Water cycle regulation**
- **Medicinal plants**
- **Cultural and indigenous importance**

Sustainable strategies:

- **Selective Logging and Replanting** - Only fully grown trees are felled, reducing damage to surrounding forest. Logged areas are replanted with native species (e.g. rubber trees), ensuring regrowth.
- **Conservation and Education** - Areas like **Taman Negara National Park** are protected to preserve biodiversity. Education programs raise awareness of the rainforest's value and promote responsible land use.
- **Ecotourism** - Small-scale, low-impact tourism (e.g. guided rainforest treks) creates income while encouraging conservation. Involves local communities and discourages deforestation.
- **International Agreements** - Malaysia is part of **CITES**, which bans trade in endangered rainforest species.
- Agreements promote sustainable hardwood use and certification (e.g. FSC-labelled timber).
- **Debt Reduction (Debt-for-Nature Swaps)** - Malaysia has received financial support in exchange for preserving rainforest areas. - This helps reduce national debt while promoting environmental protection.

KEY VOCABULARY

Tropical Rainforest

Biome
Equator
Ecosystem
Emergent layer
Canopy
Understory
Forest floor
Adaptation
Latosol
Nutrient cycle
Leaching
Buttress roots
Epiphyte
Deforestation
Biodiversity
Subsistence farming
Commercial farming
Logging
Mineral extraction
Road building
Hydroelectric power (HEP)
Ecotourism
Conservation
Sustainable management
Selective logging
Agroforestry
Debt-for-nature swap
Afforestation

11.1 - Journey of Knowledge - Geography - AQA GCSE Geography - The Living World [3/3]

CORE KNOWLEDGE

Hot Deserts

Hot Desert Characteristics

- **Climate:** Very low rainfall (less than 250 mm per year), hot days (often over 40°C), cold nights.
- **Soils:** Sandy or stony, infertile, dry, often salty with little organic matter.
- **Vegetation:** Sparse, low-growing plants adapted to conserve water.
- **Location**
- Found around 30°N and 30°S (e.g. Sahara, Thar, Sonoran deserts).

Interdependence of climate, water, soils, plants, animals, and people:

- **Climate** affects water availability and soil moisture.
- **Water** scarcity limits plant growth, which in turn affects food availability for animals and people.
- **People** depend on natural resources but also contribute to degradation (e.g. overgrazing).
- Disruption to one component can impact the whole system.

Plant & Animal Adaptations

- **Plants:** Deep roots (e.g. acacia), water storage (succulents like cacti), Xerophytes, small/spiny leaves.
- Long roots go deep into the ground, spreading out to absorb more water.
- Some plants have no leaves or only small leaves that grow after it rains. The lack of leaves helps with water retention.
- A waxy coating on leaves and stems helps to reduce water loss. Spines or thorns on plants make it difficult for animals to eat them.
- **Animals:** Nocturnal behaviour, water conservation (e.g. camels storing fat in humps), light-coloured fur for heat reflection.
- Desert animals with highly evolved kidneys and other specialised organs adapt to minimise water loss.
- Some desert animals burrow underground for protection from extreme temperatures, predators and sunlight.
- Light-coloured fur or feathers reflect sunlight, so desert animals do not become too hot during the day.

Biodiversity issues

- Low but fragile biodiversity; species are highly specialised.
- Threats include climate change, overuse of resources, and land degradation.

Case Study: Thar Desert, India/Pakistan

Challenges & Opportunities
Opportunities:

- **Mineral extraction** (e.g. gypsum, feldspar, kaolin for industry).
- **Energy** (e.g. solar farms in Rajasthan, wind energy).
- **Farming** (e.g. commercial agriculture with irrigation from the Indira Gandhi Canal).
- **Tourism** (e.g. desert safaris, camel rides, Jaisalmer fort).

Challenges:

- **Extreme temperatures** (can exceed 50°C, health risks, limits working hours).
- **Water supply** (scarce and unreliable; groundwater and canal use under pressure).
- **Inaccessibility** (sand, poor roads, remote settlements make transport difficult).

Desertification and its management
Causes of desertification:

- **Climate change** (less rainfall, higher temperatures).
- **Population growth** (increases demand for food, fuel, water).
- **Removal of fuel wood** (leads to soil exposure and erosion).
- **Overgrazing** (animals eat vegetation faster than it can regrow).
- **Over-cultivation** (soil becomes infertile due to nutrient depletion).
- **Soil erosion** (wind and rain remove topsoil once vegetation is lost).

Strategies to reduce desertification:

- **Water and soil management** (e.g. stone bunds, contour ploughing, drip irrigation).
- **Tree planting** (e.g. Great Green Wall in Africa to bind the soil and provide shade).
- **Appropriate technology** (e.g. solar cookers to reduce reliance on firewood, low-cost drip irrigation systems).
- **Water conservation**: Using **drip irrigation** to reduce water waste on farms.
- **Afforestation**: Planting trees to prevent soil erosion & reduce desertification.
- **Solar power**: Using solar energy instead of fossil fuels to reduce carbon emissions.

KEY VOCABULARY

Hot Desert

Arid
Tropic of Cancer
Tropic of Capricorn
Desertification
Climate
Arid soils
Soil erosion
Xerophyte
Cactus
Succulent
Nocturnal
Adaptation
Nomadic herding
Irrigation
Salinisation
Overgrazing
Overcultivation
Soil degradation
Sustainable development
Water conservation
Drip irrigation
Afforestation
Appropriate technology

11.2 - Journey of Knowledge - AQA GCSE Geography – Urban Issues & Challenges [Rio] [1/3]

CONTEXT & INTRODUCTION TO UNIT

This unit introduces students to the human geography of urban areas, focusing on the opportunities and challenges of urban growth in low-income countries and newly emerging economies (LICs/NEEs), using Rio de Janeiro in Brazil as the case study. Students will explore the global pattern of urbanisation and the factors driving the growth of megacities. Through the case of Rio, they will examine how rapid urbanisation impacts social, economic, and environmental development. Students will investigate the causes and consequences of urban growth in Rio de Janeiro, including rural-to-urban migration and natural increase. They will study the city's urban structure and the contrast between the formal city and informal settlements (favelas). Key challenges—such as access to clean water, sanitation, health care, education, employment, and housing—will be analysed alongside environmental issues including waste disposal, air pollution, and traffic congestion. At the same time, the unit highlights the opportunities presented by urban growth, such as improved infrastructure, economic investment, and community-led development projects. Students will evaluate how Rio is responding to its urban challenges through strategies aimed at making the city more sustainable and inclusive, such as favela urbanisation projects, transport improvements, and environmental initiatives. Throughout the unit, students will apply their understanding of urban geography to this real-world context. They will also develop key geographical skills such as interpreting data, analysing photographs and satellite imagery, and making informed geographical decisions—all of which are essential for success in the AQA GCSE assessment.

KS3 Year 7 – *Map Skills, Local Area study, Liverpool.* ***Year 8*** *– Development in Africa, Asia, Climate Change.* ***Year 9*** *– Resource Management*

THE BIGGER PICTURE

Personal development opportunities.
Career links- Urban Planner, Civil Engineer, Transport Planner, Environmental Consultant, Housing Officer, Town/City Councillor, Regeneration Officer, Surveyor, GIS Specialist, Sustainability Officer, Architect, Construction Manager, Public Health Analyst, Economic Development Officer

CORE KNOWLEDGE

A growing percentage of the world's population lives in urban areas.

1. Urbanisation and Global Trends

- **Urbanisation** is the **increasing percentage** of a country's population living in towns and cities.
- Today, over **55%** of the global population lives in urban areas (as of 2023), and this is expected to rise.

2. Global Pattern of Urban Change:

- **High-Income Countries (HICs)**: Most urbanisation occurred **during the 19th and 20th centuries** (e.g. UK, USA). Today, urban growth is **slow or static**.
- **LICs and NEEs**: Experiencing **rapid urban growth**, especially in **Africa**, **South Asia**, and **Latin America**.

Urban Growth Trends:

  - **HICs** - Slower, some counter-urbanisation
  - NEEs - Rapid urban growth
  - LICs - Fastest growth, often unplanned

3. Factors Affecting the Rate of Urbanisation

Migration (Push–Pull Theory):

- **Push factors** (reasons people leave rural areas):
  - Poverty
  - Lack of services (healthcare, education)
  - Natural disasters
  - Unemployment
- **Pull factors** (reasons people are attracted to cities):
  - Job opportunities
  - Better living standards
  - Access to services and infrastructure

Natural Increase: High birth rates and **lower death rates** in cities.

- Young migrants = more babies = population grows quickly.

4. Megacities

- A **megacity** is an urban area with a **population over 10 million**.
- There are over **30 megacities** worldwide, mostly in **Asia** and **South America**.
- Examples: Tokyo, Mumbai, Lagos, Rio de Janeiro.

KEY VOCABULARY

- Urbanisation
- Megacity
- Rural-urban migration
- Natural increase
- Push factor
- Pull factor
- Favela
- Informal economy
- Urban sprawl
- Social challenges
- Economic challenges
- Environmental challenges
- Urban planning
- Favela Bairro Project
- Site and service scheme
- Self-help scheme
- Sustainability
- Urban regeneration
- Urban deprivation
- Traffic congestion
- Quality of life
- Infrastructure
- Urban greening

11.2 - Journey of Knowledge - AQA GCSE Geography – Urban Issues & Challenges [Rio] [2/3]

Case Study: Rio de Janeiro, Brazil – Urban Growth in an NEE

1. Location & Importance

Location: Southeastern coast of Brazil, facing the South Atlantic Ocean.
Population: Approx. **13.5 million** in the metropolitan area (2024).
National Importance:
- Second largest city in Brazil after São Paulo.
- Home to Brazil's **main oil, gas and mining companies**.
- 5% of Brazil's GDP comes from Rio.

International Importance:
- Major port, international airport (Galeão).
- Hosts global events: **2016 Olympics**, **2014 World Cup**, **Carnival** (attracts over **2 million visitors/year**).
- Headquarters for major international companies and **UNESCO World Heritage Site**.

2. Causes of Urban Growth

Natural Increase - High birth rate among young migrant population. Natural population growth adds thousands annually.
Migration - 65% of Rio's growth is due to migration.
- **Rural-to-urban migration** from poorer regions like the **northeast** (e.g. Bahia), where drought, poverty, and lack of jobs are common.
- **International migration**: From Bolivia, Argentina, and some African countries.
- Attraction to Rio's job market, better services, and perceived higher quality of life.

3. Opportunities Created by Urban Growth

Social Opportunities

- **Healthcare**: More access in urban areas.
  - Yet, some areas like **West Zone (Campo Grande)** have better healthcare than **North Zone favelas**.
  - Mobile health clinics now serve hard-to-reach favelas.

- **Education**:
  - Literacy rate: approx. **95%** (vs. 86% nationally).
  - Government encourages education with school grants and **'Schools of Tomorrow'** initiative.

- **Water and energy**:
  - **95%** of the city's population has access to mains water (2022).
  - Electricity connections extended to over **60 favelas** through government schemes.

Economic Opportunities

- Rio contributes **5% of Brazil's GDP**.
- Large employment sector:
  - **Tourism**, **construction**, **retail**, **finance**, **oil refining**.
  - **Port activities** and **steel manufacturing** are major employers.
- **Informal sector**: 1 in 3 jobs are informal (e.g. street vending, recycling).

4. Challenges Created by Urban Growth

Managing Urban Growth - Favelas

- Over **1,000 favelas**, housing **around 1.4 million people** (23% of Rio's population).
- Rocinha is the largest favela:
  - **~75,000 residents** officially, up to **180,000 unofficially**.
  - **Challenges:** overcrowding, informal construction, landslides (e.g. **2010 – 224 deaths**).

Access to Services

- **Water**: 12% of the population lacks reliable access.
- **Sanitation**: 50% of homes in favelas are not connected to sewage systems.
- **Healthcare**: Infant mortality: **14 per 1,000 live births** in favelas (vs. 6 city average).
- **Education**: School attendance drops sharply after age 14 in poorer areas. Youths often drop out to earn money.

Crime and Unemployment

- **Youth unemployment:** approx. **25%**. Informal employment lacks job security, legal protection, or taxes.
- **Crime:**
  - High rates of drug trafficking, gang violence, and armed police operations.
  - Some favelas are controlled by drug gangs.
  - **Pacification (UPP)** programmes have been launched but are controversial.

Environmental Issues

- **Waste**: Many favelas lack formal rubbish collection; waste dumped in rivers and streets.
- **Water pollution**: **Guanabara Bay**: only **40%** of sewage is treated. 200 tonnes of raw sewage enter the bay daily.
- **Air pollution**: Vehicles cause over **5,000 deaths/year** due to respiratory illness.
- **Traffic congestion**: City centre roads often at **traffic capacity for 8+ hours/day**. Steep hills and poor public transport links contribute.

KEY VOCABULARY

- Urbanisation
- Megacity
- Rural-urban migration
- Natural increase
- Push factor
- Pull factor
- Favela
- Informal economy
- Urban sprawl
- Social challenges
- Economic challenges
- Environmental challenges
- Urban planning
- Favela Bairro Project
- Site and service scheme
- Self-help scheme
- Sustainability
- Urban regeneration
- Urban deprivation
- Traffic congestion
- Quality of life
- Infrastructure
- Urban greening

11.2 - Journey of Knowledge - AQA GCSE Geography – Urban Issues & Challenges [Rio] [3/3]

CORE KNOWLEDGE

An example of how urban planning is improving the quality of life for the urban poor

Case Study: Favela Bairro Project

Context

•**Location**: Rio de Janeiro, Brazil — over **1,000 favelas** (informal squatter settlements), housing around **23%** of the city's population.
•**Goal**: Integrate favelas into the formal city by upgrading infrastructure and improving quality of life — **without relocating residents**.

Main Features:

•Legal ownership of land.
•Paved roads and drainage systems.
•Access to clean water and electricity.
•Health centres and schools built.
•Hillsides reinforced to prevent landslides.
•Training schemes and community centres.

Successes

•**Population served**: over **250,000 residents**.
•**Property values** in upgraded favelas rose by up to **80%**.
•**Increased access** to:
  - Clean water (coverage in upgraded favelas rose to **>90%**).
  - Sewerage systems (**~80%** coverage).
  - Electricity connections for nearly all homes in the selected areas.

•**Education**: school attendance rates improved; youth literacy improved by over **10%** in some areas.

Limitations:

Cost: Over **$1 billion** needed to scale up; funding limits slowed progress.
Incomplete Coverage: Only about **20%** of favelas were reached; thousands still lack basic services.
Crime and Violence: Drug gangs and militias continue to control some favelas, making improvements difficult in areas like **Complexo do Alemão**.
Environmental Impact: Illegal dumping and poor sewage management still affect some upgraded areas.

Evaluation of Project

Positives: Improved **standard of living**. Empowered communities and encouraged legal ownership. Safer housing and improved access to public services.
Negatives: Not sustainable without long-term funding and government support. Some **communities excluded** from benefits. Crime remains a **major barrier** to long-term development.

KEY VOCABULARY

- Urbanisation
- Megacity
- Rural-urban migration
- Natural increase
- Push factor
- Pull factor
- Favela
- Informal economy
- Urban sprawl
- Social challenges
- Economic challenges
- Environmental challenges
- Urban planning
- Favela Bairro Project
- Site and service scheme
- Self-help scheme
- Sustainability
- Urban regeneration
- Urban deprivation
- Traffic congestion
- Quality of life
- Infrastructure
- Urban greening

11.3 - Journey of Knowledge - Geography - AQA GCSE Geography – Coastal Landscapes in the UK [1/3]

CONTEXT & INTRODUCTION TO UNIT

This unit introduces students to the physical and human geography of coastal landscapes in the UK. Coastlines are dynamic environments, shaped by physical processes such as erosion, weathering, mass movement, transportation, and deposition. Students will study how these processes interact to create distinctive landforms including headlands, bays, wave-cut platforms, and spits. The unit also explores the ways in which human activities interact with the coast. As coastal areas are home to large populations and are popular for tourism and economic activity, understanding the pressures they face is vital. Students will examine coastal management strategies—both hard and soft engineering—and evaluate their effectiveness in protecting people, property, and the environment. By engaging with case studies such as the Holderness Coast and the Dorset Coast, students will apply their understanding to real-world examples. They will also develop geographical skills, including interpreting OS maps, analysing photographs, and making informed decisions—key components of the AQA GCSE assessment.

THE BIGGER PICTURE

Personal development opportunities.
Career links- Flood and coastal risk management officer, coastal engineer, planning officer.

Prior knowledge: River erosional, transportation and depositional features, OS map skills, Tourism and Coastal Management.

CORE KNOWLEDGE

The coast is shaped by a number of physical processes

A. Wave types and characteristics:

- **Destructive Waves** – High- energy waves which remove material from beaches by dragging it into the sea. The backwash is stronger than the swash.
- **Constructive Waves** – Waves which add material to beaches by carrying sediment onto the beach when the swash is stronger than backwash.

B. Coastal Processes:

- **Erosion**:
  - **Hydraulic Power** –where the power of seawater crashing against rocks forces air into the cracks in the rocks or land causing them to break apart.
  - **Attrition** – A type of erosion caused by rocks and boulders colliding and breaking each other apart into smaller pieces.
  - **Abrasion/Corrasion** – A type of erosion caused by sediment, flung by breaking waves, wearing away the cliff face.
- **Transportation - Longshore Drift** – The process by which material is transported along a beach through a combination of swash and backwash.
- **Deposition** – the process where the sea drops material it's carrying, leading to the formation of various landforms

- **Weathering:**
  - **Freeze-Thaw Weathering (mechanical)** - occurs when water continually seeps into cracks, freezes and expands, eventually widening the cracks and breaking the rock apart.
  - **Chemical Weathering** - The break-down of rocks caused by a chemical change within the rock (e.g. seawater dissolving the minerals in the rocks).
  - **Biological weathering** – The breakdown of rocks through the actions of living organisms. Examples include plant roots growing into rocks, animals burrowing, and lichens and mosses growing on surfaces.

- **Mass Movement:**
  - **Sliding** – When loose surface material becomes so saturated after a period of heavy rain that the extra weight causes the material to become unstable and move rapidly downhill.
  - **Slumping** – A rapid mass movement of rocks and debris downslope.
  - **Rock Falls** - where fragments of rock fall from the cliff face due to gravity and freeze-thaw weathering and then breaks down into smaller pieces.

KEY VOCABULARY

- Abrasion
- Attrition
- Backwash
- Bar
- Beach Nourishment
- Cliffs
- Erosion
- Estuary
- Fetch
- Freeze-thaw weathering
- Groyne
- Headland
- Hydraulic Action
- Lagoon
- Longshore Drift
- Managed Retreat
- Notch
- Prevailing Wind
- Rock Armour
- Seas Defences
- Sea Wall
- Sediment
- Spit
- Crack, cave, Arch, Stack, Stump
- Swash
- Constructive Waves
- Destructive Waves
- Wave Cut Platform
- Weathering
- Biological Weathering
- Mechanical Weathering

11.3 - Journey of Knowledge - Geography - AQA GCSE Geography – Coastal Landscapes in the UK [2/3]

Distinctive coastal landforms are the result of rock type, structure and physical processes

C. How geological structure and rock type influence coastal forms:

- **Harder rocks (e.g., limestone, granite):** These rocks are more resistant to erosion, weathering, and abrasion, leading to the formation of cliffs, arches, and stacks. They tend to project into the sea as headlands due to their slower erosion rate.
- **Softer rocks (e.g., clay, sand):** These rocks are more susceptible to erosion and weathering, leading to the formation of bays, beaches, and low-lying coastal areas.
- **Discordant Coastlines:** When different rock types are arranged perpendicular to the coastline, the softer rocks erode faster, creating bays, while the harder rocks form headlands.

D. Characteristics and formation of landforms resulting from erosion – headlands and bays, cliffs and wave cut platforms, caves, arches and stacks:

- **Headlands and Bays –** Discordant coastlines formed of different types of rock, erode at different speeds. The least resistant rock is eroded fastest, forming a bay. The more resistant rock is eroded slowly, forming headlands on either side of the bay.
- ***Example – Dorset Coast - Headlands and Bays*** *- Formed along a discordant coastline, where resistant rock forms headlands (Ballard Point and Durlston Head) and softer rock erodes to form bays (Studland Bay and Swanage Bay).*
- **Crack, cave, arch, stack and stump** – like 'Old Harry' on the Dorset 'Jurassic' Coast, South England.
  - **Crack -** Waves hit the cliff and water gets into small cracks in the rock. The crack gets bigger over time due to hydraulic action and abrasion.
  - **Cave -** The crack becomes wider and deeper due to further erosion. This forms a cave.
  - **Arch -** The cave is eroded all the way through the headland, making an arch.
  - **Stack -** The top of the arch collapses due to freeze-thaw weathering. This leaves a tall column of rock called a stack.
  - **Stump -** Waves keep hitting the stack and it collapses leaving a stump.
- ***Example - Dorset Coast - Old Harry Rocks*** *- A cave and a stack (Old Harry Rock) has been eroded from the chalk headland.*
- **Wave-Cut Platforms** – Waves erode the base of cliffs creating a wave-cut notch. The rock above will eventually collapse and the cliff will retreat, leaving a large, flat horizontal platform rock in front of the cliff.

E. Characteristics and formation of landforms resulting from deposition – beaches, sand dunes, spits and bars:

- **Beaches** – The zone of deposited material that extends from the low water line to the limit of storm waves. The beach can be divided into the foreshore and the backshore.
- **Spits** – A narrow stretch of sand deposited by the sea, joined to the land at one end, usually forming where the coastline abruptly changes direction.
- **Bars** – A strip of deposited material parallel to the coast. Formed when a spit grows across a bay, eventually enclosing the bay to create a lagoon. Offshore bars can develop because of breaking waves.
- ***Example – Dorset Coast - Chesil Beach*** *- A 30km tombolo (a type of bar which connects an island to the mainland) which encloses Fleet Lagoon.*

KEY VOCABULARY

- Abrasion
- Attrition
- Backwash
- Bar
- Beach Nourishment
- Cliffs
- Erosion
- Estuary
- Fetch
- Freeze-thaw weathering
- Groyne
- Headland
- Hydraulic Action
- Lagoon
- Longshore Drift
- Managed Retreat
- Notch
- Prevailing Wind
- Rock Armour
- Seas Defences
- Sea Wall
- Sediment
- Spit
- Crack, cave, Arch, Stack, Stump
- Swash
- Constructive Waves
- Destructive Waves
- Wave Cut Platform
- Weathering
- Biological Weathering
- Mechanical Weathering

11.3 - Journey of Knowledge - Geography - AQA GCSE Geography – Coastal Landscapes in the UK [3/3]

Different management strategies can be used to protect coastlines from the effects of physical processes:

F. The costs and benefits of the following management strategies:

- **Hard Engineering** – sea walls, rock armour, gabions and groynes
  - **Sea Walls** – A wall-like structure built at the edge of the land along the coastline to protect the land from the erosive force of the sea. **Pros:** Coastal erosion and flooding is prevented. **Cons:** They are expensive to build and maintain. Can cause greater erosion downdrift due to waves reflecting off seawall.
  - **Rock Armour** – Huge boulders of resistant rock, such as granite, placed in front of landforms to absorb and reflect wave energy. **Pros:** Material is deposited. **Cons:** They are expensive to build.
  - **Gabions** – Wire cages filled with boulders used as coastal defences. **Pros:** They are cheaper and easier than many other management strategies. **Cons:** The wire cages corrode over time. Can be ugly structures.
  - **Groynes** – Large wooden barriers built out into the sea to catch sand and material being moved along the beach by the sea via longshore drift. **Pros:** Material transported by longshore drift is trapped. **Cons:** They can be costly and cause greater erosion downdrift

- **Soft Engineering** – beach nourishment and reprofiling, dune regeneration
  - **Beach Nourishment and Reprofiling** – Sand and shingle are dredged from offshore and added to the beach to make it larger and more effective at absorbing wave energy. **Pros:** This creates wider beaches which reduces erosion and flooding. **Cons:** Constant maintenance is needed, especially after extreme weather/high tides.
  - **Dune Regeneration** – The process which aims to strengthen sand dunes and protect them from excessive coastal retreat. Marram grass is planted to stabilise the sand. **Pros:** They provide a barrier between land and sea. **Cons:** This is often limited to small areas as nourishment is expensive.

- **Managed Retreat** – coastal realignment.
  - **Managed Retreat** – The controlled and intentional removal of defences to allow areas of land to flood and erode naturally. This process often creates wetland areas or saltmarshes. **Pros:** This is a cheap an easy option. **Cons:**. Land and buildings will be lost – compensation cost could be high.

G. An example of a coastal management scheme in the UK – Holderness Coast, east coast of England:

The Reasons for Management

- The Holderness Coast is the fastest eroding coastline in Europe. It is made of soft boulder clay, eroding at an average rate of 1.5-2.5 metres a year. The Golden Sands Chalet Park cliffs, near Withernsea, have retreated by more than 122 metres in 25 years.
- 26 villages mentioned in the Domesday Book have been lost to the sea along the Holderness Coast.
- Prevailing winds and longshore drift in the North Sea erode and transport material downdrift, exposing cliffs to further erosion.
- To protect settlements (e.g. Withernsea with over 6000 inhabitants) and infrastructure (e.g. B1242 road near Mappleton).

The Management Strategy

1. Withernsea is a popular tourist town. Over the last 100 years, various sea defences have been built at Withernsea. The sea defences include a sea wall (costing over £6.3 million) and rock armour to protect the promenade. Wooden groynes over one century old were also replaced.
2. In 1991, a £2 million scheme at Mappleton placed granite blocks (rock amour) at the cliffs' base to reduce erosion. Two rock groynes were also built on the beach to trap sediment. The groynes create a more expansive beach which prevents the waves from reaching the cliff.

The Resulting Effects and Conflicts

3. Groynes built to trap sediment on Withernsea's beach also protect the cliffs from erosion. The effectiveness of the groynes leads to a lack of sediment depositing at the Golden Sands Chalet Park (south of Withernsea) and the loss of land.
4. Mappleton village and the B1242 have both been protected. However, the area south of the sea defences has faced increased erosion (from an average of 1.7m a year to 3.3m a year). Farmland to the south of Mappleton has been lost, including the complete loss of Cowden Farm and Grange Farm.

KEY VOCABULARY

- Abrasion
- Attrition
- Backwash
- Bar
- Beach Nourishment
- Cliffs
- Erosion
- Estuary
- Fetch
- Freeze-thaw weathering
- Groyne
- Headland
- Hydraulic Action
- Lagoon
- Longshore Drift
- Managed Retreat
- Notch
- Prevailing Wind
- Rock Armour
- Seas Defences
- Sea Wall
- Sediment
- Spit
- Crack, cave, Arch, Stack, Stump
- Swash
- Constructive Waves
- Destructive Waves
- Wave Cut Platform
- Weathering
- Biological Weathering
- Mechanical Weathering

Journey of Knowledge - Geography - AQA GCSE Geography – The Challenge of Resource Management [1/3]

CONTEXT & INTRODUCTION TO UNIT

This unit introduces students to the geographical challenges of managing essential resources—food, water, and energy—which are vital for human well-being and economic development. Students will explore the global inequalities in resource distribution and the impact this has on levels of development. The unit examines how demand for resources in the UK is changing, and the implications for sustainability. Through optional topics such as food, water, or energy, students will investigate the causes and consequences of resource insecurity and explore strategies to manage resources more sustainably, including both large-scale infrastructure projects and local, sustainable solutions. Real-world case studies, such as large-scale water transfers in the UK or renewable energy development in LICs/NEEs, enable students to apply their understanding to contemporary issues. Throughout the unit, students will develop geographical skills, including data interpretation, decision-making, and evaluating sustainability, which are core components of the AQA GCSE assessment.

Prior Knowledge: Water cycle, sustainability, some examples of renewable and non-renewable resources, Map skills, Graph skills, how income can limit access to resources, resource management.

THE BIGGER PICTURE

Personal development opportunities.
Career links- GIS technician, environmental technician, wildlife specialist, water resources engineer, environmental consultant, Environmental Lawyer

CORE KNOWLEDGE

Food, Water, and Energy Are Fundamental to Human Development

Resource Management - The control and monitoring of resources so they don't become depleted or exhausted.
Natural Resources: Food, water, and energy are essential resources required for human development and quality of life.
Interdependence: These resources are interconnected; for example, growing food requires water and energy.
Resources are essential for people's survival and development:

- **Food**: needed for a healthy, productive population.
- **Water**: essential for drinking, hygiene, agriculture, and industry.
- **Energy**: powers homes, industry, transport, and technology.

1. The significance of food, water and energy to economic and social well being

Key for human wellbeing. All lead to social and economic benefits which all increase the standard of living

Food:

- Undernourishment affects productivity, child development, and life expectancy (e.g. More than 1 billion people are malnourished & 2 billion are undernourished (poor diet))
- Over-nutrition in some HICs causes health problems (e.g. obesity).

Water:

- Used for survival, washing, food production, industry
- We need clean safe water otherwise we can get stuck in a cycle of poverty
- Access to clean water reduces disease and improves life expectancy.
- Essential for agriculture and industry → supports economic growth.

Energy:

- Reliable energy enables industrialisation, economic development, and domestic comfort.
- Energy poverty limits education, health, and employment in many LICs.

2. An overview of global inequalities in the supply and consumption of resources

Food

- Recommended average daily calorie intake: 2500 for men. 2000 for women.
- UK consume 3200 calories per person per day
- Somalia 1580 calories per person per day
- Areas of greatest population growth have highest levels of undernourishment
- Demand depends on changing diets and increasing population
- Supply depends on climate, soil and level of technology

Water

- Fresh water is unequally distributed
- Water footprint is the amount of water used per day: Global average is 1240 l per day / Bangladesh is 896 l per day / USA is 2483 l per day
- Water scarcity can be physical or economic
- 1 in 5 (more than 1.2 billion people) live in areas of water scarcity
- 1 in 3 (2.4 billion people) have no access to clean drinking water

Energy

- Richest billion people use 50% of the energy
- Poorest billion people use 4% of the energy
- Countries import and export energy
- Some countries do not have their own sources of energy

- **LICs** often have abundant natural resources but lack technology or infrastructure to exploit them.
- **HICs** consume far more resources per capita due to wealth and lifestyle.
- Resource availability is **uneven**:
  - **Water scarcity** in parts of Africa, Middle East.
  - **Energy consumption** is highest in North America and Europe.
  - **Food insecurity** persists in parts of sub-Saharan Africa and South Asia.
- **Climate, wealth, conflict, and governance** are key factors causing inequalities.

KEY VOCABULARY

Resource Management

- **Resource**
- **Surplus**
- **Deficit**
- **Inequality**
- **Sustainability**
- **Global distribution**
- **Consumption**
- **Over-abstraction**
- **Food miles**
- **Carbon footprint**
- **Organic produce**
- **Seasonal food**
- **Water stress**
- **Grey water**
- **Water transfer**
- **Renewable resource**
- **Non-renewable resource**
- **Sustainable management**

Food

- **Agribusiness**
- **Intensive farming**
- **Irrigation**
- **Food insecurity**
- **Famine**
- **Malnutrition**
- **Undernourishment**
- **Food security**
- **Food supply**
- **Green Revolution**
- **Hydroponics**
- **Aeroponics**

Journey of Knowledge - Geography - AQA GCSE Geography – The Challenge of Resource Management [2/3]

CORE KNOWLEDGE

The changing demand and provision of resources in the UK create opportunities and challenges

An overview of resources in relation to the UK

FOOD

Growing Demand for High-Value Food Exports from LICs
- UK consumers demand **exotic and out-of-season food** (e.g., mangos, green beans).
- Many products are imported from **LICs** (e.g., Kenya, Peru).
- Benefits LICs (employment, income), but can:
  - Reduce food availability for locals.
  - Strain water and land resources.
  - Increase food insecurity in exporting countries.

All-Year Demand for Seasonal and Organic Produce
- Foods once seasonal are now **available year-round** due to global trade.
- **Organic food** (grown without chemicals) is increasingly popular in the UK.
- Organic food often costs more but is seen as healthier and more sustainable.

Carbon Footprints and Food Miles
- **Food miles** = distance food travels from producer to consumer.
- Importing food increases the **carbon footprint** due to:
  - Air freight, refrigeration, and transport emissions.
- Push for **local sourcing**:
  - Reduces emissions.
  - Supports local farmers and rural economies.

Agribusiness in the UK
- Agribusiness = large-scale, industrialised farming.
- Features:
  - High-tech machinery.
  - Chemical fertilisers and pesticides.
  - Fewer, larger farms.
- Increases **efficiency and productivity**, but:
  - Can reduce **biodiversity**.
  - Leads to loss of traditional farming methods.
  - May increase environmental degradation.

WATER

Changing Demand for Water
- UK demand is rising due to:
  - Population growth.
  - Lifestyle changes (e.g., more showers, appliances).
  - Increased use in industry and leisure.

Water Quality and Pollution Management
- UK water sources are affected by: Agricultural runoff (nitrates, pesticides) & Discharge from industry and untreated sewage.
- **Water treatment** and **regulation** (e.g., by the Environment Agency) help manage pollution.

Areas of Water Deficit and Surplus
- **Water surplus**: North and west UK (e.g., Wales, Lake District).
- **Water deficit**: South and east UK (e.g., London, East Anglia).
- Mismatch between supply and demand causes pressure on water systems.

Water Transfer Schemes
- Moving water from surplus to deficit areas (e.g., Kielder Transfer Scheme).
- Benefits: balances supply.
- Challenges: Costly / Environmental impacts (disruption of ecosystems) / Local opposition.

ENERGY

Changing UK Energy Mix
- UK used to rely heavily on **coal**.
- Now moving towards: **Gas** (domestic and imported), **Nuclear & Renewables** (wind, solar, HEP, biomass).
- **Coal use has declined** due to climate goals and mine closures.

Decline in Domestic Fossil Fuel Supplies
- Many **coal mines have closed** (uneconomic, polluting).
- **North Sea oil and gas** reserves are declining and expensive to extract.
- UK now **imports over 50%** of its energy.

Economic and Environmental Issues of Energy Sources
Fossil Fuels: Pros: reliable, established infrastructure. **Cons:** CO_2 emissions, pollution, finite supply, costly to clean up.
Renewables: Pros: sustainable, lower emissions, long-term cost-effective. **Cons:** expensive to set up, visual/noise pollution, weather dependent.
Nuclear: Pros: low emissions, high output. **Cons:** expensive, radioactive waste, long build time.

KEY VOCABULARY

Resource Management
- Resource
- Surplus
- Deficit
- Inequality
- Sustainability
- Global distribution
- Consumption
- Over-abstraction
- Food miles
- Carbon footprint
- Organic produce
- Seasonal food
- Water stress
- Grey water
- Water transfer
- Renewable resource
- Non-renewable resource
- Sustainable management

Food
- Agribusiness
- Intensive farming
- Irrigation
- Food insecurity
- Famine
- Malnutrition
- Undernourishment
- Food security
- Food supply
- Green Revolution
- Hydroponics
- Aeroponics

Journey of Knowledge - Geography - AQA GCSE Geography – The Challenge of Resource Management [3/3]

CORE KNOWLEDGE

Food

Demand for food resources is rising globally but supply can be insecure, which may lead to conflict

- **Global food demand is increasing** due to:
  - **Population growth** (expected to reach 9+ billion by 2050).
  - **Economic development**: As countries develop, people eat more **calories**, **processed foods**, & **meat**.
- This puts pressure on **global food supply systems**.

Areas of Surplus and Deficit

- **Food surplus (security)** = supply > demand.
  - Found mostly in **HICs**: e.g., North America, Europe, Australia.
- **Food deficit (insecurity)** = demand > supply.
  - Found mostly in **LICs and conflict-affected regions**: e.g., sub-Saharan Africa, parts of South Asia.

Global Patterns:

- **Calorie intake**:
  - HICs: often >3,000 kcal/day (e.g., USA: ~3,600 kcal).
  - LICs: often <2,500 kcal/day (e.g., Chad: ~2,000 kcal).
- **Food supply** differs due to access to:
  - Fertile land, technology, infrastructure, and investment.

Factors Increasing Food Consumption

1. **Population Growth** – more people = more mouths to feed.
2. **Economic Development** – rising incomes = demand for varied, high-calorie diets (e.g., fast food, dairy, meat).
3. **Urbanisation** – changes how food is produced, distributed, and consumed.

Factors Affecting Food Supply

1. **Climate** – droughts, floods, temperature extremes can ruin crops.
2. **Technology** – lack of machinery, fertilisers, and infrastructure limits productivity.
3. **Pests and Disease** – affect crops and livestock, especially where pest control is poor.
4. **Water Stress** – water shortages hinder irrigation and crop yields.
5. **Conflict** – war disrupts farming and food transport.
6. **Poverty** – people can't afford seeds, tools, or even to buy food.

Impacts of Food Insecurity

1. **Famine**: Long-term, extreme food shortage. Example: South Sudan (2021) – millions at risk.
2. **Undernutrition**: Not enough nutrients = poor health, reduced productivity. Affects children and vulnerable populations.
3. **Soil Erosion**: Over-farming and overgrazing degrade land. Leads to desertification and less food production.
4. **Rising Prices**: Low supply = higher prices, making food unaffordable.
5. **Social Unrest**: Food shortages can lead to protests, riots, and instability. Example: Arab Spring (2010–11) partly triggered by food price spikes.

Different strategies can be used to increase food supply.

Overview of Strategies

1. **Irrigation** – Artificial watering of land for agriculture (e.g., canal systems, sprinklers).
2. **Aeroponics & Hydroponics**: **Aeroponics**: growing plants in air/mist without soil. **Hydroponics**: growing plants in nutrient-rich water. Pros: saves space/water; year-round production.
3. **New Green Revolution**: High-yield crops, chemical fertilisers, and irrigation. Now includes **GM crops** and **sustainable techniques**.
4. **Biotechnology**: Genetically modified (GM) crops resist pests, drought, etc. Improves yields but raises **ethical and environmental concerns**.
5. **Appropriate Technology**: Small-scale, low-cost, sustainable, and suited to local needs. Examples: treadle pumps, solar-powered irrigation.

Example: Large-Scale Agricultural Development - Case Study: Almería, Spain – Greenhouse Farming

Location and Context - Almería is in **southeastern Spain**, a **semi-arid region** that gets **less than 250 mm of rainfall per year**. The region has over **30,000 hectares** of greenhouses, producing **fruit and vegetables** for export across **Europe**.

Advantages

1. **Year-Round Production and Export -** enabling crops to be grown **365 days a year**. Supplies **50% of Europe's out-of-season fruit and vegetables**.
2. **Economic Growth and Employment -** contributes around **€1.5 billion annually** to the local economy. Provides approximately **100,000 jobs.**
3. **Use of Recycled Water and Solar Energy - Drip irrigation systems** reduce water waste. The region benefits from **high solar radiation**, reducing the need for artificial lighting.

Disadvantages

1. **Plastic Waste and Visual Pollution -** Plastic waste is often **dumped in local riverbeds** or the sea, causing **long-term pollution**.
2. **Intensive Water Use in a Dry Region -** Water is extracted from **aquifers**, causing **over-abstraction** and a **falling water table**. Reliance on **desalination plants**, which are expensive and energy-intensive.
3. **Reliance on Migrant Labour** Many workers are from **North and West Africa**, often employed **illegally** or informally. **Low wages**, **long hours**, and **poor working conditions** are widespread.

Sustainable Food Supply

Strategies for Sustainable Food

1. **Organic Farming** – No chemicals; supports biodiversity and soil health.
2. **Permaculture** – Farming with natural systems (e.g., crop rotation, natural pest control).
3. **Urban Farming Initiatives** – Growing food in cities (e.g., rooftop gardens, vertical farming).
4. **Sustainable Fish and Meat** – Reduces overfishing and land degradation.
5. **Seasonal Food Consumption** – Eating what's in season locally = fewer food miles.
6. **Reducing Food Waste**: 1/3 of all food globally is wasted. Solutions: better storage, public awareness, redistributing surplus.

Example: Local Scheme in LIC/NEE – Tanzania: Goat Aid

Location and Background - Tanzania is an **LIC in East Africa** where many people rely on **subsistence farming**. Goat Aid was a scheme introduced by **Farm Africa**, a UK-based charity. Each goat cost approximately **£25–£30**.

Advantages

1. **Improved Nutrition -** One goat could produce up to **3 litres of milk per day**. Provides a **regular source of protein and calcium**, helping reduce **malnutrition** among children.
2. **Extra Income -** Surplus milk is sold at local markets. Profits can be used to buy **school supplies, clothing, or farming tools**.
3. **Improved Agriculture -** Goats produce **manure**, which improves **soil fertility** and crop yields.

Disadvantages

1. **Overgrazing -** Goats may eat young shoots and strip bark, leading to **land degradation** and **soil erosion** in areas where vegetation is scarce.
2. **Hidden Costs -** Families need to pay for: **Vet bills** & vaccinations / **Animal feed** during dry seasons
3. **Climate Risk -** Droughts or disease outbreaks could **kill livestock**, wiping out a family's investment.

KEY VOCABULARY

Resource Management

- **Resource**
- **Surplus**
- **Deficit**
- **Inequality**
- **Sustainability**
- **Global distribution**
- **Consumption**
- **Over-abstraction**
- **Food miles**
- **Carbon footprint**
- **Organic produce**
- **Seasonal food**
- **Water stress**
- **Grey water**
- **Water transfer**
- **Renewable resource**
- **Non-renewable resource**
- **Sustainable management**

Food

- **Agribusiness**
- **Intensive farming**
- **Irrigation**
- **Food insecurity**
- **Famine**
- **Malnutrition**
- **Undernourishment**
- **Food security**
- **Food supply**
- **Green Revolution**
- **Hydroponics**
- **Aeroponics**

Journey of Knowledge - Geography - AQA GCSE Geography – Issue Evaluation [Pre-release]

CONTEXT & INTRODUCTION TO UNIT

This unit introduces pupils to the geographical challenges of managing essential resources—food, water, and energy—which are vital for human well-being and economic development. pupils will explore the global inequalities in resource distribution and the impact this has on levels of development. The unit examines how demand for resources in the UK is changing, and the implications for sustainability. Through optional topics such as food, water, or energy, pupils will investigate the causes and consequences of resource insecurity and explore strategies to manage resources more sustainably, including both large-scale infrastructure projects and local, sustainable solutions. Real-world case studies, such as large-scale water transfers in the UK or renewable energy development in LICs/NEEs, enable pupils to apply their understanding to contemporary issues. Throughout the unit, pupils will develop geographical skills, including data interpretation, decision-making, and evaluating sustainability, which are core components of the AQA GCSE assessment.

THE BIGGER PICTURE

Personal development opportunities.
Career links-

Prior Knowledge:

This section contributes a critical thinking and problem-solving element to the assessment structure. The assessment will provide pupils with the opportunity to demonstrate geographical skills and applied knowledge and understanding by looking at a particular issue(s) derived from the specification using secondary sources.

The issue(s) will arise from any aspect of the compulsory sections of the subject content but may extend beyond it using resources in relation to specific unseen contexts. Pupils develop knowledge and understanding of physical geography themes in unit 3.1 and human geography themes in unit 3.2. This section is synoptic, and the assessment will require pupils to use their learning of more than one of the themes in units 3.1 and 3.2 so that they can analyse a geographical issue at a range of scales, consider and select a possible option in relation to the issue(s) and justify their decision.

A resource booklet will be available twelve weeks before the date of the exam so that pupils can work through the resources, enabling them to become familiar with the material. pupils will not be allowed to take the original resource booklet into the examination room but will be issued with a clean copy in the exam. Sources could include maps at different scales, diagrams, graphs, statistics, photographs, satellite images, sketches, extracts from published materials, and quotes from different interest groups.

Assessment will consist of a series of questions related to a contemporary geographical issue(s), leading to a more extended piece of writing which will involve an evaluative judgement. Pupils will apply knowledge and understanding to interpret, analyse and evaluate the information and issue(s) in the pre-release resources booklet and the question paper. They will also use geographical skills to set the issue(s) in context and to examine conflicting viewpoints about the issue(s).

Pupils will develop a critical perspective on the issue(s) studied, consider the points of view of the stakeholders involved, make an appraisal of the advantages and disadvantages, and evaluate the alternatives.

The exam will also require pupils to consider physical and human interrelationships and to make reasoned justifications for proposed solutions in terms of their likely impact on both people and the physical environment.

KEY VOCABULARY

TO BE UPDATED EACH YEAR – Around March