8.01: Population

Population distribution

1	**population density**	(n) the number of people who live within one square kilometre (km²)
2	**population distribution**	(n) how people are spread out over a particular area
3	**densely populated**	(n) many people per km²
4	**sparsely populated**	(n) few people per km²

Population structure

1	**population structure**	(n) the number/proportion of people in each age range, for each gender
2	**population pyramid**	(n) a graphical representation of a country's population structure, showing the distribution of different age groups and sexes
3	**working-age population**	(n) the group of people typically aged 15–64 who are considered old enough to work and support the economy
4	**young dependents**	(n) children and young people aged 0–14 who are usually not working and depend on others for care and support
5	**elderly dependents**	(n) older adults, usually aged 65 and over, who are often retired and may rely on others or the government for financial and healthcare support

Population change

1	**birth rate**	(n) the number of live births per 1,000 people in a population per year
2	**death rate**	(n) the number of deaths per 1,000 people in a population per year
3	**natural increase**	(n) the difference between the birth rate and death rate
4	**population explosion**	(n) the rapid increase in the world's population since the 1950s
5	**overpopulation**	(n) when the number of people in a region exceeds the capacity of that region's resources to support them

Managing population

1	**ageing population**	(n) a population with a high and increasing proportion of people aged 65 and over, often due to low birth rates and longer life expectancy
2	**youthful population**	(n) a population with a high proportion of young people (typically under the age of 15), often found in countries with high birth rates and lower life expectancy

Migration

1	**voluntary migration**	(n) when people choose to move to another place, often for reasons such as better job opportunities, education or lifestyle
2	**forced migration**	(n) when people are made to move due to conflict, natural disasters, persecution or other dangers beyond their control
3	**international migration**	(n) when people move from one country to another
4	**internal migration**	(n) when people move within the same country, e.g. from rural areas to cities
5	**push factor**	(n) factor that makes people want to leave an area
6	**pull factor**	(n) factor that makes people want to move to an area
7	**source country**	(n) the home country of a migrant
8	**host country**	(n) the destination country for a migrant

8.01: Population

Factors influencing population distribution		
1	**physical**	1. relief of the land 2. availability of natural resources 3. climate 4. fertility of soil 5. access to fresh water
2	**human**	1. transport network 2. job opportunities 3. investment in basic and wider services

Factors affecting birth and death rates		
1	**birth rate**	1. cost of childcare 2. access to contraception 3. children seen as an economic asset 4. average age of marriage
2	**death rate**	1. access to safe drinking water 2. access to food
3	**both**	1. access to healthcare 2. infant mortality rate 3. access to education 4. war

Population structure and development		
1	**developing countries**	1. high birth rates, so a large young dependent population 2. a lower life expectancy, so a small elderly dependent population
2	**developed countries**	1. a declining birth rate, so a small young dependent population 2. a rising life expectancy, so a large elderly dependent population

Ageing population		
1	**Advantages**	1. the grey pound 2. family support with childcare 3. jobs in health and social care
2	**Disadvantages**	1. pressure on public services, including healthcare 2. strain on housing supply 3. increased tax revenue required for pensions
3	**Management strategies**	1. increasing the retirement age 2. increasing tax for the working-age population 3. access to free or funded childcare

Youthful population		
1	**Advantages**	1. large future workforce 2. increased tax revenue in the future 3. future business development
2	**Disadvantages**	1. strain on natural resources 2. overpopulation 3. education requirements
3	**Management strategies**	1. investing in healthcare 2. family planning 3. investment in education 4. improving women's rights

Factors affecting migration

Push factors	Pull factors
war and conflict	peace (no war)
low wages	higher wages
education difficult to access	good education system
droughts and water scarcity	better access to healthcare
gender inequality	good job opportunities

8.02: Coasts

Wave features

1	**swash**	(n) the movement of a wave up the beach. The direction is dependent upon the wind direction.
2	**backwash**	(n) the movement of water down a beach. This is caused by gravity and happens at 90 degrees to the shore.
3	**constructive wave**	(n) waves that have a strong swash and a weak backwash. Deposition is the dominant process.
4	**destructive wave**	(n) waves that have a weak swash and a strong backwash. Erosion is the dominant process.
5	**fetch**	(n) the distance a wave has travelled
6	**prevailing wind**	(n) the direction that the wind usually comes from in a particular area over a long period of time

Weathering and erosion

1	**hydraulic action**	(n) the erosion caused by the force of the water hitting the rocks, which traps and compresses air in the cracks and causes the cracks to weaken and break
2	**abrasion**	(n) the erosion caused when rocks and sediment carried by waves (or a river) are thrown against a cliff or riverbank
3	**attrition**	(n) the erosion caused when rocks and sediment carried by waves (or a river) hit each other and cause each other to break into smaller pieces
4	**weathering**	(n) the slow breakdown of rocks while they are in place

Geology

1	**geology**	(n) the scientific study of the Earth, including its structure, materials (such as rocks and minerals) and the processes that act upon it
2	**igneous rock**	(n) rocks formed from the cooling and crystallisation of molten rock. Examples include basalt and granite.
3	**metamorphic rock**	(n) rocks formed when very high temperature and pressure cause existing rocks to change. Examples include slate and marble.
4	**sedimentary rock**	(n) rocks formed when sediments of rock are transported, deposited, compacted and cemented together in layers. Examples include chalk, clay and limestone.

Coastal processes

1	**transportation**	(n) the movement of sediment
2	**deposition**	(n) when waves drop the sediment they are transporting, either due to a loss of energy or change in the direction of the coastline
3	**longshore drift**	(n) the process by which sediment (such as sand and pebbles) is transported along a coastline by the action of waves. It creates beaches.

Headlands and bays

1	**resistant**	(aj) does not easily erode or wear away
2	**headland**	(n) a piece of land that sticks out into the sea and is usually made of hard, resistant rock
3	**bay**	(n) a curved or indented area of the coastline where the land curves inward

Alternating hard and soft rock → destructive waves → hydraulic action → soft rock less resistant → erodes quickly → hard rock more resistant → erodes slowly → soft rock retreats → bay forms → hard rock remains → headland forms

Caves, arches, stacks and stumps

1	**cave**	(n) a hollow or opening in a cliff face, usually at the base, formed when waves erode a weakness in the rock, such as a fault or crack
2	**arch**	(n) a natural bridge of rock with an opening underneath, formed when a cave is eroded all the way through a headland.
3	**stack**	(n) a tall, isolated pillar of rock that is left standing in the sea after the roof of an arch collapses
4	**stump**	(n) the remains of a collapsed stack, which has been eroded by waves down to a small, flat rock just above or below sea level

Weakness or crack in headland → destructive waves → hydraulic action and abrasion → cave formed → headland erodes through → arch formed → unsupported roof collapses → vertical stack left → stack collapses leaving a stump

8.02: Coasts

Beaches and longshore drift

1	**sand**	(n) loose material made up of fine rock particles, usually smaller than 2 mm in diameter
2	**shingle**	(n) loose, rounded pebbles and small stones found on beaches, usually between 2 mm and 200 mm in size
3	**sediment**	(n) solid material that is moved and deposited in a new location
4	**beach**	(n) a landform made of loose material, such as sand, pebbles or shingle, that lies along the edge of a sea, ocean or lake
5	**longshore drift**	(n) the process by which sediment (such as sand and pebbles) is transported along a coastline by the action of waves. It creates beaches.

Direction of prevailing wind at an angle → swash happens at an angle → transports material up the beach → backwash takes material down the beach at 90 degrees → due to the force of gravity → process repeats → sediment moves across the beach → zigzag pattern

Coastal management

1	**soft engineering**	(n) adaptations to work with nature **beach nourishment –** Sand and shingle from elsewhere are added to the beach. **managed retreat -** Engineers do nothing, people are moved and the coast is left to erode and flood naturally.
2	**hard engineering**	(n) human-made structures that help to deal with coastal erosion **seawalls –** concrete walls that reflect the waves' energy back out to sea **groynes –** wooden posts that trap sediment and interrupt longshore drift

Other threats to the coast

1	**plastic pollution**	(n) when plastic waste ends up in the environment, especially in the sea
2	**sewage pollution**	(n) when untreated or poorly treated wastewater (including human waste) is released into rivers or the sea
3	**oil spill**	(n) when oil accidentally leaks into the sea, usually from a ship or drilling platform
4	**sea level rise**	(n) the increase in the average level of the world's oceans
5	**sustainability**	(n) meeting the needs of the present without compromising the ability of future generations to meet their own needs

Coastal erosion case study: Happisburgh, Norfolk coast

Background: Norfolk coast in between Cromer and Sea Palling.
A small village with a population of approx. 1400 people.

Vulnerability: soft boulder clay, long fetch, longshore drift, limited sea defences

Impacts	Management strategies
homes destroyed or had to be knocked down	1950s: groynes and revetments
roads lost to the sea	
car parks relocated	2000s: rock armour
homes valued at £1 on Beach road	
farmland lost: 1 field per year	2007 onwards: managed retreat
businesses lost, e.g. caravan parks	