

My Revision Notes: Tomorrow's Geography for Edexcel GCSE Specification A

Unit 1 Geographical Skills and Challenges

Chapter 1 Basic Skills

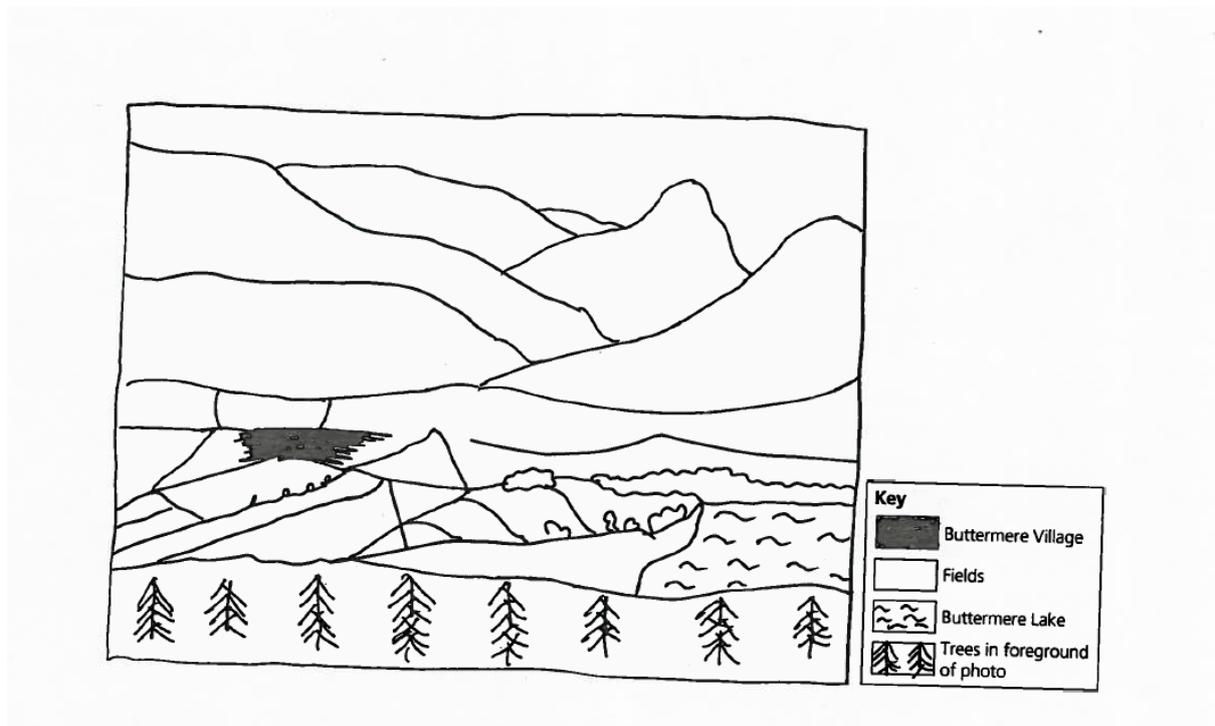
Page 1

Check your understanding

- 1 There are a number of possible responses such as: fields, houses, vegetation.
- 2 There are a number of possible responses such as: parking, National Trust, the farm name.

Page 2

Check your understanding



Page 3

Check your understanding

- 1 Aerial
- 2 The village is linear. The buildings are in a line along the roads.
- 3 The Post Office, church (place of worship), public house.

Exam practice

There is a village in the centre of the photograph with the runways of an airport to the north. The village is surrounded by fields growing crops. There are a number of roads with a main road running to the north of the village.

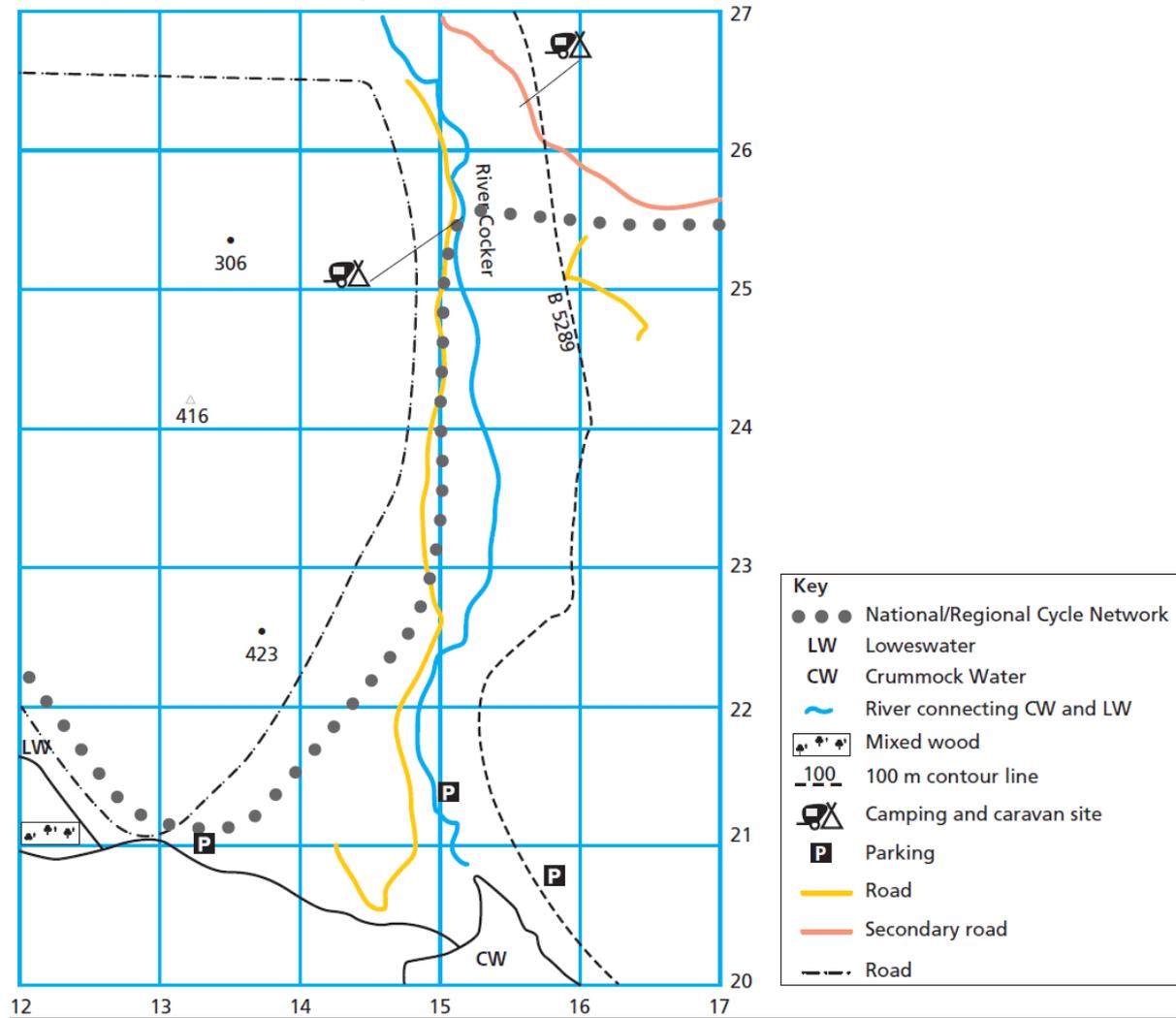
Chapter 2 Cartographic Skills**Page 5****Check your understanding**

The continent with the least doctors per person is Africa. India has 9–10 doctors per 100,000 people. Countries such as the USA have many doctors available with 350–610 doctors per 100,000 people.

Exam practice

Most of the countries shown in Figure 1 and Figure 2 which have a high life expectancy also have many doctors per person. This is true of the countries in Europe. However, there are some anomalies such as Russia which has 350–610 doctors per 100,000 people but has a low life expectancy. Countries in South America have a large number of people per doctor and a long life expectancy.

Check your understanding



Page 8

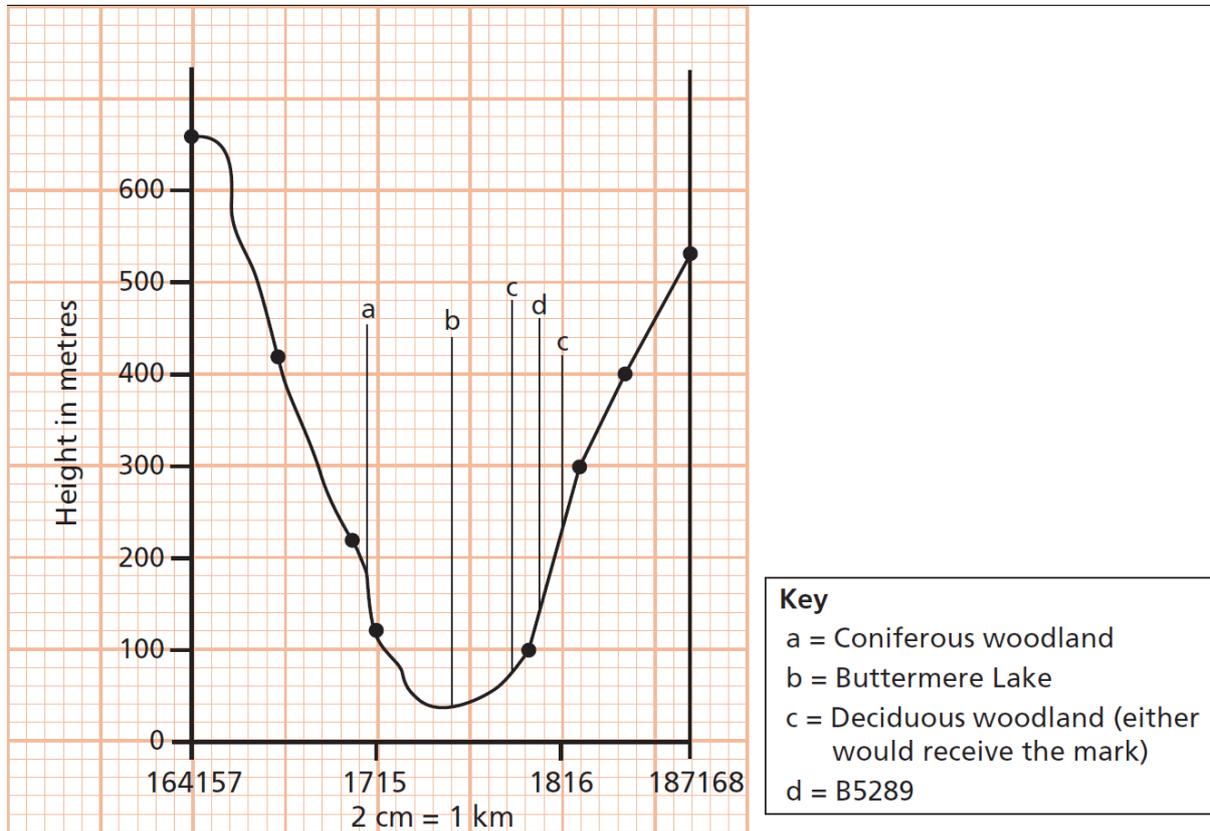
Check your understanding

13.5 km

Page 9

Check your understanding

1 & 2



3 The cross-section goes across the valley which has Lake Buttermere in it. The sides of the valley are steep rising to 641 metres to the south west from about 80 metres in 1 km. The land use is woodland and fields.

Page 10

Check your understanding

Both deciduous and coniferous woodland are on the map. There are large areas of coniferous woodland to the north east and south west of the map. There is an area of deciduous woodland on the north east-facing hillside between the lakes Buttermere and Crummock Water. There is an area of mixed woodland around the base of Scale Hill grid square 1521.

Page 11

Check your understanding

Dispersed

Exam practice

It is on an area of land between lakes Buttermere and Crummock Water. It is on the south west-facing slope above the floodplain. It is sheltered from the north wind at a height of

approximately 60 metres.

Page 12

Check your understanding (1)

Answers must be from the tourist information section of the map key:

many parking areas such as 158207

camp site – 185155

caravan and camp site – 154263

viewpoint – 113156

walk/trail – 112153

Check your understanding (2)

1 A = Crummock Water

B = Bleaberry Tarn

2 Height of the hill at point C = 641m

Page 13

Exam practice

a) Tourist information features

Walk/trail – 183255



Parking – 181255



b) General features

National Trust always open – 148171



Coniferous woodland – 1824



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Chapter 3 Graphical Skills

Page 16

Check your understanding

Countries such as Ethiopia which is a LIC has many people employed in primary industry and few employed in secondary and tertiary industry. An HIC such as the UK has only 1 per cent of people employed in primary industry and the majority of the people are employed in tertiary industry.

Page 17

Check your understanding

Please refer to the pyramid diagrams on page 17 of the Revision Guide.

- Women live longer than men: square on top right of HIC population pyramid
- A narrow base shows a low birth rate: square on bottom left of HIC population pyramid
- Wide bands at the top show a low death rate: square on top left of HIC population pyramid
- There are fewer baby girls than boys: square on bottom right of HIC population pyramid
- Few older people indicate a high death rate: square on top left of LIC population pyramid
- A wide base shows a large number of children: square on bottom right of LIC population pyramid
- There are more elderly women than men: square on top right of LIC population pyramid

Exam practice

The majority of LICs have low carbon emissions per person. Countries which are HICs and MICs have much higher carbon emissions per person, for example, the United States with 19 tonnes of CO₂ emitted per person. An anomaly is Sweden which is a HIC but has low carbon emissions of 10 tonnes of CO₂ per person.

Page 18

Check your understanding

1 It is continuous data because it is for a sequence of years.

2 Brazil has an almost even percentage in each of the sectors of industry. The UK has the majority of its population employed in tertiary industry at 75 per cent and a very small percentage employed in primary industry.

Page 19

Exam practice

They show the spread of something over an area and therefore show location as well as amount and show data at a glance. They show a range of data, not a particular amount. They are time consuming to construct.

Page 20

Check your understanding

1

Type of display technique	
Topological	b
Choropleth	c
Scatter graph	d
Dispersion	a

2 A topological diagram is not drawn to scale but shows the correct direction. The scatter graph is for two variables. The choropleth map is a map with located information. The dispersion graph shows a spread of data.

Chapter 4 Geographical Enquiry and ICT Skills

Page 21

Check your understanding

1 The River Lee

2 Oxford, Reading, London

3 Oxford

Page 22

Check your understanding

1 Most people walked past the count at the Royal Station. Least people walked over Eton Bridge. There were 65 males counted outside the castle.

2 A lot of people travel by train to Windsor and visit the castle.

3 The busiest parts of Windsor are by the castle and the Royal Station. Eton Bridge is not a congested area of Windsor.

Exam practice

1 A bar graph

2 The data is discrete so could be displayed in separate bars. The bars would show exact amounts.

Chapter 5 Geographical Information System (GIS) Skills

Page 24

Check your understanding

1 GIS uses a map as a base and layers of other information is put on top.

2 The police – they use it for crime statistics, layering different types of crime.
Supermarkets – they use GIS to locate customers to deliver orders.

3 Layering is the way that GIS uses maps as layers on top of each other to build up a picture of information about an area.

4 GIS is used for example by the ambulance service to locate victims and to send the closest ambulance to them.

5 GIS can save time using tracing paper to overlay information. It is also a much neater representation of the work.

6 You can input information or retrieve information that the site will then put into layers for you.

7 Answers will vary depending on the student.

Exam practice

Advantages of GIS

- A lot of information can be seen on one map.
- Information can be linked together easily to form patterns that can be analysed.
- GIS is available on iPhones and other types of mobile phone.
- GIS is of great benefit to many public services such as the Police and utilities.
- GPS has made travelling between places much easier.

Disadvantages of GIS

- The information can become difficult to see if too much is put on to one map.
- A computer or other ICT equipment is needed as the maps are digital.
- The equipment is expensive to buy and keep up to date.
- A certain amount of training is needed to use the more sophisticated systems.

Chapter 6 Challenges for the planet

Page 25

Exam practice

Temperatures have risen steadily since 8000BC although occasionally there has been a decrease such as the colder spell between 6900 and 3800BC. The temperatures have risen steadily since 1990AD and are now higher than they have ever been before.

Page 27

Check your understanding

The land in the photos is being used to grow rice and to rear cattle. Both of these activities produce methane gas which causes climate change.

Page 28

Check your understanding

For example, crop yields: India – 50 per cent decrease in land available for crops; Tanzania – farmers will lose almost a third of their maize crop due to longer periods of drought.

Exam practice

In India, there has been a 50 per cent decrease in land available to grow crops on. This

means that there will be less food available for the population. In Antarctica 90 per cent of the glaciers are retreating. This means that there will be a rise in sea levels. Coral reefs such as the Great Barrier Reef are dying, meaning that there will be a loss of fish species.

Page 29

Exam practice

Schools are having campaigns to switch off lights and use less electricity. They are also using solar panels. Local councils are putting solar panels on their public buildings such as swimming pools. They are also giving grants to householders to insulate their roofs.

Page 30

Check your understanding

Students will have a number of different ideas, for example, 'trees are being cut down in the Amazon but replanted in the UK'.

Page 31

Exam practice

Sustainable development is development which meets the needs of the present without compromising the ability of future generations to meet their own needs.

Page 34

Check your understanding (1)

Many companies are now sending information via the internet rather than by post. This cuts down on the use of paper which is made from trees which take in CO₂ and emit oxygen.

Check your understanding (2)

This is the use of buses and trains rather than private vehicles as a means of transport.

Page 35

Check your understanding (1)

Congestion charging: this is when motorists have to pay to travel into the centre of large urban areas during periods of heaviest use.

Park and ride schemes: these allow shoppers to park their cars in large designated parking areas on the edge of the urban area and catch a bus into the town centre.

Road lanes: only cars with at least two passengers are allowed to use them.

Designated cycle and walking paths within the urban area: Milton Keynes is one of the best served urban areas in the UK with 273 km of cycle paths.

Check your understanding (2)

Students will come up with a number of different ideas, for example:

Cambridge park and ride scheme

There are 4,500 parking spaces and a cost of £2.20 for a return ticket to the city centre.

The congestion charge in London

There is a charge of £8 to enter the central area of London between 7:00 am and 6:00 pm, Monday to Friday.

Exam practice

London introduced the congestion charge in 2003 and at that point in time it cost £5 to enter

the zone. It is based on a system of cameras that photograph and then register your car licence plate number in a database. These cameras are located at all entry points into the London congestion charge zone and within the zone itself and actually photograph both the front and rear plates on entry and exit of the zones.

In Cambridge there is a Park and Ride scheme. There are 4,500 parking spaces available around the city. Double-decker buses carrying up to 70 passengers leave the parks every 10 minutes during the day from Monday to Saturday.

Page 36

Exam practice

River Tapajos in Brazil has been contaminated with mercury. This is poisonous to the ecosystem in the river and the local people who drink the water. Crocodiles in Indonesia are on the brink of extinction due to the dumping of mineral waste in the river.

Page 37

Check your understanding

Students will come up with a number of different ideas, for example, Cloud Forest in Costa Rica has developed tourist facilities to manage the forest.

Unit 2 The Natural Environment

Chapter 7 Coastal Landscapes

Page 38

Exam practice

Constructive waves – strong swash, small wave.

Destructive waves – strong backwash, large wave.

Page 39

Check your understanding (1)

Corrasion (abrasion) – sand and pebbles carried in waves are thrown against the cliff face.

Corrosion (solution) – chemicals in sea water dissolve certain rock types, such as chalk.

Hydraulic action – the compression of air in cracks puts pressure on the rock and causes pieces of the rock to break off.

Check your understanding (2)

Slumping is a large piece of land which moves suddenly. Soil creep is small pieces of soil moving almost continually. Slumping is usually associated with clay cliffs and soil creep is usually associated with chalk.

Exam practice (1)

Water gets into a crack in a rock and freezes. The water expands when frozen and causes the rock to break up. The crack then becomes bigger.

Exam practice (2)

Soil creep is the slowest downhill movement. Gravity pulls water in the soil downhill. Soil

particles move with the water. Heavy rainfall causes faster downhill movement. The slope appears to have ripples. The ripples are known as terracettes.

Page 40

Exam practice

The sea erodes the bottom of the cliff using hydraulic action forming a notch. The cliff above the notch forms an overhang which will be pulled down by gravity when it becomes too heavy to be supported. The cliff which is remaining becomes a wave-cut platform.

Page 41

Check your understanding

In the answer below, text in red is sequence explanation and purple text is process explanation.

If the coast is made up of rock types with different resistances such as clay and chalk, the rocks will recede at different rates. This will cause the formation of a headland and a bay. The sea will erode the rocks using corrosion, **the wearing away of the cliffs with pebbles in the sea.** The resistant rock will form the headland and the less resistant rock will form the bays.

Page 42

Check your understanding

Longshore drift (LSD) will deposit material in estuaries causing them to silt up if not moved by humans. LSD can also remove sand from beaches.

Page 43

Exam practice

Since 1995, 25 properties in Happisburgh have been lost to the sea. The lives of the villagers are totally dominated by their struggle against the sea. The Tower at Walton on the Naze could soon be lost to the sea if the cliff continues to erode at its present rate of 1.5 metres a year. The area around the Tower is used for recreational purposes and is not deemed worthy of coastal protection.

Page 44

Check your understanding

Floods can be predicted but cannot really be prevented because defences are built for the flood normally experienced and not the exceptional flood which occurs once in a hundred years.

Page 46

Exam practice

1 Disadvantages: regular maintenance is required; can make the beach inaccessible for tourists

Advantages: effective for many years; absorbs wave energy.

2 Groynes stop the process of longshore drift from removing the sand on the beach. The beach will then take the power out of the waves and defend the coastline.

Page 47

Check your understanding (1)

Hard engineering requires the construction of defences whereas soft engineering techniques work with the environment and do not usually require engineering works.

Check your understanding (2)

Information such as:

1977 – Groynes were built to stop longshore drift movement from south to north.

1998 – 300 tonnes of Leicester granite was placed around the Tower breakwater.

Exam practice

The coast at Walton is being defended due to longshore drift and the rock type. Groynes were built in 1977 to stop longshore drift movement from south to north. In 1998, 300 tonnes of Leicester granite was placed around the Tower breakwater. This was to protect the weak rock in the cliffs, London clay.

Chapter 8 River Landscapes

Page 48

Check your understanding

Hydraulic action – this is the pressure of water against the banks and bed of the river. It also includes the compression of air in cracks: as the water gets into cracks in the rock, it compresses the air in the cracks; this puts even more pressure on the cracks and pieces of rock may break off.

Corrasion – particles being carried by the river are thrown against the river banks.

Corrosion (solution) – this is a chemical reaction between certain rock types and the river water.

Exam practice

1 The boundary of a river basin.

2 Seed is dropped in a crack, soil is trapped around it. The seed germinates and puts out roots which break up the crack/rock. The rock falls apart.

Page 49

Check your understanding

This happens when the bank slips into the river. This is common when the river passes through areas of clay. Dry weather makes the clay contract and crack. When it rains, water gets into the cracks and is absorbed making the rock heavy. The soil becomes saturated. The rock is weakened and slips into the river due to the pull of gravity. It has slipped on the slip plane of saturated rock.

Exam practice

Soil creep is the slowest downhill movement. Gravity pulls water in the soil downhill. Soil particles move with the water. Heavy rainfall causes faster downhill movement. The slope appears to have ripples. The ripples are known as terracettes.

Page 51

Exam practice

There is deep water on the outside of the meander bend. This means there is less friction, therefore the water travels more quickly and is more likely to erode the bed and banks forming a river cliff.

There is shallow water on the inside of the meander bend. This causes more friction, therefore the water travels more slowly and is more likely to deposit sediment. Over time the neck of the meander bend gets smaller until the river breaks through at time of flood, forming an ox-bow lake.

Page 52

Check your understanding (1)

It is humans who remove the vegetation but the process this stops, which is interception, is a physical process.

Check your understanding (2)

Urbanisation – with the building of towns the ground is covered in tarmac and concrete, which cannot soak up the rainwater so it goes straight to drains and rivers. This can cause flooding.

Deforestation – the removal of trees from areas means that less interception takes place and there is more surface run-off and floods.

Page 53

Check your understanding

Write points for the effects on people in one colour and points for the effects on the environment in another colour. For example:

Bulgaria 2006 – 2 million people were affected by the flood and 20 were killed. Large areas of farmland were destroyed.

Mexico 2007 – 2.1 million people were affected by the flood. Seventy per cent of the state was under water and all crops were destroyed.

Exam practice

Bulgaria in 2006 – 2 million people were affected by the flood as their homes were destroyed. Large areas of farmland were destroyed leaving food shortages.

Mexico in 2007 – 2.1 million people were affected by the flood. Seventy per cent of the state was under water and all crops were destroyed leaving the population short of food.

Page 54

Check your understanding

Floods can be predicted but cannot really be prevented because defences are built for the flood normally experienced and not the exceptional flood which occurs once in a hundred years.

Page 56

Check your understanding (1)

Hard engineering requires the construction of defences whereas soft engineering techniques work with the environment and do not usually require engineering works.

Check your understanding (2)

The list should include points such as:

- residents in the Far Cotton area now given two hours' notice of a flood occurring
- major roads such as the A45 are on embankments up to six metres high
- the station has been protected by building 4m floodwalls at Foot Meadow.

Exam practice (1)

1 Large areas of land are taken over and cannot be built on. It can spoil the natural look of the landscape but usually enhances the natural environment. It is relatively cheap.

2 They take the excess water out of the river and store it until river levels are lower.

Exam practice (2)

In Northampton the River Nene flooded in the 1990s. Since then a number of defences have been built to protect different areas of the town. The residents in the Far Cotton area are now given two hours' notice of a flood occurring in order to move their belongings.

Major roads in the area such as the A45 are on embankments up to six metres high to stop them being covered by flood water. The railway station has been protected by building four metre floodwalls at Foot Meadow.

Chapter 9 Tectonic Landscapes

Page 57

Check your understanding

- There is a line down the coast of North America and South America.
- There is a line of volcanoes in the South of Africa.
- A number of volcanoes are in Iceland.
- There is a line of volcanoes close to the coast of Asia.
- There are no volcanoes in the UK.

Exam practice

There are no volcanoes in the UK. There are 11 volcanoes close to Iceland. There is a ring of volcanoes around the Pacific Ocean.

Page 58

Check your understanding

Hotspots are fixed points in the mantle which generate heat, they usually occur under oceans. The intense heat causes a build-up of pressure and magma erupts through the crust. If the magma rises above the ocean surface a volcano is created. Hotspots usually create chains of volcanic islands as the plate moves over the hotspot, for example, the Galapagos Islands and Hawaii.

Exam practice

Plate tectonics is a theory which gives an explanation for the location of earthquakes and volcanoes. The Earth's crust is divided into plates. These plates move a few centimetres every year as they are floating on the mantle. This movement is caused by convection currents in the mantle. This movement causes the plates to collide or move apart. The pressure created at these boundaries is what causes earthquakes and volcanoes.

Page 59

Exam practice

Please refer to the diagram on page 59 of the Revision Guide to complete your answer.

Page 60

Check your understanding

Mercalli scale	Richter scale
Measurement of the intensity of an earthquake completed from eyewitness accounts	Measurement of the magnitude of an earthquake completed by a seismograph
Measured on a scale of 1–12	Measured on a scale of 1–9 with each number of the scale split into 10 points
Subjective	Objective

Exam practice (1)

The Mercalli scale is subjective whereas the Richter scale is objective. The Richter scale is measured by a seismograph, the Mercalli scale is measured by eye.

Exam practice (2)

The epicentre is on the Earth's surface while the focus is a point below the surface of the Earth.

Page 62

Check your understanding

[In the tables below the effects on people are given in red and the effects on the environment are given in green]

Turkey earthquake 1999

Causes	Effects
Turkey lies between three continental plates: the Eurasian, the African and the Arabian.	Number of people killed – approximately 18,000. Number of people homeless – approximately 300,000.
During the earthquake the north Anatolian fault moved approximately three metres.	Rebuilding costs – these were estimated to be in the region of \$10 billion.
Izmit is built on soft rock made from clay and	A fire caused by the earthquake at the

sand.	Tupras oil refinery meant that 700,000 tonnes of oil were lost.
	The earthquake caused damage to the sewage works at Petkim.

Montserrat eruption 1997

Causes	Effects
Montserrat is a volcanic island. It is on a destructive plate boundary. The two plates that meet at this boundary are the North American plate and the Caribbean plate.	Number of people killed – 19 people.
In June 1997, Chances Peak volcano erupted. It produced a huge ash cloud which covered the southern part of the island. Pyroclastic flows of hot rock and ash were also thrown out of the volcano.	The villages of Farm and Trant were completely buried by the ash flow. Approximately 150 houses were destroyed.
	Ash and rock covered four square kilometres of land.
	Pyroclastic flows caused the River Belham to flood. Pyroclastic flows removed all vegetation in the south of the island including the ridges.

Page 63

Check your understanding

Environmental reasons: beautiful scenery

Economic reasons: tourists come to the areas

Exam practice (1)

Coffee is grown on the slopes of volcanoes in Colombia.

In Iceland, Reykjavik has cheap electricity produced from geothermal energy.

Mt Etna in Sicily has many tourist guides which provides jobs for the local people.

Exam practice (2)

Turkey lies between three continental plates: the Eurasian, the African and the Arabian plates. This means that it is very likely to have earthquakes because of the pressure building up on the plate boundaries.

During the earthquake the north Anatolian fault moved approximately three metres, causing destruction on the surface. The town of Izmit is built on soft rock made from clay and sand which will move during an earthquake. During the earthquake approximately 18,000 people were killed and 300,000 were made homeless. The cost of rebuilding was estimated to be in

the region of \$10 billion. The earthquake caused damage to the sewage works at Petkim which left raw sewage in the water supply.

Chapter 10 A Wasteful World

Page 64

Check your understanding

HICs contain 20 per cent of the world's population but consume 86 per cent of the world's products. People in HICs have more money and buy more products. This is known as the consumer society. If people have more things, they have more to throw away hence more waste!

Exam practice

There are seven main types of waste produced in the UK. The greatest amount of waste generated is from construction and demolition. The least amount of waste generated is from municipal.

Page 65

Check your understanding (1)

The richer countries in the Northern Hemisphere produce more waste as the darker colours on the map imply more waste. The poorer LICs in continents such as Africa produce a lot less waste.

Check your understanding (2)

The USA produces domestic waste such as white goods. Bangladesh does not produce white goods waste as the population does not have many white goods. The USA would also have more industrial waste. Bangladesh would have more agricultural waste.

Exam practice

Bangladesh is a LIC therefore the waste produced would be different as it does not have a consumer society. The UK is a richer country with a population that has a large disposable income. Therefore, there is more waste produced.

Page 66

Check your understanding

For how waste is recycled, include points such as:

There are 150 recycling points around Reading, Wokingham and Bracknell

Bracknell has a bi-weekly collection system.

One week the following bins are collected:

- the brown bin – garden waste
- the blue bin – plastic bottles and tins
- the green box – paper

The other week the general rubbish bin (green) is collected.

For how the recycled material is used, include points such as:

Cans are reprocessed at a facility in Leicester, being made into products such as cars or new cans!

Paper and cardboard goes to the St Regis paper mill in Kent where it is turned into new packaging material.

The glass is reprocessed in Yorkshire. The glass is washed and crushed and then mixed with raw materials such as sand and limestone to make new glass containers.

Exam practice

There are 150 recycling points around Reading, Wokingham and Bracknell. Bracknell has a bi-weekly collection system. One week the following bins are collected: the brown bin for garden waste; the blue bin for plastic bottles and tins. The other week the main refuse bin is collected.

Page 67

Check your understanding

Student opinion will vary for this question. A possible answer would be incineration because it disposes of waste and produces energy.

Exam practice

1 Landfill is not the best way to dispose of waste because it takes up important land which could be used for food production.

2 Germany disposes of waste in a number of ways. It has 160 landfill sites. Waste has to be treated before it is allowed to be put into landfill.

There are 68 incinerators in Germany.

The plant at Darmstadt incinerates 212,000 tonnes of waste a year.

At present, low-level nuclear waste is stored around the country at about 50 locations.

Page 68

Check your understanding

The following points could be included:

Germany has 160 landfill sites. Waste has to be treated before it is allowed to be put into landfill.

There are 68 incinerators in Germany.

The plant at Darmstadt incinerates 212,000 tonnes of waste a year.

At present, low-level nuclear waste is stored around the country at about 50 locations.

During 1991 and 1992, 480 tonnes of toxic waste (pesticides) were sent to Albania. In Germany, it would have cost the company \$5,500 per tonne to dispose of the pesticides.

The pesticides were sent to Albania to be used by farmers even though they were too dangerous to use in Germany.

Page 69

Check your understanding

Renewable energy sources are ones which can be reused and therefore will not run out.

Non-renewable energy sources are ones that once they have been used can never be used again.

Page 70

Exam practice

Non-renewable energy sources such as coal can be found in many countries and are an easy way of producing energy. They have to be used in large power stations and much

energy is lost as it is moved around the country.

Renewable energy sources are more small-scale local and domestic projects which produce little energy. They are produced on the spot so little energy is lost in movement.

Page 71

Check your understanding

1 Venezuela has a higher population than Qatar.

2 The UK is a HIC whereas Bangladesh is a LIC. Therefore, the UK has more energy-using devices as the population is richer.

Page 73

Check your understanding

The teenager could switch off the lights and the computer.

Exam practice

1 This is a measure of the impact that human activities have on the environment in terms of the number of greenhouse gases they produce.

2 It is wasted through the roof – 25 per cent. It is also wasted by leaving on lights. Energy is also lost through the floor – 15 per cent.

Page 74

Check your understanding

Oldham City Council

They are installing loft insulation in social priority housing and giving ideas on their website on how to save energy such as *'using one energy saving bulb can save £5 a year in energy costs.'*

Penwith Housing Association, Penzance, Cornwall

In Cornwall ground source heat pumps have been fitted to fourteen bungalows by one local council. This provided the owners with heating via radiators and hot water. The cost of the project was £200,000.

Woking Borough Council

A new power plant at Woking Leisure Centre supplies the pool and 136 homes close by.

By 2011, the council wants to provide 20 per cent of energy through renewable resources. It has more photovoltaic cells than anywhere else in the country, for example, the ones at Vyne Community Centre.

Exam practice

Many local councils are encouraging home owners and local industry to use renewable energy. The wind turbine at Green Park in Reading has been providing energy since 2005 for 1,500 homes and businesses.

British Gas is also working with 16 local councils, including Reading Borough Council, to improve energy efficiency. If households implement energy efficiency measures such as loft insulation they will receive £100 off their council tax bill. Many householders are fitting solar panels on their roofs.

Chapter 11 A Watery World

Page 75

Exam practice

The usage of water in HICs is much greater than that in LICs. The way water usage is divided between domestic, agricultural and industrial use is dependent upon the country being discussed but as a general rule, HICs use the majority of their water domestically and in LICs the highest usage is for agriculture.

Page 76

Check your understanding

Reservoirs (for example, the Queen Mother Reservoir)
rivers (for example, Kielder Water on the North Tyne River)
groundwater (for example, the Thames Valley).

Exam practice (1)

The increase in wealth in HICs has seen a growth in the use of labour-saving machines such as washing machines and in the last twenty years dishwashers, because people can afford to buy them. These machines use much more water than traditional ways of washing clothes and dishes. With greater wealth, people can afford to equip their homes with more bath and shower rooms, thus enabling people to wash more frequently.

Exam practice (2)

Some areas of the UK get their water directly from the ground. This is the case in the Thames Valley. The rocks below the Thames Basin are in layers. Chalk which is porous lies above an impermeable layer of clay. This traps water in the layer of chalk forming an aquifer. Water is extracted from the aquifer by drilling down into the rock.

Page 77

Check your understanding (1)

High rainfall – North-east Brazil

Low rainfall – Morocco

Water surplus – central Brazil

Water deficit – central Australia

Check your understanding (2)

Countries in the Northern Hemisphere are usually have enough water for their populations. Countries in Africa close to the Equator are in water deficit. Most countries in South America have a water surplus.

Page 78

Exam practice

The UK's domestic water supply is carried through pipes which are approximately 150 years old. Many of these pipes are cracked and leaks occur. It is estimated that 30 per cent of the water supplied is lost. In some areas of the world water is more available than others, even in HICs. This is due to the lack of rainfall but also because of the demands on water because of large populations. For example, most of Australia has a water deficit.

Page 79

Exam practice

Many homes have been fitted with meters. People with meters use less water as they are charged for how much water they use, rather than paying a fixed amount for the year. Short-flush toilets are another way that water is managed domestically. New toilets are fitted with a short flush option which means that less water is used to flush the toilet.

Page 80

Check your understanding

The Tigris and Euphrates Rivers both have their sources (start points) in Turkey, flowing through Syria and Iraq to the Persian Gulf. This has caused conflict between the three countries because they all require the water for their countries but Turkey controls the flow of the rivers.

A war between Syria and Iraq was narrowly averted in 1975 after the building of both the Keban Dam in Turkey and the Tabaqah Dam in Syria.

In January and February 1990 Turkey reduced the flow of the Euphrates by 75 per cent while it filled the Lake Assad behind the Ataturk Dam. Iraq threatened to bomb the dam so Turkey mobilised its army in defence of the dam and threatened to cut off the water flow completely. Luckily the conflict was averted.

Page 81

Exam practice

Jobs have been created in the tourist industry as many people come to see the dam. The dam will protect an estimated 1.5 million hectares from flooding, meaning that the rice crop is secure. The Yangtze River dolphin has become extinct because the dam has destroyed its habitat. The dam will protect approximately 15 million people from the threat of flooding.

Unit 3 The Human Environment

Chapter 12 Economic Change

Page 82

Check your understanding

Germany has the majority of its population employed in the tertiary sector, whilst Mali has the majority of its population employed in the primary sector. Taiwan has the largest tertiary sector with 34 per cent.

Exam practice

Primary industry – the extraction of raw materials from the ground or the sea. Examples: mining, farming, fishing and forestry.

Secondary industry – the processing (manufacturing) of goods using the raw materials from primary industry. Example: making paper from wood.

Tertiary industry – this is concerned with doing a service. Examples: teachers, solicitors, sales assistants and cleaners.

Page 83

Check your understanding

In 1851 the largest sector of industry in the UK was the secondary sector. By 1991 tertiary was the largest sector with 70 per cent of the workforce. The percentage employed in the primary sector declined throughout the period and the percentage employed in the tertiary sector increased except for a slight dip in 1940s.

Exam practice

1 HICs typically have a large tertiary sector because they have many service industries. Mali is a LIC because the country is poor so most people are still employed in agriculture and raw material extraction.

2 Raw materials that were to be mined in the UK have run out. This has caused a decline in the mining industry. Primary industry jobs such as farming are seen to be hard work. There are more service industries as the population has become wealthier.

Page 84

Check your understanding

It depends if the country's economy is based on primary industry. This may be farming, fishing or mining. The government will value the industry because it is their main source of income. In many High Income Countries in the western world primary industries such as farming are of value to feed their populations but the main sector of industry is tertiary.

Page 85

Check your understanding (1)

1 Raw materials that were mined in the UK have run out. This has caused a decline in the mining industry. Primary industry jobs such as farming are seen to be hard work. Goods can be produced more cheaply in LICs and MICs because workers are poorly paid and land is cheap. Modern communication such as the internet allows businesses to communicate globally. This means that the owner of a company could be in one country and the goods produced in another. Developments in transportation mean that goods can be moved around the world quickly and efficiently.

2 In HICs the secondary sector has declined and much of the manufacturing is now done abroad in MICs, whereas in countries such as China the government is trying to encourage the growth of secondary industry. The UK government now concentrates on the development of tertiary industry as it sees this as a more valuable sector of industry.

Check your understanding (2)

All of the factors in the table are human ones apart from 'China has a long coastline with major ports on trade routes' and 'China has a lot of natural resources such as coal, oil and natural gas'.

In their revision guide, students could colour the human factors in red and the physical factors in green.

Page 86

Check your understanding

For this activity, use the information given in the spider diagram on page 86. For the social effects, refer to the second box on the left-hand side of the diagram and the third box on the right-hand side of the diagram.

For the economic effects, refer to the first and fourth boxes on the left-hand side of the diagram and the third box on the right-hand side of the diagram.

For the environmental effects, refer to the third box on the left-hand side of the diagram and also the first and second boxes on the right-hand side of the diagram.

Please note there will be some overlap between the categories.

Exam practice

There are a number of effects of the growth of secondary industry in China. For example, 760,000 people die a year from illnesses related to water and air pollution. However, many new homes are being built in urban areas which the workers can afford. People are moving out of shanty towns. But the workers are poorly paid; many work for 40p an hour.

Page 87

Check your understanding

More members at health clubs means that more people will need to be employed as fitness trainers or receptionists.

Exam practice

The money that the average household had to spend on non-essential items doubled between 1987 and 2006. The large numbers of people employed in telecommunications and computing provided services such as internet banking. Shops selling mobile phones and computers are now common on the high street.

Page 88

Check your understanding (1)

The industry needs to be on its raw material source. It needs good communication links and if possible a nearby market or good links to the market.

Check your understanding (2)

Secondary industries need land to build their factories. They need excellent transport links to move the raw material and the finished product. Proximity to an abundant and if possible traditionally skilled workforce is also important.

Exam practice (1)

The presence of the raw material as the industry is concerned with the extraction of raw materials.

Exam practice (2)

An example of a secondary industry is the Toyota car factory at Burnaston, near Derby. The land is a greenfield site with 280 hectares of flat land. It is cheaper land on the edge of the city of Derby. It is located close to villages such as Findern and close to the Peak District so it is attractive to managerial workers. It has excellent transport routes. It is on the junction of two main trunk roads: the A50 and A38.

Page 89

Check your understanding

A large demand is important so that the business has a client base. It will also need good transport routes so that the clients can get to the business.

Location is also an important factor. Tertiary industries such as health clubs need to be located in an area with a large population such as Hatfield Business Park.

Exam practice

Many rural areas have suffered from deindustrialisation, for example, the extraction of China clay in Cornwall left many pits full of water. One of these pits has become the Eden Project. When the quarry closed, a number of people lost their jobs and the local government lost income from the quarry owners. The pit has been totally transformed into a tourist attraction with landscaped walks, a huge diversity of plants and two enormous pods. The Eden project employs 500 staff and provides jobs for approximately 3,000 other people in restaurants, hotels and suppliers of products. Costs and benefits of the extraction of raw materials, especially coal, have left the landscape scarred with many waste heaps. In 1966 the Aberfan disaster occurred. A landslide occurred from a coal waste heap after heavy rainfall and tonnes of material fell onto the village school killing 144 people, 116 of them children. The land is now used for agriculture and leisure.

Chapter 13 Settlement Change

Page 90

Check your understanding

1 On top of hills for defensive purposes – Windsor

On the inside of meander bends – Durham

Beside a gap in a range of hills – Dorking

On an island in a river – Paris (originally)

2 Tourists visit spa towns and major cities for the history and culture and to visit the spa because of the healing properties of the waters.

Exam practice

A major function of many settlements is to give people a place to live. Market centres developed to provide services for the local area. In the past, the main function of industrial settlements was to provide jobs in secondary industry.

Page 91

Check your understanding

Aberfan has provided the following functions over the years:

Agricultural settlement

Industrial settlement

Residential settlement – commuters and retired people.

Exam practice

Aberfan is a small settlement in South Wales which has seen its function change over time. It first grew as an agricultural settlement in the bottom of the valley close to the River Taff, approximately five miles from Merthyr Tydfil. Merthyr Vale coal mine was opened in 1875. This changed the main function of the village and the village became an industrial settlement. There were still farms and agricultural workers in the village but the majority of

the population worked in the mine. In 1989 the coal mine was closed and the function of the settlement changed to being a residential settlement. It is a commuter village with the people who live there working in local towns and cities such as Merthyr Tydfil. It is also a retirement settlement as the age structure of the population shows a larger number of people in the retirement age groups. There are still a number of farms close to the village but the main function is residential.

Page 92

Check your understanding

Refer to the bullet list 'Counter-urbanisation example: Austrey in Warwickshire' on page 92 of the Revision Guide

Demographic changes: first bullet point in the list

Economic changes: the fifth bullet point in the list

Social changes: the fourth bullet point in the list

Environmental changes: the second bullet point in the list

Exam practice

Austrey in Warwickshire is an example of change to a rural community due to counter-urbanisation. People moved out of the city of Birmingham and the local town of Tamworth into this village during the 1970s. It caused a growth in population from 300 in 1961 to 1,000 in 2001. The environment of the village changed with a number of new housing estates being built such as St Nicholas Close and Elms Drive on previous farmsteads. The village school has opened on a new site with 120 children on roll. In 1961 there were 16 children. The village pub 'The Bird in Hand' is thriving and has become a meeting place for the local community.

Page 93

Exam practice

Rural depopulation is when people move away from the countryside into urban areas.

Page 94

Check your understanding

- People are now marrying later in life – the average age has gone up from 24 in 1960 to 30 in 2010.
- People are having fewer children and later in life which has also impacted on the type of houses that are demanded.
- There has also been a rise in the number of divorces which means that a family are not living as a group but are living in two different dwellings.
- Many people now live on their own or with their spouse until they are in their 70s and 80s – this means that more houses are needed for the younger generation.

Exam practice

The population of the UK is increasing. It is predicted to rise by 4.1 million between 2001 and 2021. The government has promised that three million new homes will be built by 2020. The growth will take place in certain areas of the country. One of the developments in the south east is in Bracknell where a new housing estate has been built on the edge of the town called Peacocks Farm. An area of Norwich comprising 17 hectares, located south east of Norwich City Centre, on the banks of the River Wensum has been redeveloped into an entertainment complex including a fourteen-screen cinema, a large shopping centre and

over 200 residential units.

Page 95

Check your understanding

A number of housing developments, for example, in the south-east of England now have gates to protect them from perceived threats such as burglars.

Exam practice

A brownfield site is an area within a city, which is no longer used. It may contain old factories and housing, or it may have been cleared ready for redevelopment. A greenfield site is an area on the edge of the city, which has never been developed in any way.

Page 96

Check your understanding

1 Redevelopment is when buildings are knocked down and something new is developed. Renewal is when the fabric of the building stays the same but is updated and the use of the building is usually changed.

2 On brownfield sites, planning permission is easier to obtain. Infrastructure such as gas, electricity and water is already present. They are easier to market because of access to entertainment and other facilities. Brownfield sites have to be cleared and in some cases decontaminated which adds to the construction costs. Land costs are higher as they are closer to the city centre. Cities may have social problems, such as anti-social behaviour and crime, as well as higher levels of pollution and congestion which could make marketing more difficult.

Exam practice

One of the advantages is that the land was originally unoccupied and therefore developers can build as they wish. The land is also cheaper due to being further from the city centre. Construction costs are lower as there is nothing to knock down or renew.

Page 97

Check your understanding

Central government attitudes – Housing minister, Shadow housing minister.

Local government attitudes – Bracknell Forest Councillor, Green party member of Bracknell Forest Council.

Chapter 14 Population Change

Page 99

Check your understanding

The population increases steadily until 1700 and then increases more quickly until 1950. The world then experiences rapid population growth.

Exam practice

Extremely hot or cold climates such as the Sahara Desert or Siberia will have sparse population, as will areas with infertile soils. Fertile soils where crops are grown such as river

valleys, for example, the Ganges Valley will be densely populated. Temperate climates where the population can grow crops such as the UK will also be densely populated.

Page 100

Check your understanding

Changes in birth rate

- In HICs people do not want to change the way they live in order to have children. So fewer children are born.
- China has used policies to decrease its birth rate, for example, the 'one-child' policy. Whereas Singapore has used incentives to increase its birth rate.

Changes in death rate

- Better access to health care including inoculations for childhood diseases has decreased death rates in many LICs.
- Governments in LICs have invested large sums of money to provide the population with clean drinking water to lower the death rate.

Exam practice

Children cost a lot of money to feed and clothe. Therefore, fewer children are being born because couples prefer to provide more for one or two children. If women receive an education they become aware of ways to control fertility. This leads to a lower birth rate. The average age of marriage in the UK has risen from 24 in 1960 to 30 in 2010. Birth rates will be lower as there is less time to have children.

Page 101

Check your understanding

Birth rate is high and fluctuating in Stage 1. It falls in Stage 3 and continues to fall through Stages 4 and 5.

Exam practice

The death rate has fallen due to better diets and cleaner living conditions with the introduction of clean drinking water. There have also been advances in medicine and inoculations against diseases.

Page 102

Check your understanding

One factor is the physical geography of the country. The population is dense in the river valleys and sparse in the desert areas. It is also dense in coastal areas.

Exam practice

The west of the country is sparsely populated. In this area are the Atai Mountains where it is too wet and cold to grow crops. Also in this area is the Gobi Desert where it is too dry to grow crops. The east of the country is densely populated. People live on the fertile floodplains of the rivers such as the Yangtze.

Page 103

Check your understanding (1)

In 1979 66 per cent of China's population was under the age of 30. This meant that in the future the population would increase greatly.

Check your understanding (2)

Incentive – Parents receive a gift of \$3,000 from the government for each of their first two children and \$6,000 from the government for each of their next two children.

Disincentive – Couples with one or no children are only allowed to buy a three-room flat.

Exam practice

There was a large population under the age of 30. There were limited resources to provide for its large population.

Page 104

Check your understanding

The majority of the population is in the older age groups with 50 per cent being over 45 which shows an ageing population. Only 15 per cent of the population are of school age meaning that the population numbers will be falling.

Page 105

Check your understanding

Characteristics	LIC (Philippines)	MIC (Brazil)	HIC (Germany)
Shape	Triangle	Fatter triangle	Bulges in the middle
Birth rate	High	High	Low
Death rate	High	Getting lower	Low
Growth rate	High	High	Low
Stage of demographic transition model	1	3	4
Age structure	Many young people	In transition	Many old people
Future	Will become more like Brazil's	Will become more like Germany's	Will become wider at top and lower at bottom

Exam practice

Germany's shape is becoming more like an upside-down pyramid. The Philippines' shape is like a pyramid.

Page 106

Check your understanding

The 'greying yen' is the money spent by retired people in Japan.

Exam practice

1 There will be a greater demand for midwives and hospital care for babies and mothers because of the high birth rate. There will be a great demand for education services. There will be a large workforce in the future. There are many children to look after their parents in the future so less care will be needed for the elderly in the future. There will be less demand for pensions because of the younger population.

2 There is a greater need for care homes and specialist nursing for the elderly. There will be less money for education due to the demand for elderly services such as care homes. More houses will be needed because people are living longer. The pension age will have to increase from 65 to 68 in 2046. There will be more jobs in the leisure industry as the retired people go on more holidays.

Chapter 15 A Moving World

Page 107

Check your understanding (1)

Immigration is movement into a country.
Emigration is movement out of a country.

Check your understanding (2)

Classification of migration

National – moving from London to North Norfolk

International – moving from UK to Spain

Long-term – retiring to North Norfolk from London

Short-term – going to university from Reading to Bristol

Voluntary – moving from Poland to England for work

Forced – a refugee from Egypt coming to England because they are being persecuted

Legal – EU citizens who work in the UK

Illegal – citizens of Romania who come to the UK without a passport

Exam practice

1 Voluntary migration occurs when the individual wants to move and forced migration occurs when the individual has to move.

2 National migration is when a person moves within a country and international migration is when a person moves between countries.

Page 108

Exam practice

An example of a population flow into Europe: Germany after the war needed people to rebuild the country. Many workers migrated from Turkey to Germany.

An example of a population flow within Europe: movement of people from northern Europe, for example, from the UK to countries in southern Europe such as Spain when they retire.

Page 109

Check your understanding

H = host country

O = country of origin

	Social impacts		Economic impacts	
	Positive	Negative	Positive	Negative
H	Polish shops on many British high streets gives variety to the culture.	The police have to deal with different languages. It is difficult and expensive to find translators.	Migrant workers earn £20,000 per year in the UK adding to the economy.	27,000 child benefit applications have been approved. This is a burden on the welfare state.
O	Wages have increased in Poland which means people have a higher standard of living.	The birth rate in Poland is decreased because of the loss of people in the reproductive age groups.	In 2007 salaries in Poland increased by 9 per cent.	In 2007 there were many vacancies in the construction industry because of a shortage of workers.

Exam practice

Migrants are generally in their 20s and 30s. This is making the UK workforce younger and is easing the pension burden. Migrant workers do low-paid jobs such as crop picking which British workers do not want to do.

Page 110

Check your understanding

Technology

- People can use the internet to keep in close contact with family and friends when they move away.

Transport

- Budget airlines like Ryanair and Easyjet have flights to many small airports in Europe allowing people to move around much more cheaply.

Government policies

- People are free to move between the member countries of the EU. They just need a passport or identity card.

Exam practice

New developments in technology mean that people can keep in touch. Budget airlines mean that people can visit people much more easily. The EU has relaxed barriers to movement due to the free movement between its countries.

Page 111

Check your understanding

Medical flows

Push factors

Hospitals in the UK have a poor reputation. They are seen as dirty and lacking in patient care, for example, the case of the Staffordshire Trust deaths.

Waiting lists for medical treatment are very long in the UK.

Private health care is expensive in the UK.

Pull factors

Dental treatment in Hungary is much cheaper than in the UK, for example, a crown costs £650 in the UK and £200 in Hungary.

Some treatments are done as part of package holidays.

Tourism flows

Push factors

Climate – movement away from cold, wet climates to warm and sunny ones.

Workers in the UK have more disposable income and therefore can afford to go on holiday at least once a year.

The media (television and internet) provide information about different countries in the world which encourages people to travel.

Pull factors

Stunning scenery such as the Pyrenees and the Alps in France encourage people to go on holiday there.

Attractions such as Disneyland Paris will also attract people to France for a holiday.

Transport – it is now much easier to travel to different countries due to improved transport links such as the Channel Tunnel to France.

Exam practice

People go to places such as Budapest for dental treatment because it is cheaper than in the UK. Some people go abroad for hip replacements because of the bad reputation of the NHS. People go on holiday to warm sunny areas or ones with attractions such as Disneyland, Paris.

Page 112

Check your understanding

Points for Norfolk could include:

Reasons for the migration – the average house price in North Norfolk is approximately £150,000 less than in London.

Consequences of the migration – a new hospital has been planned for North Norfolk combining a GP surgery, 24 beds and community health services under one roof.

Exam practice

There has been a lot of development along the coast of Spain. This has caused damage to the environment. In 1998 the government passed the Coastal Law which states that any property built within 106m of the shore can be demolished. Many of the migrants move to Valencia which is a very dry area of Spain. They buy properties with swimming pools which use a lot of water. This is causing friction between the host community and the migrants.

Chapter 16 A Tourist's World

Page 113

Exam practice

Beach holidays – these are holidays when the main purpose is to spend time relaxing on a beach.

Short city breaks – this is when people travel to urban areas to enjoy a heritage and cultural break.

Page 114

Exam practice

There has been an increase in leisure time with longer paid holidays and a shorter working week. There is an ageing population and people take early retirement with good pensions. Package holidays have been developed. Planes are faster and larger making flying cheaper so more people can afford to go on holiday.

Page 115

Check your understanding (1)

Photograph A has many physical attractions such as the white sand and the blue sea. Photograph B, on the other hand, has many human attractions such as the mooring for boats and the market stalls.

Check your understanding (2)

The photo of Snowdon on the left shows both human attractions, such as the railway line, and physical attractions such as the scenery. The photo of Cornwall on the right also has both physical attractions such as the scenery and human attractions such as the harbour.

Page 116

Exam practice

The Butler model states how a resort changes through time. In the exploration stage Blackpool's first guest house opened, owned by Edward Whiteside. The only visitors were the landed gentry (rich people) who would ride on the beach and bathe in the sea. In the consolidation stage many attractions were built such as the Grand Theatre, Church Street. Blackpool illuminations were first switched on in 1912. Blackpool has finally reached the rejuvenation stage with Merlin taking over the Tower and the new promenade being fully opened.

Page 118

Check your understanding

1 Social impacts – these are the impacts on the lives of the people who live in the area.

Economic impacts – these are the impacts on the economy of the area.

Environmental impacts – these are the impacts on the landscape of the area.

2 The information needed to complete the spider diagrams can be found in the tables on pages 117 and 118 of the Revision Guide.

Exam practice

The enclave resorts on the Maldives have caused problems for the coral reefs that surround them in a number of ways. There has been a decrease in fish numbers and species. This is due to the environmental problems caused by tourism, such as sewage disposal and the tourists themselves swimming close to the coral reef.

The environmental impacts of tourism at Lulworth Cove in Dorset have been minimised by the use of tourist money. People pay to park their cars at Lulworth Cove. This money has been used to build a heritage centre which teaches the tourists about the area. It has also been used to improve the signage and to re-lay the footpaths which had become worn due to the sheer numbers of tourists that use them.

Page 119

Exam practice

1 There are steep slopes for skiing and designated ski runs. There is a flat bottom of the valley where hotels are located and an ice rink.

2 a & b Activity holidays could take place there because skiing is very active. There is the possibility of cultural tourism because it is an alpine resort.

3 Skiers will wear away the slopes and the village will be overcrowded in the winter. However, there will be plenty of jobs for the local inhabitants.

4 Walking and sightseeing for a weekend break could take place there. Activity holidays such as coasteering could also take place there.

5 The walkers will wear away the paths and the area will become overcrowded. However, there will be plenty of business for local B&Bs and public houses in the area.

Page 120

Check your understanding

1 Footsteps give 20 per cent of their profit to the local community. All 22 of the staff are from the local village of Gunjur. The employees receive training and are paid for the whole of the year even if the hotel does not have any guests whereas most locally employed staff are only paid in the season when the hotel is busy. The staff also get medical and dental care.

2 Electricity is produced using the wind and the sun. The solar-powered freezer has reduced the use of propane gas. The water for the swimming pool is filtered through reed beds to get rid of impurities instead of using chlorine in the water. The toilets at Footsteps are composting toilets. This means that after harmful substances have been removed, the waste can be used as compost on the garden.

Exam practice

Footsteps give 20 per cent of their profit to the local community to help with community projects such as fresh water supply for all.

All 22 of the staff are from the local village of Gunjur. The employees are paid for the whole of the year even if the hotel does not have any guests. Therefore, they have a yearly income.

Electricity is produced using the wind and the sun and therefore does not drain meagre local supplies. The water for the swimming pool is filtered through reed beds to get rid of impurities instead of using chlorine in the water. This helps to protect the environment. The toilets at Footsteps are composting toilets. This means that after harmful substances have been removed, the waste can be used as compost on the garden.