LEVELS QUESTIONS

In the geography exam there will be opportunities to do extended writing. These are called '**levels**' questions. They give you an opportunity to write in more detail and at length about a certain part of a topic. They usually ask you to include an example or examples. Even if an example is not asked for, you should try and use one, as this will get you extra marks.
When the examiner marks these longer type answers they do not give ticks but assign levels to your answers. The higher the level the more marks you will get.

For a 6-mark question the levels would be as follows:

LEVEL	MARKS	DESCRIPTION
1	1-2	Simple statements. No elaboration or detail. Vague answers with no elaboration
2	3-4	More detailed answers. May include an example, but example is tagged on and not built into the answer. Some elaboration
3	5-6	A more detailed answer with good use of English and geographical terms. A number of good examples are given and these are built into the answer. Diagrams are appropriately used. A sense of place – the candidate knows what they are writing about.

If you are asked to give an example you will not get higher than half marks if you do not include one. You should try to build the example into your answer and not just simply tag it on at the end. It is a good idea to start your answer with the example rather than leave it to the last sentence.

Example- in an answer on the good affects of volcanoes you could start by saying – ***In Iceland the area has benefited from more tourism as visitors come to see features such as geysers and mud pools. Iceland has also been able to harness the power of the volcanoes in geothermal energy and use the energy to heat local homes. Whereas the area around Mt Etna has been able to use the rich fertile soil produced by volcanoes to grow vines and oranges to sell and improve the trade balance.***

ELABORATION

When you are answering the questions you will only move up the levels if you **ELABORATE** and answer in detail. You must also **use geographical terms** and words. Vague statements should be avoided. You will pick up marks for relevant information and sticks to the point and answers the question. **WAFFLE** gets you no marks – it may fill the page, but it will not get you any credit.

CONNECTING WORDS

Instead of using short sentences you should get into the habit of using CONNECTING words to extend your short answers. Good connecting words include:

This will mean that . . . . .
Because . . . . ..
Therefore . . . . ..
This means that . . . . ..
As a result. . . . . .
So . . . .
Due to this. . . . . .
Whereas . . . . . .
As. . . . . .

EXAMPLE – in a question on the good points of volcanoes worth 3 marks.

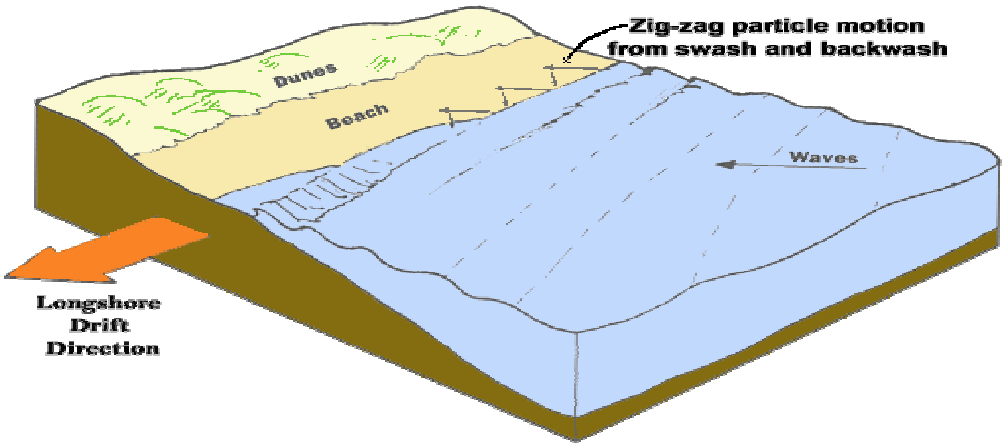
First answer - *The benefits of volcanoes will be more tourists*. [This answer will get one mark.]

Second answer – *The benefits of volcanoes will be more tourists* [1 mark] *this will mean an increase in jobs* [1 mark] *in the local area. The taxes paid will go to pay for improved schools and hospitals* [1 mark]. [This answer will get a total of 3 marks].

THE REST OF THIS BOOKLET GIVES YOU EXAMPLES OF GOOD ANSWERS TO LEVELS QUESTIONS.
Read through the answers and see how the student has structured the answers. Note the good use of examples and geographical terms and how the answer flows.

Section 1 - Coasts

1. **Explain how a sand spit is formed. [Higher 6 marks]**

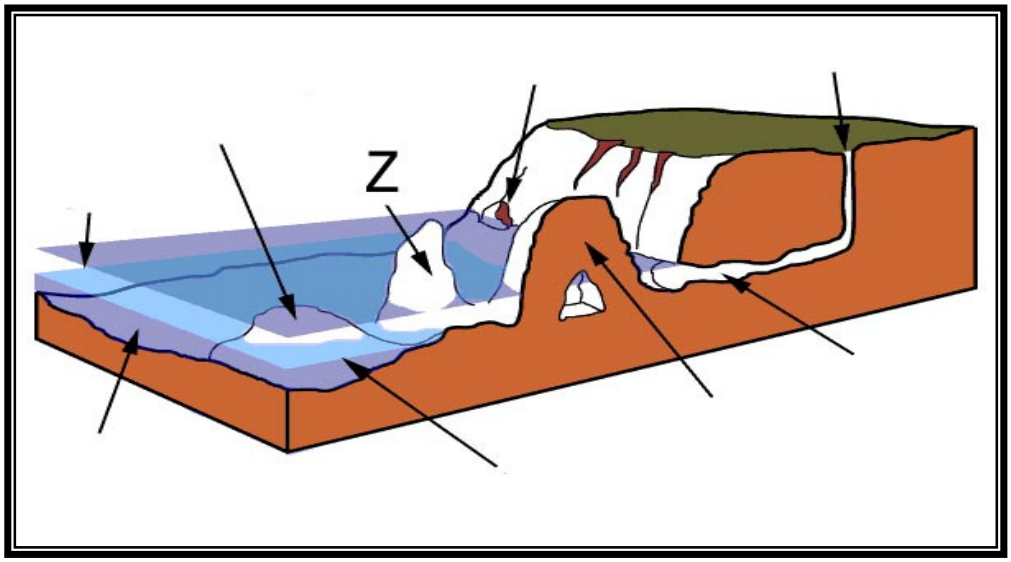


***Answer**: Spits are long ridges of sand and shingle with one end attached to the land and the other ending in the open sea. For example – Spurn Head on the Yorkshire coast. A spit will form when sand and shingle are carried along a coast by **longshore drift**. This is when waves approach a beach at an oblique angle, break and transport material up the beach but the backwash returns to sea at a right angle to the coast. Material is therefore gradually transported along the beach in the direction of the dominant wind. If there is a bay or a bend in the coastline, deposition of sand and shingle will continue to be deposited away from the coast in the open sea. This will build up in time to form a long ridge; sometimes winds and currents may curve the spit.*

2. **Explain how and why cliff collapse occurs in some coastal locations. [Foundation 4 marks]**

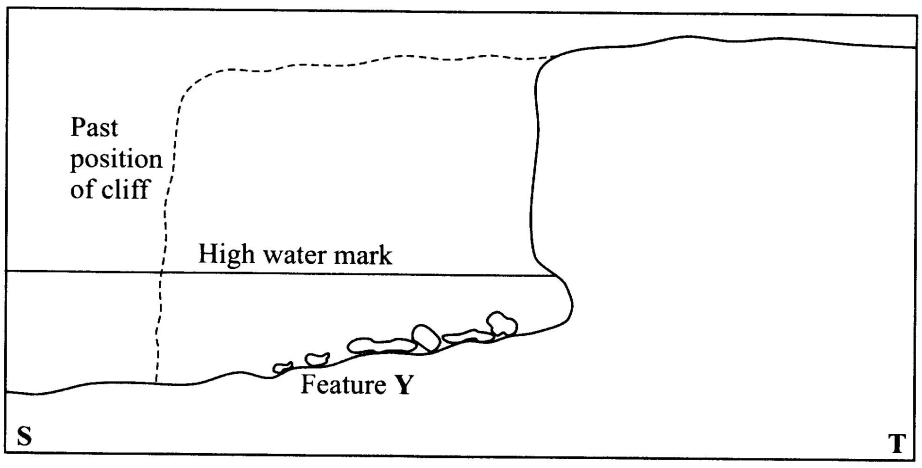
***Answer**: In some areas of the coastline the bottom of the cliff can be attacked by destructive waves. This erosion by waves undercuts the rock face to form a wave cut notch. The overhanging rock will collapse. If this happens many times the cliff retreats inland. This is more likely to happen in areas where the fetch of the waves is long and the waves are destructive, such as in Cornwall and Devon. There will also be more erosion if the rock is soft such as clay on the Yorkshire coastline.*

3. Explain how feature Z was formed. [Higher 6 marks]



Answer: *Feature Z is a stack which at one time will have been connected to the headland.. A crack or weakness in the headland will be eroded by the sea to form a cave. Further erosion enlarges the cave and it breaks through the headland to form an arch, eg. Durdle Door, Dorset. The roof of the arch is often unstable and will be attacked by the sea and by weathering. Eventually the roof will collapse leaving a stack such as Old Harry. Sometimes you get a series of stacks such as The Needles off the Isle of Wight. Areas with limestone or chalk rocks are prone to this type of erosion.*

4. The diagram below is a cross section along a coast. Explain how feature Y was formed. [Higher 6 marks]



Answer: *Feature Y is a wave cut platform. When the sea attacks the cliff it will attack the bottom of the cliff first. Over time a wave cut notch will form. This notch will become bigger and bigger and eventually the rock above the notch will become unstable and collapse. This process then continues over and over again and the cliff slowly retreats. As you can see from the diagram the original position is marked. The flat area in front of the cliff is called a wave cut platform and is usually only visible at low tide. This is the area that was originally the bottom of the cliff.*

5. Using one or more examples, describe the human responses to coastal erosion. [6 marks]

Answer: *There are two main approaches to coastal erosion, hard and soft engineering. Hard engineering involves building solid substantial sea defences which cost a lot of money. These can include the building of groynes at right angles to the coast to stop the movement of sand. E.g. Bournemouth. Another method is the building ox expensive sea walls to protect the land. This is being tried at Scarborough where the local council is spending £30 million. Other defences include gabions which are steel mesh cages containing boulders and armour blocks when large boulders are piled on the beach where erosion is likely. None of these hard engineering projects are sustainable in the long term. There has now been a move to soft engineering projects.*
The easiest soft engineering project is to leave the sea to do what is wants, but others include beach nourishment where more mud or sand is placed on the beach. In the west coast of France they have tried shoreline vegetation such as pine trees to hold the beach sediment together and dune stabilisation as dunes are an excellent defence against the sea.

Section 2 - Industry

1. **Using <u>one or more</u> examples you have studied, explain how government policy has influenced the location of industry. [Higher 6 marks]**

Answer: Governments can influence where industry goes in a number of ways. They can give tax incentives, cheap rents, subsidies, grants and cheap loans. These are all incentives for a firm to locate in a certain area. Often these are places, which the government wants to develop economically, usually in areas of high unemployment, such as the North East of England or South Wales. A good example is Nissan in Sunderland. The Nissan Company were given large cheap loans as well as grants and reduced rates if they agreed to come to Britain and especially to the north east of England. This was so the factory would not go abroad. Jobs would be created in Britain. Toyota in Burnaston is a similar example. Another way of influencing the location of industry is by planning permission. Before building a factory a company must apply for planning permission. The final decision for this lies with the government. They will refuse permission for areas that they do not want companies to go to and grant permission to areas that they do want companies to go to.

2. **Describe how industries pollute the environment. [Foundation 4 marks]**

Answer: *Industry creates a great deal of pollution. This can include pollution of the atmosphere, water, land and visual pollution. Primary industry such as open cast mining creates pollution by producing noise and dust when mining. The increase in road transport causes air pollution as well as an increase in danger. Secondary industry such as oil refineries are ugly to look at, take up a lot of space and give off toxic gases while making oil and chemicals. E.g. ICI on Teesside. Finally Tertiary industry such as Tourism creates overcrowding as tourists flock to 'honey pot sites', e.g. Windermere. This leads to an increase in litter, footpath erosion and destruction of wildlife habitats.*

3. **Describe how governments are trying to reduce pollution problems. [Foundation 4 marks]**

***Answer**: In MEDCs governments have used legislation to reduce and stop pollution. In response to the Great London Smog of December 1952, the Government introduced its first Clean Air Act in 1956. This Act aimed to control domestic sources of smoke pollution by introducing smokeless zones. The British government was committed to reducing sulphur dioxide emissions to 60% of their 1980 levels by the year 2000. The UK National Air Quality Strategy, sets air quality standards and guidelines for nitrogen dioxide, sulphur dioxide and carbon monoxide Many of these targets will need to be met by 2005.*

4. **Explain the advantages of Transnational Corporations (TNCs) for LEDCs. [Foundation 4 marks]**

***Answer**: Transnational corporations have a number of advantages for the LEDC they are built in. They bring work and use local labour. There is an improvement in education and work skills for the workers. TNCs will provide money for industrial projects, such as improving roads, airports and services. They will provide technology and know how that an LEDC might not have and they can provide trade links with other countries this brings in valuable foreign currency. In addition TNCs provide expensive machinery and equipment which the host country cannot afford as they are too poor. Finally TNCs can provide health care and education for the workers and their families.*

5. **Describe and explain the advantages and disadvantages of Transnational Corporations (TNCs). [Higher 9 marks]**

Answer: Transnational corporations or multinational companies are very large businesses that have offices and factories all over the world. They have a number of advantages. They bring work and use local labour. There is an improvement in education and work skills for the workers. TNCs will provide money for industrial projects, such as improving roads, airports and services. They will provide technology and know how that an LEDC might not have and they can provide trade links with other countries this brings in valuable foreign currency. In addition TNCs provide expensive machinery and equipment which the host country cannot afford as they are too poor. Finally TNCs can provide health care and education for the

workers and their families. However there are a number of disadvantages of TNCs. The local labour they employ is usually poorly paid and few of the local skilled workers are employed. Any profit made will go overseas back to the home country. Many of the products made by the TNC are often of little value to local people as they are too expensive. A big disadvantage is that companies may pull out at any time e.g. Samsung in Billingham and they rarely consider the needs of the country but are motivated by the needs of the company.

6. **Explain why industries that require large quantities of raw materials often have a limited choice of location. [Foundation 4 marks]**

Answer: Industries that need large quantities of raw materials such as coal or iron ore are severely restricted to where they can set up. Large amounts of raw materials are expensive to transport and when used there is often a lot of waste left over, such as with iron ore. In the case of coal most of it is burnt and you are left with a small amount of waste. To reduce costs industries that use these type of raw materials site their factories as close as possible to their raw material to keep transport costs down. A good example is the iron and steel industry on Teesside. The original factories where built within a few miles of the two main raw materials coal and iron ore.

Section 3 – Managing Resources

1. **Using <u>one or more</u> examples you have studied explain how 'Green' tourism can help protect environments. [Higher 9 marks]**

Ecotourism *or Green Tourism is aimed at allowing people to visit naturally beautiful environments whilst protecting them for the future at the same time. Many developing world governments have realised that unless they protect their fragile environments they are not going to have anything left for the tourists to come and see. Ecotourism also aims to benefit the local people directly. One country to try this new form of tourism is Belize, on the Caribbean coast of Central America.*
Belize is a very good example of where Ecotourism is being tried. The main aim is to achieve ***sustainability****, which means that the environment is not in any way damaged by the tourists. Belize has an abundance of natural and cultural phenomena that attract tourists, including forests, wetlands, coral reefs, savannahs and ancient Mayan ruins.*
An increasing number of tourists are coming to the country as they learn about all the things to see, and as the government realises the financial benefits of tourism.
However the government has also realised the importance of protecting the environments and has tried a number of initiatives. They created many National Parks and reserves, banning farming in many of them. In 1993 the Belize Ecotourism Association was established, it is concerned with protecting the natural environment and works closely with the Ministry of Tourism and the Environment.

2. **Why might renewable energy become more important in the future? [Foundation 4 marks]**

Answer: *The demand for and use of the world's resources continues to grow at a rapid rate. This is because of the increase in the world's population and the increasing economic development of countries, especially the poorer countries. Most resources in the world are non-renewable, in other words once they are used they are gone and cannot be used again. To conserve these resources the world will have to look to those resources that will not run out such as wind, solar and wave energy.*

3. **Why might energy use increase as a country develops? [Foundation 4 marks]**

Answer: *As a country develops there is an increase in the amount of energy that it uses. As the country becomes richer people want to spend their extra wealth on luxury items such as cars, TVs, computers etc. all of these items need made and demand large amounts of energy to make them. Similarly as a country develops there is more demand on services such as banks, hospitals, schools and shops. These services are large users of energy also.*

4. **For <u>one</u> type of renewable energy you have studied, explain its location. [Foundation 4 marks]**

Answer: *Wind Farms have been set up, like the one at Delabole in Cornwall, in many areas of the UK. Exposed hilltops are the usual location for a wind farm. They need somewhere with a fairly constant supply of wind, so many in the UK are located either on the coast or in high moorland. With the exception of three, they are all towards the West of the country because the prevailing winds blow from the southwest.*

5. **Using renewable energy is one way of saving resources. There are <u>other</u> ways of making the earth's resources last longer. Explain these. [Foundation 6 marks]**

Answer: *There are other ways of conserving resources other than renewable energy and these are called sustainability. These include things such as recycling. In Stockton each household is issued with a blue box and bag to recycle newspapers and glass. This means that less trees and electricity are needed to make more paper and glass. Households can also make an effort to conserve energy by having double-glazing, draught excluders, loft insulation and more efficient boilers installed. This would cut down on the use of energy. Finally we could all conserve energy by using resources carefully to slow down our consumption of them. We could make cars and power stations more efficient so they use less fuel.*

6. **Using examples of places you have studied, describe the advantages of tourism. [Foundation 4 marks]**

Answer: *Tourism can bring many advantages to an area especially to an LEDC such as Kenya. Tourism has brought foreign money into Kenya along with new investment. Big companies have built hotels to profit from the tourists. New jobs have been created for the people, e.g. in hotels. Local businesses have been strengthened, e.g. Local farmers have benefited from supplying food to hotels. There has also been a knock on effect in Kenya as other industries have started to move there because the infrastructure has been developed.*

7. **Using <u>one or more</u> examples of places in LEDCs, describe the <u>disadvantages</u> tourism may bring. [Higher 6 marks]**

Answer: *Tourism can bring a large number of disadvantages. In Kenya large numbers of people go there for the safaris, but these can damage the very environment, which attracts them there. Pressure is put upon wildlife and local people as well as on Kenya's fragile environments. Safari mini buses stray off the defined tracks and form new routes. Buses get stuck in the mud killing vegetation or widening tracks. In Amboseli, as in other parks, the minibuses and tourists have increased the rate of soil erosion. To get good tips from their passengers drivers will get too close to the animals. This scares the animals and they may be prevented from mating or forced to move to less favourable areas. The setting up of national parks in Kenya meant that the Maasai had to be moved from their traditional areas. Many now have to live a more permanent life, earning money from selling souvenirs to the tourists or performing traditional dances.*

Section 4 – Population

1. **Why do some parts of the world have few people living in them? [Foundation 4 marks]**

Answer: *Areas of extreme climates such as deserts often have few people living in them. This is because it is either too hot or cold or too wet or dry. E.g. Antarctica or the Sahara. Places at high altitude also have few people as they are inaccessible; have poor soils and steep slopes which means farming is difficult. For example the Alps and the Andes.*

2. **Many LEDCs have a high population growth rate. Using one or more examples you have studied, describe the measures that have been introduced to control population growth and explain why they are needed. [Higher 9 marks]**

Answer: *China has 25% of the world's population. Since 1979 china has enforced the one child per couple policy to try and slow the increase in their already huge population – it's working, but it is very harsh. Couples must get permission to have a baby. Big fines are given for unauthorised births. Unauthorised children are given no benefits, schooling or employment opportunities. In 1982 couples with more than two children were forced to be sterilised (mainly the women). Unauthorised pregnancies are often terminated by abortion and birth control is strictly enforced. Recently (1999) the government has trialled less extreme measures (e.g. birth control education) with good results. Allowing all families in rural areas to have two children. As the first single-family children had now reached marriageable age, then if two married they could have two children. Abolishing quotas for childbirths in 300 trial districts and replacing them with voluntary family planning.*
China as well as other LEDCs such as India has had to try and control its population because there were simply too many people for the resources available. If population growth had continued there would not be enough basic items such as food, housing and jobs to go round. The health of the people would suffer as hospitals and doctors would be stretched and there would not be enough education for all.

3. **Why have death rates fallen in some LEDCs in recent years? [Foundation 4 marks]**

Answer: *In some LEDCs there has been a fall in death rates because there has been an improvement in medical care. Vaccinations are much more common and there has been an increase in hospitals and doctors. There has also been an improvement in sanitation and water supply. This has led to less water borne diseases such as cholera. Finally there as been improvements in food production, both the quantity and the quality. This has led to less people dying from starvation.*

4. **For an area you have studied, explain why it has a high population density. [Higher 4 marks]**

Answer: *Western Europe such as Germany and the Netherlands has a high population density for a number of reasons. The climate is temperate in that it is not too hot or cold or too wet or dry. The relief is relatively flat making communications and building easier. There are also a large number of natural resources in the area such as coal and iron ore in the Ruhr region. This led to the growth of industry. Finally there are a number of large rivers such as the Rhine, which can be used for water supply and transport.*

5. **Using examples, explain why some countries have high birth rates and others have low birth rates. [Higher 6 marks]**

Answer*: In MEDCs such as Britain there tends to be lower birth rates because people have easier access to family planning and there is less religious reasons for using things such as condoms. There is also a lower infant mortality so there is less need to have so many children. People in MEDCs have more of a desire for material possessions such as cars and holidays and less desire for large families. Finally woman have far more freedom in countries like the UK and France and this enables them to follow their own careers rather than being solely child bearers.*
In LEDCs such as Kenya there is less access to family planning and is some countries such as Brazil there are religious reasons why you should not use it. Infant mortality is high so there is a need for more children. Things like pensions do not exist so they have more children to look after them in old age and woman have less freedom and their role is seen as being in the home.

6. **LEDCs often have youthful populations, whereas MEDCs' populations are often ageing. Describe the problems, which may result from this. [Higher 6 marks]**

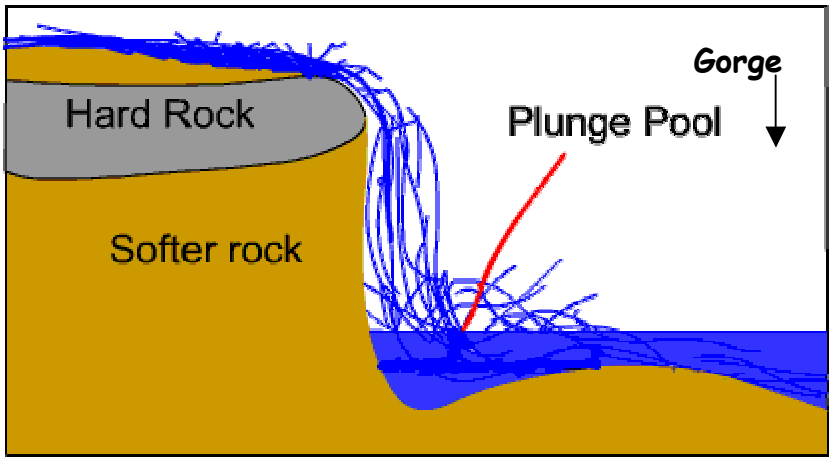
Answer: *In countries with an ageing population such as Italy and Germany there are major problems. In years to come there may be too few workers. This will lead to less taxes being paid and governments will have less money to invest in schools, hospitals and pensions. There will also be fewer consumers as people tend to spend less money when they get older. Schools will close due to lack of children and teachers will be out of work. Demand for products in the economy will be slanted towards the elderly e.g. wheelchairs.*
In LEDCS such as Brazil they have the opposite problem with more younger people. They will have the problem of increased demand on child health care and education. These are two services which are very expensive and the countries can ill afford to pay for them. There will also be less economically active people to pay taxes to pay for this large dependant population of children

Section 5 – Rivers

1. 1. **Explain the formation of a waterfall and gorge. [Higher 6 marks]**

Answer: *Waterfalls occur when rivers meet a band of softer rock after flowing over harder rock. The softer rock is worn away more quickly and the harder rock is undercut. In time the overlying harder rock will become unsupported and will collapse. This process is likely to be repeated many times, causing the waterfall to retreat upstream and leave a steep sided gorge in front of the waterfall. The Niagara Falls retreat by 1 metre a year and have left a gorge 11 km long in front of it.*
A labelled diagram would be good to go along side your answer.

Waterfall moves backwards



2. **Using an example of a flood in an MEDC, describe its effects on the land and people. [Foundation 6 marks]**

***Answer**: In the summer of 1993, the Mississippi River in the USA burst its banks. 150 levees (embankments) collapsed under the pressure of water. Dams burst and bridges were closed. By mid July 100 tributaries had flooded and the Mississippi spread across the flood plain for 10 - 25 kilometres. The effects of the flood were that48 people were killed. Nine states were affected. Floodwater stretched from Memphis in the south to Minneapolis in the north - covering 23 million acres. 26.5 million sandbags were used. Almost 70,000 people were evacuated from their homes. Final damage costs were estimated at $10 billion. Over 25% of this was crop losses. Some areas never recovered. The town of Valmeyer, Illinois, was abandoned after the floods and rebuilt on higher ground. The river was closed to traffic for two months - 15% of the USA's freight uses the Mississippi.*

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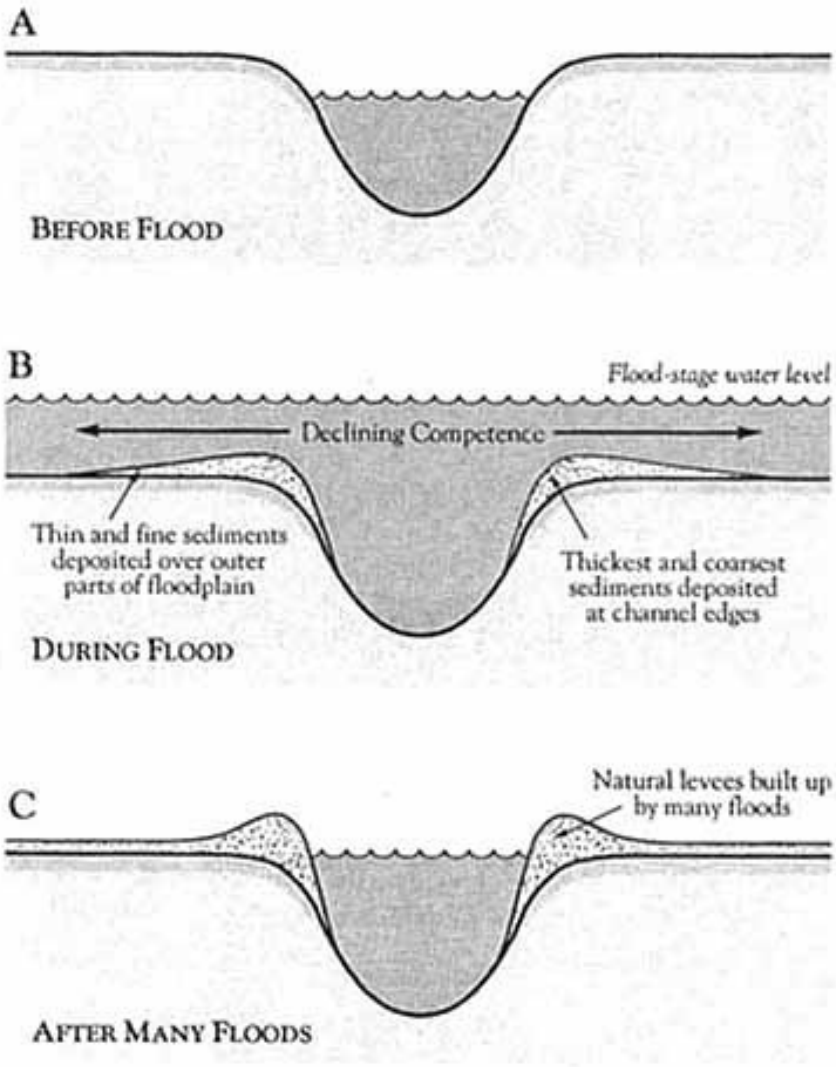
Some areas never recovered. The town of Valmeyer, Illinois, was abandoned after the floods and rebuilt on higher ground. The river was closed to traffic for two months - 15% of the USA's freight uses the Mississippi so the effects were enormous.

4. With the aid of diagrams, explain how levees are formed. [Higher 6 marks]



Answer: *Levees are naturally formed banks along the sides of a river channel in its lower course, as it flows through the flood plain. They are formed by the river depositing material when it floods. During a flood the river deposits its heaviest, coarsest material closest to its normal course. Over years this deposition has built up the natural embankments, built of coarse material. Beyond them the flood plain has been built up of the finer material that was deposited further away from the normal course of the river.*

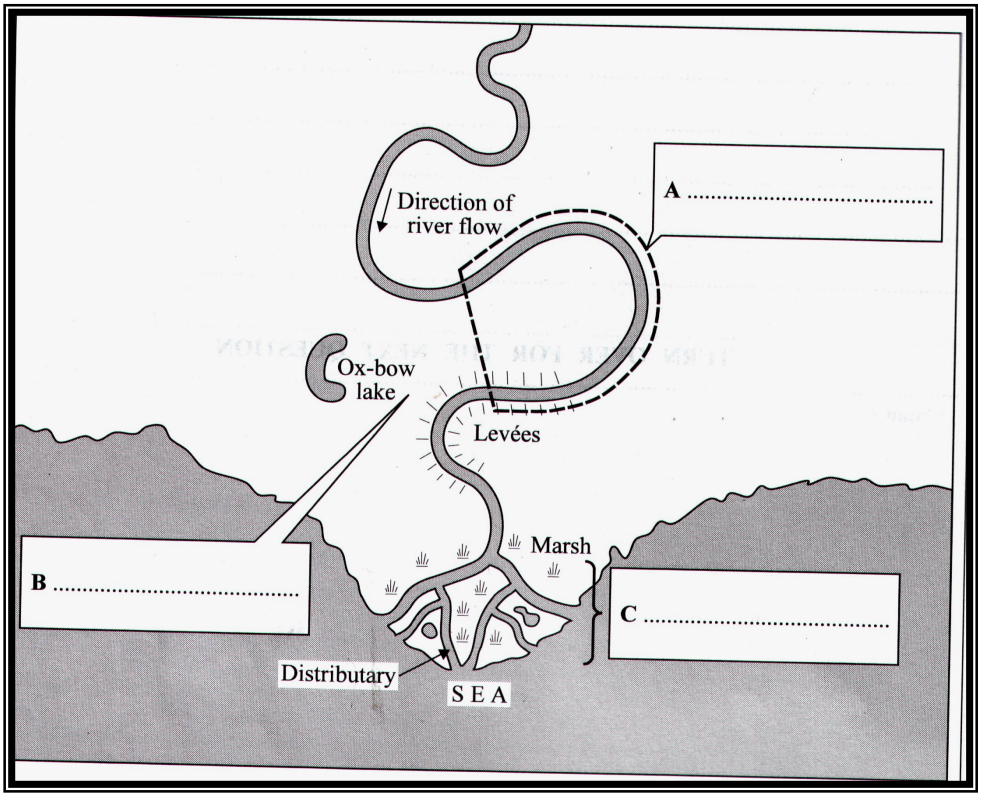
5. Explain how a river flood plain is formed. You may use diagrams to help you. [Higher 6 marks]

Answer: *The floodplain is the flat land of the river valley close to the riverbanks. As the meanders in the river get bigger and bigger they erode sideways and make the whole valley wider. The floodplain is usually found in the lower course of a river. It is a fertile area of land, used for agriculture and growing crops. The floodplain is covered with water when a river floods, fine silt will be deposited. Each time the river floods another layer of silt is added and a flat flood plain is formed.*

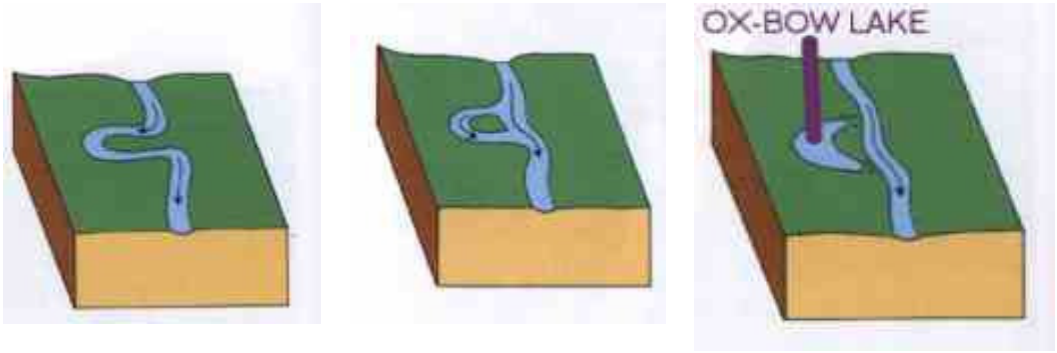
6

a. From the diagram above, name the features shown at A, B and C. [3 marks]

a. = Meander b. = Flood plain c. = Delta



b. Explain the formation of an ox bow lake. You may use diagrams to help you. [Higher 6 marks]



Answer: *When meander bends become giant loops, there is a thin piece of land left between the beginning and the end of the meander. This is the meander neck. As the river neck becomes very narrow, the river can break through. For a short time, water flows both round the meander (which is now called a backwater) and across the meander neck. Eventually the river cuts off the backwater completely and flows across what used to be the meander neck. For a short time, an oxbow lake is left behind. It is called an oxbow lake because it is shaped like the old fashioned 'U' shaped yoke that was once used to hitch an ox to a plough. The oxbow lake lasts until it becomes overgrown with weeds and filled in with soil. This happens quite quickly as it is cut off from the main river and therefore doesn't get any water.*

c. Describe how feature C (from the main diagram above) is formed. [4 marks]

Answer: *Rivers move slowly at the river <u>mouth</u>. The river carries a lot of sediment and mud. The river deposits (drops) its sediment and mud at its mouth. This sediment and mud spreads out into a fan- like shape, or delta, across the mouth of the river.*
If the force of the sea tides and water is not very strong, the mud deposits cannot be washed away. Instead, the deposits break up the flow of the river water into many smaller channels. The delta gradually gets bigger and bigger. The new land is made up of billions of pieces of mud, sediment and small rocks. The river from its source to its mouth has carried this sediment.

7 Using one or more examples, describe the human responses to river flooding. [Foundation 6 marks]

Answer: *there are a number of things humans can do to control river erosion. Firstly there are hard engineering projects such as those that have been tried on the Mississippi. These have involved building dams and reservoirs, such as in Tennessee to control the volume of water in the river. A local example is Kielder in Northumberland. Humans can also change the shape of the river to help control flooding. The river can be mad deeper by using dredges, the river can be straightened as they have with the River Tees to help the water flow quicker and diversionary spillways and culverts can be built as with the Mississippi. Secondly, there are soft engineering projects. This involves changing the land use in areas that are prone to flooding. Not allowing the building of houses or industry on floodplains, but instead leaving it for farming or recreation such as parks or golf courses. This has been tried near York. Also tried has been afforestation, the planting of trees to help the soaking up of excess water.*

Section 6 – Tectonics

1. **Using <u>one or more</u> examples of a volcanic eruption, describe the effects on the <u>physical</u> environment. [Foundation 4 marks]**
   [Be careful with this question as it is only asking for <u>Physical</u>]

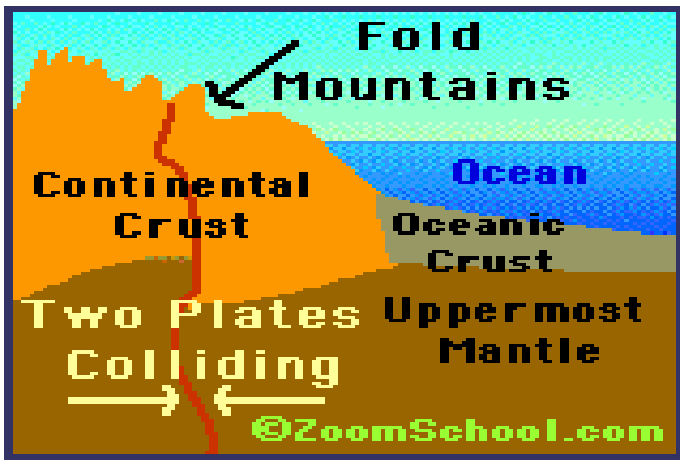
Answer: *In 1980 Mt ST Helens in the USA erupted even though it had been dormant for 120 years. Ash, which fell into rivers and lakes, raised the water temperature and sediment and mud choked channels. The effects were to kill many fish, which led to the loss of 250 km of top class salmon and Trout Rivers. Every tree within 25 km of the blast north of the volcano was flattened. Some 10 million trees had to be replanted. As with the trees no wildlife survived within the blast zone. Sometimes volcanoes can have good effects. In the Mt Etna area the lava and ash has turned into good soil, which grows plentiful crops including vines and oranges.*

2. **Using examples of earthquakes, explain why some cause more deaths than others. [Higher 6 marks]**

Answer: *Some earthquakes cause more deaths than others for a number of reasons. One reason is the size of the earthquake and where the epicentre is. The 1997 Assisi quake measured only 5.7 on the Richter Scale and caused fewer deaths than the 1755 Lisbon quake, which measured 8.8 and was the largest ever recorded. The Kobe quake of 1995 caused 5500 deaths mainly because the epicentre was so close to Kobe itself. Whereas the San Francisco quake of 1989 caused less deaths as the epicentre was so far away. If the quake hits a large built up area like Kobe then it will cause more damage than if it had hit a rural area. due to the size and density of the population. Finally if a quake was to hit an LEDC such as India in 1993 this will have more effect that hitting an MEDC as the richer MEDC will be much better prepared for the quake in terms of rescue services and building preparation.*

3. **With the aid of diagrams, explain the formation of Fold Mountains. [Higher 6 marks]**

Answer: *Fold mountains form along both* ***destructive*** *and* ***collision plate boundaries****, in other words where two plates are pushing towards each other. The best examples are the Himalayas, the Rockies, the Andes and the Alps, all of which are huge fold mountain ranges caused by the collision of two plates. The theory is that as two plates, with landmasses on them, move towards each other they push layers of accumulated sediment in the sea between them up into folds. Thus most fold mountains will continue to grow, as the plates constantly move towards each other.*

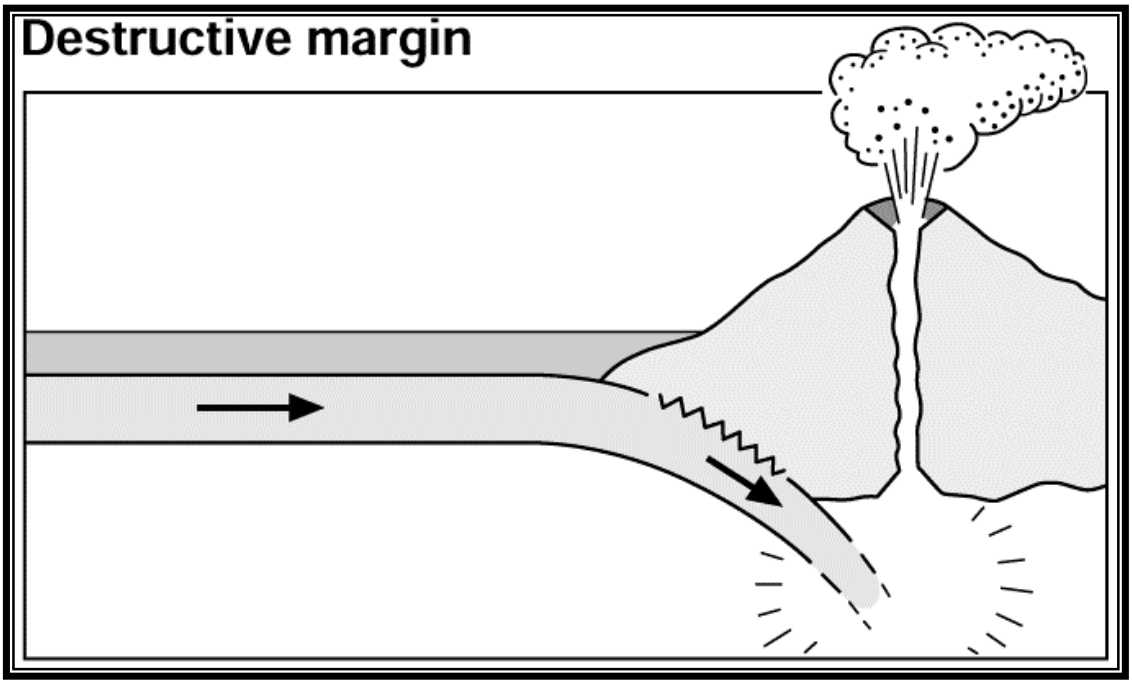


4. **Using one or more examples, describe the effects of an earthquake. [Higher 6 marks]**

Answer: *in 1995 there was a major earthquake in Kobe in Japan. Nearly 200,000 buildings collapsed and also a 1 km stretch of the elevated expressway along with numerous bridges. 120 of the 150 quays were destroyed. Electricity and gas supplies were disrupted and fires caused by broken gas pipes raged for several days destroying a further 7500 houses. Roads were grid locked delaying ambulances and fire engines. An estimated 230,000 were made homeless in the middle of the winter when temperatures fell to -2^{0}C. There was a short-term shortage of blankets, clean water and food. Many people had to sleep in their cars. Industries such as Mitsubishi and Panasonic were forced to close. The final death toll reached 5500, injuries at 40,000*

5. **Explain how a volcano is formed. You may use diagrams to help you. [Foundation 6 marks]**

Answer: *Volcanoes are formed along two types of plate boundary: destructive and constructive boundaries. Volcanoes occur where molten rock (magma) is allowed to escape to the surface of the earth. This usually occurs at plate boundaries through cracks in the crust called vents. In the case of destructive boundaries the two plates move together. As the plates collide the oceanic plate is forced under the continental one. This causes friction and heat results. This heat melts the rock and pressure builds up. This molten rock under pressure will force its way to the surface through cracks and a volcanic eruption occurs. Overtime the lava builds up to form a cone shaped mountain called a volcano.*



6. **Explain the methods that countries can use to predict and prepare for volcanoes and earthquakes. [Higher 9 marks]**

Answer: *in volcanic areas scientists monitor the telltale signs that precede a volcanic eruption. You often get lots of tiny earthquakes, rising magma, escaping gas and changes in the tilt of the volcano sides. If enough signs are noted then evacuation plans can be put into operation. Earthquakes are harder top predict but there do seem to be some clues. Chinese scientists observed strange animal behaviour in 1974. But most scientists rely on looking at previous data about earthquakes to predict when a quake might hit. This includes mapping previous quakes to see if there is a pattern. Looking at the frequency of quakes to see if there is a pattern also. Evacuation plans are not possible with earthquakes bit other things could be done.*

With both volcanoes and earthquakes the rescue services can be trained and prepared for a disaster. In Japan for example each 1st September is given over to publicity campaigns and public information about what to do in an emergency. Each household is encouraged to have an earthquake survival kit in the house. In earthquake regions buildings cab be built to withstand earthquakes. They can have foundations that move with the quake and should be made of fire resistant materials. Buildings should not be built on clay as this turns to mud and results in liquefaction when the building will literally sink.