

CHAPTER 5 = ROCKS

3 types of rock

- (1) igneous rock
- (2) sedimentary rock
- (3) metamorphic rock

(1) Igneous rock-

->Igneous rock

Is liquid rock that is created when magma cools down this is directly linked to magma. magma cools and hardens quickly on the earth's crust or magma can cool and harden slowly in earth's crust/ocean floor. magma will cool and harden quickly on constructive plate boundaries fissures then form ,magma cools quickly on the earth's crust on the ocean floor liquid magma hardens on seafloor on crust to form BASALT eg Giant Causeway Co. Antrim basalt is hardened magma it forms when 2 plates separate its the main rock in the Atlantic ocean. igneous rock gives Basalt and Granite.

->Basalt

It forms when 2 plates separate. magma cools and hardens on earth's crust it's found in the giant's causeway co antrim and derry antrim plateau. its the main rock in the atlantic ocean. its a black/grey colour. its a very dull rock. it is used for roads, driveway you can only have to mix it with tar. the texture is medium grained with microscopic crystals. basalt cools faster than granite. It was formed 65 million years ago.

->granite

It forms when magma cools and hardens in the earth's crust. it happens when 2 plates collide the edge of one get subducted inside the mantle and it burns, melts and rises. the edge of continental plate buckles and folds up to form fold mountains. because of the fold mountains being too thick the magma cools and hardens slowly in the earth's crust forming granite. granite forms at destructive plate boundaries. it has a speckled and sparkling appearance because it has minerals. it has small crystals on it. it is found in the wicklow mountains. it is formed in the caledonian period 400 million years ago. It is used for kitchen countertops. The texture is coarse grained with large crystals of the minerals feldspar, mica and quartz.

What basalt and granite have in common?

they both form when magma cools and hardens

3 types of igneous rock = (1) igneous (2) basalt and (3) granite

(2) sedimentary rock

Is made up of compressed and hardened and lithified sediments and compacted. Most common rock is limestone burren co. clare.

->limestone

Was formed 320 million years ago. it is found in the burren co. clare. it forms when fossils of sea creatures are compressed (calcium carbonate glued all fish and bones and teeth together) like fish, teeth, bones, shells and hardened layers and layers build up and hardens to form limestone. limestone forms on seafloors plates move (ireland is 51-55 degrees). it's a light grey colour. it is mainly used for construction. the plates move uplifted. Texture = easily weathered.

->sandstone

It is compressed and hardened sand. it is found in the cork and kerry mountains the McGillycuddy Reeks. it forms on seafloors (tropics). it is a red rusty colour. it is mainly used for buildings. red brick buildings. it was formed 380 million years ago ireland was in the tropics they were near the equator near 30 degree south or north. only caledonian fold mountains were above the sea level the rest of ireland was undersea theres alot of sand. sand is broken down rock. sand got washed out to sea. layers of sand were compressed and hardened to form sandstone. texture = coarse grained. it is used in patios.

Sedimentary rock = (1) limestone (2) sandstone (3) coal (4) shale

(3) metamorphic rock

Is complete change. it used to be either igneous, sedimentary or metamorphic rock but it was completely changed by great heat by the magma. the colour change, they are impermeable = water passes through. (1) heat changes rock (2) great pressure the plates colliding changes the rock. then subduction occurs the destructive plate boundaries or folding give you great pressure. links metamorphic rock to subduction and folding. its minerals will change heat comes from subduction of plates. anything subducted melts and rises. pressure comes from folding destructive plate boundaries. great pressure changes completely changed rock.

YOU CAN ONLY GET METAMORPHIC ROCK WHEN 2 PLATES COLLIDE.

->marble

Limestone becomes marble found in kilkenny. black marble = kilkenny. pink = cork. pure white = italy corvara. connemara = green.
uses = tiles, statues, churches, gravestones. texture = hard rock

->quartzite

It used to be sandstone but was changed by great heat or pressure found in Croagh Patrick Co. Mayo uses = glass, ceramics. texture = extremely hard rock

->slate

It used to be shale but changed into slate. its found in portroe. uses = roofing.

What we use rock for

(1) Quarrying rock=

Explosive method=drill little holes in the rock and fill it in with dynamite get a remote control and detonate and blast the rock apart.slicing method get a large rotation disc it got jagged edges.use rock limestone to make granite.in explosive method use concrete for foundations of buildings or can make concrete blocks.for slicing method granite for countertops for tiles,statues.

(2)energy

Rocks provide us with energy known as fossil fuels.coal,oil and gas are extracted from the crust in different ways.coal is taken underground.process of extracting coal->shaft mining.vertical wells are drilled and a shaft is constructed.oil and gas are extracted from rock by drilling and pumping.drilling deep into earth's crust and pumping oil and gas to surface.can also be done offshore by a oil rig and gas is then piped a shore.eg of oil rig is kinsale co.cork

Advantages of Quarrying-economic consequence

Main advantage is jobs/employment.lots of direct jobs (5,000)eg killybegs of fantine.kelly's quarry belong to kelly quarry fantane.you could be a lorry/truck driver,mechanics,engineers,accountants,secretary.indirect jobs=local shops,rolls,coffee,local pubs,restaurants,cafes.

GNP=gross national product=amount of money.country has vat.taxes.

Disadvantage of Quarrying-environmental consequence

One environmental consequence of environmental rock exploitation is pollution.dust is released when rocks are quarried by explosive/slicing then falls into local groundwater and farms it goes into our food chain. Noise pollution=machiners in lorries/quarries its bad for your health bad for the environment.quarrying is a non-renewable source when all of rock is extracted your left with a scar in the landscape then theres a eyesore.visual pollution.

Social consequences of rock exploitation

Jobs and good for social fabric of society/stops migration.direct jobs/indirect jobs like lorry/truck drivers,mechanics.jobs in an area stop people to emigrate good for communities like local schools/gaa clubs/families.prevents antisocial behaviour that comes with unemployment like joyriding,stealing,drugs.

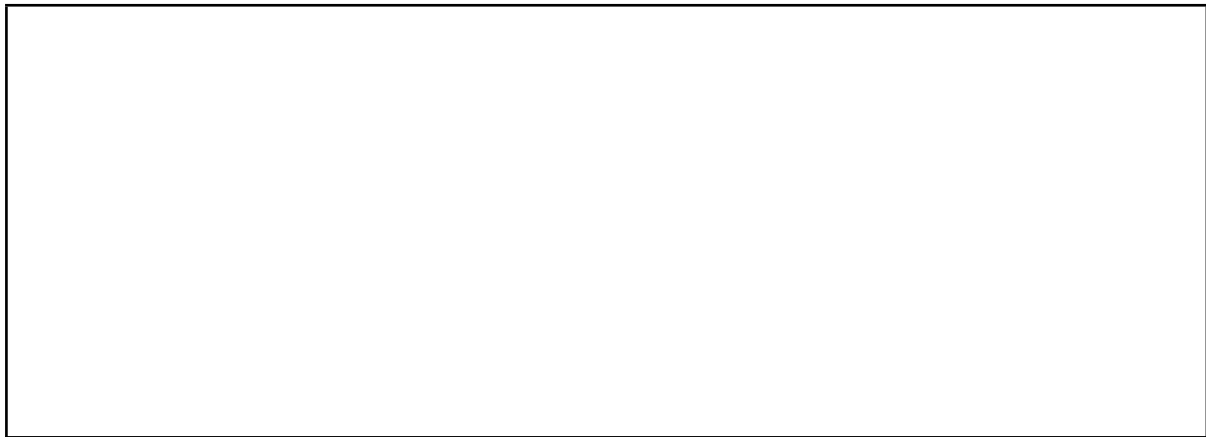
EXAM QUESTIONS

-SAMPLE ANSWERS

EXPLAIN WITH AID OF A DIAGRAM HOW TWO IGNEOUS ROCKS ARE FORMED.

Basalt is one of the igneous rocks that I have studied. It formed 65 million years ago. It forms when 2 plates separate. Magma cools and hardens on the earth's crust/ocean floor. It is found in the Giant Causeway in Antrim and Derry Antrim Plateau. Its main rock in the Atlantic Ocean. It's a black, grey colour. A very dull rock. It is used for roads, driveways. The texture is medium grained with microscopic crystals. Basalt cools faster than granite. The second igneous rock I've studied is granite. It forms when magma cools and hardens in earth's crust happens when 2 plates collide edge of one get subducted inside mantle it burns, melts and rises. The edge of continental plate buckles and folds up to form fold mts because fold mts are too thick magma cool and hardens slowly in earth's crust forming granite. Granite forms at destructive plate boundaries. It has a speckled and sparkling appearance found in Wicklow Mountains formed in the Caledonian period 400 million years ago. It's used for kitchen countertops.

DIAGRAM = (DRAW YOUR OWN DIAGRAM)



EXPLAIN 2 WAYS THAT HUMANS INTERACT WITH ROCKS AS PART OF THE ROCK CYCLE ON A DAILY BASIS

(1) quarrying rocks = extracting rock. explosive method you drill little holes in the rock and fill it with dynamite you get a remote control and detonate and blast the rock apart.
.in explosive method you use concrete for foundation of buildings or can make concrete blocks. the second method is the slicing method you get a large rotating disc it got jagged edges use rock limestone to make granite
in slicing method you use granite for countertops and marble for statues and tiles

Here is one answered try do the second way human interact on your own

(2)

name on example of rock group you studied=sedimentary rock

name one place this rock group is located=burren co clare

name on characteristic of this rock group=its made up of sediments and compressed sand

name two types of rocks belonging to this rock group=(1)limestone (2)sandstone

Explain how the rock group you have studied is formed=

sedimentary rock is made up of compressed and hardened and lithified sediments then its compacted.its most common rock is limestone burren co.clare.limestone is formed when fossils of sea creatures are compressed like bones,teeth and shells and hardened.layers and layers build up and hardens to form the limestone.limestone forms on seafloors when plates move.ireland is 51-55 degrees north to equator.limestone is a grey colour mainly used for construction.plates move uplifted.another sedimentary rock that i've studied is limestone.its compressed and hardened hand.its found in cork and kerry mountains like the McGillicuddyreeks.it forms on seafloors.Its a red,rusty colour mainly used for buildings.red brick buildings.380 million years ago ireland was in the tropics.30 degrees south to the equator only caledonian fold mountains were above sea level the rest of ireland was undersea theres alot of sand.the sand then gets washed out to the sea.

explain one positive socio-economic effect and negative socio-economic effect of rock exploitation

positive=

it creates jobs and it's good for the social fabric of society and stops migration.you get direct jobs and indirect jobs like lorry/truck drivers,mechanics .jobs in the area to stop people to emigrate.it's good for communities like GAA clubs ,local schools.

negative effect=

rock exploitation is pollution.dust is released when rocks are quarried by explosive/slicing method then falls into local ground and water and farms then it gets in our food chain.it also causes noise pollution and its also bad for the environment.quarrying is a non renewable source when all rock is extracted your left with a scar in the landscape then there's an eyesore that also causes visual pollution.

Learning outcomes=

1. Distinguish between different categories of rock type ,referring to composition and formation
2. Evaluate the environmental,economic and social consequences of rock exploitation and energy resources.