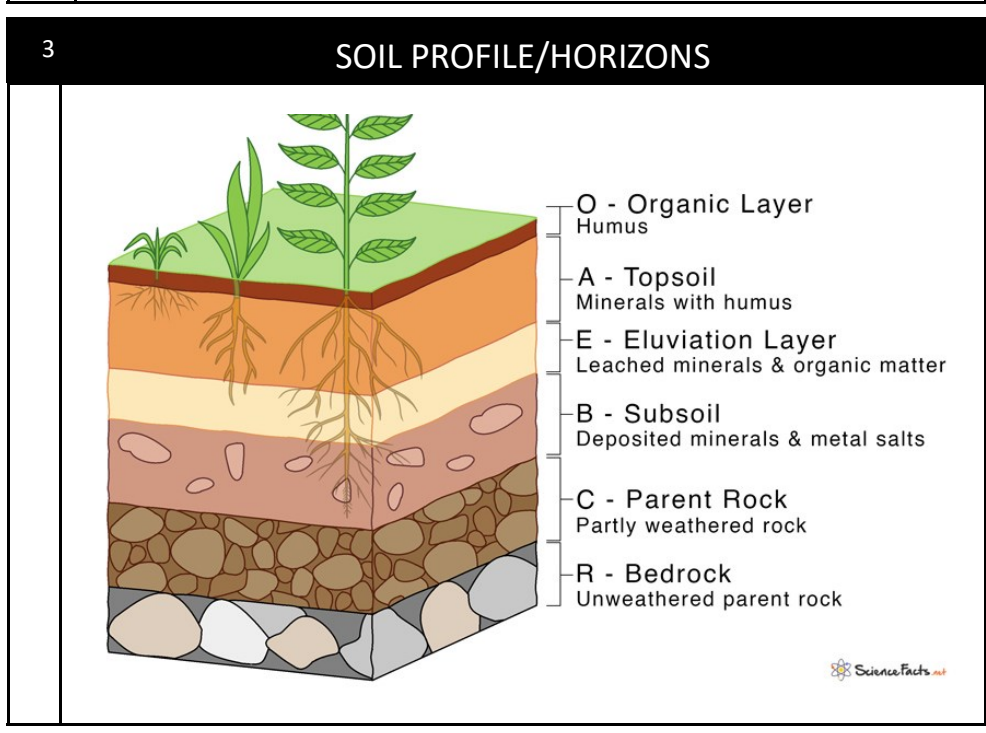
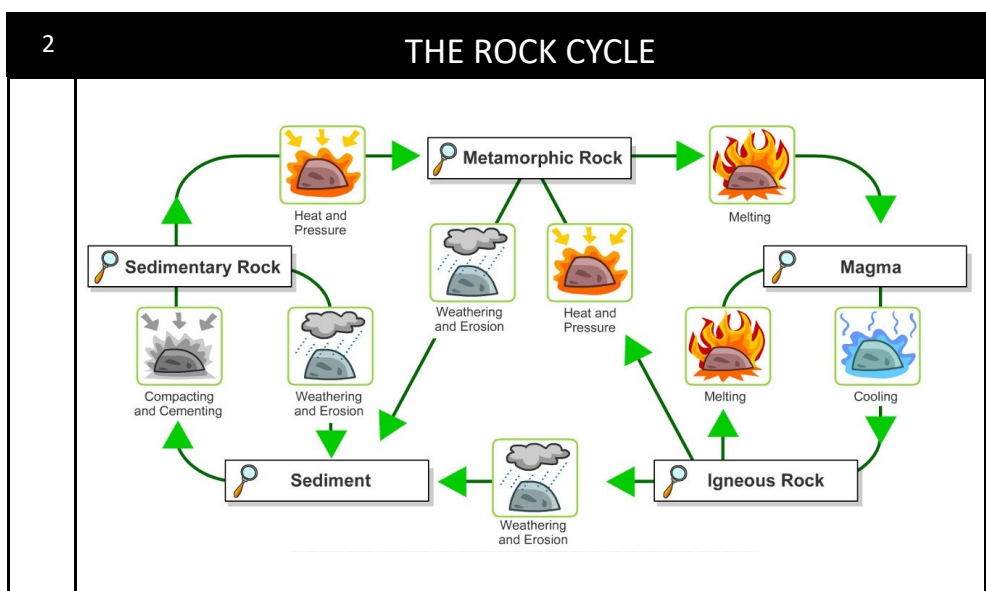


YEAR 7 GEOGRAPHY – ROCKS AND SOILS

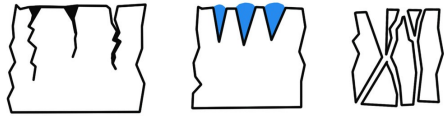
1 KEY VOCABULARY	
Geology	the study of the earth's physical structure and substance, its history, and the processes that act on it.
Igneous	Igneous rocks are formed by magma from the earth cooling
Metamorphic	Metamorphic rocks have been subjected to heat and/or pressure, causing them to change into another type of rock
Sedimentary	Sedimentary rocks are formed from sediments that have settled at the bottom of a lake, sea or ocean, and have been compressed over millions of years.
Geologic Timescale	A way of chronologically dating the earth's structure through time.
Igneous Intrusive	Igneous rocks formed as they cool on the inside of a volcano
Igneous extrusive	Igneous rocks formed as they cool outside a volcano.
Soil	Soil is a mixture of organic matter, minerals, gases, liquids, and organisms that together support life.
Soil Profile	A soil profile is a vertical cross-section of the soil, made of layers running parallel to the surface.
PH Scale	This measures the acidity or alkalinity on a scale of 1 to 14. 7 is neutral, below 7 acidic and above acid
Humus	Decayed or dead matter in the soil which adds nutrients.
Chemical Weathering	Rainwater is naturally slightly acidic because carbon dioxide from the air dissolves in it. Minerals in rocks may react with the rainwater, causing the rock to be weathered.
Biological Weathering	biological weathering, is caused by animals and plants. For example, rabbits and other burrowing animals can burrow into a crack in a rock, making it bigger and splitting the rock.
Mechanical Weathering	Caused by physical processes such as changes in temperature, freezing and thawing, and the effects of wind, rain and waves.



YEAR 7 GEOGRAPHY —ROCKS AND SOILS

4 MECHANICAL WEATHERING

Freeze thaw Action



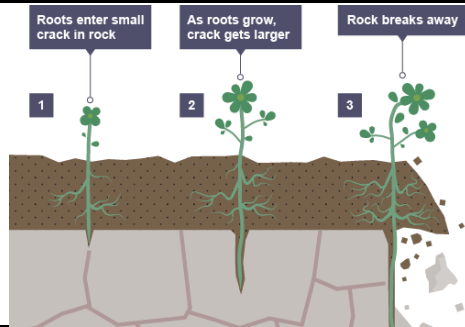
Water seeps into the cracks in rocks. when temperatures fall (e.g. at night) the water freezes and expands. Over time, this process repeats until eventually pieces of rock are chipped away.

Onion weathering



This Process occurs mainly in desert environments. Rock expands during the high daytime temperatures and then cools rapidly at night forcing the outer layers of rock to crack.

5 BIOLOGICAL WEATHERING



6 SOIL EROSION

Soil erosion is when soil is removed from the upper layers of the soil profile, It occurs naturally by wind, water, ice and gravity. However, humans make soil erosion worse, some examples include having bare areas of farmland, slash and burn agriculture, grazing animals, logging, mining, construction, quad biking and using/creating hiking trails.

7 WHAT IS IN SOIL?

Sand particles: these are the biggest in size. They help to form lightweight soil and are important for drainage but sand particles cannot hold onto nutrients Clay particles: these are small particles. They hold water well but can become heavy and waterlogged when wet. These particles can hold onto nutrients. Silt particles: these are medium sized particles. They hold water but can be hard to drain. They can hold only a limited amount of nutrients. Water clings to the soil particles and is taken up by plant roots. It is important for the animals living in the soil. Air fills the gaps in the soil and allows the plant roots and animals to 'breathe'. Just under half, about 35 to 40%, of a good soil is made up of water and air! So 'Which one is there most of' - could be air! Organic matter. This includes manure, leaf mould and compost. It releases nutrients slowly as it rots and helps the soil hold water. It helps stick the soil together!

8 STRATEGIES TO REDUCE SOIL EROSION

Wind Breaks	Rows of trees are planted between fields, slowing down wind and reducing erosion
Terracing	Step- like terraces are built on slopes. They prevent rain water rushing downhill across the surface of the land carrying soil away.
Preventing Overgrazing	Frequently move animals from field to field. This gives the grass a chance to recover. This makes it harder for the soil to be blown or washed away.
Strip Cropping	Groundcover plants such as grasses are planted in strips between fields and crops. The strips of groundcover soak up rain and slow runoff.
Contour Cropping	Crops are planted in curving rows to follow the contour of hills. This slows runoff and reduces soil erosion.
Selective Hillside logging	Cut only a few trees in any given place along a hillside
Cover Crops	Cover crops are any crop that is grown to protect and improve the soil, but not be harvested. Fields are planted all year round, even in seasons when crops don't grow. Cover crops cover the soil and hold it in places reducing wind erosion. They also add organic matter and improve soil texture.
Reclaim mind lands	Save the stripped topsoil and return it to the land. Once the soil is in place, plant trees and other plants to protect the bare soil.
Afforestation	Plant new trees to replace those that have been cut down