CWK CWK

Weathering

- To describe the three types of weathering, Biological, physical and chemical.
- To be able to give examples of all three types of weathering.
- To link the weathering process to the landscape.
- Use particle diagrams to explain weathering

Lesson 7

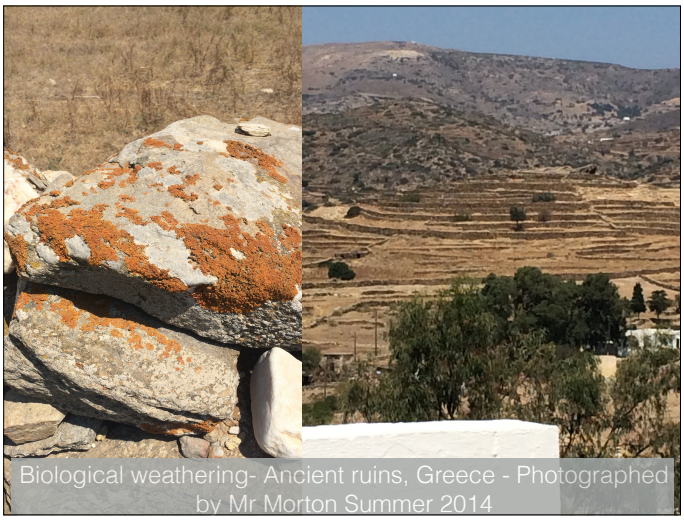
cwk **Biological Weathering** date

When rocks are broken into smaller pieces by the action of any living material. Animals, plants, bacteria or fungi

Trees put down roots through joints or cracks in the rock in order to find moisture. As the tree grows, the roots gradually prize the rock apart.

Many animals, such as these Piddock shells, bore into rocks for protection either by scraping away the grains or secreting acid to dissolve the rock

Even the tiniest bacteria, algae and lichens produce chemicals that help break down the rock on which they live, so they can get the nutrients they need.



Biological weathering- Ancient ruins, Greece - Photographed by Mr Morton Summer 2014

cwk **Physical Weathering** date

When the action of water, ice, or sun causes rocks to break into smaller pieces.

Freeze thaw

Rainwater or snow-melt collects in cracks in the rocks.

At night the temperatures drops and the water freezes and expands.

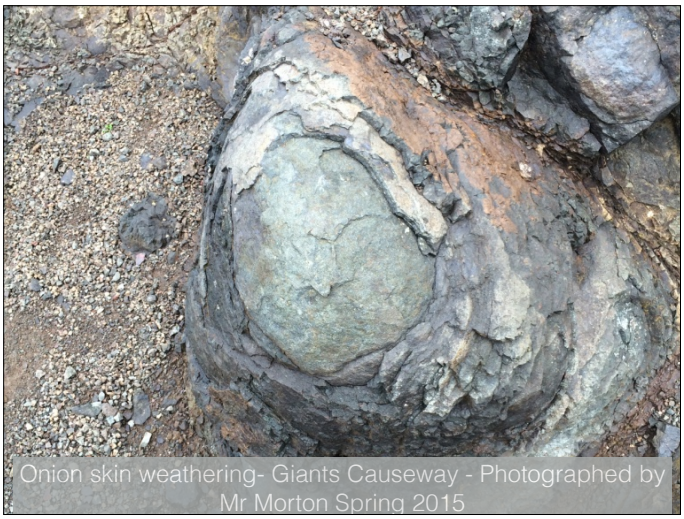
The increases in volume of the ice exerts pressure on the cracks in the rock, causing them to split further open.

During the day the ice melts and the water seeps deeper into the cracks.

At night the water freezes again….etc.

Onion Skin Weathering

This type of weathering is common in warm areas. As the sun shines on rocks during the day it causes them to expand. During the night the rock contracts due to the colder temperature. Over time this continued process causes small pieces of surface rock to flake off.



Onion skin weathering- Giants Causeway - Photographed by Mr Morton Spring 2015

cwk **Chemical Weathering** date

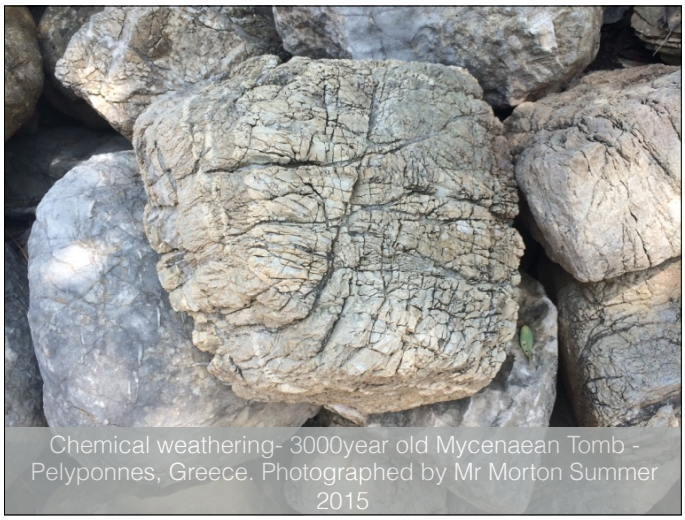
When chemicals such as acid rain react with the minerals in a rock causing them to wear away.

cwk **Chemical Weathering** date

Limestone is particularly susceptible to acid rain.

calcium carbonate + sulphuric acid —> calcium sulphate + carbon dioxide + water

$CaCO_3 + H_2SO_4 \longrightarrow CaSO_4 + CO_2 + H_2O$



Chemical weathering- 3000year old Mycenaean Tomb - Pelyponnes, Greece. Photographed by Mr Morton Summer 2015

Chemical weathering Torso of male statue Greece. Photographed by Mr Morton Summer 2014

Which words have you learned so far? SPLAT

biological weathering	limestone	$CaCO_3$	biological weathering	limestone	$CaCO_3$
onion skin weathering	sediment	freeze-thaw	onion skin weathering	sediment	freeze-thaw
cracks	hot climates	cold climates	cracks	hot climates	cold climates
chemical weathering	ice	Calcium Carbonate	chemical weathering	ice	Calcium Carbonate
carbonic acid	Acid Rain	carbon dioxide	carbonic acid	Acid Rain	carbon dioxide
physical weathering	sulphuric acid	tree roots	physical weathering	sulphuric acid	tree roots