Connected Learning Team Primary

Year 4

Science Package
Characteristics of soil
Weathering

2 weeks

EARTH and SPACE

Lesson 1

We are learning to (WALT):

Find out what are the characteristics of different soils.

I am successful when (WILF):

I can **distinguish** between different soils.

Soil is often described using several **characteristics** including texture, structure, density, temperature, colour, consistency, and porosity.

One of the most important **properties of soil** is the texture. Texture is a measure of whether the **soil** is more like sand, silt, or clay.

Characteristics of sands and soils

Complete the table below with the soil samples you can collect from around your house. These might include sand, potting mix, mulch or gravel. Wear gloves for this activity as a safety precaution while handling soil. You will need to come up with 2 of your own classification categories.

Classification Categories	Name of Soil Sample			
	1	2	3	4
Particle size				
Texture				

Write a paragraph describing 1 of the samples. Here is the start of an example: The sand has fine particles and are mostly the same colour. The texture is grainy and course.

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Reflection

After reviewing the WALT and WILF, what was one success you had from this task:

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EARTH and SPACE

Lesson 2

We are learning to (WALT):

Discover what weathering means and its effect on soil.

I am successful when (WILF):

I can explain weathering and its effect on Earth's soil.

Weathering can be:

Physical due to temperature changes (heat expansion & frost), water and wind driven particles, ice motion, and the action of animals. *Desert polish on pebbles and the base of Wave Rock are the result of both weathering and wind erosion.*

Chemical due to action of oxygen, water, natural acids formed from plant decomposition and pollution from burning fossil fuels (acid rain).
The marble acropolis of ancient Athens has been physically weathered by humans using cannon shots and explosives. The breakdown has been rapidly accelerated by the action of acidic fumes from modern traffic.

Biological due to the weakening and subsequent disintegration of rock by plants, animals and microbes. Growing plant roots can exert stress or pressure on rock, resulting in their break down over time.

Weathering Investigation

Can you conduct this investigation at home to understand what happens during weathering! Check the list of materials carefully.

Weathering Examples	Prediction – what will happen and why	What happened and why?	Was it *Physical or Chemical* Weathering?
1. **Acid rain on Limestone** Add drops of vinegar to a stick of chalk			
2. **Water freezing** Mark a plastic cup to the halfway point and fill it up to the mark. Freeze overnight and observe what happens.			
3. **Weathering on rocks** Place 6 sugar cubes in a zip lock bag and shake 10 times. Examine and observe the contents of the bag after.			
4. **Water on rock containing iron** Examine dry steel wool and wet steel wool after one week in a zip lock bag			

Reflection

Review the WALT and WILF. What is one key idea you have learnt today?

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