Year 3 Science Knowledge Organiser - Rocks

Knowledge - types of rock

Sedimentary		1. Formed under the sea or water 2. From particles of sand, shell, pebble or other material 3. Settle and gathers into layers 4. Over time piles up 5. Pressure turns the sediment into rock 6. Can be crumbly 7. Permeable 8. May contain fossils	• Limestone: glass making, cement • Sandstone: most popular building material in the world
Igneous		1. Formed from cooling and solidification of magma and lava 2. Very hard rock 3. Contains crystals	• Obsidian: arrowheads, spear points • Granite: building, bridges, monuments • Basalt: building, construction
Metamorphic		1. Formed under the surface of the earth near magma 2. The heat causes a chemical change **without** it melting 3. The pressure on the heated rock makes curvy layers 4. Usually hard 5. May contain crystals or fossils	• Marble: ancient greeks built Parthenon, sculpture, kitchen worktops • Slate: roofing material, decorative stone, base for snooker tables

Vocabulary

1. Magma	Hot fluid or semi-fluid material below or within the earth's crust
2. Lava	Hot molten or semi-fluid rock erupted from a volcano or fissure
3. Solidification	A change of matter, through cooling, that results in the production of a solid
4. Particles	A minute portion of matter
5. Permeable	A substance that allows liquids or gases to pass through it
6. Semi-permeable	Allows certain substances to pass through it but not others
7. Impermeable	Not allowing fluid to pass through
8. Matter	Anything that takes up space is called matter
9. Organic matter	Matter that has come from a recently living organism, capable of decay, or the product of decay
10. Fossilisation	The process of becoming a fossil - the remains or traces of plants and animals that lived long ago
11. Palaeontologist	A scientist who studies the remains of ancient organisms (fossils) or living things
12. Rapid	Marked or distinguished by high speed
13. Moderate	Neither too much nor too little

Soil

What is soil made from?		1. Air - oxygen, carbon dioxide, nitrogen etc.
		2. Organic matter - living and dead plants and animals
		3. Water - air and water fill the gaps between particles of soil
		4. Minerals
What are the different types of soil?	1. Sandy soil - pale coloured, has large particles that create small air gaps, water drains easily 2. Clay soil - usually sticky, few air gaps, water does not drain easily leaving puddles 3. Chalky soil - light brown, water drains through quickly 4. Peat - no rock particles, made from very old decayed plants, dark and crumbly, rich in nutrients	

Did you know…
There are rocks made by humans:
1. Concrete (water, sand and cement)
2. Bricks (clay soil and sand which have been air dried or baked hard)

Fossils

How are fossils formed?	1. Animal dies, skeleton settles on floor buried by sediment 2. Sediment around the skeleton thickens turning to stone 3. Skeleton dissolves and a mould is formed 4. Minerals crystallise inside the mould forming a cast 5. Erosion or excavation means fossil is exposed on the earth's surface	**Fact File: Mary Anning** 1. Born Lyme Regis, UK in 1799 2. Fossils were known as 'curiosities' and her dad collected them to earn money 3. Aged 12, she discovered a 5.2m long fossil now known as an Ichthyosaurus 4. She discovered the first Plesiosaur skeleton (a similar one can be seen in Peterborough Museum) 5. She also discovered the fossil of a Pterodactyl and coprolite (fossilised poo!)