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| **Year 3 – Materials (Rocks)** | | | | | |
| **National Curriculum Objectives** | | **Declarative Knowledge** | | **Procedural Knowledge** | |
| Rocks  Pupils should be taught to:   * Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. * Describe in simple terms how fossils are formed when things that have lived are trapped within the rock. * Recognise that soils are made from rocks and other organic matter. | | * Know the name of the three types of rocks. * Know the properties of sedimentary rocks. * Know the properties of igneous rocks. * Know the properties of metamorphic rocks. * Know the four different types of matter that soil is composed of. * Know examples of natural and human-made rocks. * Know how to group rocks by their properties and identify simple similarities and differences. * Know the difference between a bone and a fossil. * Know how soil is formed and be able to explain using scientific language. * Know the main processes of fossilisation. * Know the importance of Mary Anning’s work in the field of palaeontology. | | * To be able to observe rocks, including those used in buildings and gravestones, * To be able to exploring how and why they might have changed over time. * To be able to use a hands lens or microscope to help them identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them. * To be able to research and discuss the different kinds of living things whose fossils are found in sedimentary rock * To be able to explore how fossils are formed. * To be able to explore different soils and investigate similarities and differences between them * To be able to investigate what happens when rocks are rubbed together or what changes occur when they are in water. | |
| **Prior Learning** | | **Key Questions** | | **Future Learning** | |
| **In Year 2 children should have:**   * Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. * Find out how shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.   **Children may**:   * May have some understanding of a variety of different rocks in the natural world. * Some understanding of what soil is. (how to identify soil etc) * May have some knowledge of what a fossil is. | | * How are the soils different? * Which do you think has best drainage? * Which is more likely to lead to flooding? * How many soil types have we found? * Where might you find more? * How might the soil be different in different countries? * What rock is best for a kitchen chopping board? What might be the issues with various materials and what they must withstand? * What types of rocks are there? * How do rocks change? * What would grow best in your soil? * Why do you think worms are important to the creation of soil? * How can we use composting to make our own soil? * Does it currently look like real soil? * How long do you think this process will take and why? * How are fossils created? * Why do fossils help us find out about historical events? * If you could fossilise an object what would it be? | | **In Year 4 children will**:   * Compare and group materials together, according to whether they are solids, liquids or gases. * Observe that some materials change state when heated or cooled, and measure and research the temperature at which this happens in degrees Celsius. * Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.   **In Year 6 children will**:   * Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. | |
| **Vocabulary** | | **Key Scientists** | | **Linked Texts** | |
| Rocks, igneous, metamorphic, sedimentary, anthropic, permeable, impermeable, chemical fossil, body fossil, trace fossil, Mary Anning, cast fossil, mould fossil, replacement fossil, extinct, organic matter, topsoil, sub soil, base rock. | | **Mary Anning**  (Discovery of Fossils)  **Inge Lehmann**  (Earth’s Mantle) | | **The Pebble in My Pocket**  (Meredith Hooper)  **Stone Girl, Bone Girl**  (Laurence Anholt)  **The Street Beneath My Feet**  (Charlotte Guillain & Yuval Zommer) | |
| **Teaching Ideas** | | | | | |
| **Comparative tests** | **Identify & Classify** | **Observation over time** | **Pattern seeking** | **Research** | **Big Question** |
| How does adding different amounts of sand to soil affect how quickly water drains through it?  Which soil absorbs the most water? | Can you use the identification key to find out the name of each of the rocks in your collection? | How does tumbling change a rock over time?  What happens when water keeps dripping on a sandcastle? | Is there a pattern in where we find volcanos on planet Earth? | Who was Mary Anning and what did she discover? | What are rocks and soils like? |
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