|  |
| --- |
| **Year 3 – Materials (Rocks)** |
| **National Curriculum Objectives** | **Declarative Knowledge** | **Procedural Knowledge** |
| RocksPupils 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? |
| Text, icon  Description automatically generated | Diagram, venn diagram  Description automatically generated | Shape, circle, rectangle  Description automatically generated | A drawing of a face  Description automatically generated | Logo  Description automatically generated | Clip Art: Punctuation: Big Question Mark 2 Color I abcteach.com | abcteach |