Year 2: : Materials Our Learning Leaves Curriculum – Science

	Required prior knowledge	Knowledge to be explicitly taught	How knowledge will be built upon
Substantive knowledge [NO1]	• An object is a thing that can be seen and touched (Year 1) • Objects have a name and often have a purpose for example a cup is the object and its purpose is for drinking from (Year 1) • The material is what an object is made of, for example a cup can be made of paper or plastic. Common materials include wood, paper, metal, glass, water, rock. (Year 1) • Materials have different physical properties, some materials are hard whilst others are soft, some can be described as rough whilst others are smooth, some dull whereas others are shiny. (Year 1) • Materials can be grouped in a number of ways based on their physical properties (Year 1) • The material we choose to make an object from depends on its purpose (e.g. no chocolate kettle. (Year 1)	• Matter is all the 'stuff' that we experience in everyday life, including air, water, tables and us! • Materials have different **physical properties** such as **malleable, waterproof, heatproof, windproof,** and **absorbent.** • These physical properties make the materials more suitable for certain uses. • Everyday materials such as **wood, metal, plastic, brick, rock, paper** and **cardboard** have these physical properties but to different extents. • Different combinations of materials can be used to create different objects, for example a saucepan or a mop. • The shape of some solid objects made from some materials can be changed by **squashing, bending, twisting or stretching** the material. • Find out about people who have developed useful new materials, John Dunlop and Charles MacKintosh.	• Different rocks can be identified and classified using simple scientific properties (texture, colour etc), and whether they have grains, crystals or fossils in them. (Year 3) • There are 3 states of matter: solid, liquid and gas (Year 4) • Properties of materials (Year 5)
Disciplinary knowledae [NO2]	• It is important that we keep as much as we can the same, apart from the things we measure and the one thing we change. • Make simple statements about the results of an enquiry. (Year 1)	• **Classify** materials based on the extent of their properties. • Investigate **(comparative test)** the best material to use to make a covering that is waterproof. (Keep the rat dry)	• Make careful observations (of rocks in the locality, the structure of different rocks, the composition of different soil types). Year 3 • Classify rocks (according to their structure) - Report on findings using a simple written explanation (what are the properties of different rocks?)Year 3 • Use results to draw simple conclusions (how could the properties of different rocks be useful. Year 3

Year 2: : Materials Our Learning Leaves Curriculum – Science

Key Drivers[NO3]

Culture and Diversity - which helps pupils to develop enquiring minds about the wider world

- How are different materials suited for different environments and uses.
- Scientists' values and beliefs are influenced by the larger culture in which they live. Such personal views can, in turn, influence the questions they choose to pursue and how they investigate those questions.
- Scientific activities are social activities, so scientific culture is the product of humans' or particular groups of humans' activities. The thinking patterns, values, behavioural norms and traditions of science formed in its history reflect its cultural connotation.
- Scientists – Mackintosh and Dunlop – effects on culture and expansion of human adaptation using materials
- .PSTT – 'A Scientist Just Like Me' - https://pstt.org.uk/resources/curriculum-materials/ASJLM Case studies of different scientists from diverse and under-represented backgrounds

Environment and Community - which helps to instil in our pupils a respect for our environment and for our local and wider communities

- Visit to Cheltenham Science Festival
- Eco School – use of plastics, recycling of materials
- School community reminders
- RESPECT characters reminders
- Children to appreciate our communities values, similarities and our unique qualities that make us special.

Creative arts and physical development - which helps our pupils to express themselves and excel as holistic learners.

- – cross curricular links to history (Great Fire of London)
- Scientists have to use their imagination to come up with explanations, theories and predictions.
- Scientists have to use their prior and new knowledge to create links

Learning to learn - which helps pupils to concentrate and focus and build resilience as learners –

- Investigating (**comparative test)** different materials related to Great Fire of London.
- Patttern seeking, Identifying and classifying, Using secondary resources
- Respect characters model learning behaviours to develop resilience and perserverance.
- Respect characters model excellence in attitudes to learning.