Materials and Magnets

Year 1

This unit is an introduction to every day materials and their properties. Knowledge and understanding from this unit will be built upon in Year 2 – Materials and Matter, Year 3 – Forces and Magnets, and in Year 5 – Materials where children will study further properties of materials including solubility, and conductivity. In this unit pupils will learn to distinguish everyday objects from the material they are made from. They will recognise everyday materials such as wood, plastic, glass, metal and rock. They will become familiar with key vocabulary used to describe everyday materials, such as soft, hard, flexible, strong, opaque and transparent. They will compare and group together materials based on their properties.

Pupils will begin to understand that scientists and engineers study the properties of materials before making decisions. They will study the engineer John Dunlop, of Dunlop Tyres, who invented the inflatable rubber tyre. They will think carefully about the different materials used to make bicycles and why they were chosen. Throughout the science curriculum, pupils will encounter many scientists and engineers, and their knowledge of the achievements of people within this field will build.

Within this unit there is a lesson introducing children to the property of magnetism. This knowledge goes beyond the requirements of the national curriculum at magnets are not featured until Year 3. However, in order to give children some prior knowledge of magnets and how they behave before they reach Year 3, we have introduced magnets within this Year 1 unit. Pupils will reflect on magnetism as a force we cannot see, but that we can see things that happen because of it. This is a concept that pupil will build upon in Year 2 Electricity and Year 3 Forces and Magnets.

An investigation has been planned for Lesson 5 of this unit. If you have space within your timetable to spread this investigation over two lessons, it will give pupils more time to think carefully about planning and undertaking each stage. Pupils will have frequent opportunities throughout the science curriculum to plan and undertake investigations, however this investigation helps pupils begin to think scientifically and consider important disciplinary knowledge, for example, how do scientists work?

The assessment task in this unit has been designed to allow pupils to apply their knowledge of materials and their properties in a designing task. Pupils will design a playground. They will think about the different materials they will need to build their playground and the suitability of these materials for the purpose they are needed for. Pupils will build on this knowledge when they design a garden area with a water feature in Year 2- Materials and Matter.