Year 2 – Uses of everyday materials (biology, chemistry, physics)

NC objectives

Pupils should be taught to:

- 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 the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

Prior learning

- Distinguish between an object and the material from which it is made. (Y1 - Everyday materials)
- Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. (Y1 - Everyday materials)
- Describe the simple physical properties of a variety of everyday materials. (Y1 - Everyday materials)
- Compare and group together a variety of everyday materials on the basis of their simple physical properties. (Y1 - Everyday materials)

Future Learning

- Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. (Y3 - Rocks)
- Notice that some forces need contact between two objects, but magnetic forces can act at a distance. (Y3 - Forces and magnets)
- Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. (Y5 - Properties and changes of materials)
- Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. (Y5 - Properties and changes of materials)

Key vocabulary

Names of materials – wood, metal, plastic, glass, brick, rock, paper, cardboard
Properties of materials – as for Year 1 plus opaque, transparent and translucent, reflective, non-reflective, flexible, rigid
Shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching

Common misconceptions

Some children may think:

- only fabrics are materials
- only building materials are materials
- only writing materials are materials
- the word rock describes an object rather than a material
- solid is another word for hard.

Areas of enquiry	Hook suggestions
• Observation over time – what will happen to our snowman? Will a paper boat float forever? • Comparative ~~and fair~~ testing - Test the properties of materials for particular uses e.g. compare the stretchiness of fabrics to select the most appropriate for Elastigirl's costume, test materials for waterproofness to select the most appropriate for a rain hat. • Identifying and classifying – sort and classify materials according to their properties. • Pattern seeking – do magnetic materials always conduct electricity? • Researching using secondary sources – how have the materials we use changed over time?	<u>Books</u> The Grumpalump *by Sarah Hayes & Barbara Firth* 'Granny' poem by Spike Milligan – What materials would be best to protect Granny from the wind? <u>Scenarios</u> Scenario – Robert says that if you try hard enough, any material can be squashed and bent. (Identifying, grouping & classifying)