

**Year B Term 1**  
**Unit Overview: KS1 Science**  
**Uses of materials**

<p><b><u>National Curriculum Objectives</u></b></p> <ul style="list-style-type: none"> <li>❖ Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</li> <li>❖ Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> </ul>	<p><b><u>Substantive knowledge</u></b></p> <ul style="list-style-type: none"> <li>❖ That material properties are linked to their use</li> <li>❖ That the shape of some materials can be changed by forces</li> <li>❖ Know that some materials are naturally occurring and some are not</li> <li>❖ Know that some materials are unsuitable for some purposes</li> <li>❖ know the contribution made to materials science by John Boyd Dunlop</li> <li>❖ A material can be suitable for different purposes and an object can be made of different materials.</li> </ul>	<p><b><u>Vocabulary</u></b></p> <ul style="list-style-type: none"> <li>❖ Names of materials – wood, metal, plastic, glass, brick, rock, paper, cardboard</li> <li>❖ Properties of materials – hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, opaque, transparent and translucent, reflective, non-reflective, flexible, rigid</li> </ul> <p><b><u>Phonics / polysyllabic words</u></b></p> <ul style="list-style-type: none"> <li>❖ Absorbent, cardboard (/or/ sound)</li> <li>❖ Flexible, table, bottle (&lt;le&gt; spelling)</li> <li>❖ Reflective (&lt;ve&gt; spelling)</li> </ul> <p><b><u>Reading support</u></b></p> <ul style="list-style-type: none"> <li>❖ Word mats</li> <li>❖ Scaffolded recording / choice of recording</li> <li>❖ Pre teaching of vocab</li> </ul> <p><b><u>Extension/Deeper thinking</u></b></p> <ul style="list-style-type: none"> <li>❖ Are all metals rigid? Are all plastics flexible? Can you stretch plastics?</li> <li>❖ Talk about objects made from more than one material, explaining why their different properties make them suitable.</li> </ul>
<p><b><u>Working Scientifically Skills</u></b></p> <ul style="list-style-type: none"> <li>❖ Ask questions (such as what something is, how things are similar and different, the way things work, which alternative is better, how things change and how they happen) and answer these questions where appropriate.</li> <li>❖ Answer questions developed with the teacher, often with a scenario.</li> <li>❖ Plan how to use resources provided to answer questions using different types of enquiry.</li> <li>❖ Use practical resources provided to gather evidence to answer questions.</li> <li>❖ Carry out: tests to clarify; comparative tests; pattern seeking enquiries; and make observations over time.</li> </ul>	<p><b><u>Disciplinary knowledge</u></b></p> <ul style="list-style-type: none"> <li>❖ Explain how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</li> <li>❖ compare and contrast the advantages of using different materials for the same object</li> <li>❖ explain in simple terms what properties make a material suitable for a specific use</li> </ul>	<p><b><u>Key People</u></b></p> <ul style="list-style-type: none"> <li>❖ John Boyd Dunlop</li> <li>❖ Huang Yang</li> <li>❖ Pearl Agyakwa</li> <li>❖ Jyoti Sehdev</li> </ul>
	<p><b><u>British Values</u></b></p>	

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	<ul style="list-style-type: none"> <li>❖ <b><u>Democracy</u></b> Take the views and opinions of others into account using teamwork.</li> <li>❖ <b><u>The rule of law</u></b> Using rules during science investigations.</li> <li>❖ <b><u>Individual liberty</u></b> Allow children to develop their independence, offering them opportunities to follow their own ideas and interests.</li> <li>❖ <b><u>Mutual Respect for and tolerance of those with different faiths and beliefs</u></b> Evolution versus faith beliefs</li> </ul>	<p><b><u>Common misconceptions</u></b></p> <ul style="list-style-type: none"> <li>❖ only fabrics are materials</li> <li>❖ only building materials are materials</li> <li>❖ only writing materials are materials</li> <li>❖ the word rock describes an object rather than a material</li> <li>❖ solid is another word for hard.</li> </ul>
<p><b><u>Prior learning</u></b></p> <ul style="list-style-type: none"> <li>❖ Distinguish between an object and the material from which it is made. (Y1 -Everyday materials)</li> <li>❖ Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. (Y1 -Everyday materials)</li> <li>❖ Describe the simple physical properties of a variety of everyday materials. (Y1 -Everyday materials)</li> <li>❖ Compare and group together a variety of everyday materials on the basis of their simple physical properties. (Y1 -Everyday materials)</li> <li>❖ Use all their senses in hands-on exploration of natural materials. (Nursery - Materials, including changing materials)</li> <li>❖ Explore collections of materials with similar and/or different properties. (Nursery - Materials, including changing materials)</li> <li>❖ Talk about the differences between materials and changes they notice. (Nursery - Materials, including changing materials)</li> </ul>	<p><b><u>School Values</u></b></p> <p><u>Courage</u></p> <ul style="list-style-type: none"> <li>❖ Asking our own questions and investigating new ideas.</li> </ul> <p><u>Respect</u></p> <ul style="list-style-type: none"> <li>❖ Supporting other’s ideas, even if they differ to our own.</li> </ul> <p><u>Trust</u></p> <ul style="list-style-type: none"> <li>❖ Celebrating everyone’s unique ideas and working together collaboratively.</li> </ul>	<p><b><u>Future learning (KS2)</u></b></p> <ul style="list-style-type: none"> <li>❖ Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. (Y3 -Rocks)</li> <li>❖ Notice that some forces need contact between two objects, but magnetic forces can act at a distance. (Y3 -Forces and magnets)</li> <li>❖ 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)</li> <li>❖ 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)</li> </ul>