| **Science** | **Unit: Everyday Materials** |
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| **Early Learning Goals (Year R)** | **<u>Early Learning Goal: The Natural World</u>**<br>Children at the expected level of development will:<br>- Explore the natural world around them, making observations and drawing pictures of animals and plants;<br>- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class;<br>- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. |
| **Key Stage 1** | The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.<br><br>'Working scientifically' is described separately in the programme of study, but must always be taught through and clearly related to the teaching of substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.<br><br>Pupils should read and spell scientific vocabulary at a level consistent with their increasing word-reading and spelling knowledge at key stage 1. |
| **Working scientifically** | During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:<br><br>• asking simple questions and recognising that they can be answered in different ways<br>• observing closely, using simple equipment<br>• performing simple tests<br>• identifying and classifying<br>• using their observations and ideas to suggest answers to questions<br>• gathering and recording data to help in answering questions |

| | Links to learning in Year R | Year 1 | Year 2 |
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| **Key knowledge** | • To comment and ask questions about aspects of their familiar world, such as the place where they live, or the natural world.<br>• To talk about some of the things they have observed, such as plants, animals, or found objects.<br>• To talk about why things happen and how things work.<br>• To have an understanding of growth, decay and changes over time. (eg rusting)<br>• To be interested in and describe the texture of things.<br>• To look closely at similarities, differences, patterns and change.<br>• To know about the similarities and differences in relation to places, objects, materials and living things. Children talk about the features of their own immediate environment and how environments vary from each other. | Pupils should be taught to:<br>• distinguish between an object and the material from which it is made<br>• identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock<br>• describe the simple physical properties of a variety of everyday materials<br>• compare and group together a variety of everyday materials on the basis of their simple physical properties<br>**Taught in: Spring 1** | Pupils should be taught to:<br>• identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses<br>• find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching<br>**Taught in: Autumn 1 and Autumn 2** |
| **Key Skills** | | • Pupils should **explore, name, discuss and raise and answer questions** about everyday materials so that they become familiar with the names of materials and properties such as: hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy; waterproof/not waterproof; absorbent/not absorbent; opaque/transparent.<br>• Pupils should **explore and experiment** with a wide variety of materials, not only those listed in the programme of study, but including for example: brick, paper, fabrics, elastic, foil.<br>• Pupils might work scientifically by: **performing simple tests** to explore questions, for example: 'What is the best material for an umbrella? … for lining a dog basket? … for curtains? … for a bookshelf? … for a gymnast's leotard?' | • Pupils should **identify and discuss** the uses of different everyday materials so that they become familiar with how some materials are used for more than one thing (metal can be used for coins, cans, cars and table legs; wood can be used for matches, floors, and telegraph poles) or different materials are used for the same thing (spoons can be made from plastic, wood, metal, but not normally from glass).<br>• They should think about the properties of materials that make them suitable or unsuitable for particular purposes and they should be encouraged to think about unusual and creative uses for everyday materials.<br>• Pupils might find out about people who have developed useful new materials, for example John Dunlop, Charles Macintosh or John McAdam.<br>• Pupils might work scientifically by: **comparing** the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs); observing closely, **identifying and classifying** the uses of different materials, and **recording** their observations. |

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| **Key Vocabulary** | | • wood, plastic, glass, metal, water, and rock<br>• hard/soft;<br>• stretchy/stiff;<br>• shiny/dull;<br>• rough/smooth;<br>• bendy/not bendy / ridged;<br>• waterproof/not waterproof;<br>• absorbent/not absorbent;<br>• opaque/transparent. | • Review of year 1 vocabulary – perhaps through lesson starters, or during other opportunities during the day (e.g. guided reading / register) |
| **Enrichment /Theme** | | All about Me – Autumn 1<br>Where do Iive? What is my house made from? What are my clothes made from? What materials can I find in my home? In my classroom?<br><br>London and Beyond- Spring 1<br><br>**Enrichment:**<br>Forest School – what to wear for all weathers. | Splash – Autumn 1<br><br>**Enrichment:**<br>Forest School – what to wear for all weathers. |
| **Links to other subjects** | | **Geography-** Looking at the different types of homes and different martials its made from- Autumn 1<br><br>**DT-** making their own moving picture using different materials- Auutmn 2<br><br>**Literacy-** Talk about the three little pigs and the different materials that their house was built from. Spring 2<br><br>**History –** great fire of London and talk about materials that can catch fire- Spring 2<br><br>**Art:-** Create art using different materials in the style of Marianne north- Summer 1 | **Art-** Create art using the style of Hokusai and van Gogh using different materials – Autumn 1<br><br>**DT-** Designing a functional product using a range of materials- Spring 2, Summer 1 |