

Progression: Materials



Reception:

- Comments and asks questions about aspects of their familiar world such as the natural world.
- Can talk about some of the things they have observed such as animals, plants, natural and found objects.
- Talks about why things happen and how things work.
- Developing an understanding of growth, decay and changes over time.
- Shows care and concern for living things and the environment.
- Looks closely at similarities, differences, patterns and change.
- **ELG: Children know about the similarities and differences in relation to places, objects, materials and living things. They talk about the features of the own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes.**
- *Practical exploration of different materials. Development of some material based vocabulary through play.*
- *Play based exploration of material properties with some oral reasoning on what is seen, noticed or observed e.g. 3 little pigs (strong materials) rainy day play, roof building, water based play (waterproof materials), icebergs, ice sculptures (freezing and melting – change of state)*

Year 1:

- distinguish between an object and the material from which it is made
- identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock
- describe the simple physical properties of a variety of everyday materials
- compare and group together a variety of everyday materials on the basis of their simple physical properties

Working Scientifically

- observing closely, using simple equipment
- performing simple tests
- identifying and classifying
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions.

Link to Teacher Assessment Framework

Distinguish objects from materials, describe their properties, identify and group everyday materials, and compare their suitability for different uses.

Recap – any material names which may have been talked about and remembered. Question and explore – What do they feel like? What might they be good for? Can you think of anything made of wood?

Vocabulary: Wood, Plastic, Glass, Paper, Water, Metal, Rock, Hard, Soft, Bendy, Rough, Smooth

Working scientifically vocabulary: question, answer, equipment, sort, group, record, chart, describe

Year 2:

- 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

Working Scientifically

- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions.

Link to Teacher Assessment Framework

Distinguish objects from materials, describe their properties, identify and group everyday materials, and compare their suitability for different uses.

Recap:

- what objects are made of
- identify, name, group, compare and describe everyday materials (See Y1 vocabulary)

Vocabulary: Hard, Soft, Stretchy, Stiff, Shiny, Dull, Rough, Smooth, Bendy, Waterproof, Absorbent, Opaque, Transparent Brick, Paper, Fabrics, Squashing, Bending, Twisting, Stretching Elastic, Foil

Working scientifically vocabulary: question, answer, identify, classify, chart, compare, contrast, describe

Year 5:

- 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
- know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
- use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating
- give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic
- demonstrate that dissolving, mixing and changes of state are reversible changes
- explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda

Working Scientifically

- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations

Link to Teacher Assessment Framework

The pupil can group and identify materials, including rocks, in different ways according to their properties, based on first-hand observation; and justify the use of different everyday materials for different uses, based on their properties. The pupil can identify, and describe what happens when dissolving occurs in everyday situations; and describe how to separate mixtures and solutions into their components.

The pupil can identify, with reasons, whether changes in materials are reversible or not.

Recap:

- identify and compare materials based on their suitability for particular uses
- changing the shape of solid objects (See Y2 Vocabulary)

Vocabulary: Hardness, Solubility, Transparency, Conductivity, Magnetic, Filter, Evaporation, Dissolving, Mixing

Working scientifically vocabulary: plan, variables, measurements, repeat readings, record data (scientific diagrams, labels, classification keys, tables, scatter graphs, bar graph and line graph), predictions, further comparative and fair test, report and present (conclusions, casual relationships, explanations, degree of trust, oral and written explanations, and presentation), evidence (support, refute ideas or arguments), identify, classify and describe, patterns, systematic, quantitative measurements.