

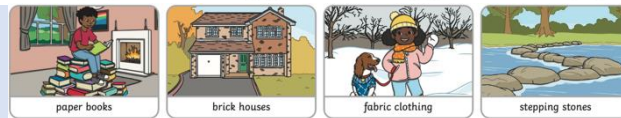
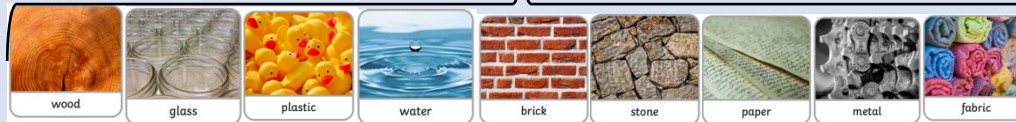
National Curriculum: Science

Pupils should be taught to:

- 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
- 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

Key Learning

Everyday Materials



Uses



Properties



Key People



John McAdam



Charles Macintosh



John Dunlop

Vocabulary

Object - A thing that can be used. For example a door, chair, car, table are all objects.

Materials - Materials are what an object is made from.

Hard - Not easily broken or bent.

Soft - If something is soft, it is easy to cut, fold or change the shape of.

Stretchy - Can be pulled to make it longer or wider without breaking.

Shiny - Reflects light easily.

Dull - Doesn't reflect light. Doesn't look bright or shiny.

Rough - If something is rough, it feels and looks uneven or bumpy.

Smooth - Smooth objects have no lumps or bumps.

Bendy - Bendy things can be bent easily into a curved or folded shape.

Waterproof - If something is waterproof, it keeps water out. It keeps things dry.

Absorbent - If something is absorbent, it soaks liquid up.

Transparent - Transparent objects can be seen through.

Opaque - Opaque objects can't be seen through.

Materials - materials or what objects are made of.

Suitability - suitability means having the properties which are right for a specific purpose.

Properties - this is what material is like and how it behaves (soft, stretchy, waterproof).

National Curriculum:
Science

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:

- asking simple questions and recognising that they can be answered in different ways
- 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.

Key Questions



What types of materials do we use every day?

What are everyday objects made from?



Which materials can we group together based on their properties?

Why are windows made from glass?



How are objects recycled?



Who discovered the materials used for roads, tires and coats?



Investigation

What are the properties of materials and how can we test them?



How can we stop some objects getting wet?



Can you change the shape of a material?



Which materials can we group together based on their uses?



Key Learning:

1	What types of materials do we use every day? Many different materials are used in our everyday life - wood, glass, plastic, metal, water and rock. Learning: To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock by matching a material to its name.
2	What are everyday objects made from? The objects we use in everyday life are often made out of wood (tables), glass (glasses), plastic (carrier bags) and metal (door handles). Learning: To distinguish between an object and the material from which it is made by naming objects and identifying the material which they are made from.
3	What are the properties of materials and how can we test them? Materials can be described as hard, transparent, soft, shiny, stretchy, dull, rough and smooth. You can sometimes tell just by looking at materials which properties they have, but sometimes you have to do a few tests to see how they behave. Learning: To distinguish between an object and the material from which it is made by looking and touching different materials. To describe the simple physical properties of a variety of everyday materials by testing different objects.
4	How can we stop some objects getting wet? Soft materials can get very wet in the rain. Some materials are waterproof and can protect things from getting wet. Learning: To observe closely by watching what happens to teddy. To perform simple tests to find out which material would be suitable to make an umbrella from. To use their observations and ideas to suggest answers to questions by deciding which materials would be suitable to make an umbrella from.
5	Which materials can we group together based on their properties? Different materials can be sorted in to categories depending on their properties. Learning: To compare and group together a variety of everyday materials on the basis of their simple physical properties by sorting objects, using a Venn diagram.
6	Which materials can we group together based on their uses? Everyday materials can be grouped into similar uses. Walking around your local area can help you identify, group and discover common uses for everyday materials. Learning: To identify and classify the uses of everyday materials, in the context of the local area. To gather and record data to help in answering questions, by exploring the purposes of different objects.
7	Why are windows made from glass? Suitability means having the properties which are right for a specific purpose. Windows are made from glass to protect the inside of our houses from the rain (they are waterproof). They are also transparent, so the sunlight can shine through. Learning: 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, by identifying the uses of different materials.
8	Can you change the shape of a material? Some materials can be squashing, bending, twisting and stretching. You can squash an object by pushing both hands together. You can bend an object by grabbing both ends of the object and bringing the ends inwards together. You can twist an object by turning your hands in opposite directions. You can stretch an object by pulling your hands slowly and gently apart. Learning: To find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching, by changing the shape of objects.
9	How are objects recycled? Many objects can be recycled so that their material can be reused, such as, paper and cardboard (such as newspaper and cardboard boxes). Learning: To find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching, in the context of recycling.
10	Who discovered the materials used for roads, tires and coats? John McAdam was a Scottish engineer who experimented with using new materials to build roads, inventing a new process called Macadamisation. John Dunlop was a Scottish inventor who invented the airfield rubber tire. Macintosh - Charles McIntosh was a Scottish inventor and chemist who invented waterproof fabrics in 1818. Learning: To find out about people who have developed new materials, by learning about John McAdam, John Dunlop and Charles Macintosh.