

Key Facts

Everything around us and things we use is made of some form of material. All materials come from animals or plants, are dissolved in the sea or are mined from the ground. Today some materials are artificially made in commercial chemical plants. Some of these materials are used as they are and others are altered to make new, manufactured materials.

Materials can be:

Natural: rocks, soil, water, wood. These have not been changed in any way.

Manufactured: metals, plastic, glass, rubber, paper, fabrics, bricks. Manufactured materials have been processed/changed in some way from raw materials.

Some types of materials children will explore are:

Plastic: A synthetic material made from a wide range of organic polymers such as polyethylene, PVC, nylon, etc., that can be moulded into shape while soft, and then set into a rigid or slightly elastic form.

Metal: A material that is usually shiny, and conducts electricity and heat relatively well.

Glass: Hard brittle substance that is usually transparent.

Fabric: A cloth produced by weaving or knitting textile fibres. Fabric is usually soft and flexible.

Paper: A material manufactured in thin sheets from the pulp of wood or other fibrous substances, used for writing, drawing, or printing on, or as wrapping material.



Science Year 1 Autumn 2 Everyday Materials



Vocabulary

Word	Definition
Absorbent	A material that is able to soak up liquids easily.
Flexible	Can bend easily without breaking.
Opaque	A material you are not able to see through.
Properties	A thing or things belonging to an object, e.g. the properties of wood is that it is hard and rough.
Smooth	When an object has an even and regular surface; free from perceptible projections, lumps, or indentations.
Soft	A material that is easy to mould, cut, or fold. It is not hard or firm.
Stiff	A material that cannot be easily bent or changed in shape.
Transparent	An material you can see through.
Waterproof	A material that does not allow water to pass through.
Shiny	A material reflecting light.
Dull	Objects that are not shiny.

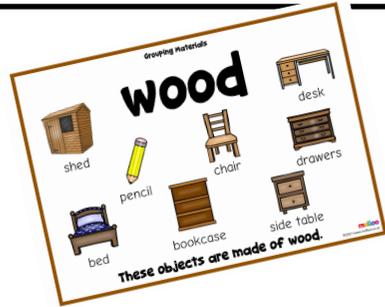
Common misconceptions:

There are few misconceptions at this level of work with materials. The major potential for confusion is the distinction between the properties of materials and the objects they are made into. It is important that, in this module especially, children are encouraged to focus on the material, not the object when describing properties. It is important that they explore off cuts or samples of different materials before they investigate objects they have been made into. Adults as well as children may mis-use the word "material" to describe what should be called fabric. In science a material is something that is made from matter and this includes solids, liquids and gases. Non-materials are things not consisting of matter, for example energy. Children often think that absorbent materials such as paper towels are waterproof - confusing absorbent (soaks water up) with waterproof (keeps water out).

Knowledge and Understanding:

Children will learn:

- To name and identify wood, plastic, metal, glass, rock, brick, water and other materials, many of which will be familiar to them.
- Understand that these materials can be made into many different objects, from spoons made of plastic, wood or metal or any combination of the three, to more complex objects.
- Distinguish between an object and the material from which it is made, and to define an object as, for example, a wooden spoon or plastic cup, by the material from which it is made.
- Recognise that the same material can be made into different objects, for example, a metal can, a metal spoon and a metal car.



Key skills and concepts:

Children will be able to:

Use their senses to observe closely.

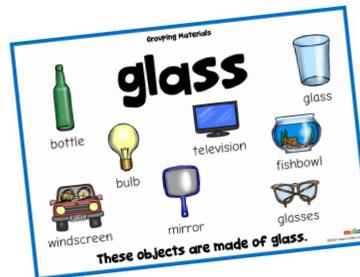
Identify, name and sort materials, classify them using separate and overlapping sorting rings, simple tables and Carroll diagrams.

Find ways to compare the properties of different materials.

Design and carry out simple tests to make fair comparisons.

Record their findings in a variety of ways and use the evidence from the tests to classify and sort materials according to their properties.

Use comparative adjectives to describe their findings, for example, shinier, harder, softer.



Key Questions

Which materials can you name?

What objects can you name that are made of each material?

Can you find objects made of each material?

Can you sort materials made of wood, plastic and metal?

Can you sort materials made of rock, wood and brick?

Is all paper the same? How are they different?

What properties do each of the materials have?

How are some materials similar?

How are some materials different?

