Science Y2 Autumn 1 and 2 Materials and their properties

In this unit of work the children will identify and compare the suitability of different everyday materials. They will name various materials, explain what materials can be used for, investigate their properties, and choose the best material for a particular purpose. Through exploration, they will find out how the shapes of objects, made from some materials can be changed by squashing, bending, twisting, and stretching.

In this unit children will:

Identify and compare the suitability of a variety of everyday materials uses.

Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting, and stretching

Sort materials using a range of properties

Say what use a material has and explain its properties.

Identify which properties make materials suitable for different purposes.

Label a picture or diagram of an object made from different materials

Learn about people who have developed useful new materials - John McAdam and tarmac

Research and sequence the process of recycling.

Choose an appropriate method for testing a material for a particular property.

Identify and classify uses of different materials

Compare materials for a particular purpose

Key Vocabulary

Properties – The characteristics of something.

Material – A substance used to make something

Translucent – An object which allows some light to pass through it

Opaque – A material which doesn't allow light to pass through it.

Transparent – A material which allows light to pass through it.

Waterproof – A material which keeps you dry and doesn't let water in.

Recycling – Using things which have already been used to make something new.

Rigid – When something is impossible to bend.

Flexibility –When something can bend easily, without being broken.

Durability – When something lasts a long time.

Prior Learning

Year 1 – Distinguish between an object and the material it is made from. They can identify and name simple materials, describing the simple properties of materials and grouping them.

Cross Curricular Links

ICT – Using i-pads photograph objects around the school made from everyday materials

Maths – Drawing tables and graphs to record results of investigations.

Key Knowledge

Around our school we can find objects which are made from metal, wood, glass, plastic, concrete.

Natural **materials** are those which come from plants, animals or rock and include wood, cotton, sand, coal, leather, gold, and iron.

Man-made **materials** are created by humans and include paper, concrete, glass, nylon, plastic, and steel.

Materials have specific **properties** which make them suitable for their job e.g., Wood is used to make a table because it is strong, hard wearing, and smooth.

Glass is used for a windowpane because it is **transparent** and lets us see through it.

Some **materials** such as wool and paper are **flexible** and can be bent, stretched, twisted, and squashed and the shape of them will be changed.

Other **materials** such as steel and granite are **rigid** and can't be twisted, stretched, squashed, or bent.

Recycling helps to save our planet.

John McAdam invented Macadamisation which created tarmac, the material which we use to build roads

Some **materials** will be **transparent,** some will be **opaque,** and some will be **translucent** if you shine a torch on them.

Plastic is a versatile material because it can be made into lots of different products.

Clothes can be made from lots of different **materials** such as wool, cotton, polyester, nylon, silk, and leather.

Key Questions

Why is that material suitable for that job?

Which is the most common material and why?

What properties do wood, metal, glass, plastic, and fabric have?

How can the shape of an object be changed?

Why is it important to recycle?