

UNIT 5. MATTER AND MATERIALS



PRIMARY 3 / Natural Science

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MATTER

It is the **MASS** and **SPACE** that all objects have.

Properties of matter

Volume

It is the space that an object take up.

We measure volume with **LITRES**, using instruments like **MEASURING JUGS** and **CYLINDERS**.



Mass

It is the amount of matter there is in a object.

We measure mass in **GRAMS** or **KILOGRAMS** using **SCALES**.

Types of matter

Pure substance

It consists of only one substance.



Water

Mixture

It can be made up of two or more substances.

Heterogeneous mixture

We can see the different ingredients and separated them.



Salad

Homogeneous mixture

We can't see the different ingredients.



Lemonade

MATTER AND ITS CHANGES

States of matter

There are three states of matter

Solid

It has a definitive shape and always takes up the same amount of space.

Its volume is always the same.



Liquid

It always takes up the same amount of space but adapts its shape to the part of the container where it is.



Gas

It doesn't have a definite shape or volume, so it fills the whole space of the container where it is.



Changes in matter

Chemical change

New matter is formed.

For example:

Burning wood transforms it into smoke and ash.



Physical change

It has shape changes but the mass and volume are the same.

For example:

The mass and volume of bread don't change if you break it into pieces.



CHANGES OF STATE

Heating



1.Melting: Solid changes to liquid



2.Evaporation: Liquid changes to gas



4.Solidification: Liquid changes to solid



3.Condensation: Gas changes to liquid

Cooling

MATERIALS

They are the matter of which objects are composed

We classify materials into two types

Natural materials

Artificial materials

They come from living things like plants and animals. They are found around us in nature.

They are created by transforming natural materials into different things.

For example:

We transform **wood** from trees to make **paper**.

Animal origin

We use the skin of cows to make **LEATHER**.
WOOL comes to sheep.

Plant origin

The **WOOD** and **CORK** come from a tree. The flower of the cotton plant is used to make **COTTON**.

Mineral origin

IRON, MARBLE and CLAY are materials that come from the Earth.



PROPERTIES OF MATERIALS

The characteristics of an object are its **PROPERTIES**

Impermeable

A plastic bottle protects its contents because it keeps the liquid inside.

Strong

We use wood to make tables because it supports heavy things and doesn't break.

Heat conductor

It allow in hot.

Flexible

You can fold a napkin many times without it breaking.

Elastic

You can stretch a hairband and it will return to its original shape

Transparent

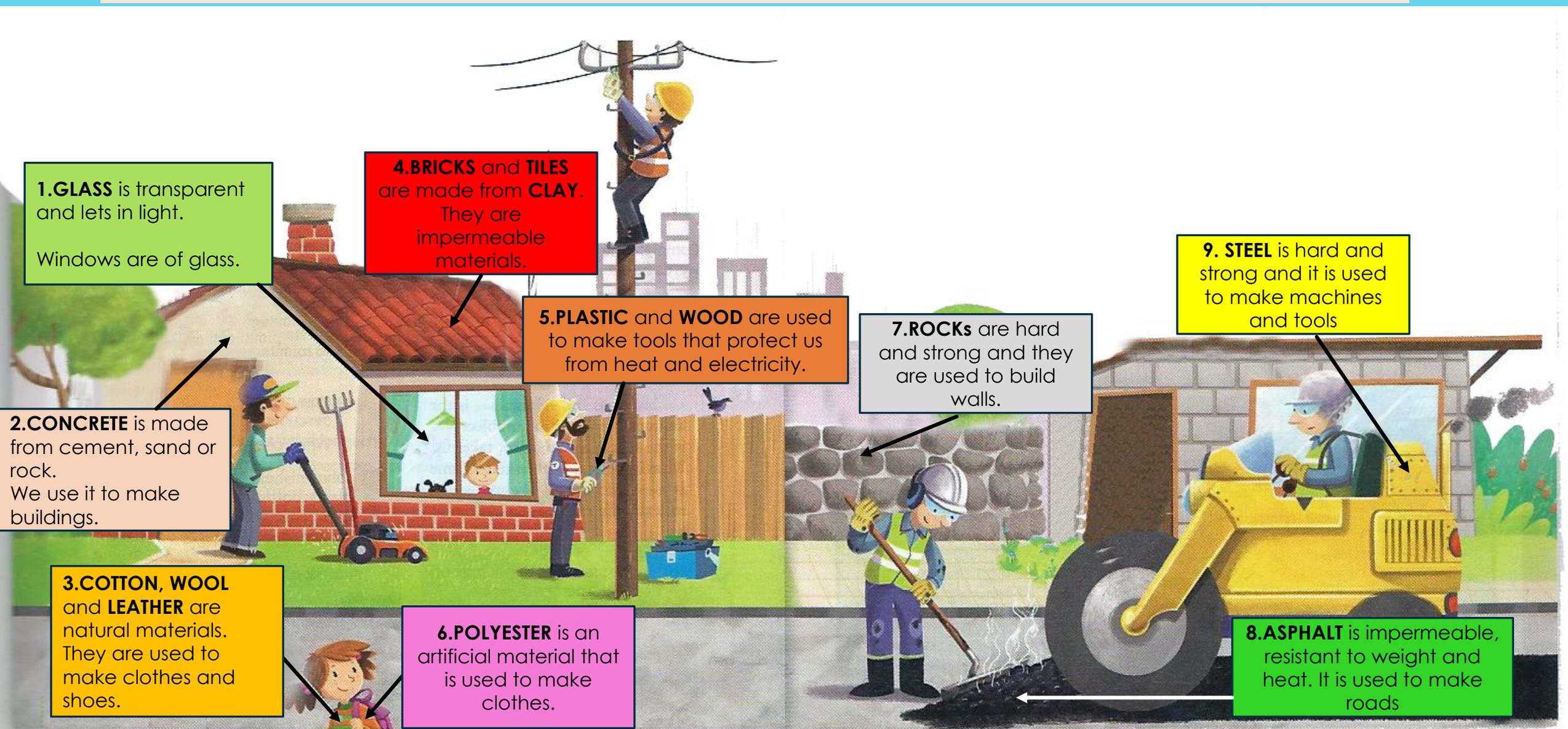
The glass is transparent so you can see through it.



HOW MATERIALS ARE USED



Before making an object, it is important consider that it will be used for. Then, we choose the materials with the most suitable properties



1. GLASS is transparent and lets in light.
Windows are of glass.

4. BRICKS and **TILES** are made from **CLAY**. They are impermeable materials.

5. PLASTIC and **WOOD** are used to make tools that protect us from heat and electricity.

7. ROCKS are hard and strong and they are used to build walls.

9. STEEL is hard and strong and it is used to make machines and tools

2. CONCRETE is made from cement, sand or rock. We use it to make buildings.

3. COTTON, WOOL and **LEATHER** are natural materials. They are used to make clothes and shoes.

6. POLYESTER is an artificial material that is used to make clothes.

8. ASPHALT is impermeable, resistant to weight and heat. It is used to make roads

MATERIALS AND ENVIRONMENT

We can help our environment by following the 3Rs: **REDUCE, REUSE and RECYCLE**

