

# Man-Made Materials



Materials and their Properties

- ▶ From wood to paper
- ▶ From crude oil to plastic
- ▶ From coal to plastic and other things
- ▶ From chalk to building materials
- ▶ From sand to glass
- ▶ Can you remember which is which?

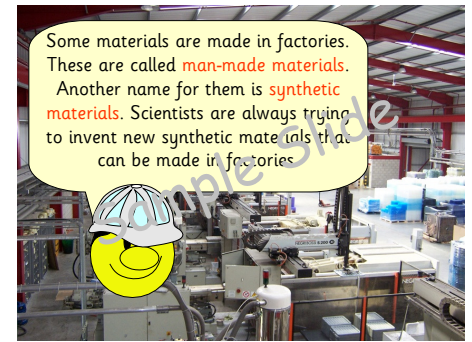


Can you remember where natural materials come from?

Natural materials are materials that are found all around us. We use some of them every day.



Natural materials come from .....  
Plants  
Animals  
Under the ground.



Some materials are made in factories. These are called **man-made materials**. Another name for them is **synthetic materials**. Scientists are always trying to invent new synthetic materials that can be made in factories.



Many natural materials are changed into man made materials in these factories.

If something is found naturally it is a **natural material**.

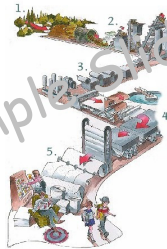
If people have changed it into something else, it becomes a **man-made material**.



Wood is a **natural** material. It comes from trees grown in forests.

Wood can be **changed** into paper.

Paper is a **man-made** material.



Teacher link



1. Trees are cut down.
2. Bark is removed from the logs then it goes through a 'chipper' to be made into wood chips. After that the chips are heated in water that has been mixed with chemicals.
3. The pulp is cleaned and beaten. Then it is dyed and sent onto a moving wire screen to allow water to drain away.
4. It is squeezed by big rollers to get rid of the rest of the water and then heated with dryer rollers.
5. Now the paper is ready to be rolled into big rolls. A cutter cuts the paper into smaller rolls and then it's ready to use!

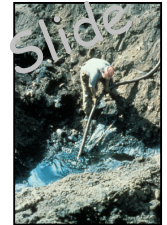
Oil comes from under the ground or under the sea bed.



Crude oil is used to make petrol for vehicles.



It looks like this..



Crude oil is a **natural** material found under ground. It can be **changed** to make plastic.

Plastic is a **man-made** material. It can be used to make lots of things that you see around you.



Oil (a **natural** material) can also be made into nylon.

Nylon is a **man-made** material and can be used to make clothes and the bristles on your hair brushes and tooth brush!



Bristles are made from nylon and oil is used to make nylon.

Oil is used to make plastic.



Coal is a **natural** material that comes from under the ground.

It is burnt in power stations to make electricity.



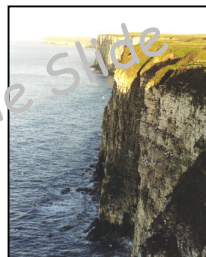
Coal can be **changed** to make the special chemicals that are used to make plastics.

It is also used to make steel which is a very strong metal.

When coal is burned it gives us heat and when it's heated in factories it can be **changed** and used to make lots of other useful things like soap, perfume, paint, cement, bricks, tiles and tar to make roads.



Chalk is a rock that is dug up from under the ground. There are also cliffs that are made of chalk like the ones near Bridlington on the east coast.



Chalk is a soft, white rock. If you find a piece you can draw on the playground with it. It is a **natural** material.



It is used to make building materials like cement, putty, plaster and mortar.



Cement is a **man-made** material.

Sand is a **natural** material. You can find it on beaches.

Sand is made from shells and pebbles that have been crushed and made smaller and smaller by the sea washing over them. It can feel coarse or fine.



Sand is used by builders when they are laying a new patio or driveway.

They put a layer of sand down on the ground then they lay the paving stones on top of it.



Sand is also mixed with cement to make concrete.

Glass is made by mixing sand with limestone and soda. When the temperature gets very hot the mixture melts and turns to glass.



A special sand called quartz sand is used to make glass. It is a **natural** material.



Limestone is a rock so it is a **natural** material.



Sand, limestone and soda ash are ground into a fine powder and when they are melted together they make glass. Glass is a **man-made** material.

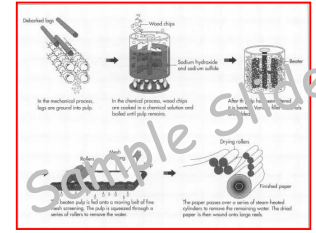


Can you remember how to tell which materials are natural and which are man-made?



If something is found natural it is a natural material.

If people have changed it into something else, it becomes a man-made material.



Making Paper

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