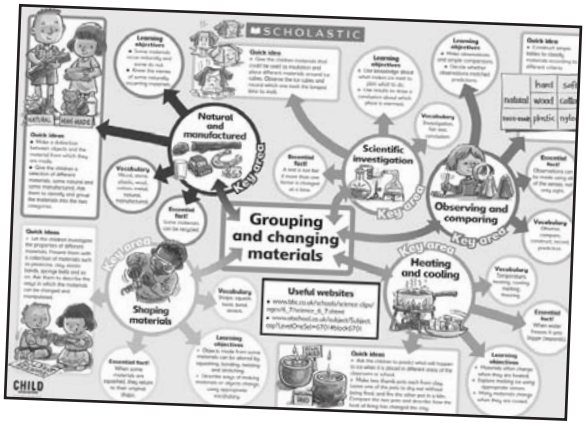
# Grouping and changing materials

Introduce QCA Unit 2D Grouping and changing materials with these simple science activities




## Whole class

- Produce a display of natural and manufactured materials. Include examples of natural materials that have not been altered, and natural materials that have been changed in order to produce a useful product. This will help the children to distinguish between the object and the material from which it is made. For example, you could include sheep's wool and a woollen jersey, or a piece of wood and a wooden bowl. Be aware that sheep's wool must be washed before use.
- Make a collection of clothes made from different types of fabric. Look at the labels and identify what the clothes are made of. Point out natural fabrics, such as wool and cotton, and explain that other fabrics such as nylon and polyester are man-made.
- Melt some chocolate over a bowl of warm water and ask the children to observe and record how it changes. Place the chocolate into moulds and allow it to cool. Ask the class to suggest where the chocolate would cool down the quickest.
- Demonstrate that water can be in the form of a liquid, solid or gas. Take some ice and heat it in a saucepan. Continue to heat the water until it is boiling. Hold a cool surface near the steam so that the children can see the steam condensing and returning to liquid form. Ensure that the children are kept at a safe distance away from the demonstration, and the adult carrying out the experiment should protect themselves from scalding by wearing oven gloves.

## Group/independent

- Ask the children to give examples of things that must be kept cool or frozen. This may include dairy produce such as butter, cheese and milk, or frozen food such as vegetables, fish fingers, ice cream and so on. Ask the children to explain why it is important to keep these items at cold temperatures.

Give the children the opportunity to freeze samples of different materials. Do some freeze more quickly than others?

- Place different amounts of water into a freezer and record how long they take to freeze solid. Show the children how to construct a table to record their results.
- Examine objects in the classroom and around the school, and discuss why they are made from particular materials. Take digital images showing how materials have been used. Give each child a copy of **Natural or man-made? photocopiable sheet 4**, and invite them to fill in the table. What properties do different materials have? Are the materials natural or man-made?
- Give the children a collection of different materials and a set of labelled cards, which have words describing different properties, for example, *hard, soft, flexible, strong* and *stretchy.* Ask the children to match the materials to the words. Some materials may have more than one property, so there is plenty of scope for discussion and justification of ideas.
- Devise a series of fair tests to examine the properties of different materials. From a collection of four or five examples (such as wood, plastic, metal, wax and plasticine), the children should predict which will be the hardest and which will be the softest. They must test their predictions and record their results in a table.

*Activities and poster devised by **Mark Longmore**.*



Photocopy or download from:
**www.scholastic.co.uk**