Y5 - Materials

Lesson 2

Lesson	2 of 7

Key Unit Question:	How do materials change?

Key Lesson Question:	How can I describe the properties of materials?

Learning Objective

I can describe the properties of materials using scientific vocabulary.

NC Links

- Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets

Resources

- Presentation
- Differentiated activity sheet (easy/medium)
- Challenge activity sheet
- A feely bag full of materials that have different properties
- Next step
- Dictionaries

Teaching Input

- PPT slide 2/PDF p1 - recap on previous learning; partner talk – what are solids, liquids and gases? Can you name some examples? Can you explain the structure of solid particles? How are they different from liquids or gases? If any of the groups completed the challenge activity from lesson 1, ask them to act out how solid, liquid and gas particles are arranged.
- Challenge the children to write down as many materials they can think of on their whiteboards. Some children mistake the word material for fabric so check that they understand what you mean by material. Review answers using PPT slide 4/PDF p3
- Explain that in this lesson, they are going to be thinking about the properties of materials and how those properties make them suitable for certain jobs. What materials are their houses made from? (stone, brick, wood). Why are these materials suited to building houses? Remind the children of the traditional tale 'the three little pigs'. Which house stood up to the wolf's huffing and puffing? Why do they think that was? Introduce the word durable. Can you use this word in a sentence? (PPT slide 5/PDF p4).
- PPT slide 6/PDF p5 - Ask the children what car tyres are made from? Why do you think this is a good material to use for car tyres? Introduce the word flexible. Can you think of any other materials that are flexible?
- Use PPT slide 7/PDF p6 to introduce the independent activity. Remind the children how to use the heading words at the top of each page to efficiently use the dictionary.
- To end the lesson, have a feely bag prepared with a variety of items that could be described using the vocabulary taught in todays lesson (hose pipe, plastic ruler, string, kitchen paper, elastic band etc.). Ask a child to reach in the bag and describe using words such as flexible, durable, stretchy etc. Can the other children guess what the material is?

BACKGROUND SCIENCE FOR TEACHERS:

Properties - A quality or characteristic of something. Materials can be described according to their properties. These can be mechanical properties (such as hardness, strength); optical properties (transparent, translucent and opaque); density; conductivity (electrical and heat); magnetism; permeability and absorbency. The characteristics or properties of materials, make them suitable for particular uses e.g. wooden spoons are poor heat conductors compared to metal spoons so are useful when cooking as they won't burn our hands.

Differentiated Activities

⭐ (working below)

Children are asked to use a dictionary to find out the meaning of the following words: durable, flexible, absorbent, waterproof and magnetic. They will write a definition of each word using the activity sheet provided. Adult support may be needed to help the children use a dictionary efficiently.

⭐⭐ (working at)

Children are asked to use a dictionary to find out the meaning of the following words: durable, flexible, absorbent, waterproof, magnetic, permeable, conductive, transparent and stretchy. They will write a definition of each word using the activity sheet provided.

Challenge activity

Children are asked to name materials that have the following properties; durable, flexible, waterproof and magnetic.

Next Step activity

Children are asked to explain how they could find out which materials are magnetic and which are not?

Assessment questions

- Can you describe the properties of wood, metal and plastic?
- What does durable mean?
- Which materials are good for building houses? Why?

Self assessment

- I know what the following words mean: durable, flexible, absorbent, waterproof, magnetic, permeable, conductive, transparent and stretchy.
- I can suggest a suitable material for a given purpose.

Key vocabulary

property, characteristic, durable, flexible, absorbent waterproof, magnetic, permeable, conductive transparent, stretchy