Knowledge Organiser: Uses of everyday materials

Careers connected to materials: materials engineer, road designer, road engineer

Lesson Sequence

1. Identify different materials and their uses

2. Understand how to select the right materials to build a bridge

3. Explore and test the stretchiness of materials

4. Understand materials can change their shape by twisting, bending, squashing or stretching

5. Learn about Charles Macintosh and explore how materials are suitable for different purposes

6. Discover which materials change shape when making a road with John McAdam

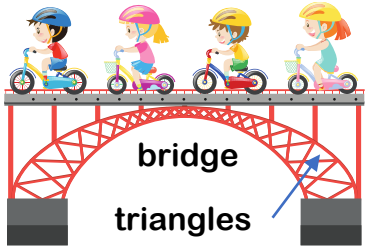
Materials

material		uses
wood		window frames, furniture, buildings, floors
metal		furniture, buildings, statues, pipes, jewellery
plastic		containers, toys, bags, pipes
brick		walls, floors
rock		roads, garden paths, floors, kitchen tops
paper		toilet roll, writing paper, newspaper, cardboard
glass		drinking glasses, windowpanes, television screens

Forces

pull

bend



bridge

triangles

squash

drag carry pull push

Rocket Words

material	anything that is used to make something else
property	the way in which a material is described
obstacle	something that blocks the way
construction	the process of building something
stretchy	something that can pull apart without breaking; elastic
elastic	something that can pull apart without breaking; stretchy
force	a pressure applied to something that makes it change shape or move
bend	to shape or force something into a curved shape

What I already know:

Year 1

- ❑ I can tell the difference between an object and the material from which it is made
- ❑ I can identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock
- ❑ I can describe the simple physical properties of a variety of everyday materials
- ❑ I can compare and group together a variety of everyday materials on the basis of their simple physical properties

What I will learn now:

Year 2

- ❑ **I can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses**
- ❑ **I can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching**

What I will learn next:

Year 5

- ❑ I can compare and group together everyday materials on the basis of their properties
- ❑ I know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
- ❑ I can use knowledge of solids, liquids and gases to decide how mixtures might be separated
- ❑ I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials
- ❑ I can demonstrate that dissolving, mixing and changes of state are reversible changes
- ❑ I can explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda

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Before and After Test

State what the materials below can be used to make.		
wood		
metal		
plastic		
brick		
rock		
paper		
glass		

Which force or action is shown in the picture

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