

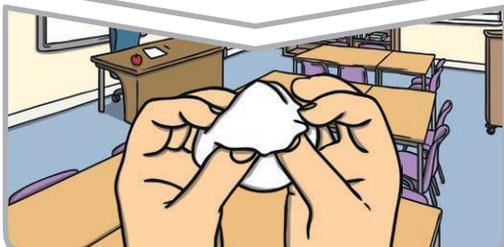
**Key Vocabulary**

**materials** **Materials** are what objects are made from.

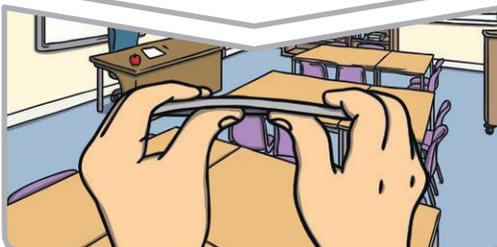
**suitability** **Suitability** means having the **properties** which are right for a specific purpose.

**properties** This is what a **material** is like and how it behaves (soft, stretchy, waterproof).

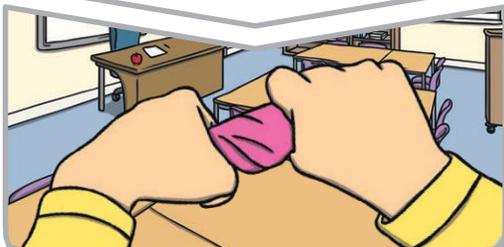
**Squash** an object by pushing both hands together.



**Bend** an object by grabbing both ends of the object and bringing the ends inwards together.



**Twist** an object by turning your hands in opposite directions.



**Stretch** an object by pulling your hands slowly and gently apart.



**Key Knowledge**

**Properties of Materials**



**wood:**  
hard, stiff, strong, opaque, can be carved into any shape.



**glass:** waterproof, transparent, hard, smooth.



**plastic:**  
waterproof, strong, can be made to be flexible or stiff, smooth or rough.



**metal:**  
strong, hard, easy to wash.



**paper:**  
lightweight, flexible.



**cardboard:**  
strong, light, stiff.



**fabric:**  
soft, flexible, hard-wearing, can be stretchy, warm, absorbent.



**rubber:**  
hard-wearing, elastic, flexible, strong.

## Key Knowledge

**John McAdam**

**John McAdam** was a Scottish engineer who experimented with using new **materials** to build roads, inventing a new process called '**macadamisation**'.

**John Dunlop**

**John Dunlop** was a Scottish inventor who invented the air-filled rubber tyre. It was originally invented in 1887 to use with bicycles, and then became very useful when automobiles were developed.

**Charles Macintosh**

**Charles Macintosh** was a Scottish inventor and chemist who invented waterproof fabrics in 1818. The Mackintosh raincoat was introduced in 1824.

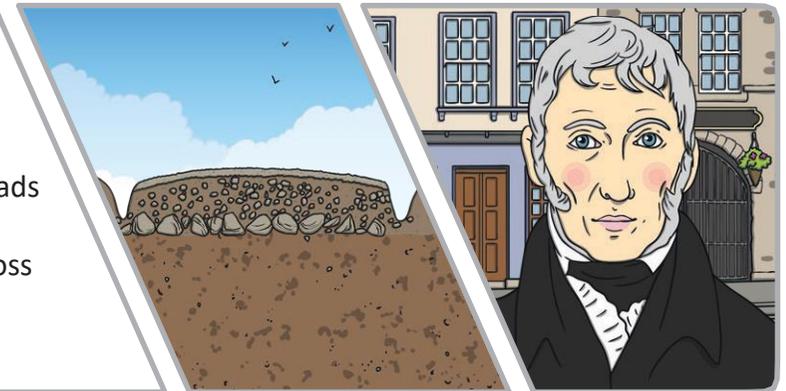
**Macadamisation**

**Macadamisation** was the name given to **John McAdam's** construction process of building roads. The name tarmac means a road made like this using tar.

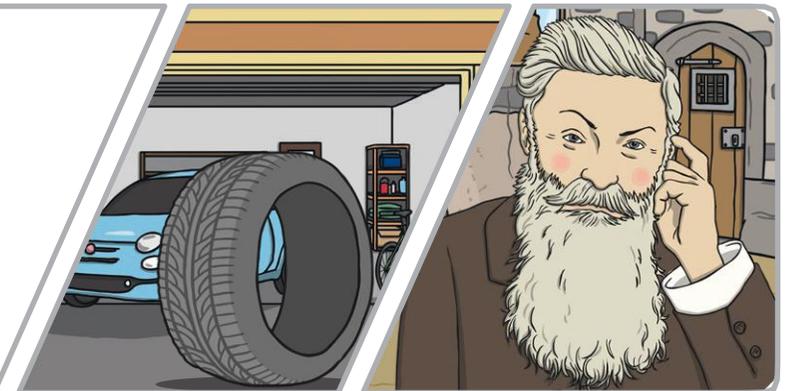
People who developed new **materials**:

**John McAdam's**

process was so successful that roads were built in this way right across the world.

**John Dunlop**

originally used rubber to make tyres for his son's tricycle.

**Charles Macintosh**

invented the first waterproof fabric by painting a dissolved rubber solution onto cloth.

