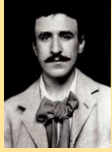




### Key People/Scientists



**Charles Mackintosh (1868-1928)**  
A Scotsman Charles Mackintosh created the first 'waterproof' fabric. It was made by squeezing liquid rubber in between two pieces of fabric, then pressing them together.



**John Macadam (1827-1865)**  
A Scotsman John Loudon Macadam invented the first form of tarmac called Tarmacadam. The new form of tarmac on the roads we know today was made in 1901.



**John Dunlop (1840 - 1921)**  
In 1887 John Boyd Dunlop developed the first practical inflatable tyre for his son's tricycle using his knowledge and experience with rubber.

### Key Questions

<b>What is a material?</b>	A material is anything that something can be made from.
<b>What are the most common materials?</b>	Wood, metal, plastic, glass, brick/rock, paper/cardboard and fabric.
<b>How can you change the shape of some objects?</b>	Squashing, stretching, bending or twisting.
<b>What happens when you apply force onto a material?</b>	In some materials the particles can move around so the materials can change shape. In other materials the particles are so close together that they cannot move at all.
<b>What are properties of materials?</b>	Physical features or behaviours of a material. E.g. One property of plastic is that it is waterproof.

### Diagrams/Visual Aids

**How does the material look?**

Is the material transparent or opaque?

**Is the material rough or smooth?**

**Is the material heavy or light?**

What are you comparing it to?

**Is your material...**

...hard and rigid?

...soft and squashy?

...flexible?

...breakable?

**Which group does your material belong to?**

...metal?

...plastic?

...stone (includes glass)?

...fibres?

...wood?

...waterproof?

...absorbent?

...magnetic?

Does your material conduct electricity?

### Misconceptions

#### Misconception:

Material means a fabric.

#### Fact:

A material is anything that an object can be made from.

### Key Vocabulary

<b>elastic</b>	The material can stretch.
<b>flexible</b>	The material can bend easily.
<b>hard</b>	The material does not dent or scratch easily.
<b>opaque</b>	The material does not let any light through.
<b>rigid</b>	The material will not bend or change shape easily.
<b>strong</b>	The material doesn't break easily.
<b>suitability</b>	Having the properties that are right for a specific purpose.
<b>translucent</b>	The material lets some light through.
<b>transparent</b>	The material is see-through.