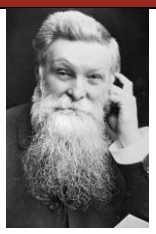
Year 2 Knowledge Organiser—Changing Materials

Materials are the **substance** things are made from. We see lots of different materials each day and some materials can be used to make many things.

Materials can be made to behave in different ways, based on their properties.

Twisting	Bending	Stretching	Squashing
			
Twisting can form a material into a **curled** or **coiled** shape.	Bending can force or shape a material into a **curve** or **angle**.	Stretching materials can make materials longer, or wider, without tearing or breaking them.	Squashing means to **crush** or **squeeze** a material using force. It becomes flat, or out of shape.
String 	Pipe cleaner 	Metal spoon 	Ruler 
Elastic band 	Blu Tac 	Playdough 	Sponge 

Developing Materials	
John Dunlop lived in Northern Ireland. In 1888, he was watching his son riding a bike across the cobbled streets. This was a painful, as the tyres were solid and he felt every bump. To make the ride more comfortable John developed the pneumatic (air-filled) rubber tyre. His tyre cushioned the bumps making riding easier and smoother.	
Charles Macintosh was a Scottish chemist. In 1823, he painted liquid rubber onto pieces of woollen cloth and pressed them together. He found his new fabric was not only waterproof but flexible enough to make into clothing. His invention led to the creation of the modern raincoat, which was named after him – the mackintosh.	
John McAdam was a Scottish engineer and road builder. In 1816, he invented a way of building roads which were smoother, more durable and less muddy. His roads had a curved surface so water ran off, rather than formed puddles. Later, tar was used to make the surfaces we see today – tarmacadam or tarmac for short.