







<p align="center">Question for Learning: <u>How can we compare and group materials?</u></p> <p>Key learning;</p> <ul style="list-style-type: none"> In science the word 'material' is a generic term used to describe what something is made of. Some materials have easily observable features, such as transparency, whereas the features of others are less obvious and need to be identified using a range of tests. 	 <p align="center">Grouping and classifying</p>
<p align="center">Question for Learning: <u>Is a solid always hard?</u></p> <p>Key learning;</p> <ul style="list-style-type: none"> A 'soft' solid, like sponge or foam (used in soft furnishing), is a solid, as are sand and flour, which behave a little like liquids when spilt from a container. This is an example of an amorphous solid. Hard solids are called crystalline solids. 	 <p align="center">Comparative and fair testing</p>
<p align="center">Question for Learning: <u>Is a liquid always runny?</u></p> <p>Key learning;</p> <ul style="list-style-type: none"> It exhibits the properties of a shear thickening fluid (also called a non-Newtonian fluid). The faster you stir the more viscous (thick) the material becomes. This is because at low speeds the water can easily fill gaps between particles, but at higher speeds the water is unable to do so. As friction increases, the viscosity increases. Tomato ketchup, on the other hand, is a shear thinning fluid because its viscosity decreases as it is shaken, which also makes it a non-Newtonian fluid. 	 <p align="center">Comparative and fair testing</p>
<p align="center">Question for Learning: <u>Are all metals the same?</u></p> <p>Key learning;</p> <ul style="list-style-type: none"> Only metals containing iron (including steel), nickel and cobalt are magnetic. All metals conduct electricity and they are very effective thermal conductors. Metals are strong, flexible, malleable, ductile, conduct electricity and heat. This makes them particularly suited for specific uses, for example, lead is softer than steel and is more easily worked at low temperatures. Copper is a particularly good conductor of electricity, which is why it is used in cables and for wiring electrical circuits. 	 <p align="center">Grouping and classifying</p>
<p align="center">Question for Learning: <u>Are all plastics the same?</u></p> <ul style="list-style-type: none"> Plastics are poor thermal conductors and very good thermal insulators. They are ideal for using in contexts where heat requires insulating to protect the user, for example, the handles of metal cooking pans and cooking spoons that are used with hot food. 'Plastic' is a generic term used to describe a wide variety of materials with noticeably different properties. These properties make plastics suitable for a great many everyday uses 	 <p align="center">Grouping and classifying</p>
<p align="center">Question for Learning: <u>To bounce or not to bounce? Why are sports balls so different?</u></p> <ul style="list-style-type: none"> Each ball is designed to be made from a specific combination of materials, in order for it to be appropriate for a particular sport. For example, a football needs to be bouncy enough to be kicked down a pitch without causing injury, and a bowling ball needs to be heavy enough to be rolled. 	 <p align="center">Comparative and fair testing</p>

Key Words

Dissolved	When a substance dissolves, it might look like it has disappeared, but in fact it has just mixed with the water to make a transparent (see-through) liquid called a solution.
Separating	To set apart parts of a mixture and get the original materials back again.
Evaporation	The process of turning water into water vapour.
Properties	All materials have properties. This means the things about them you can measure that can be different to other materials.

