



Autumn 1

Name of Topic Changes of Materials

Year Group

5

Key Vocabulary and Spellings

1	soluble	can be dissolved, like coffee granules
2	insoluble	cannot be dissolved, like pebbles
3	conductor	transmits heat or electricity, like copper
4	insulator	does not transmit electricity, like rubber
5	mixture	substances are mixed together but don't dissolve
6	solution	substances dissolve that are mixed together
7	reversible	a change that doesn't last forever
8	irreversible	a change that lasts forever
9	dissolve	to incorporate into a liquid so as to form a solution
10	separate	the action of moving things apart

Key Investigations

1	Make sugar or salt crystals
2	Dissolve skittles in water

The diagram illustrates various concepts in science. At the top, it shows three types of particles: solid particles (represented by red spheres in a regular grid), liquid particles (red spheres in a disordered, close-packed arrangement), and gas particles (red spheres with motion lines, spread out). Below this, three processes are shown: Sieving (a sieve catching particles), Filtering (a hand pouring liquid through a filter), and Evaporating (a beaker with arrows pointing up from the surface). Further down, two beakers are shown: one with sugar dissolving in water, labeled 'Sugar is a soluble material', and another with sand settling at the bottom, labeled 'Sand is an insoluble material'. At the bottom, two photos illustrate changes of state: a toaster with the word 'irreversible' above it, and melting ice cubes with the word 'reversible' above them.

Top 5 Topic Facts

1	Materials have different properties, including their hardness, solubility, transparency, conductivity (electrical and thermal)
2	Everyday materials like a crayon can be used as candles during an emergency and can burn for up to 15 hours.
3	If you mix sugar and water, the sugar will dissolve forming a solution. You can separate the sugar through a process of evaporation.
4	Other mixtures can be separated through filtering, sieving and evaporating.
5	Certain changes of state are reversible changes. Water can be frozen into an ice cube, and left to melt and turn back into water again.
6	When you burn a log, it will turn to ash. A new material is made and this change is irreversible.

Key Questions of Enquiry

1	What are the different properties of materials and how can you group them?
2	How can you separate mixtures?
3	What changes are reversible?
4	What changes are irreversible?