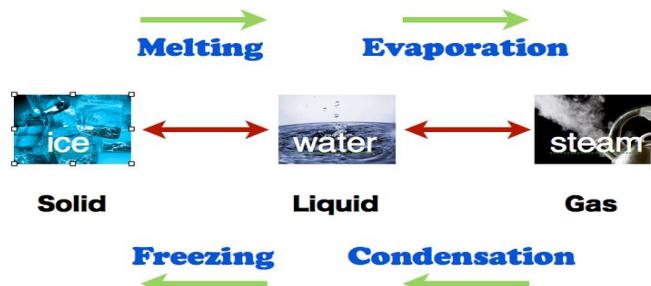


Properties and Changes of Materials

Significant Scientist		Key Knowledge	Key Vocabulary
Ahmed Zewail 	Ahmed Zewail (1946-2016) known as the father of femtochemistry, which is the study of chemical reactions over very short periods of time. He was the first Egyptian scientist to win a Nobel prize.	<p>When the particles of a solid mix with the particles of a liquid, they either combine with the liquid and the result is a solution. This is called dissolving and we say the solid is soluble. Sometimes the particles do not mix or dissolve, we say the solid is insoluble.</p> <p>Some materials can be separated after they have been mixed based on their properties - this is called a reversible change.</p> <p>Some methods of separation include the use of a magnet, a filter (for insoluble materials), a sieve (based on the size of the solids) and evaporation, e.g. The Water Cycle.</p> <p>Melting and heating are examples of reversible changes.</p> <p>A filter can be made of paper, charcoal or other material with tiny holes in it.</p> <p>When a mixture cannot be separated back into original components, it is called an irreversible change.</p> <p>Burning or mixing a liquid with bicarbonate of soda are examples of irreversible changes.</p>	dissolve When a substance is mixed with a liquid and becomes incorporated into the liquid so as to form a solution. soluble Able to be dissolved. insoluble Impossible to dissolve. solution A mixture that contains two or more substances combined. filter A device used to remove impurities or other particles from liquids or gases. evaporate To turn from liquid into gas; pass away in the form of vapour. reversible change A change that can be undone or reversed. When you can get back the substances the reaction started with. irreversible change A change that cannot be changed back again. New materials are formed from a change.
Enquiry Skills		Working Scientifically Skills	
Observing over time	Grouping and classifying	Plan	Changes of State
Fair testing	Pattern seeking	Measure	
   		Fair test	Solid  Melting  Freezing  Liquid  Evaporation  Condensation  Report data – scientific diagrams, labels, bar graphs and line graphs. Present – conclusions, causal relationships, explanations.
 