

Nature of Matter

	<u>Working towards Mastery (W)</u>	<u>Meeting Mastery (M)</u>	<u>Beyond Mastery (B)</u>
Particle Model	<ul style="list-style-type: none">- Properties of solids, liquids and gases can be described in terms of particles in motion but with differences in the arrangement and movement of these same particles: closely spaced and vibrating (solid), in random motion but in contact (liquid), or in random motion and widely spaced (gas).- Observations where substances change temperature or state can be described in terms of particles gaining or losing energy.	<ul style="list-style-type: none">- Explain unfamiliar observations about gas pressure in terms of particles.- Explain the properties of solids, liquids and gases based on the arrangement and movement of their particles.- Explain changes in states in terms of changes to the energy of particles.- Draw before and after diagrams of particles to explain observations about changes of state, gas pressure and diffusion.	<ul style="list-style-type: none">- Argue for how to classify substances which behave unusually as solids, liquids or gases.- Evaluate observations that provide evidence for the existence of particles.- Make predictions about what will happen during unfamiliar physical processes, in terms of particles and their energy.
Elements	<ul style="list-style-type: none">- Most substances are not pure elements, but compounds or mixtures containing atoms of different elements. They have different properties to the elements they contain.	<ul style="list-style-type: none">- Name compounds using their chemical formulae.- Given chemical formulae, name the elements present and their relative proportions.- Represent atoms, molecules and elements, mixtures and compounds using particle diagrams.- Use observations from chemical reactions to decide if an unknown substance is an element or a compound.	<ul style="list-style-type: none">- Use particle diagrams to predict physical properties of elements and compounds.- Deduce a pattern in the formula of similar compounds and use it to suggest formulae for unfamiliar ones.- Compare and contrast the properties of elements and compounds and give a reason for their differences.