



# AQA GCSE Combined Science: Trilogy

## Topic Checklists

### 6.3 Particle Model of Matter

#### 6.3.1 Changes of State and the Particle Model

Topic	Success Criteria	Progress		
Density of Materials	I can recall and apply the correct equation to calculate the density of an object.			
	I can rearrange the equation linking density, mass and volume to calculate the mass or volume of an object.			
	I can use the particle model to explain the different states of matter.			
	I can use the particle model to explain differences in density.			
	I can recognise and draw simple diagrams to model the difference between solids, liquids and gases.			
	I can describe how to use appropriate apparatus to make and record the measurements needed to determine the densities of regular solid objects and liquids (required practical activity 17).			
	I can calculate the volume of regular solid objects and liquids (required practical activity 17).			
	I can describe how to use appropriate apparatus to make and record the measurements needed to determine the densities of irregularly shaped objects using a displacement technique (required practical activity 17).			
Changes of State	I can describe the different changes of state.			
	I can describe what happens to the mass of a substance when it changes state.			
	I can explain why a change of state is different to a chemical change.			

**6.3.2 Internal Energy and Energy Transfers**

Topic	Success Criteria	Progress		
Internal Energy	I can describe where energy is stored inside a system.			
	I can give a definition for internal energy.			
	I can explain how heating affects the energy stored within a system.			
	I can explain the effects that heating can have on a system.			
Temperature Changes in a System and Specific Heat Capacity	I can describe what affects the temperature increase of a system.			
	I can calculate the energy change involved when the temperature of a material changes by applying the correct equation from the physics equation sheet.			
Changes of State and Specific Latent Heat	I can give a definition for specific latent heat.			
	I can distinguish between the specific latent heat of fusion and the specific latent heat of vaporisation.			
	I can describe what happens to the energy transferred to a substance as it changes state.			
	I can calculate the energy change involved when a substance changes state by applying the correct equation from the physics equation sheet.			
	I can interpret heating and cooling graphs that include changes of state.			
	I can distinguish between specific heat capacity and specific latent heat.			

**6.3.3 Particle Model and Pressure**

Topic	Success Criteria	Progress		
Particle Motion in Gases	I can describe the motion of the molecules of a gas.			
	I can describe how the temperature of a gas is related to the average kinetic energy of the molecules.			
	I can explain how the motion of the molecules in a gas is related to its temperature.			
	I can explain how the motion of the molecules in a gas is related to its pressure.			