



Attainment Band :	P3 Particle model of matter (AQA)
	Knowledge and Understanding
<b>Yellow Plus/ Yellow</b>	<p>Link the particle model for solids, liquids and gases with density values in terms of the arrangements of the atoms or molecules.</p> <p>Explain how changes of state conserve mass.</p> <p>Explain that internal energy is the total kinetic energy and potential energy of all the particles that make up a system.</p> <p>Use the specific heat capacity equation to calculate mass, specific heat capacity or temperature change.</p> <p>Use the particle model to explain why the latent heat of vaporisation is much larger than the latent heat of fusion.</p> <p>Describe that the temperature of a gas is related to the average kinetic energy of the molecules.</p>
<b>Blue</b>	<p>Use particle diagrams to communicate ideas about relative densities of different states.</p> <p>Use the density equation to calculate mass and volume.</p> <p>State that mass is conserved when substances change state.</p> <p>Explain that changes of state are physical, not chemical, changes because the material recovers its original properties if the change is reversed.</p> <p>Describe that heating raises the temperature or changes the state of a system but not at the same time.</p> <p>Use the specific heat capacity equation to calculate the energy required to change the temperature of a certain mass of a substance.</p> <p>Describe the latent heats of fusion and of vaporisation.</p> <p>Use the equation <math>E = mL</math></p> <p>Use the particle model to explain the effect on temperature of increasing the pressure of a gas at constant volume.</p>
<b>Green</b>	<p>Use density = mass/volume to calculate density.</p> <p>Describe changes of state as physical changes.</p> <p>Describe how heating raises the temperature of a system.</p> <p>Describe the effect of an increase in temperature on the motion of the particles.</p> <p>State that when an object changes state there is no change in temperature.</p> <p>State that in the particle model the higher the temperature the faster the molecules move.</p>
<b>White</b>	Some elements of the above have been achieved