CP12 Particle Model

CP12a Particles and density
Describe the arrangements of particles in solids, liquids and gases.
Use the particle model to explain the different properties of solids, liquids and gases.
Recall the formula relating density, mass and volume.
Use the formula relating density, mass and volume.
Use the particle model to explain why solids, liquids and gases have different densities.
Describe what happens to the mass of a substance when it changes state.
CP12b Energy and changes of state
Explain how heating affects the particles in a substance or object, including changes of state.
Describe how the temperature of an object changes with time while being heated or cooled to make it change state.
Define the term specific heat capacity.
Define the term specific latent heat.
Explain the difference between specific heat capacity and specific latent heat.
Explain ways of reducing unwanted energy transfer through thermal insulation.
CP12c Energy calculations
Use the formula relating change in thermal energy, mass, temperature change and specific heat capacity.
Use the formula relating thermal energy, mass and specific latent heat.
Recall that the value of specific latent heat for a substance is different for melting/solidifying and for evaporating/condensing.
CP12d Gas temperature and pressure
Explain how the movement of particles causes gas pressure.
Explain how changing the temperature of a gas affects the speed of its particles.
Explain how temperature affects the pressure of a fixed mass of gas at constant volume.
Explain the significance of absolute zero.
Convert temperatures between the Kelvin and Celsius temperature scales.