

81 Fluids	Knowledge, Skills and Understanding
Higher	<p>Use quantitative information on expansion and contraction</p> <p>Compare densities of materials and link them to the mass of the particles and how closely they pack together</p> <p>Explain why ice is less dense than water</p> <p>Use the idea of latent heats when discussing changes of state</p> <p>Apply ideas about pressure to barometers and altimeters</p> <p>Use the equation relating pressure to the depth and density of a liquid</p> <p>Work out if something will float</p> <p>Use ideas about density changes to explain how a hot air balloon flies/how the depth of a submarine is controlled</p> <p>Explain that the upthrust depends on the weight of fluid displaced</p> <p>Use ideas about displacement to explain phenomena connected with floating and sinking</p> <p>Use and interpret the equation linking drag, density, speed and frontal area</p>
Intermediate	<p>Describe how the volumes and densities of substances change at different temperatures</p> <p>Identify some consequences of changing the temperature of objects or substances, such as structures expanding or contracting</p> <p>Explain how density depends on mass and volume</p> <p>Use the particle model of matter/particle theory to explain density changes at different temperatures</p> <p>Describe the effect of physical weathering on rocks and explain it in terms of expansion and contraction</p> <p>Explain what happens to particles and temperature during changes of state, in terms of energy and forces</p> <p>Explain some effects caused by air or water pressure using ideas about forces</p> <p>Use the particle model of matter to explain atmospheric pressure in different situations</p> <p>Explain why pressure in a fluid increases with depth</p> <p>Use the particle model of matter to explain why gas pressure changes with temperature, number of particles and volume</p> <p>State what is meant by upthrust</p> <p>Explain why an object floats</p> <p>Recall the factors that affect the amount of upthrust on an object</p> <p>Describe the ways in which the size of drag forces can be changed</p> <p>Describe the causes of air and water resistance</p> <p>Explain why a vehicle needs a force from the engine to keep moving at a constant speed</p>
Foundation	<p>Describe the three states of matter in terms of shape, volume and compressibility</p> <p>State what is meant by diffusion, contraction and expansion</p> <p>Use the particle model of matter to explain the properties of solids, liquids and gases, and how their movement changes with temperature</p> <p>Use the particle model of matter to explain expansion and contraction at different temperatures</p> <p>State what is meant by density and recall its units and the factors that affect it</p> <p>Recall that ice is less dense than water</p> <p>Describe the ways in which the volume and density changes during the water–ice transition are different from other materials</p> <p>Explain how chemical changes are different from physical changes and recall some examples of each type</p> <p>Recall that a change of state of a pure substance takes place at a constant temperature</p> <p>State what is meant by gas pressure and recall some of its effects</p> <p>Recall that pressure in a fluid changes with depth</p> <p>Describe how pressure in a fluid increases with depth</p> <p>Use the particle model of matter to describe the causes of pressure in fluids</p> <p>Recall the different types of resistive forces and describe how they affect movement</p> <p>Describe how drag changes with speed</p> <p>Explain the effects of balanced forces in simple situations</p>