

Module map

GCSE Science	Module story	Science ideas and explanations	GCSE Additional Science
<p>Testing products in C2 <i>Material choices</i>: forces can stretch, compress, and bend materials. Intramolecular forces can explain polymer properties.</p> <p>In P3 <i>The Earth in the Universe</i>, the forces which move tectonic plates and arise when they collide are discussed.</p>	<p style="text-align: center;">How forces arise</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">Friction and normal reaction (of surfaces)</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">Adding forces</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">Describing and summarizing motion clearly</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">Explaining the motion of objects</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">Work</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">Energy changes</p>	<p>Forces always arise from an interaction between two objects. So they always come in pairs. The two forces in an interaction pair are equal in size, opposite in direction, and act on different objects.</p> <p>Two very common interactions:</p> <ul style="list-style-type: none"> • When two surfaces slide past each other, there is a friction force on both. • The normal reaction of a surface, when something sits on it, is due to tiny distortions of the surface, which then pushes back like a spring. <p>Several forces acting on the same object add to give a resultant force.</p> <p>To describe the motion of an object, we often want to know its speed. Distance–time and velocity–time graphs are also useful ways of summarizing and analysing the motion of an object.</p> <p>When a force acts on an object, it causes a change in its momentum. The change depends on the size of the force and the time for which it acts.</p> <p>When a force makes an object move, it does work. The energy of the object is increased.</p> <p>Conservation of energy. When an object drops to a lower level, it loses gravitational potential energy. If friction can be ignored, it gains an equal amount of kinetic energy.</p>	<p>Attraction forces between atoms, molecules, and ions are introduced in C5 <i>Chemicals of the natural environment</i>.</p> <p>Forces between particles within nuclei are discussed in P7 <i>Observing the Universe</i>.</p> <p>In P3, <i>The Earth in the Universe</i>, the motion of galaxies is discussed.</p> <p>Ideas about energy and energy conservation are explored in P3 <i>Radioactive materials</i>, and B4 <i>Homeostasis</i>.</p>