

Year 5 Progression map – Forces		
National curriculum objectives	HEP science lesson titles	Coherence:
<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object identify the effects of air resistance, water resistance and friction, that act between moving surfaces recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect <p>Misconceptions:</p> <ul style="list-style-type: none"> If an object is at rest, no forces are acting upon it Friction is bad There is no gravity on the moon That mass and weight are the same thing That heavier objects fall to the ground faster than lighter objects Objects have to be in contact with each other to exert a force on each other Weight is measured in kilograms Friction only exists between solid objects Alternative meaning of force e.g. forcing someone to do something Objects slow down and stop when they ‘run out’ of force 	<ol style="list-style-type: none"> What happens when friction is low? What happens when friction is high? What is air resistance? What is water resistance? What does gravity do? What are some simple machines? <p>Working scientifically</p> <p>Scientific enquiry skills used: Observation, comparative testing, fair testing</p> <p>Key scientists and inventors: Galileo Galilei, Sir Isaac Newton</p> <p>Careers: Mechanical engineer, marine engineer</p>	<p>Literacy: Etymology, phonetic spelling, comprehension, DARTs</p> <p>Key vocabulary: Catapults, grit, newton meter, newtons, trebuchets, synovial fluid, aerodynamics, drag, mechanical engineer, streamlined, marine engineer, mass, clutch, effort, fulcrum, gear, lever, load</p> <p>Maths: Taking accurate measurements using standard units, gathering data, taking averages from repeats</p> <p>Design Technology: Simple machines</p>
Builds on:	Future learning:	Further reading:
<p>Year 3: Forces and magnets, Animals including humans</p> <p>Year 5: Properties and changes of materials</p>	<p>Year 5: Earth and space</p> <p>KS3: Forces and motion, energy, pressure</p>	<p>The aerodynamics of biscuits by Clare Helen Walsh</p> <p>The enormous turnip by Katie Daynes</p>