



Year Five & Six		Topic: Forces	Term: Spring 2
Building on Prior Knowledge		Future learning	Key vocabulary
Compare how things move on different surfaces. (Y3 - Forces and magnets) Notice that some forces need contact between two objects, but magnetic forces can act at a distance. (Y3 - Forces and magnets) Observe how magnets attract or repel each other and attract some materials and not others. (Y3 - Forces and magnets) Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. (Y3 - Forces and magnets) Describe magnets as having two poles. (Y3 - Forces and magnets) Predict whether two magnets will attract or repel each other, depending on which poles are facing. (Y3 - Forces and magnets)		Forces as pushes or pulls, arising from the interaction between two objects. (KS3) Using force arrows in diagrams, adding forces in one dimension, balanced and unbalanced forces. (KS3) Moment as the turning effect of a force. (KS3) Forces: associated with deforming objects; stretching and squashing – springs; with rubbing and friction between surfaces, with pushing things out of the way; resistance to motion of air and water. (KS3) Forces measured in Newtons, measurements of stretch or compression as force is changed. (KS3)	Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears
Knowledge		Working Scientifically	
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		Exploring falling paper cones or cup-cake cases. Designing and making [exploring] a variety of parachutes. Carrying out fair tests to determine which designs are the most effective. Exploring resistance in water by making and testing boats of different shapes. Design and make [create/invent/design] artefacts that use simple levers, pulleys, gears and/or springs and explore their effects.	
Key Learning			
A force causes an object to start moving, stop moving, speed up, slow down or change direction. Gravity is a force that acts at a distance. Everything is pulled towards the Earth’s centre by gravity. This causes unsupported objects to fall. Air resistance, water resistance and friction are contact forces that act between moving surfaces. The object may be moving through the air or water, or the air and water may be moving over a stationary object. A mechanism is a device that allows a small force to be increased to a larger force. The pay back is that it requires a greater movement. The small force moves a long distance and the resulting large force moves a small distance, e.g. a crowbar or bottle top remover. Pulleys, levers and gears are all mechanisms, also known as simple machines.			