

Year5				
Topic	Prior Learning	Present learning	Misconceptions	Future learning
<p>Forces</p> <p>National Curriculum</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. 	<ul style="list-style-type: none"> 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) 	<p>Knowledge and Understanding</p> <ul style="list-style-type: none"> -what a force is the units of force -the different types of forces -which force is the weakest and why -what a simple machine is -how to show the forces acting using arrows -what are balanced and unbalanced forces -how to use a force meter to measure weight -the advantages and disadvantages of frictional forces -real life examples where friction is useful or harmful <p>Investigations:--</p> <ul style="list-style-type: none"> -plan a fair test to find out to determine which designs of parachutes are the most effective -plan a fair test to determine resistance in water by making and testing boats of different shapes -to investigate how changing variables on a paper helicopter affects the speed at which it falls through the air <p>Vocabulary:</p> <p>hefty unstable Newton gravity buoyancy friction air resistance unbalanced forces simple machine</p>	<p>Some children may think:</p> <ul style="list-style-type: none"> the heavier the object the faster it falls, because it has more gravity acting on it forces always act in pairs which are equal and opposite smooth surfaces have no friction objects always travel better on smooth surfaces a moving object has a force which is pushing it forwards and it stops when the pushing force wears out a non-moving object has no forces acting on it heavy objects sink and light objects float. 	<ul style="list-style-type: none"> 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)

