

Forces		
	Skills and Knowledge	Key Vocabulary
EYFS	<ul style="list-style-type: none"> • observe and describe movements they and objects make 	
Year 3 Forces and Magnets	<ul style="list-style-type: none"> • recognise that pushes and pulls are forces • recognise that a force acts in a particular direction • observe the movements, shape and direction of objects when forces act on them • describe how to make a familiar object start moving by pushing or pulling • describe how to use pushes and pulls to make familiar objects speed up, slow down, change direction or shape • produce annotated drawings showing the direction of force needed to make an object move • identify friction as a force • observe and explore how friction affects the movement of objects • describe some ways in which friction between solid surfaces can be increased or decreased • compare how things move on different surfaces • observe how magnets attract or repel each other and attract some materials and not others • classify materials as magnetic or non-magnetic • 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 • describe the difference between a magnet and a magnetic material • notice that some forces need contact between two objects, but magnetic forces can act at a distance • describe what happens when some materials are put near a magnet • recall that magnets have a north and a south pole • describe magnets as having two poles • describe the direction of forces between magnets • predict whether two magnets will attract or repel each other, depending on which poles are facing • describe some everyday uses of magnets • explain that a compass works by lining up with the Earth's magnetic field 	Force, push, pull, speed up, slow down, change shape, change direction, movement, direction, friction, magnets, magnetic, surface, magnetism, north pole, south pole, repel, attract,

<p>Year 5 Earth and Space</p>	<ul style="list-style-type: none"> • identify and name the components of the solar system (i.e. Sun, Moon, Earth and other planets) • locate the Sun, Earth and other planets in the solar system • recognise that the Earth and other planets orbit the Sun • recall that the Earth takes one year to orbit the Sun • recall that the Earth rotates on its' axis and this takes one day • describe the movement of the Earth, and other planets, relative to the Sun in the solar system • use simple physical models to explain effects that are caused by the movement of the Earth • recognise that the Moon orbits the Earth • explain that gravity is a force of attraction and it is what holds the planets in orbit around the Sun and the Moon in orbit • around the Earth • describe the movement of the Moon relative to the Earth • explain that the changes in the appearance of the Moon over a period of 28 days arise from the Moon orbiting the Earth once every 28 days • describe the Sun, Earth and Moon as approximately spherical bodies • recognise that the Earth, Sun and Moon are spherical and support this with some evidence • recognise that it is daylight in the part of the Earth facing the Sun • recall that a shadow from the Sun changes over the course of a day • explore and describe how a shadow from the Sun changes over the course of a day • explain in terms of the rotation of the Earth why shadows change and the Sun appears to move across the sky during the course of the day • use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky • explain why it is night time in Australia when it is day time in England • explain how ideas about the solar system have changed over time 	<p>Earth, Sun, planet, Mercury, Venus, Mars, Jupiter, Moon, Saturn, Uranus, Neptune, solar system, spherical, moon, day and night, celestial body, rotation, hemisphere, orbit, gravity, shadow.</p>
<p>Year 5 Forces</p>	<ul style="list-style-type: none"> • identify weight as a force • identify that force is measured in Newtons • name simple forces such as gravity, friction and air resistance • recognise that more than one force can act on an object • draw force diagrams with arrows showing the direction of forces acting on an object • observe and explore the effect of several forces on objects • recognise that air resistance slows things down 	<p>force, air resistance, water resistance, magnetic attraction, gravitational attraction, direction, force, motion, weight, upthrust,</p>

	<ul style="list-style-type: none"> • recognise that friction can be useful or not useful • identify the effects of air resistance, water resistance and friction, that act between moving surfaces • describe some situations in which there is more than once force acting on an object • describe and explain the motion of some familiar objects in terms of several forces acting on them • identify forces on an object as either balanced or unbalanced • use the terms 'balanced' and unbalanced' when describing several forces on an object • explain that balanced forces on an object cause it to remain stationary or travel at the same speed • explain that unbalanced forces on an object cause it to speed up, change shape or slow down • explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object • understand that air resistance is the frictional force of air on objects moving through it • describe some of the factors that increase friction between solid surfaces and increase air and water resistance • describe situations in which frictional forces are helpful as well as those in which frictional forces are unhelpful • compare the tread on bicycle tyres according to how much friction they need • identify streamlined objects and describe why they have been designed in this way (e.g. cycling helmets, formula 1 cars, dolphins) • explore the effects of levers, pulleys and gears • recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect • describe how levers, pulleys and gears are used in everyday life (e.g. describe how having gears can make it easier to pedal a bike, how a bottle opener makes it easier to open a bottle lid) • explain how introducing gears onto bikes has changed cycling 	<p>Newton, forcemeter, stationary, surface area, force applied, pulley, lever, gear</p>
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