



Forces, Magnets and Moments

<p>Streamlining</p>	<ul style="list-style-type: none"> •To get the biggest speed when a force acts on an object, the object can be streamlined •Streamlining reduces the size of the drag force acting on the object. •Drag forces slow objects down •Streamlined objects are shaped to cut through water or air •Animals are streamlined e.g. birds and fish •We can design vehicles to be streamlined as well- a sports car is very streamlined. A lorry isn't. 	<p>Electromagnets</p>	<ul style="list-style-type: none"> •An electromagnet is an iron core surrounded by coils of wire. •It is a temporary magnet •When current flows through the coils of wire, the iron core becomes magnetised and acts like a magnet. •When the current is switched off, the iron core is no longer magnetic. •To make an electromagnet stronger, increase the number of coils or increase the current in the coils. You can also change the shape of the iron core. •Electromagnets have lots of uses, e.g. bells, loudspeakers, scrap yards and relay circuits.
<p>Pressure</p>	<ul style="list-style-type: none"> •When a force acts on an area, it causes pressure. •We can calculate the pressure caused by a force using the equation Pressure = Force ÷ Area or $P = F \div A$ for short •Pressure is measured in N/m^2 or Pascals, Pa. •1 Pascal is the same as $1 N/m^2$ •For the same force, the bigger the area the smaller the pressure will be. •For the same force, the smaller the areas, the bigger the pressure will be. •We use this to help us- for example snowshoes give a big area to make a smaller pressure to stop a person sinking into the snow. 	<p>Levers and moments</p>	<ul style="list-style-type: none"> •A lever is a force multiplier. It increases the turning effect a force has. •A lever works around a pivot or fulcrum. •The longer the lever, the bigger the turning effect it has. •Levers use moments. A moment is the turning effect of a force. •To find the size of a moment, we multiply the size of the force by the distances it acts from the pivot •Moment = Force x Distance
<p>Magnets and Magnetism</p>	<ul style="list-style-type: none"> •Iron, steel, nickel and cobalt are magnetic metals. •A magnet will attract a magnetic metal. •A magnet has an area around it called a field. This is an area around the magnet where another magnet or a magnetic material will experience a force. •Magnets have a North pole and a South pole. •Two N poles or two S poles will repel each other. •A N and a S pole will attract each other. •The Earth has a magnetic field around it. A compass lines up with the field lines of the Earth and points to the N pole of the Earth's magnetic field. 		