

<p>A force is a push or a pull</p>	<p>True</p>
<p>Friction is a type of force</p>	<p>True</p>
<p>Gravity is caused by the spin of the Earth</p>	<p>False. Gravity is the force that is caused by the fact that mass attracts mass (no one really understands why)</p>
<p>An object needs a force to keep it moving</p>	<p>False. Newton First law says that an object remains at rest or moves with a constant speed in a straight line, unless an overall force acts on it. In space, where there is no air resistance, if something is already moving it will keep moving at the same speed in a straight for ever with no need for any force to keep it going.</p>
<p>A heavy object falls faster than a light one</p>	<p>False. A tricky one! Try dropping 2 identical film canisters, one filled with sand and the other empty- they will hit the ground at the same time. In fact, objects of different masses fall with the same acceleration (ie increase their speed at the same rate). Hence they reach the floor at the same time - unless the air resistance on the 2 objects is significantly different.</p>

Like poles of magnets repel	True
When an object is at rest on a table, there are no forces at all acting on it	False. Gravity pulls the object down and there is an upwards, contact force acting on it. There is, however, no overall force acting on it, as these 2 forces are balanced.
A floating object has balanced forces acting on it	True. Gravity pulls the object down and there is an equal and opposite force upwards – called the upthrust. Upthrust is a term used for the force upwards when an object is in a liquid.
Metals are attracted to magnets	False. Not all metals are attracted to magnets, only those containing iron, nickel or cobalt.
Friction can be useful	True. Cars on sheet ice etc!

<p>Forces are measured in kilograms</p>	<p>False. They are measured in Newtons.</p>
<p>Gravity is caused by magnetism</p>	<p>False. Gravity is the force that is caused by the fact that mass attracts mass (no one really understands why)</p>
<p>Gravity only causes attraction</p>	<p>True and rather fortunate if you think about it!</p>
<p>The atmosphere pushing down on an object causes gravity</p>	<p>False. Gravity is the force that is caused by the fact that mass attracts mass (no one really understands why)</p>
<p>Heavy things sink</p>	<p>False. Ships are heavy and not all 'do' a Titanic.</p>

<p>The faster an object moves, the bigger the air resistance</p>	<p>True. As the object moves faster through the air, the friction increases.</p>
<p>Forces always come in pairs</p>	<p>True but this is tricky! This is probably the most misunderstood area of physics. The paired forces act on <i>different</i> bodies. Hence if an object rests on a table, the contact force upwards is not the paired force to the pull downwards because of gravity. The object is pulled to the Earth and the paired force is the pull that the Earth experiences upwards because of the book!</p>

The idea of the card sorting activity as an assessment for learning tool comes from: Naylor, S., Keogh, B., Goldsworthy, A. *Active Assessment. Thinking, Learning and Assessment in Science*. Millgate House Publishers

The Oxford Brookes science team devised these specific cards for forces.