

Leamington Primary Science Knowledge Organiser Year 5 – Forces – Strand - Physics

What I should already know	What I will learn	Important words to help me. (vocabulary)	Ideas for Scientific Enquiry																				
<p>There are different types of forces including; push, pull and twist.</p> <p>There is a force called gravity that pulls you down. This is how we stay on Earth.</p>	<p>There are lots of different types of forces all around us and we use these in everyday life.</p> <p>Isaac Newton (scientist) had a massive impact on physics and developed the theory of gravity.</p> <p>Weight is a measure of how strongly gravity pulls and is measured in newton's (N). Mass isn't a measure of gravitational pull and your mass would be the same even in space.</p> <p>There are different forces that act between moving surfaces. These include; air resistance, water resistance and friction.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Force</td> <td>Force is a push or pull on an object. A force can cause an object to accelerate, slow down, remain in place, or change shape.</td> </tr> <tr> <td>Gravity</td> <td>Gravity is a force of attraction that pulls together all matter (anything you can physically touch). The more matter something has, the greater the force of its gravity.</td> </tr> <tr> <td>Mass</td> <td>Mass always stays the same, while weight changes with changes in gravity.</td> </tr> <tr> <td>Friction</td> <td>Friction is the resistance of motion when one object rubs against another. Friction works against the motion and acts in the opposite direction.</td> </tr> <tr> <td>Air resistance</td> <td>Air resistance is the frictional force air exerts against a moving object. As an object moves, air resistance slows it down. The faster the object's motion, the greater the air resistance exerted against it.</td> </tr> <tr> <td>Water resistance</td> <td>This is a force that tries to slow things down that are moving through water and is a type of friction.</td> </tr> <tr> <td>Mechanisms</td> <td>A system of parts working together in a machine; a piece of machinery.</td> </tr> <tr> <td>Orbit</td> <td>The curved path of a celestial object or spacecraft round a star, planet or moon.</td> </tr> <tr> <td>Streamline</td> <td>A form that presents very little resistance to a flow of air or water, increasing speed and ease of movement.</td> </tr> <tr> <td>Upthrust</td> <td>An upward force that a liquid or gas exerts on a body floating in it.</td> </tr> </table>	Force	Force is a push or pull on an object. A force can cause an object to accelerate, slow down, remain in place, or change shape.	Gravity	Gravity is a force of attraction that pulls together all matter (anything you can physically touch). The more matter something has, the greater the force of its gravity .	Mass	Mass always stays the same, while weight changes with changes in gravity.	Friction	Friction is the resistance of motion when one object rubs against another. Friction works against the motion and acts in the opposite direction.	Air resistance	Air resistance is the frictional force air exerts against a moving object. As an object moves, air resistance slows it down. The faster the object's motion, the greater the air resistance exerted against it.	Water resistance	This is a force that tries to slow things down that are moving through water and is a type of friction.	Mechanisms	A system of parts working together in a machine; a piece of machinery.	Orbit	The curved path of a celestial object or spacecraft round a star, planet or moon.	Streamline	A form that presents very little resistance to a flow of air or water, increasing speed and ease of movement.	Upthrust	An upward force that a liquid or gas exerts on a body floating in it.	<p>Pattern seeking</p> <p>Using a Newton Metre to measure objects in Newtons and G or KG. Can a pattern be identified between Newtons or G or KG?</p> <p>Fair test</p> <p>Planning and conducting a fair test to see whether the ramp surface, vehicle or height of ramp affects the distance the vehicle travels.</p> <p>Fair test</p> <p>Planning and conducting a fair test to see whether the size of the parachute affects the time it takes to reach the floor.</p> <p>Fair test</p> <p>Planning and conducting a fair test to see whether the shape of blu tac affects the time it takes to reach the bottom of the tank.</p> <p>Classifying and grouping</p> <p>Sorting examples of pulleys, levers and gears into correct mechanism group.</p>
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<p>Interesting Facts</p>	<p>Friction occurs when objects move through water or air.</p> <p>Air resistance is a type of friction between air and another material.</p> <p>Water resistance is a type of friction between your skin and the water particles.</p> <p>Streamline is the shape of something so it has less friction acting on it in water. This will provide an object to move smoothly in water. Upthrust is a force that acts on an object to keep it afloat.</p> <p>There are a range of mechanisms that are used that allow a smaller force but can have a greater effect. These are; pulleys, gears and levers.</p>																						
<p>Isaac Newton discovered gravity. He described it as a pulling force that keeps people on the ground rather than floating off. He also noted that gravity keeps the moon in orbit.</p>																							