

Goonhavern Primary School- Science

TOPIC: Forces

YEAR: 5

STRAND: Physics

What should I know already?	What will I know by the end of the unit?	
<p>Know what a force is and be able to explain that a push and pull are types of forces.</p> <p>That when forces are applied to an object they allow them to move or stop moving. The strength of the force determines how far and fast an object moves.</p> <p>Friction is the resistance of motion when there is contact between two surfaces. The force that causes objects to move downwards towards the ground is gravity. That magnets have poles, and that opposite poles attract, while similar poles repel.</p>	<p>What is gravity?</p>	<p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p>
	<p>What are resistance and friction?</p>	<p>Air resistance pushes up on the parachute, opposing the force of gravity. This makes the parachute land more slowly.</p> <p>Water resistance is the friction that is created between water and an object that is moving through it. Some objects can move through water with less resistance if they are streamlined.</p> <p>Friction is a force - it is the resistance of motion when one object rubs against another.</p>
	<p>What are examples of mechanisms?</p>	<p>Levers allow us to do heavy work with less effort. For example, trying to pick up a large heavy box is difficult, however if a lever is used it becomes much easier to move it.</p> <p>Pulleys also allow us to do heavy work - objects are attached to ropes and pulley wheels, and so instead of lifting heavy objects upwards, we can pull on the pulley rope downwards.</p> <p>Gears are toothed wheels. Their 'teeth' can fit into each other so that when the first wheel turns, so does the next one. This allows forces to move across a surface.</p> <p>Springs can be stretched by pulling them or squashed by pushing them. The greater the force pulling or pushing the spring, the greater the force the spring uses to move back to its normal shape.</p>

Vocabulary	
Friction	Resistance when an object rubs against another.
Force	The pulling or pushing effect that something has on something else.
Gear	A part of a machine that causes another part to move because of teeth which connect the two moving parts.
Gravity	An invisible force that pulls objects toward each other. Earth's gravity is what keeps you on the ground and what makes things fall.
Lever	Something that lifts or prys things open.
Pulley	A simple machine which makes lifting easier.
Resistance	A force which slows down the movement of something.
Spring	A spiral of wire which goes back to its original state after being pressed or pulled.
Streamlined	An object, animals or vehicle which has a shape that allows it to move quickly or efficiently through air and water.

Investigate!
<ul style="list-style-type: none"> • Investigate the amount of friction created by different surfaces. Use measures (such as length and time) to show how far or fast an object travels. • Draw diagrams to show how objects move down ramps, through the air and through water, using arrows to show the direction of the forces. • Explore the effects of friction on motion and find out how it slows or stops moving objects, for example, by observing the effects of a brake on a bicycle wheel • Make parachutes to investigate how air resistance works. Ensure that only one variable is changed while other variables stay the same. Variables may include the objects attached to the parachute, shape of parachute, size of parachute, length of string attached to the object, height of drop, material of parachute. Explain why this is necessary in an experiment. • Explore resistance in water by making and testing boats of different shapes. • Design and make products that use levers, pulleys, gears and/or springs and explore their effects.

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TOPIC:	YEAR:	STRAND:

Q1	Start of Unit	End of Unit	Q3	Start of Unit	End of Unit

