

# ALDER COPPICE PRIMARY SCHOOL - KNOWLEDGE ORGANISER

**Subject: Science**

**Year: 5**

**Unit 5: Forces**

**Links to: Y3 Forces**

## What I Should Already Know:

- That forces are pushes and pulls.
- When a force is applied it allows something to move or stop moving.
- 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.

## Skills and Enquiry:

**What is air resistance?**

**What is water resistance?**

**How do levers and pulleys help us to increase the amount of force?**

## Unit Specific Vocabulary:

**friction** - the resistance of motion when one 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** - the force which causes things to drop to the ground

**lever** - a basic tool used to lift or pry things open **motion** - the activity of changing position or moving from one place to another

**pivot** – a point upon which something turns

**pulley** - a simple machine that makes lifting something easier. A pulley has a wheel or set of wheels with grooves that a rope or chain can be pulled over

**resistance** - a force which slows down a moving object or vehicle

**streamlined** - A streamlined vehicle, animal, or object has a shape that allows it to move quickly or efficiently through air or water

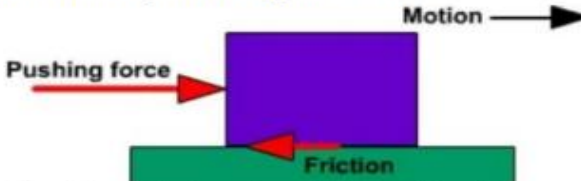


## What I should know by the end of this Unit:

**That unsupported objects fall to the Earth because of gravity.**

**The effects of air resistance, water resistance and friction**

**That some mechanisms such as levers and pulleys allow a smaller force to have a greater effect.**

## Key Facts:

<p>What are <b>forces</b>?</p>	<ul style="list-style-type: none"> <li>• <b>Forces</b> are pushes and pulls.</li> <li>• These <b>forces</b> change the <b>motion</b> of an object.</li> <li>• They will make it start to move or speed up, slow it down or even make it stop.</li> <li>• For example, when a cyclist pushes down on the pedals of a bike, it begins to move. The harder the cyclist pedals, the faster the bike moves.</li> <li>• When the cyclist pulls the brakes, the bike slows down and eventually stops.</li> <li>• <b>Friction</b> is a <b>force</b> - it is the <b>resistance of motion</b> when one object rubs against another.</li> </ul>  <ul style="list-style-type: none"> <li>• Other <b>forces</b> that create <b>resistance of motion</b> include <b>water resistance</b> and <b>air resistance</b>.</li> </ul>
<p>What is <b>gravity</b> and <b>air resistance</b>?</p>	<ul style="list-style-type: none"> <li>• <b>Gravity</b> is the <b>force</b> that pulls objects to the centre of the Earth.</li> <li>• <b>Air resistance</b> pushes up on the parachute, <b>opposing</b> the force of <b>gravity</b>. This makes the parachute land more slowly.</li> </ul> 
<p>What is <b>water resistance</b>?</p>	<ul style="list-style-type: none"> <li>• <b>Water resistance</b> is the <b>friction</b> that is created between water and an object that is moving through it.</li> <li>• Some objects can move through water with less <b>resistance</b> if they are <b>streamlined</b>.</li> </ul> 

Pulley	Lever
