



# Whingate Primary School – Science



## Forces



YEAR 5

| Forces Fact 1:                                                                     | Forces Fact 2:                                                                                                        | Forces Fact 3:                                                                                               | Complete the stem sentence:                                                                                         |
|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Forces are everywhere but we can't see them - we can only see the effects of them. | The moon has a gravitational pull which affects the oceans, creating tides. The fuller the moon, the higher the tide. | If you throw a ball in space, it would just keep moving in the same direction and at the same speed FOREVER! | 1 - A ..... is the unit of measurement used to measure force.<br>2 - ..... is a pulling force exerted by the Earth. |

| Images:                                                                                                                                                                                                                                                                                                                                                                                          | Vocabulary:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | What we will learn in this unit (skills):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|                                                                                                                                                                                                                                                                                                                                                                                                  | <p><b>Air resistance:</b> A type of friction caused by air pushing against a moving object.</p> <p><b>Buoyancy:</b> An object is buoyant if it floats and means the forces working on it are equal (weight and upthrust).</p> <p><b>Forces:</b> pushes or pulls</p> <p><b>Friction:</b> A force that acts between two objects or surfaces that are moving, or trying to, across each other.</p> <p><b>Gravity:</b> A pulling force exerted by the Earth, pulling objects to the Earth's centre.</p> <p><b>Mass:</b> A measure of how much matter (or 'stuff') is inside an object.</p> <p><b>Mechanism:</b> Simple machines with moving parts that change input forces and movement into a set of useful output forces (e.g. gears, levers and pulleys).</p> <p><b>Newtons:</b> a unit of force</p> <p><b>Streamlined:</b> When an object is shaped to minimise the effects of air and water resistance.</p> <p><b>Upthrust:</b> A force that pushes objects up, usually in water.</p> <p><b>Water resistance:</b> A type of friction caused by water pushing against any moving object.</p> <p><b>Weight:</b> The measure of the force of gravity on an object.</p> | <p><b>Working Scientifically – Planning focus (Aut Term):</b></p> <p><u>Ask questions:</u> Refine a scientific question so that it can be investigated, choosing an appropriate type of scientific enquiry to provide the best evidence.</p> <p><u>Make predictions:</u> Recognise when scientific evidence supports an idea or not and use this to support predictions. Use test results to prompt new questions and make predictions for setting up further tests.</p> <p><u>Decide how to carry out an enquiry:</u> Plan enquiries, deciding when it is appropriate to carry out a fair test or another type of practical enquiry from a range suggested. Identify one or more control variables in investigations when conducting a fair test.</p> |
| Sticky Knowledge:                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | What we will learn in this unit (knowledge):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <ul style="list-style-type: none"> <li>-Gravity is a force that pulls everything towards the centre of the Earth.</li> <li>-Unsupported objects fall towards the Earth because of gravity.</li> <li>-Air resistance, water resistance and friction act between moving surfaces.</li> <li>-Mechanisms, like levers, pulleys and gears, allow a smaller force to have a greater effect.</li> </ul> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p><b>NC Objectives:</b></p> <ul style="list-style-type: none"> <li>-Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</li> <li>-Identify the effects of air resistance, water resistance and friction that act between moving surfaces.</li> <li>-Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.</li> </ul>                                                                                                                                                                                                                                                                                |