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| **F:\Learning bugs\Foundation Subjects\Dolly the Fly - Science.jpgLyng Primary School Knowledge Organiser** | | | |
| **Topic:** | **Unbalanced forces** How do forces impact objects? | Year 5 | Summer 1 |

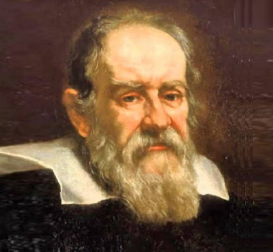


**What should I already know?**

* Identify examples of pushes, pulls and twists.
* Define a force including describing, naming and classifying contact and non-contact forces.
* Describe the relationship between friction and the roughness of a surface.
* Identify examples of friction being useful or not.
* Predict attraction and repulsion between like and opposite poles.
* Identify examples of magnetic and non-magnetic materials.
* Name some examples of types of magnet and compare their strengths.
* Describe some examples of the uses of magnets.

**Notable scientists**

Galileo Galilei



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| **What Step On and Goldilocks words will I use?** | |
| **Spelling** | **Definition** |
| aerodynamics | having a shape which reduces drag from air |
| air resistance | the force acting on an object as it moves through the air in the opposite direction |
| balanced | forces of equal magnitude but in opposite directions |
| contact force | any force that occurs as a result of two objects making contact with each other |
| effort | the force used to move an object over a distance |
| force | strength or energy |
| friction | the resistance that one surface or object encounters |
| gear | a toothed wheel that works with others to alter the relationship between speed |
| gravity | a force that attracts a body towards the centre of the Earth |
| lever | simple machine pivoting on a fixed hinge |
| load | the force exerted on the surface or a body |
| mass | a large body of matter |
| non contact force | a force which acts on an object without physically being in contact with it |
| pivot | the central point, pin or shaft on which a mechanism turns |
| pulley | a wheel with a grooved rim which acts to change the direction of force |
| streamlining | design to provide very little resistance to the flow of water or air, increasing its speed or movement |
| surface area | the outside part or upper most layer of something |
| unbalanced | the force applied in one direction is greater than the other |
| water resistance | type of force that uses friction to slow things down moving through water |

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| **Investigate!** |
| * Analyse predictions, data and anomalies to write a conclusion. * Plan a fair test to investigate air resistance. * Write a method. * Evaluate a method and judge the degree of trust. * Design a results table. * Calculate the mean average from repeat data. * Draw and annotate a diagram. * To draw an accurate line graph. |

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**What will I know by the end of the unit?**

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| What effect does gravity have? | Define the term gravity  Explain why unsupported objects fall to Earth  Describe relationship between mass and gravity |
| What effect does air resistance have? | Define the term air resistance  Describe the relationship between surface area and air resistance |
| What effect does water resistance have? | Define the term water resistance  Describe the effect of water resistance  Describe the relationship between surface area and water |
| What effect does friction have? | Define the term friction  Describe the effect of forces  Predict the outcome of balanced and unbalanced forces |
| What effect do levers, pulley and simple machines have on movement? | Explain the purpose of levers and pulleys  Explain the purpose of gears  Label a diagram |
| What is the relationship between lever length and effort? | Name the three things needed for a lever  List the uses of a lever  Explain how changing the length of a lever will affect the effort needed to lift the load |

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| **Topic** | **Science** | Year 5  *Unbalanced forces* | Summer 1 |

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| 1. What forces are types of friction | **S** | | **E** |
| 1. Air resistance and gravity |  |  | |
| 1. Air resistance and water resistance |  |  | |
| 1. Water resistance and gravity |  |  | |
| 1. Gravity and friction |  |  | |

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| 5. Which size parachute will cause the most air resistance? | **S** | **E** |
| 1. Small |  |  |
| 1. Medium |  |  |
| 1. Large |  |  |
| 1. None – they will all have the same |  |  |

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| 6. Which simple machine is primarily used to change the speed and direction of a force? | **S** | **E** |
| 1. Levers |  |  |
| 1. Pivots |  |  |
| 1. Pulleys |  |  |
| 1. Gears |  |  |

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| 2. Which factors affect gravity? | **S** | **E** |
| 1. Mass and distance |  |  |
| 1. Surface area and speed |  |  |
| 1. Roughness and weight |  |  |
| 1. All of the above |  |  |

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| 7. Which of these simple machines uses levers? | **S** | **E** |
| 1. Scissors |  |  |
| 1. Bicycle |  |  |
| 1. Flagpole |  |  |
| 1. Windmill |  |  |

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| 3. Which effect is caused by balanced forces? | **S** | **E** |
| 1. Changing speed |  |  |
| 1. Changing shape |  |  |
| 1. Stopping moving |  |  |
| 1. Steady movement |  |  |

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| 4. Which of these objects is NOT streamlined? | **S** | **E** |
| 1. A shark |  |  |
| 1. A missile |  |  |
| 1. A parachute |  |  |
| 1. A sports car |  |  |