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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 gravityExplain why unsupported objects fall to EarthDescribe relationship between mass and gravity |
| What effect does air resistance have? | Define the term air resistanceDescribe the relationship between surface area and air resistance |
| What effect does water resistance have? | Define the term water resistanceDescribe the effect of water resistanceDescribe the relationship between surface area and water |
| What effect does friction have? | Define the term frictionDescribe the effect of forcesPredict the outcome of balanced and unbalanced forces  |
| What effect do levers, pulley and simple machines have on movement? | Explain the purpose of levers and pulleysExplain the purpose of gearsLabel a diagram |
| What is the relationship between lever length and effort? | Name the three things needed for a leverList the uses of a leverExplain 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
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| 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
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| 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
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| 1. Pivots
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| 1. Pulleys
 |  |  |
| 1. Gears
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| 2. Which factors affect gravity?  | **S** | **E** |
| 1. Mass and distance
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| 1. Surface area and speed
 |  |  |
| 1. Roughness and weight
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| 1. All of the above
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| 7. Which of these simple machines uses levers? | **S** | **E** |
| 1. Scissors
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| 1. Bicycle
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| 1. Flagpole
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| 1. Windmill
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| 3. Which effect is caused by balanced forces?  | **S** | **E** |
| 1. Changing speed
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| 1. Changing shape
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| 1. Stopping moving
 |  |  |
| 1. Steady movement
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| 4. Which of these objects is NOT streamlined? | **S** | **E** |
| 1. A shark
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| 1. A missile
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| 1. A parachute
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| 1. A sports car
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