Hurst Hill Primary School Knowledge Organiser

Hurst Hill Primary School
Learning Together

Science	Forces and magnets	Year 3	Spring	Physics

Knowledge	
What are forces?	**Identifying and classifying** Describe what a force is and identify pushing and pulling actions in photographs, distinguishing between the two and describing which direction the forces are acting in.
What do we measure a force in?	**Identifying and classifying** Discuss what a force meter is and recognise that forces are measured in newtons. Practise reading scales on force meters
How do things move on different surfaces?	**Comparative Testing** Carry out an investigation to measure whether the same objects needs the same amount of force to be pulled along different surfaces
Do all forces need contact?	**Pattern Seeking** Discuss how some forces do not need contact between objects. Look at gravity and magnetism. Consider the forces being applied to use when we stand or an apple falling from a tree.
Who found gravity?	**Research** Gather information and write about Issac Newton and how he discovered gravity.
Is there gravity in space?	**Comparative Testing** Consider the differences between earth and space. Opportunity for application of knowledge about gravity and consolidation about how it pulls and not pushes.
How do magnet forces work?	**Pattern Seeking** Identify what magnets are and how they work before testing how they behave when they are put together. Discuss the patterns they discover. Consider ways to record observations and what is happening when the magnets repel.
Are all materials magnetic?	**Comparative Testing** Predict what which materials are magnetic based on prior knowledge then carry out an investigation using a variety of materials to check if their predictions were correct. Categorise which materials are magnetic and which are not.
In everyday life, what are magnets used for?	**Research** Gather information about a variety of uses for magnets including medical equipment, credit cards, and recycling. Write up the findings in a non-chronological report about magnets.
How can the weather affect the force?	**Observing over time** Watch videos of the weather and how period of time can add an external factor to consider especially when driving or walking.

Vocabulary	
Force	A push or pull on an object which can cause it to move, change speed, direction or shape.
Newtons (N)	The measurement of a force.
Magnet	A material or object that produces a magnetic field. It attracts or repels magnetic objects, including iron.
Attract	To pull towards. Opposite of repel
Repel	To push away. Opposite of attract
Friction	The resistance of motion when one object rubs against another. Friction causes objects to slow down and the energy becomes heat
Balanced Force	Two forces of equal size acting in opposite directions on an object so that it will stay still or continue to move in the same way
Unbalanced Force	Two forces of unequal size acting in opposite directions causing an object to move, change speed, direction or shape.

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Physics is the science that understands the nature and properties of energy and matter.

Forces and magnets

- compare how things move on different surfaces
- notice that some forces need contact between 2 objects, but magnetic forces can act at a distance
- observe how magnets attract or repel each other and attract some materials and not others
- compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials
- describe magnets as having 2 poles
- predict whether 2 magnets will attract or repel each other, depending on which poles are facing