Forces- Year 5- Kapow unit- Forces and space: Unbalanced forces

Previous learning

Compare how things move on different surfaces.
Notice that some forces need contact between two 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 materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials

Describe magnets as having two poles.

Predict whether two magnets will attract or repel each other depending on which poles are facing.

Key Vocabulary for Year 5

Air resistance	
Water resistance	
Friction	
Gravity	
Newton	
Gears	
Pulleys	

Previous vocabulary

Magnetic, force, contact, attract, repel, friction, poles, push, pull

Useful links

https://www.stem.org.uk/resources/community/collection/12696/year-5-forces

https://www.hamilton-trust.org.uk/science/year-5-science/forces-may-forces-be-you/

https://www.bbc.co.uk/bitesize/articles/z22t7yc

Key scientists you could look at...

Isaac Newton

Scientific skills

Working scientifically	Questioning and enquiry	Observing and measuring	Investigating	Recording	Grouping and classifying
Use practical scientific methods, processes and skills, covered in a variety of ways throughout the year	Begin to plan different types of scientific enquiries to answer questions, including recognising and controlling variables when necessary.	Begin to take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate. Begin to identify patterns that might be found in the natural environment. Begin to make own decisions about what observations, measurements, and equipment to use. Begin to interpret data. Begin to make accurate and precise measurements.	Begin to test results to make predictions to set up further comparative and fair tests. Begin to recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why. Begin to suggest improvements to the method and give reasons.	Begin to record data and results of increasing complexity using scientific diagrams and tables, classification keys, tables and bar and line graphs. Begin to report and present findings from enquiries. Begin to decide how to record data from a choice of familiar approaches. Begin to choose how best to present data	Begin to us and develop keys and other information to record, identify, classify and describe living things and materials.

Experiment and activity ideas

Parachutes- creating air resistance	Make a balloon powered car	Investigate levers, pulleys and gears, making a moving object	Investigate and create levers	Investigate and create pulleys

Knowledge- objectives

Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the earth and the falling object

Identify the effects of air resistance, water resistance and friction, that act between moving surfaces

Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect

Resources in school

Magnets- range of different types, range of different materials, variety of different metals, friction ramp, pulleys, gears, newton meters