

Adventurers - May The Force Be With You

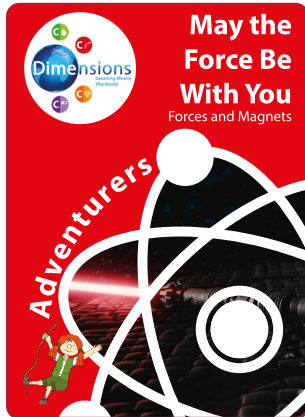
What

I

Should

Know

Dimensions
CURRICULUM



Overview

"May the Force Be With You" is a thematic unit based around magnets and forces, with a key focus on science. We will begin by learning about contact and non-contact forces, before focusing on magnets. We will learn about magnetic forces, the relevance of magnetic North and South poles and the concept of magnetic attraction and repulsion.

Forces

Everything on the planet has a force acting upon it. Right now, gravity is pulling you down towards the centre of the Earth so you don't go floating off into space! Friction is the force that stops you from slipping over when you walk or run. Icy weather reduces the friction under your foot meaning you might slip. Friction is a force that always works against (in the opposite direction to) a moving object. Things travelling through air face air resistance and when you swim, you experience water resistance, too. Some forces require contact while others don't.

Magnets

Magnets use the forces of attraction and repulsion. Every magnet has a north and south pole. North poles attract south poles (opposites attract!) but when two of the same pole are together e.g. a north pole and a north pole, they repel each other. Magnets are extremely useful. For example, magnets are used to make a tight seal on the doors to fridges and freezers and are important in scanning machines called MRIs (magnetic resonance imagers), which doctors use to look inside people's bodies.



Materials

Only some materials can be magnetic or be attracted to magnets. All of these are types of metals, but not all metals are magnetic. Examples of magnetic metals are steel and iron. Examples of non-magnetic metals are copper and gold.

We really use magnets for that?!

Magnets have been used to clean up oil spills using a magnetic fluid and they have also been used to study how bees sleep and whether they suffer from sleep deprivation! More usual uses for magnets can be to help you pick metal objects that have fallen down the sink or down a drain or attach things to your fridge. When you place a magnet over wet nail polish (it has to be still wet) the metal particles in the polish rise towards the magnet, creating a funky pattern!

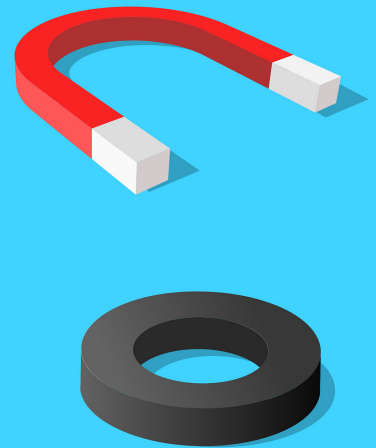
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Vocabulary

Attract	when opposite poles on magnets pull towards each other
Friction	the resistance of a surface to motion If a surface is very rough then objects aren't likely to move smoothly over it. Smooth surfaces have less friction.
Gravity	the force by which all objects in the universe are attracted to each other All objects on Earth are pulled downwards towards the centre.
Pole	either of the two points of a magnet where the lines of magnetic force meet and are strongest
Resistance	opposition to something
Repel	when the same poles on magnets push away from each other

Concept Flow

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



My Notes / Questions