



20 minutes



Small magnet (e.g. fridge magnet), metal paper clip, small piece of foil



Low level of supervision



Can be done indoors and outdoors



Internet access is *optional* for 'Explore some more' tasks

Preparation

- Print/ copy the task sheet OR
- Create a copy on A4 paper or in a scrapbook

Purpose

- To explore non-contact forces (magnetism) by finding out what objects are attracted and not attracted to magnets, how objects behave and what they have in common.

Description

1. Students use an everyday magnet, such as a fridge magnet, to explore what objects around the home 'stick' to or are attracted to magnets.
2. Students list and/or draw the objects the magnet 'sticks' to or that are attracted by the magnet, by completing the '*Magnetic treasure hunt*' task sheet.
3. Students summarise where magnets are found and how they are used in everyday objects.
4. Students may share the completed sheet with parents, carers, peers or teachers.

- Vacuum cleaners use powerful magnets in their motors to give high suction.
- Smart phones use small magnets to interact with a coil of wire to create the vibrate function.
- Kitchen cupboards might have magnetic catches to keep the doors closed.
- Microwaves usually have two magnets in their Magnetron to guide the electrons to heat the food.
- Electric can openers use a magnet to hold onto the lid as the can is opened.
- Recycling plants use huge magnets to sort scrap metal.

EXAMPLE:

List of examples highlighting the role of magnets in everyday objects

Before the task

- Locate an everyday magnet, a metal paper clip, and a small piece of aluminium foil.
- Find out what students think they know about magnets and what objects might 'stick' or be attracted to magnets. You may wish to use these questions to guide you.
 - What objects do you think might 'stick' to a magnet?
 - Can you tell me some examples?
 - What word might describe an object that 'sticks' to a magnet? (magnetic)
 - What word might describe an object that doesn't 'stick' to a magnet? (non-magnetic)
- Explain that students will explore what 'sticks' to a magnet by testing a few objects – a paper clip and aluminium foil.
- Ask the student to predict what might happen. You might scaffold this by saying "I predict the paper clip will stick to the magnet because..."
- Explain the *Magnetic treasure hunt* task by brainstorming locations and objects that could be explored such as, in the kitchen, garage or backyard, and the task sheet requirements.

After the task

- Using the completed task sheet, discuss the students' findings. You may wish to use these questions to guide you: - -
 - What objects are magnetic?
 - How do you know?
 - What do the objects do/how do they behave?
 - How do they feel?
 - What objects are non-magnetic? How do you know?
 - What do the objects do/how do they behave?
 - How do they feel?
 - What do you notice magnetic objects have in common?
 - What do you notice non-magnetic objects have in common?
 - Where and how are magnets used in everyday objects?
 - What surprised you?
 - What else did you notice during the Magnetic treasure hunt?
- You may wish to share the completed sheet with parents, carers, peers or teachers..

Explore some more

- Find two magnets. Explore what happens when a magnet is tested **as the object** that might 'stick' to another magnet. Draw, describe or show what happens.
- Research the role of magnets in everyday objects drawing from examples from the list above.
- Watch a video from the Science Channel on maglev trains (6:11s). (<https://www.youtube.com/watch?v=l-U7s6KpKwg>)
- Use a magnet to make a needle float and then fall. (<https://blog.doublehelix.csiro.au/drop-the-needle/>)

Important safety note: This activity uses a lighter and gets very hot. Get an adult to help.



Ask students to be careful while they are investigating and not use objects that are fragile and/or too heavy or dangerous.

Information note for families

Name: _____ Date: _____

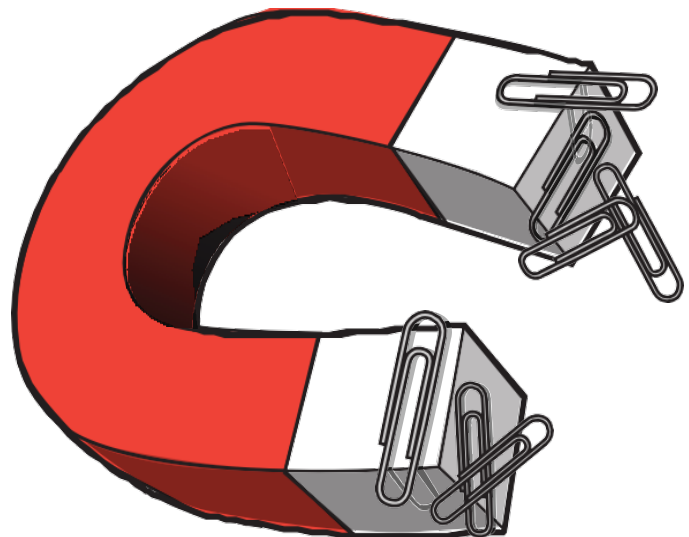
Introducing the Magnetic treasure hunt home task

We are exploring magnetism as a force that enacts on objects at a distance.

Students will use a magnet, such as a fridge magnet, to find what objects around the house 'stick' to or are attracted to the magnet, and those that are not.

Students are asked to list and/or draw the objects that the magnet 'sticks' to or that are attracted by the magnet and those that are not.

Students will use the task sheet to document their exploration.



Name: _____ Date: _____

Objects I found that **are** attracted to a magnet:

Objects I found that are **not** attracted to a magnet:

Explore some more - the role of magnets in everyday objects

Where and how are magnets used at work or at home?

Example:

My research findings: