# Mighty Metals

Name





These activities are for you to do at home with an adult. You can do all of them or choose the ones that you find most interesting.

## Activities

**1.** Use information books and the internet to find out about contact and non-contact forces, including friction, gravity and magnetism. Create an information poster to report your findings. Include a title, headings, facts and pictures.

**2.** Watch videos or read information books to find out about friction in everyday life. Write a definition of what friction is, then complete the table to describe occasions when friction is helpful and unhelpful.

Friction is

_____

_____

| Occasions when friction is helpful | Occasions when friction is unhelpful |
|---|---|
| • Friction between road surfaces and car tyres helps grip and allows cars to stop easily. | • Friction between road surfaces and car tyres causes the tyres to wear down and need replacing. |




**3.** Air resistance is a type of friction between air and another material. Use your research skills to learn about air resistance. Afterwards, look at the pictures and write sentences to explain the effect that air resistance will have on each object. Does the shape of the object matter for air resistance?

bird

parachute


aeroplane

racing car

Images from: Shutterstock editorial/Sufi, Ev. Safronov

**4.** Galileo Galilei was a famous 16th century scientist who carried out experiments to learn about forces. Use the internet or information books to find out about Galileo's law of free fall, then write a short descriptive report. You might like to learn more about other scientific discoveries that he made.

Galileo Galilei

Image from: Wikimedia Commons/Public domain

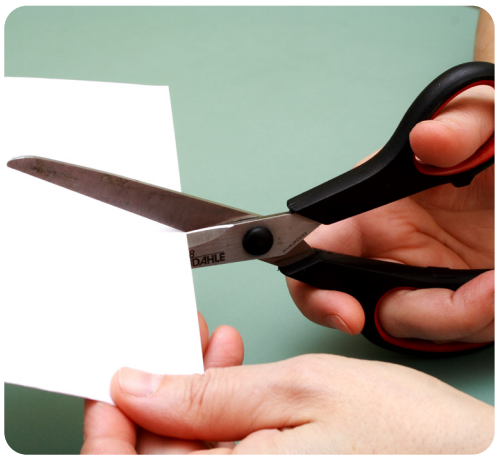
**5.** Gravity is a force that pulls things to the ground. The scientist, Sir Isaac Newton, first described gravity. Use a range of sources to find out more about gravity and the life and discoveries of Sir Isaac Newton. Afterwards, write a non-chronological report about Sir Isaac Newton and how he discovered gravity, as well as what gravity is and does. Include a title, headings, facts and pictures.

**6.** Use information books and the internet to learn more about magnets and magnetism. Write down any interesting facts that you discover. Afterwards, use your facts to create a quiz about magnets and magnetism. See if a family member or friend can complete your quiz. Mark the quiz and share your knowledge, giving the answers to any questions that they answered incorrectly.

Interesting facts



**7.** Use your research skills to find out about levers and how they work. Can you find out what the terms fulcrum, load and effort mean, and what these words have to do with levers? The pictures below show some everyday levers. Label the fulcrum and load and draw arrows to show where a person applies effort to work the lever. Find other examples of everyday levers and draw labelled diagrams of them on a separate sheet of paper.



scissors

hammer

wheelbarrow

bottle opener

**8.** Use a range of sources to find out about different metals, their properties and uses. Use your research to answer the questions, then complete the table for three metals of your choice.

What are metals and where are they found?

What is metallurgy?

What does the process of extracting metals involve?

Why are metals useful materials?




| | Name and picture | Properties | Uses |
|---|---|---|---|
| Metals | | | |
| | | | |
| | | | |





**9.** Create a piece of art using aluminium foil. You can find many examples on the internet by typing key terms, such as 'aluminium foil art ideas', into the search bar.

**10.** Finish your home learning by writing some sentences or explaining to an adult what you have learned about forces, famous scientists, levers and metals.

## Useful websites

BBC Bitesize – Forces and Motion – KS2 Science
DKfindout! – What is friction?
BBC Bitesize – What are water and air resistance?
Britannica Kids – Galileo – Homework Help
Britannica Kids – Isaac Newton – Homework Help
DKfindout! – How do magnets work?
DKfindout! – What is a lever?
DKfindout! – Uses of metals
Britannica Kids – Metal – Homework Help

## Good reads

| Title | Author | ISBN |
|---|---|---|
| Moving up with Science: Forces and Magnets | Peter Riley | 9781445135250 |
| Science Superstars: Galileo | Nancy Dickmann | 9781474758826 |
| Science Superstars: Sir Isaac Newton | Angela Royston | 9781474758871 |
| Everyday Materials: Metal | Harriet Brundle | 9781789980783 |