



# Magnets and electromagnets

## 1. Choose the correct word to complete these sentences:

- a. All magnets have **two** **three** **four** opposite poles.
- b. Identical poles **attract** **repel** each other.
- c. Opposite poles **attract** **repel** each other.

## 2. Drag and drop words from the box to complete the sentences.

temporary	weakest	magnetite	magnetic poles	molten iron
magnetic field	induced	needle	artificial	
permanent	filings	cosmic radiation	strongest	nickel

- a. A/An \_\_\_\_\_ magnet never loses its magnetism.
- b. A/An \_\_\_\_\_ is the area around a magnet where its force has an effect.
- c. All compasses contain a magnetised \_\_\_\_\_ which points north.
- d. The Earth has two \_\_\_\_\_, located near the geographical poles.
- e. The magnetic force of an induced magnet is \_\_\_\_\_.
- f. Small pieces of iron, called \_\_\_\_\_ can help us see the effect of a magnetic field.
- g. The Earth's core contains \_\_\_\_\_, which acts like a giant magnet.
- h. The areas around a magnet's poles are where the magnetic field is the \_\_\_\_\_.

## 3. What is electromagnetism? Fill in the gaps in the definition:

Electromagnetism is the relationship between \_\_\_\_\_ and \_\_\_\_\_

## 4. Which of the following materials are magnetic?

silver

nickel

copper

glass

steel

iron

**5. Electromagnets are objects which act like magnets when an electrical current passes through them. Watch this video to see how it works:**

**a. What components are used in the video to make the electromagnet?**

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

**b. Are electromagnets permanent or induced magnets?** \_\_\_\_\_

**c. If we want to increase the strength of an electromagnet, which 2 of these things can we do?**

Use a less powerful battery

Have more coils of wire

Have fewer coils of wire

Use a smaller nail

Use more paperclips

Use a more powerful battery

**6a. What do the letters *MRI* stand for? (Write one word per box.)**

\_\_\_\_\_

**b. *Maglev* is an abbreviation of which two words? (Write one word per box.)**

\_\_\_\_\_

**c. Are these statements true (T) or false (F)?**

1. Speakers use magnets to convert sound into electricity      **T**      **F**

2. Home computers contain electromagnets      **T**      **F**