

Name: _____

Class: _____ Date: _____



How to Make a Compass

The planet Earth is like a giant magnet with its strongest forces at its two magnetic poles: North Pole and South Pole. The needle on a compass is also magnetic. It is balanced so that it can swing all the way round. No matter which way you hold a compass, the needle will always point to the North Pole.

Some people think that the Ancient Chinese invented the compass. Others believe it was the Ancient Greeks. But until about 250 years ago, sailors and travellers still used the stars or Sun to know which direction they were travelling in. Then, in 1772, the ship *HMS Resolution* was the first ship to sail with a compass on board. Now, all ships and aircraft are fitted with compasses. You can make a compass that is as accurate as one you can buy.

- 1** What will the needle of a compass always point towards?
Tick **one** box.

Planet Earth

☐

A swing

☐

The South Pole

☐

The North Pole

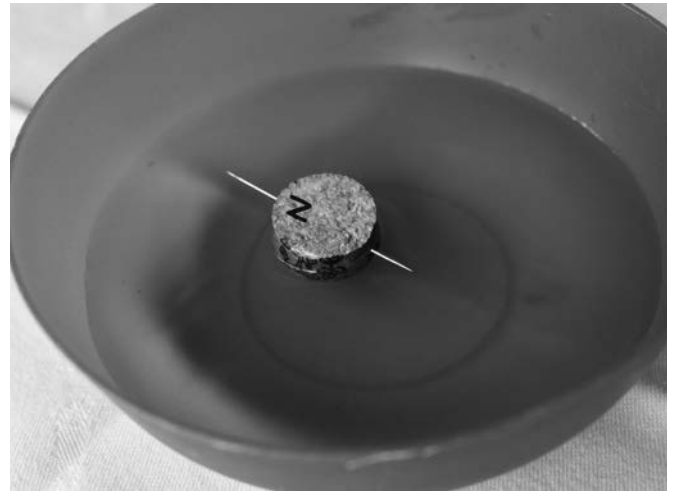
☐

- 2** How are the needle on a compass and the planet Earth the same?

- 3** When did sailors first start using the compass to find their way?

What you need

- A needle
- A bar magnet
- A flat slice of cork
- A marker pen
- A small dish of water



What to do

1. First, stroke one end of the magnet along the needle about 30 times. Always stroke in the same direction. This will magnetise the needle.
2. Then push the needle through the piece of cork.
3. Next, mark N for North on the cork near the sharp end of the needle.
4. Float the cork on a dish of water. The tip of the needle will point towards the north. The other end of the needle will point to the south.

You can check that your compass is working by comparing it with another compass. Make sure that you put the compasses more than 30 centimetres apart because the magnetism of one compass could attract the needle of the other so that it no longer points north.

4

a) What is the purpose of the text on page 2? Tick **one** box.

To tell a story

☐

To give instructions of how to make something

☐

To give information about what something is

☐

To explain how something works

☐

b) Under which heading would you look to find out how to make the compass?

5

Look at the sentence: *First, stroke one end of the magnet along the needle about 30 times.*

What does the word 'stroke' tell you about how to move the magnet?

6

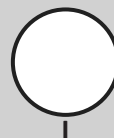
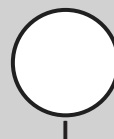
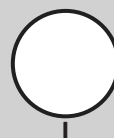
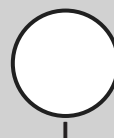
Which **two** metal objects do you need to make a compass?

7

What do you use the magnet for?

8

Suggest a word you could put at the beginning of the final instruction.



9

I made a compass and put it on my desk. My friend made a compass and put it on his desk 100 cm away. My compass would point north. Where would my friend's compass point?

10

Which order do these parts of the text come in? Number the boxes 1–4.

How to make a compass

Explanation of how compasses work

How to test that a compass works

Information about the history of the compass

For teacher use

| | |
|----------------|-----------------|
| Your mark | _____ out of 12 |
| What went well | |
| How to improve | |