

① Tick (✓) the materials that are electrical conductors.

a. paper

e. glass

b. iron

f. wood

c. copper

g. water

d. plastic

h. cotton

② What is the difference between permanent magnets and induced magnets? Write a brief explanation.

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③ Choose the correct words to complete the sentences.

a. An atom is made up of protons, \_\_\_\_\_ (electrons / nucleus / charges) and neutrons.

b. Objects that have the same number of protons and electrons are \_\_\_\_\_ (positively charged / negatively charged / neutral).

c. If two objects are positively charged, they \_\_\_\_\_ (repel / attract / rub) each other.

d. Electrical circuits are composed of a power source, a switch, a resistor and \_\_\_\_\_ (magnets / metals / wires).

e. Magnets have two poles, north and \_\_\_\_\_ (south / east) and \_\_\_\_\_ (south / east) and west.

f. Opposite poles \_\_\_\_\_ (repel / attract / attack) each other.

g. The area around a magnet where it exerts its force is called a magnetic \_\_\_\_\_ (camp / field / zone).

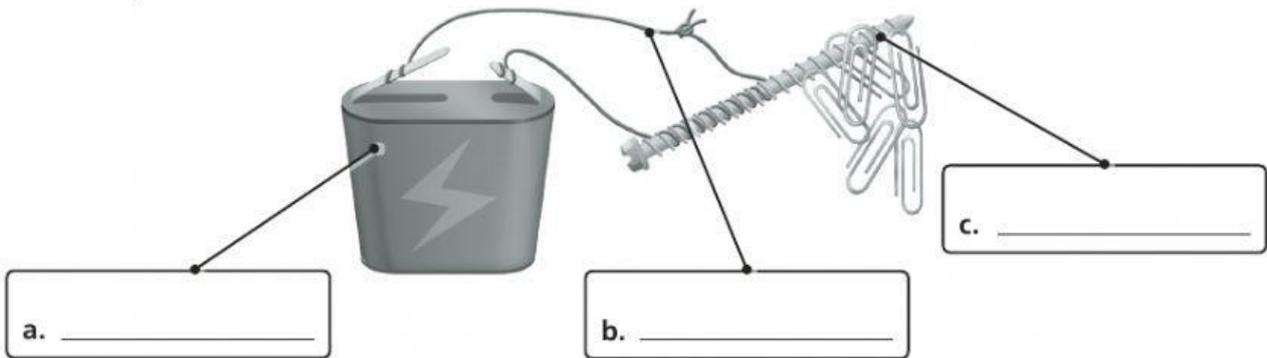
④ How does a compass work? Complete the text.

A compass is a navigational (1) i\_\_\_\_\_. It has a magnetised (2) n\_\_\_\_\_ which always points to the (3) m\_\_\_\_\_. (4) N\_\_\_\_\_ (5) P\_\_\_\_\_. The compass is marked with the (6) c\_\_\_\_\_ points; this circle is called a (7) r\_\_\_\_\_. With a (8) m\_\_\_\_\_ and a compass you can find your way in unknown places even in poor visibility.

5 Answer the following questions.

- a. What is the core of the Earth made of? \_\_\_\_\_
- b. Where do compass needles point? \_\_\_\_\_
- c. What two effects does the Earth's magnetism have? \_\_\_\_\_

6 Label the picture.



7 Are the sentences below true (T) or false (F)? Correct the false ones.

- a. Electromagnets occur in nature.
- b. Electromagnets are permanently magnetic.
- c. Adding coils of wire makes electromagnets stronger.
- d. All you need to make an electromagnet is a battery, a nail and some electrical wire.
- e. Electromagnets are used in motors and generators.

8 Tick (✓) the objects that contain magnets.

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|---|---|
| a. hairdryer <input type="checkbox"/>       | e. electric guitar <input type="checkbox"/> |
| b. washing machine <input type="checkbox"/> | f. microphone <input type="checkbox"/>      |
| c. mobile phone <input type="checkbox"/>    | g. television <input type="checkbox"/>      |
| d. toaster <input type="checkbox"/>         | h. speakers <input type="checkbox"/>        |