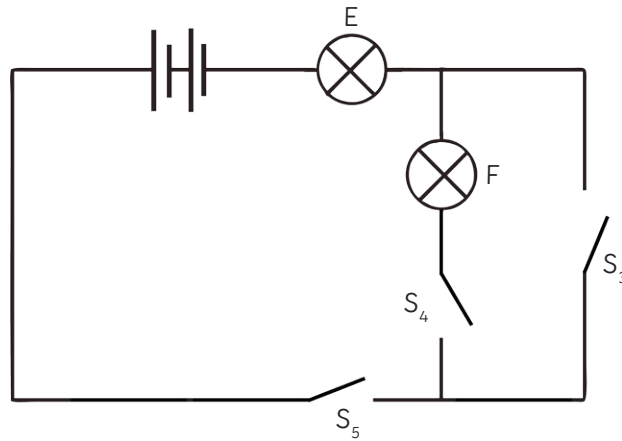


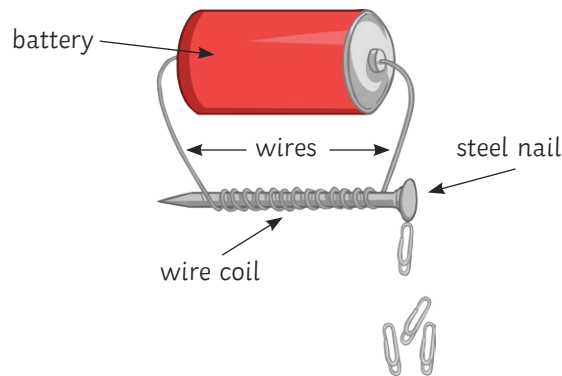
Electricity and Magnetism Exam Style Questions 1

1.



- When switch 3 and 5 are closed, which bulb will light up?
- Is it possible to light bulb F only? Explain your answer.
- Is this a series or parallel circuit?
- If bulb F is broken, is it possible to light up bulb E? Explain your answer.

2. A simple electromagnet used to pick up paperclips is shown below.



- Steel is a magnetic material. Name two other magnetic materials.
- The results for the current in the circuit and the number of paperclips attracted to the nail are shown below.

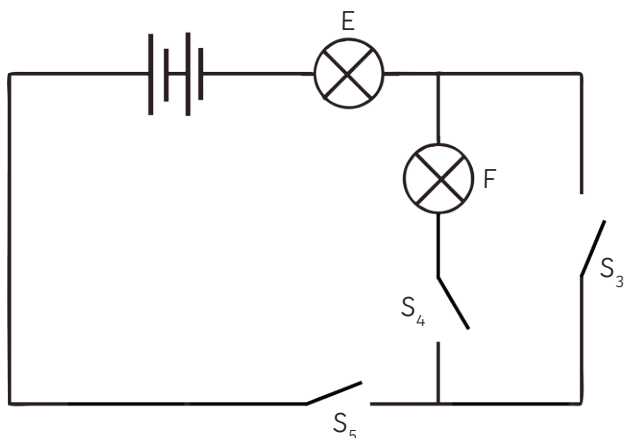
| | | | | | |
|----------------------|-----|-----|-----|-----|-----|
| Current (A) | 0.2 | 0.4 | 0.6 | 0.8 | 1.0 |
| Number of paperclips | 3 | 6 | 7 | 12 | 15 |

Write a sentence to explain how current affected the number of paperclips attracted to the magnet.

One of the results is an anomaly. Circle this result.

Answers

1.



- When switch 3 and 5 are closed, which bulb will light up? **E**
- Is it possible to light bulb F only? Explain your answer.
No. To light up bulb F, switches 4 and 5 need to be closed, which makes a complete circuit for bulb E as well.
- Is this a series or parallel circuit? **Series.**
- If bulb F is broken, is it possible to light up bulb E? Explain your answer.
Yes. A complete circuit can be made by closing switches 5 and 3, eliminating bulb F.

2. A simple electromagnet used to pick up paperclips is shown below.

- Steel is a magnetic material. Name two other magnetic materials.
Nickel, iron or cobalt
- The results for the current in the circuit and the number of paperclips attracted to the nail are shown below.

| | | | | | |
|----------------------|-----|-----|-----|-----|-----|
| Current (A) | 0.2 | 0.4 | 0.6 | 0.8 | 1.0 |
| Number of paperclips | 3 | 6 | 7 | 12 | 15 |

Write a sentence to explain how current affected the number of paperclips attracted to the magnet.
As the current was increased, the number of paperclips picked up increased.

One of the results is an anomaly. Circle this result.