

Solutions

Each answer shows the steps, then the **result**.

2.1

- they repel (push apart)

2.2

- steel

3.1 B

- field lines run from N to S outside the magnet

3.2

(a) the magnet's field induces magnetism in the iron

- the near end gains the opposite pole, so the two attract

(b) soft iron magnetises and demagnetises easily

- so the electromagnet can be switched on and off (loses its magnetism when the current stops)

3.3

- place paper over the magnet and sprinkle iron filings on top
- tap gently — the filings line up along the field lines, showing the pattern