KS3 Science

Magnetism

Mark Scheme

Time available: 22 minutes
Marks available: 34 marks

1.

(a) (i)

- **no** magnetic force ✓

if more than one box is ticked, award no mark
ignore added poles

1 (L4)

(ii)

- attract ✓

if more than one box is ticked, award no mark
ignore added poles

1 (L3)

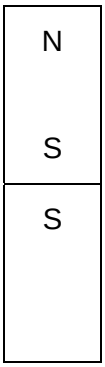
(iii)

- attract ✓

if more than one box is ticked, award no mark
ignore added poles

1 (L3)

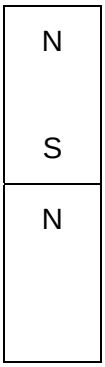
(b) (i)

- 

***all three** poles are required for the mark*

1 (L4)

(ii)

- 

***all three** poles are required for the mark*

1 (L4)

[5]

2. **Marks may be awarded for part (a) if the magnets are correctly labelled in part (b) and no answer is given in part (a)**

(a) • Magnet A

both *poles are required for the mark*

1 (L4)

• Magnet C

both *poles are required for the mark*

1 (L4)

(b) • repel

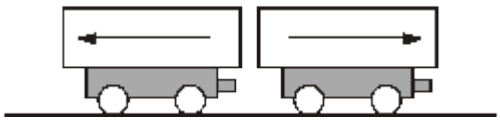
• attract

answers must be in the correct order

both *answers are required for the mark*

1 (L4)

(c) •



both *arrows are required for the mark*

1 (L4)

(d) • it is attracted

accept 'it gets faster'

1 (L4)

• nothing

accept 'it is not attracted or repelled'

accept 'it is not attracted'
accept 'it is not repelled'
'they stick together' is insufficient

do ***not*** *accept 'it repels'*

1 (L4)

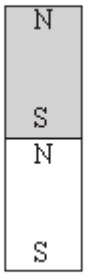
[6]

3. (a)

both poles are required for the mark

1 (L4)

(b) (i)



all four poles are required for the mark

1 (L4)

(ii) any **one** from

- iron
- steel

*accept 'cobalt **or** nickel'*

1 (L4)

(c) any **one** from

- wood **or** it is not magnetised

  accept 'the wood does not have any poles'

- wood **or** it is not magnetic

  accept 'wood is not a magnet'

  accept 'the magnet does not attract wood'

  accept 'magnetism cannot pass through wood'

- it increases the distance between the magnets
- the magnets are too far apart
- the magnets are weak

1 (L4)

[4]

4. (a) gravity

accept 'weight'

1 (L5)

magnetic force **or** magnetism

*accept 'repulsion' **or** 'upthrust'*

answers may be in either order

*do **not** accept 'air resistance'*

1 (L5)

(b) (i) 12

1 (L5)

(ii) any **one** from

- the paper cup stopped moving
  accept 'it hit the bottom'
- the paper cup reached the bottom magnet
  accept 'the paper cup could not go any further'

1 (L6)

(c) any **one** from

- iron is magnetic
  accept 'aluminium is not magnetic'
- iron nails are attracted to a magnet
  accept 'the rivets are not attracted to a magnet'
- there is a magnetic force on the iron
  *do **not** accept 'aluminium **or** rivets are less magnetic'*
  *do **not** accept 'iron **or** nails are more magnetic than aluminium **or** rivets'*

1 (L6)

[5]

5. (a) iron **or** steel
*accept 'nickel' **or** 'cobalt'*

1

(b) any **one** from

- because the poles are at the ends
- that is where the field is strongest
  accept 'that is where the magnet is strongest'
  *accept 'the magnet is weakest in the middle **'***
  ***or '** there is more magnetism at the ends'*
  *do **not** accept 'that is where the magnetism is'*

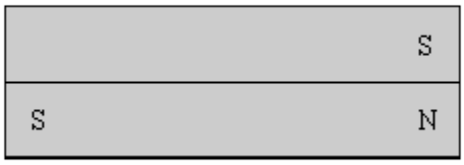
1

(c) any **one** from

- in a north-south direction
  *accept 'North' **or** 'South'*
- with the north pole pointing North
- with the south pole pointing South

1

(d) (i)



all three *poles are required for the mark*

1

(ii) Could be in any direction ✓

if more than one box is ticked, award no mark

1

[5]

6. (a) **one mark is for moving a magnet so that one end of magnet A is close to one end of magnet B**

1 (L4)

a second mark is for concluding, from the attraction or repulsion, which pole of magnet B is next to the known pole of magnet A

1 (L4)

the third mark is for deducing or showing which pole is at the other end of B

1 (L4)

either

- bring one end of B next to the S pole of A
- if it attracts it is the N pole or unlike poles attract
- so the other end is the S pole **or** will be repelled by the S pole of A

accept a similar line of argument in which the end of B is brought next to the north pole of A

or

- bring one end of B next to the S pole of A
- if it repels it is the S pole or like poles repel
- so the other end is the N pole **or** will be attracted by the S pole of A

accept a similar line of argument in which the end of B is brought next to the north pole of A

or

- put the magnets side by side
- if they repel or skid along each other, the N poles are next to each other
- and the S poles are next to each other

accept a similar line of argument in which the two magnets attract

*accept for **two** marks 'hang A on a thread: North is where the N pole of A points. Hang B on a thread; the end pointing North is the N pole. The other end is the S pole'*

(b) any **one** from

- away from the wall
- to the left
- backwards

1 (L4)

(c) slow it down **or** reduce it **or** make it less

accept 'it will stop it'

1 (L4)

[5]

7. (a) point A: south pole ✓

if more than one box in the row is ticked award no mark

1 (L3)

point B: south pole ✓

if more than one box in the row is ticked award no mark

1 (L3)

(b) (i) The magnet attracts the iron block. ✓

if more than one box in the row is ticked award no mark

1 (L3)

(ii) The iron block attracts the magnet. ✓

if more than one box in the row is ticked award no mark

1 (L3)

[4]