

Subject: Science/Physics

Level: Form 3

Topic: Effects of Magnetic Forces

Magnetism

- Materials can be classified as **Magnetic** e.g. iron and steel or **Non-magnetic** e.g. plastic and wood.
- A magnetic force is a pull or push due to interaction with a magnet or magnetic material.
- The area of a magnet where the magnetic force is strongest is called the POLE
- Magnetic poles are NORTH -seeking or SOUTH- seeking

Magnetism

- Magnets
 - repel other magnets
 - attract other magnets and
 - attract magnetic substances.
- The general rule is:
 - LIKE magnetic poles: REPEL (push apart)
 - UNLIKE magnetic poles: ATTRACT (pull towards)

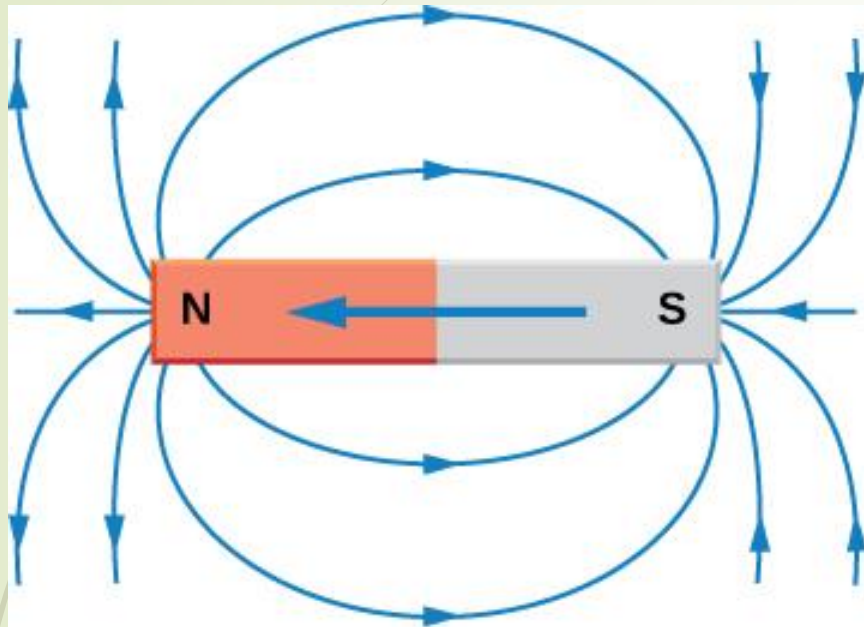
Magnetism

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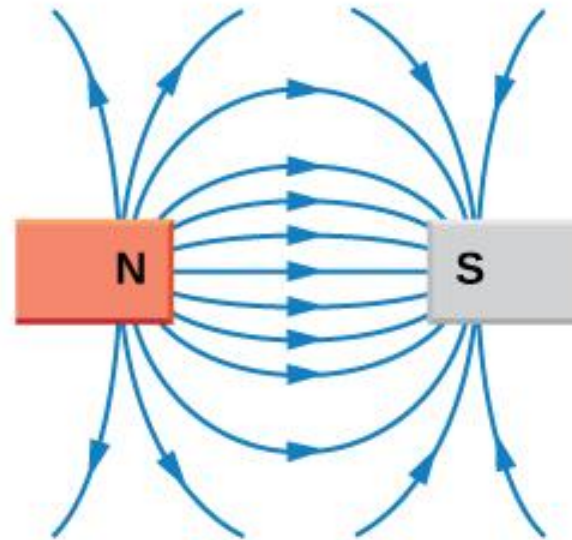
- Magnets create magnetic fields, an area where a magnetic force can be experienced
- Magnetic fields can be shown using field lines
- Magnetism is induced in some materials when placed in a magnetic field.
- One part of a magnet will always point north when allowed to swing freely.

- Bar magnets have two **poles**:
 - north pole – normally shown as **N**
 - south pole – normally shown as **S**
- **Opposite (unlike) poles attract, and like poles repel.**
- The field around a magnet goes from the North Pole to the South Pole and can be represented by lines with arrows.
- The field lines are more concentrated at the **poles** (see diagram below)

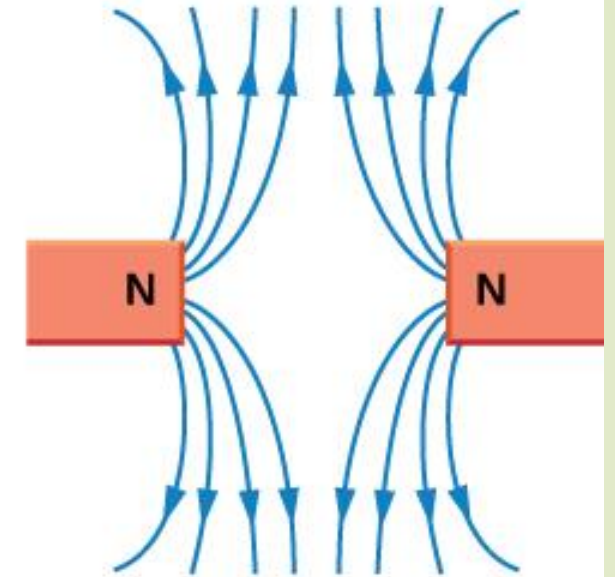




Magnetic field lines of a bar magnet



Magnetic field lines
between unlike poles



Magnetic field lines
between like poles

Activity: Complete the following and write your answer in the blank spaces below

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How Do Magnets React to Each Other?

N	N S	→	Result
N	S N	→	Result
S	S N	→	Result
S	N S	→	Result

Why do you think this happened? _____

Why do you think this happened? _____

Why do you think this happened? _____

Why do you think this happened? _____

Assessment:

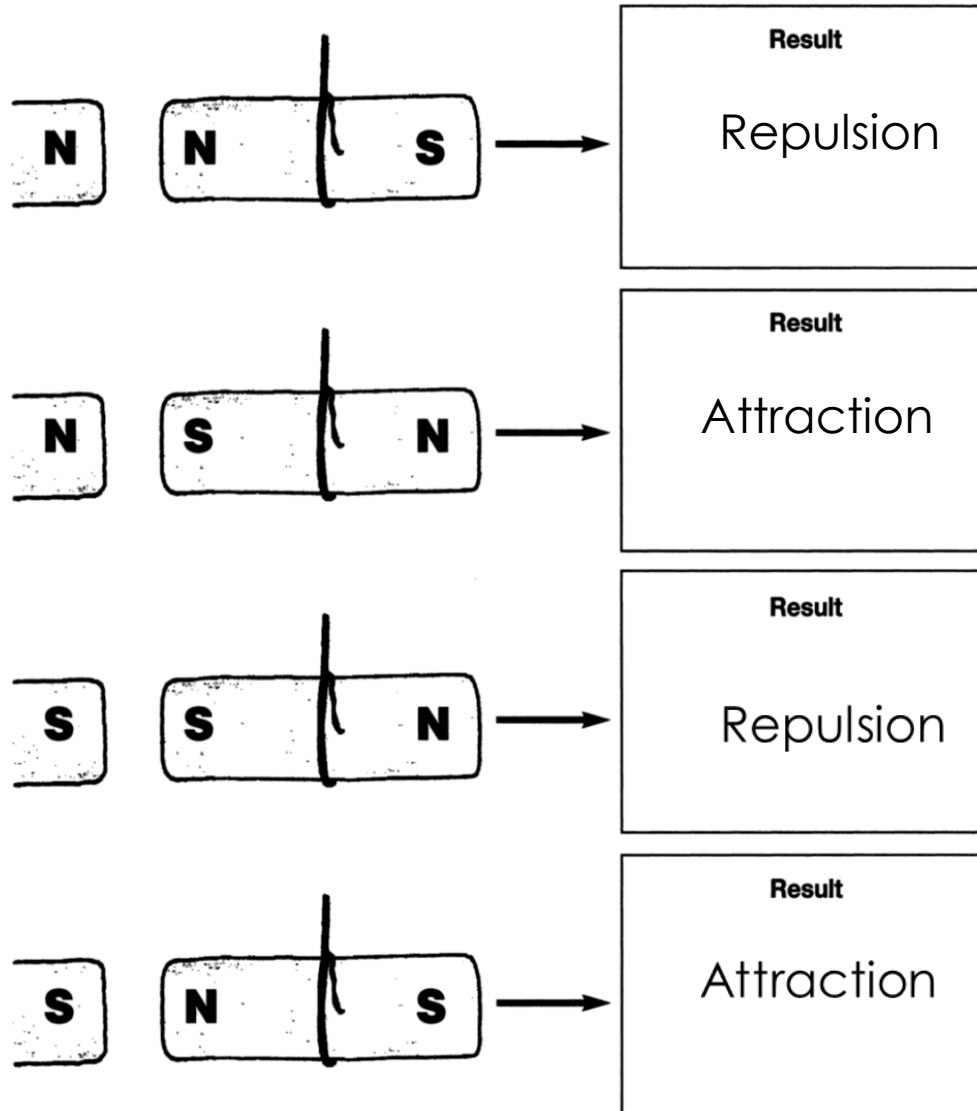
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1. How many poles a bar magnet have?
(a) one (b) two
(c) four (d) none
2. Which of these is a magnetic material?
(a) plastic (b) gold
(c) iron (d) wood
3. In which direction are the arrows on a magnetic field line?
(a) from south pole to north pole
(b) from north pole to south pole
(c) from east to west
(d) from west to east
4. The pole of the magnet that always point north when allowed to swing freely is called
(a) W-pole (b) E-pole
(c) N-pole (d) S-pole

Activity: Complete the following and write your answer in the blank spaces below

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How Do Magnets React to Each Other?



Why do you think this happened? _____

Like poles repel

Why do you think this happened? _____

Unlike poles attract

Why do you think this happened? _____

Like poles repel

Why do you think this happened? _____

Unlike poles attract

Assessment Answer Key

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1. (b)
2. (c)
3. (b)
4. (c)

References

- <https://www.bbc.co.uk/bitesize/guides/zxxbkqt/revision/1>
- <http://acamrmicheal.weebly.com/properties-of-a-magnet.html>
- This Photo by Unknown Author is licensed under CC BY-SA
- Hands-on Science : Magnetism and Static Electricity, Physical Science
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