Primary 7 Integrated Science

Term 1

Theme: Human Body

Topic 2/3 – Electricity and Magnetism

Learning Outcomes: The learner:

- appreciates the importance of electricity and magnetism in the modern world of work.
- develops the necessary scientific knowledge, principles and skills to solve problems related to electricity and magnetism.

Electricity and Magnetism in Work

Electricity and magnetism are forms of energy that are widely used in modern life. They help people perform work more easily, quickly, and safely.

Uses of Electricity in Work

(i) **Lighting** homes, schools, hospitals, and offices.
(ii) **Operating machines** in factories and workshops.
(iii) **Communication** through radios, televisions, computers, and phones.
(iv) **Transport** – electric trains, cars, and charging stations.
(v) **Medical work** – X-rays, scanning machines, and surgical equipment.

Exercise 1

State any four uses of electricity at home

Uses of Magnetism in Work

(i) **Electromagnets** used in cranes to lift heavy scrap metal in industries.
(ii) **Electric motors** in fans, washing machines, and vehicles.
(iii) **Generators and dynamos** that produce electricity.
(iv) **Magnetic storage** in computers (hard drives, tapes).
(v) **Medical work** – MRI machines use strong magnets to scan the body.

Importance in Modern Work

(i) Makes work **faster and more efficient**.
(ii) Reduces **human effort** by using machines.
(iii) Improves **communication and transport**.
(iv) Enhances **healthcare and education**.

Exercise 2

State any two home appliances that use a magnet.

Electricity

This is a form of energy that is produced by moving electrons or electrical charges. There are two types of charges; positive charges and negative charges.

Sources of electricity

Some examples of sources of electricity are:

- batteries (torch and car batteries)
- bicycle dynamos
- hydro-electric generators

- petrol and diesel driven generators
- wind driven turbines
- geothermal generators
- solar energy (panels)

Exercise 3

State any two sources of electricity

Forms of electricity

(a) static electricity
(b) Current electricity

Static electricity

It is a type electricity whose charges do not move.

Static electricity is the type of electricity that is produced when **objects rub against each other** and build up electric charges on their surfaces.

Formation of static electricity

When two objects rub together, **electrons** (tiny particles) move from one object to another.

One object becomes **positively charged** (loses electrons).

The other becomes **negatively charged** (gains electrons).

This difference in charges creates **static electricity**.

Examples of static electricity in Daily Life

- Rubbing a balloon on your hair makes the balloon stick to the wall.

- Clothes sticking together after being dried.
- Sparks seen when touching a metal door handle after walking on a carpet.

Importance of Static Electricity

(i) Used in **photocopiers and printers**.
(ii) Helps in **painting cars and furniture** evenly.
(iii) Used in **air filters** to trap dust.

Dangers of Static Electricity

(i) Lightning
(ii) Can cause small shocks when touching metal objects.
(iii) May damage electronic devices if charges build up too much.
(iv) In factories, it can cause fires if sparks ignite flammable materials.

Lightning

Lightning is a **bright flash of electricity** that occurs in the sky during a thunderstorm. It happens when electric charges build up in clouds and are suddenly released.

How Lightning is Formed

(i) Clouds contain tiny water droplets and ice particles.
(ii) As they move and rub together, they produce **static electricity**.
(iii) Charges build up: the top of the cloud becomes **positive**, and the bottom becomes **negative**.
(iv) When the difference in charges is too great, electricity is released as a **flash of lightning**.

Effects of Lightning

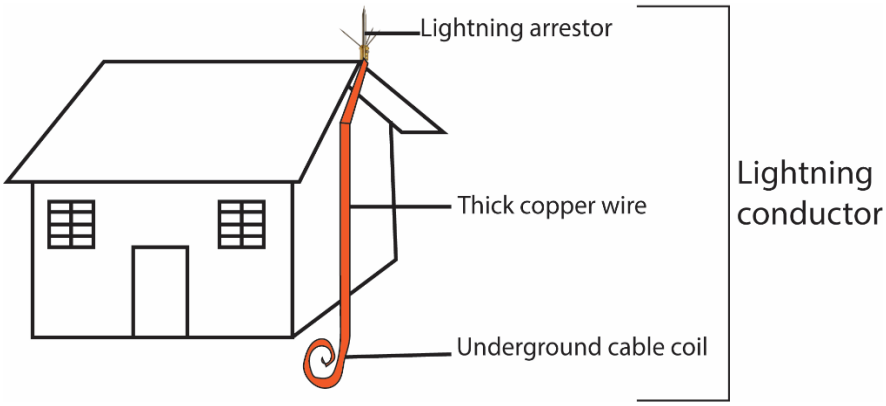
(i) Produces **thunder** (the sound caused by the rapid heating of air).
(ii) Can cause **fires** when it strikes trees or buildings.
(iii) May cause **injuries or death** if it strikes people or animals.
(iv) Sometimes helps nature by **fixing nitrogen** in the soil, which plants use to grow.

Safety Measures During Lightning

- Stay indoors during thunderstorms.
- Avoid standing under trees or tall objects.
- Do not touch metal objects like fences or poles.
- Stay away from water bodies such as lakes or rivers.

Lightning conductor

A **lightning conductor** is a **metal rod** fixed at the top of tall buildings to protect them from lightning strikes.



How It Works

(i) The rod is usually made of **copper or aluminum**, good conductors of electricity.
(ii) When lightning strikes, the conductor safely carries the electric charge down into the ground through a wire.
(iii) This prevents the building from catching fire or being damaged.

Exercise 5

(a) Name any two uses of static electricity.
(b) Explain how a lightning conductor protects a house from damage.
(c) Apart from lightning give any one danger of static electricity

Current electricity

This is a kind of electricity that moves through wires in form of electron.

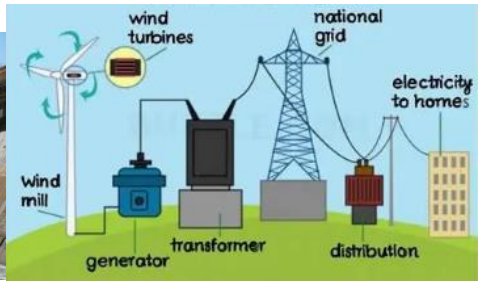
Sources of current electricity

Car battery

Bicycle dynamo

Thermos generators

Hydroelectricity generators



Wind driven turbine

Solar panels

Hydroelectricity is the cheapest and most reliable source of current electricity.

Example 6

(a) Distinguish between static and current electricity.
(b) Name two sources of current electricity.
(c) Mention any two uses of current electricity.

Conductors of electricity

Conductors are materials that **allow electricity to pass through them easily**.

They have free electrons that move quickly.

Examples:

(i) Metals like copper, aluminum, iron, and silver.
(ii) Water (especially salty water).

Insulators

Insulators are materials that **do not allow electricity to pass through them easily**.

Their electrons are tightly held and cannot move freely.

Examples:

Rubber, plastic, glass, dry wood, and cloth.

Importance in Daily Life

(i) Conductors are used to make **wires and cables** that carry electricity.
(ii) Insulators are used to **cover wires** so people do not get electric shocks.
(iii) Together, they make electricity safe and useful.

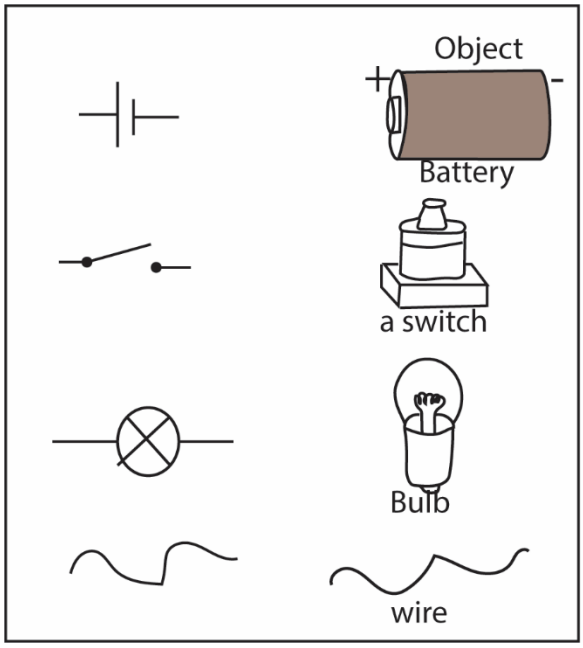
Exercise 7

Giving one example each, distinguish between conductors and insulators

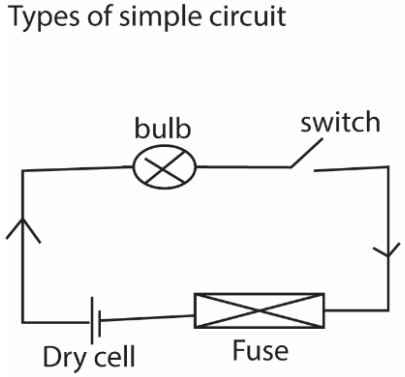
Electric circuit

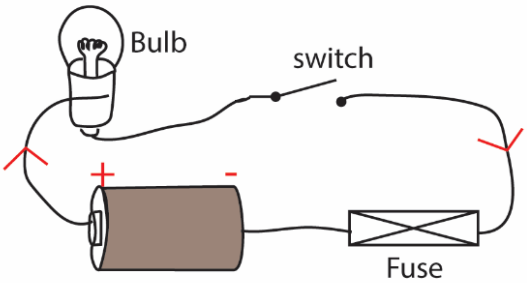
An electrical **circuit** is a path or line through which an electrical current flows to allow electric appliance work.

Parts of an Electric Circuit and their symbols

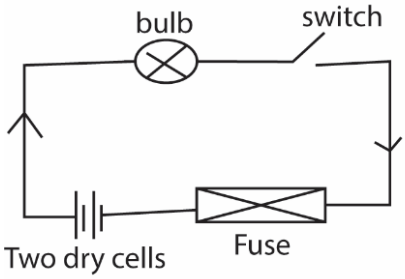


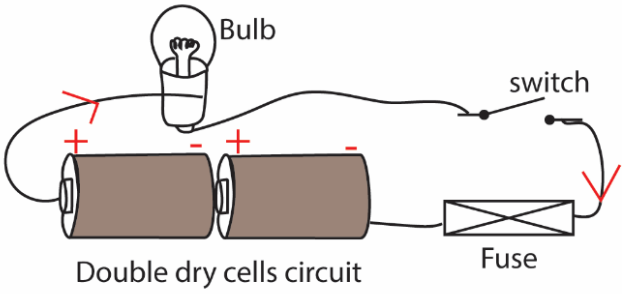
Types of simple circuit





Single battery circuit





Double dry cells circuit

Note that current moves from positive terminal through the wire to negative terminal

Importance of components of a circuit

(i) **Cell/Battery** – provides the source of electricity.
(ii) **Wires** – carry the electric current.
(iii) **Switch** – opens or closes the circuit to control the flow of electricity.
(iv) **Bulb** – uses the electricity to produce light.

Fuse

A fuse is a **small safety device** placed in electrical circuits to protect appliances and people from too much current.

How a Fuse Works

(i) A fuse contains a **thin wire** that melts when too much electricity flows through it.
(ii) When the wire melts, it **breaks the circuit** and stops the flow of electricity.
(iii) This prevents damage to appliances and reduces the risk of fire.

Uses of a Fuse

(i) **Protects electrical appliances** like radios, TVs, and fridges from damage.
(ii) **Prevents fires** caused by overheating wires.
(iii) **Protects people** from electric shocks due to excess current.
(iv) **Ensures safety** in homes, schools, and offices by controlling electricity flow.

Types of Circuits

(i) **Closed circuit** – electricity flows because the switch is ON, and the bulb lights.
(ii) **Open circuit** – electricity does not flow because the switch is OFF, and the bulb goes off.

Importance of Electric Circuits

(i) They make electrical appliances work (radios, TVs, phones).
(ii) They help in lighting homes, schools, and streets.
(iii) They are used in machines and vehicles.

Exercise 8

Suggest the use of the following parts in a closed circuit:

(i) Batteries
(ii) Fuse
(iii) Switch
(iv) bulb

Electric appliances at home and their uses

Machines which use electricity to work or operate, are known as electric appliances. At home there are many electrical appliances.

Uses of electrical appliances at home

Appliance	Use
Iron box	Ironing clothes
Radio	Provides information and entertainment
Television	Provides information and entertainment
Cooker	Cooks food
Electric kettle	Boils water

Exercise 9

Give one use of each of the following home appliances

(a) Kettle
(b) Iron box
(c) Cooker
(d) television

Short Circuits

A short circuit happens when **electricity flows along the wrong path** with little or no resistance. This makes the current very strong and dangerous.

Causes of Short Circuits

(i) **Bare wires touching each other**.
(ii) **Faulty or old appliances**.
(iii) **Overloaded sockets** (too many appliances connected).
(iv) **Water coming into contact with wires**.
(v) **Poor wiring** done by untrained people.

Dangers of Short Circuits

(i) It can cause **fires** in homes and schools.
(ii) It may lead to **electric shocks**.
(iii) It can **damage appliances** like radios, TVs, and fridges.

How to Avoid Short Circuits

(i) Always use **insulated wires**.
(ii) Do not overload sockets with too many appliances.
(iii) Keep electrical appliances **away from water**.
(iv) Switch off and unplug appliances when not in use.
(v) Allow only **trained electricians** to repair or install wiring.
(vi) Use **fuses and circuit breakers** to protect against excess current.

Exercise 10

State one item that protects appliances in case of short circuit

Dangers of Electricity

(i) **Electric shocks** – touching bare wires or faulty appliances can cause serious injury or death.
(ii) **Fires** – poor wiring or overloading sockets can lead to electrical fires.
(iii) **Burns** – sparks or overheating appliances can burn the skin.
(iv) **Damage to property** – appliances may be destroyed if electricity is misused.

Safety Precautions

(i) **Do not touch bare wires** – always use appliances with proper insulation.
(ii) **Keep water away** – never use electrical appliances with wet hands or near water.
(iii) **Switch off when not in use** – unplug appliances to prevent overheating or accidents.
(iv) **Avoid overloading sockets** – connect only the recommended number of appliances.
(v) **Use proper fuses and circuit breakers** – they protect against excess current.
(vi) **Call a trained electrician** – for repairs instead of trying to fix appliances yourself.

Magnetism

A **magnet** is a piece of metal which has ability to attract other metals.

Magnetic substances are those substances which can be attracted by a magnet, for example iron, steel, cobalt and nickel

The substances that cannot be attracted by a magnet are described as **nonmagnetic substances**, for example sand, wood, pen and so on.

The ends of a magnet are called **poles**, one being **North Pole (N**) and the other **South pole (S)**

Exercise 11

(a) Name any two magnetic and any two nonmagnetic substances
(b) State the name of magnetic poles.

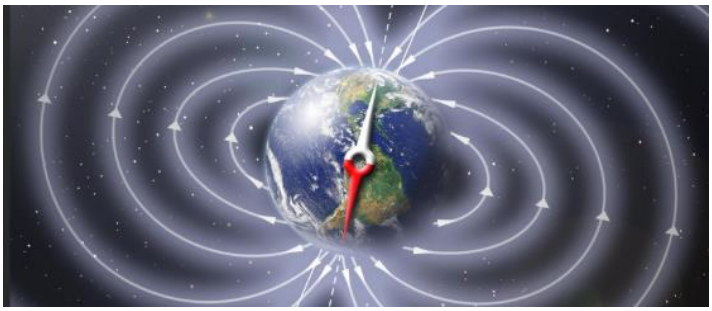
Types of magnets

There are two types of magnets, these are

(a) Natural magnets

Examples

lodestone or magnetite



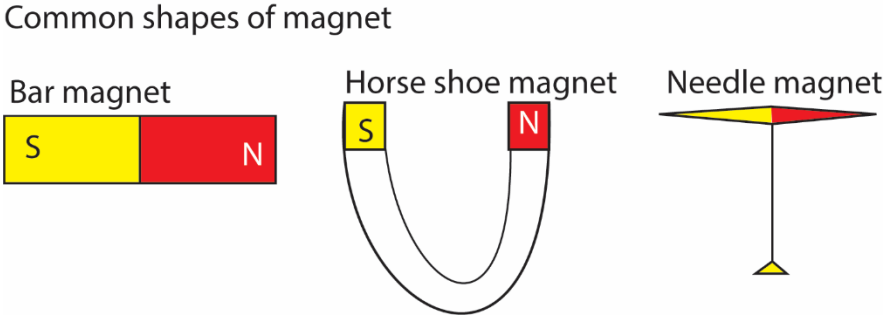
Earth

NB. All natural magnets are permanent magnets

(b) Artificial magnets, these are manmade and may be permanent or not.

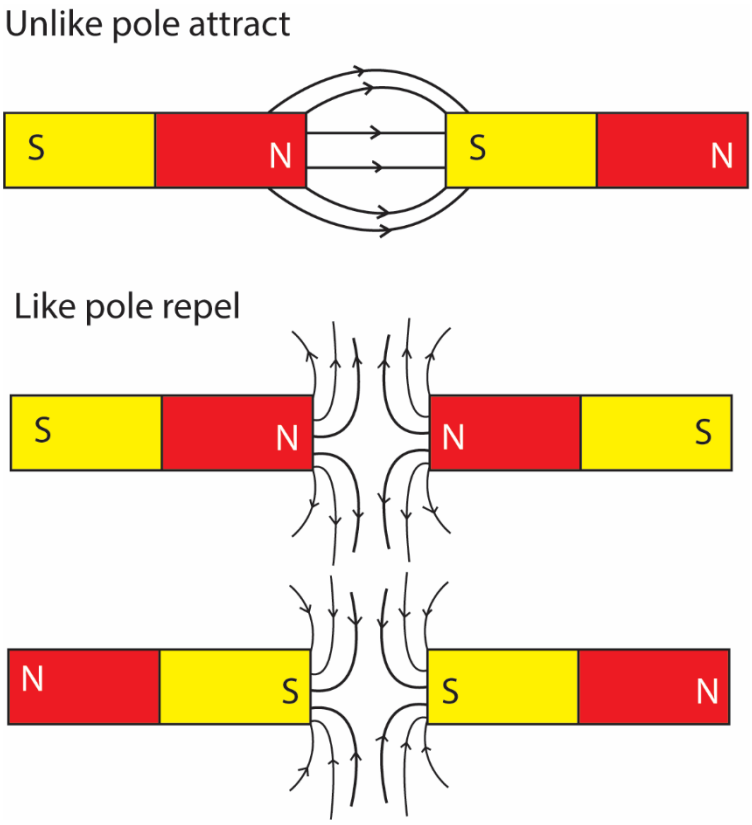
Shapes of magnets

The common shapes of magnets are shown below

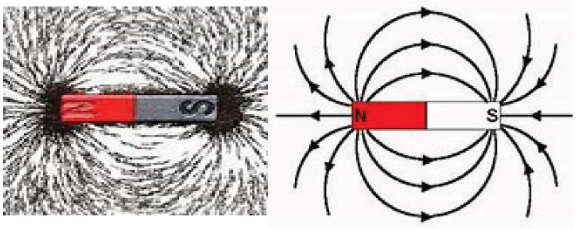


Properties of magnets

1. Unlike poles attract while like pole repel.



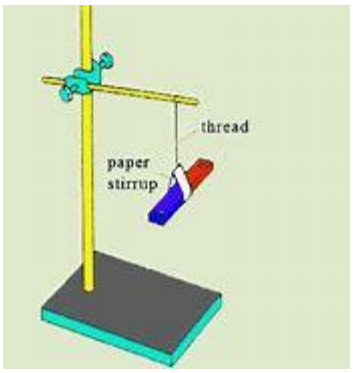
2. A magnet has a magnetic field lines which is covered with magnetic field lines running from the North to the South Pole.



Magnetic field

Magnetic field is an area around a magnet in which its magnetic field. This means that a magnet cannot attract magnetic objects outside the magnetic field.

3. Freely suspended magnet points in the N-S direction



4. The strength of a magnet (magnetism) is greatest at the pole
5. Magnetism can pass through nonmagnetic objects

Exercise 12

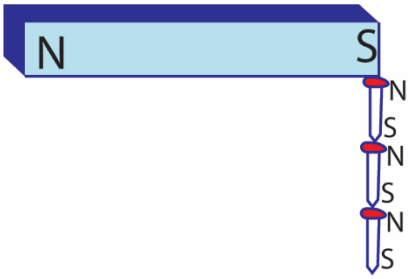
List any two properties of magnets

Magnetization

Magnetization is the process of **turning ordinary materials (like iron or steel) into magnets**.

Ways of Magnetizing Materials

1. **Induction-** iron or steel becomes **magnetized** when placed near or in contact with a magnet.

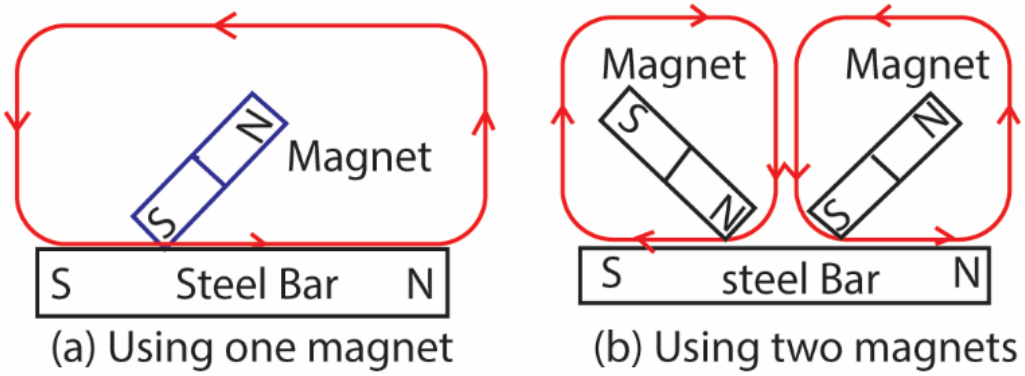


1. **Electrical method** – Materials become magnetized (electromagnet) when place in a coil currying current.

Soft iron forms a temporary magnet because magnetism is lost as soon as current is switched off.

Steel for a permanent electromagnet because magnetism is not lost even when the current is switch off

2. **Single Touch method:** A piece of iron or steel becomes a magnet when stroked with **one pole of a magnet** in one direction only.
3. **Double touch:** Two magnets are used at the same time.
    - Each magnet strokes the material from opposite ends, moving towards the center.
    - The north pole of one magnet and the south pole of the other are used together.



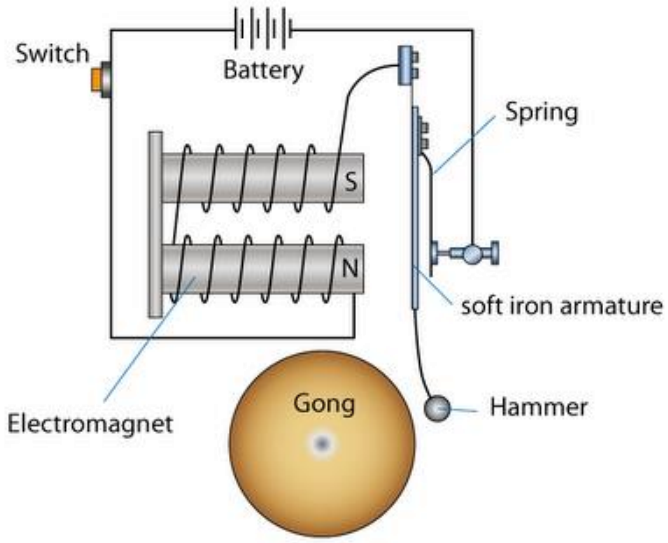
Exercise 13

(a) Suggest any two methods of making a magnet.
(b) State any **one** method of demagnetizing a magnet

Demagnetization (losing magnetism)

(i) Heating a magnet.
(ii) Hammering or dropping it repeatedly.
(iii) Storing it carelessly near other magnets.

Electric bell



How does electric magnet work

(i) The switch is pressed and current flows through the circuit.
(ii) The electromagnet is powered and generates a magnetic field that attracts the iron strip towards it.
(iii) The hammer strikes the gong (bell).
(iv) When the striking arm strikes the gong, the contact is broken and current stops flowing through the circuit. The spring pulls back the hammer.

Dynamo

Bicycle dynamo

A dynamo is a device that **changes mechanical energy (movement)** into **electrical energy**. It is often used in bicycles and small machines.

How a Dynamo Works

- A dynamo has a **coil of wire** and a **magnet**.
- When the coil or magnet is made to **rotate (move)**, electricity is produced.
- The electricity flows through wires to power devices like bulbs.

How Increase Current produced by a Dynamo

1. **Increase the speed of rotation:** The faster the coil or magnet rotates, the more electricity is produced.

   Example: pedaling a bicycle faster makes the dynamo produce brighter light.

2. **Use stronger magnets**: Stronger magnets create a stronger magnetic field, which increases the current.

3. **Add more turns of wire in the coil**: A coil with many turns produces more electricity than one with fewer turns.
4. **Use thicker wire**: Thick wires carry more current without overheating.
5. **Reduce resistance in the circuit:** Using good conductors like copper wires allows electricity to flow easily.

3. Examples of Dynamos in Daily Life

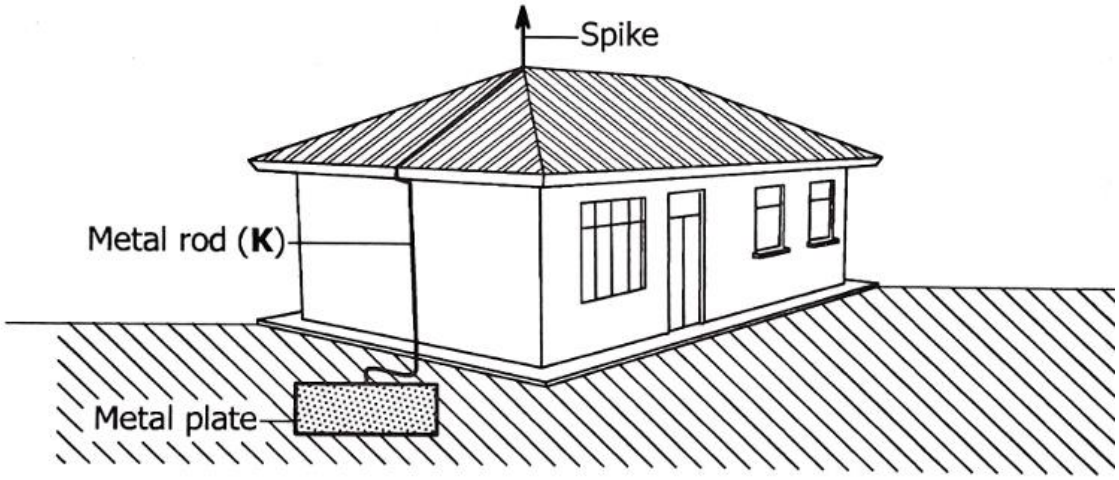
- **Bicycles** – dynamos are used to light lamps when the wheels turn.
- **Small generators** – work on the same principle to produce electricity.
- **Hand-crank torches** – use dynamos to produce light when you turn the handle.

4. Importance of Dynamos

- Provide electricity without batteries.
- Useful in places without electricity supply.
- Help in learning how electricity is generated in larger power stations.

Revision questions and answers

1. The diagram below show a lightning conductor on a building. Use it to answer the following questions



(a) Name the material used to make the metal rod labelled K
Copper or aluminium

(b) State one way in which above lightning conductor helps to control damage on buildings.
When the lightning strike, the metal rod conducts electric charges safely to the ground

2. Give any one reason why it is dangerous to take shelter under tall trees during rain.
Tall trees are likely to be struck by lightning, which may cause harm to people taking shelter under them.

3. Mention any one way in which electric shocks can be prevented in a home.

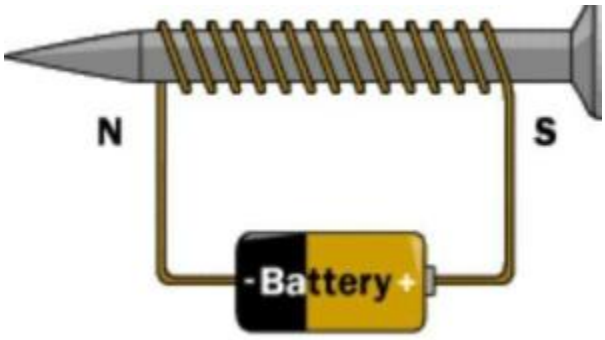
(i) **Do not touch bare wires** – always use appliances with proper insulation.
(ii) **Keep water away** – never use electrical appliances with wet hands or near water.
(iii) **Switch off when not in use** – unplug appliances to prevent overheating or accidents.
(iv) **Avoid overloading sockets** – connect only the recommended number of appliances.

(v) **Use proper fuses and circuit breakers** – they protect against excess current.
(vi) **Call a trained electrician** – for repairs instead of trying to fix appliances yourself.

4. (a) Give the meaning of the term electromagnet.

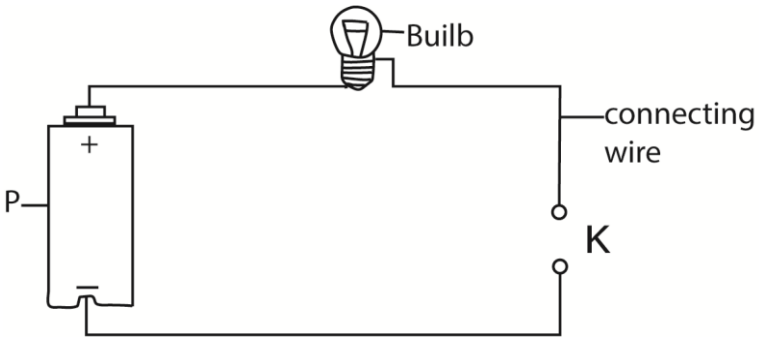
An electromagnet is a magnet formed when electric current flows through a coil of wire around iron, and it loses its magnetism when the current stops.

(b) You are provided with the following items: iron nail copper wire, a dry cell and some pins. Describe how you can use the items to make a magnet.



(i) **Wrap the copper wire** neatly around the iron nail to form a coil.
(ii) **Connect the ends of the wire** to the dry cell terminals (positive and negative).
(iii) When the current flows, the **iron nail becomes an electromagnet**.
(iv) Bring the nail close to the pins — they will be attracted to it.
(v) When current is disconnected magnetism is lost.

5. The diagram below represents a simple electric circuit. Study and use it to answer questions that follow.



(a) Give the function of P in the circuit.

Supplies electric current

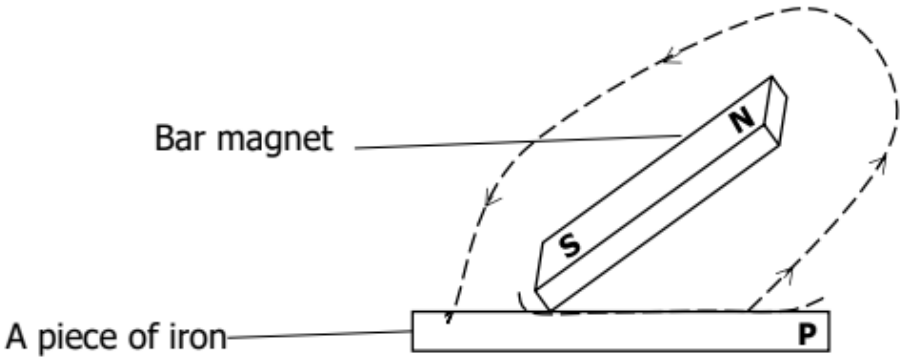
(b) Why would the bulb not light when a piece of glass is used to close K
It is a poor conductor of heat/it does not conduct electricity

6. Give any one condition that may make an electric bulb fail to produce light ina complete circuit.

(i) **The filament inside the bulb is broken** (so current cannot pass through).
(ii) **The bulb is faulty or burnt out**.
(iii) **The voltage from the battery or power source is too low** to heat the filament.
(iv) **Loose connections** prevent current from flowing properly.

7. Apart from proper insulation, state any one other way of protecting children against electric shock at home.
(i) **Keeping electrical appliances out of reach** of young children.
(ii) **Covering sockets with safety covers** so children cannot insert objects.
(iii) **Switching off and unplugging appliances** when not in use.
(iv) **Keeping electrical devices away from water** (like basins, sinks, or bathrooms).
(v) **Using circuit breakers or fuses** to cut off excess current.
(vi) **Teaching children about the dangers of electricity** in simple terms.

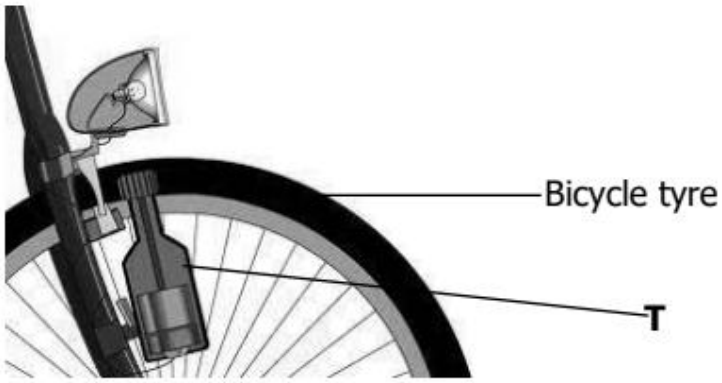
8. The diagram below shows a method of making a temporary magnet. Study and use to answer the questions that follow.



(a) Name the method shown above
Single touch stroke method

(b) What will the pole at P after magnetization?
North Pole

9. The diagram below shows an equipment on a bicycle that is used to produce electricity. Study and use it to answer the questions that follow.



(a) Name the equipment T
dynamo

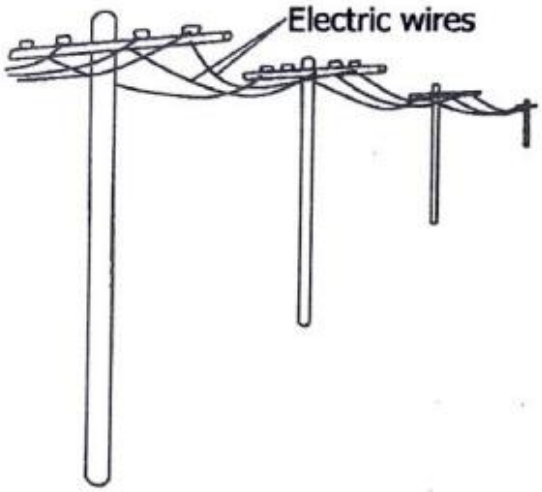
(b) Give the function of the bicycle tyre in producing electricity.
Rotates the dynamo making it able to produce electricity.

(c) State the energy changes that takes place in equipment labelled T when it is in use

Mechanical energy (from the moving bicycle tyre) → to **magnetic energy** (as the dynamo's magnet rotates) → to **electrical energy** (current produced in the coil) → to **light energy** (when the current lights the bulb).

(d) State one way in which the amount of electricity produced by the equipment labelled T can be increased
By increasing the speed of the tyre/rotation of the dynamo.

10. The diagram below shows electric wire under a certain weather condition. Study it and answer questions that follow.



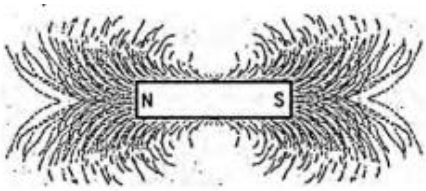
(a) In which kind of weather condition do the electric wire appear as shown above?
Hot weather

(b) Why do electric wires appear as shown above?
Due to expansion of the wires

11. Give any one way in which the electric current produced by a dynamo can be increased.
(ii) By increasing the speed of rotation
(iii) By increasing the number of turns of its coil
(iv) By using a stronger magnet
(v) By using bigger winding copper wires

12. Why is a fuse made of thin wire?
To **melt quickly when too much current flows through the circuit**.

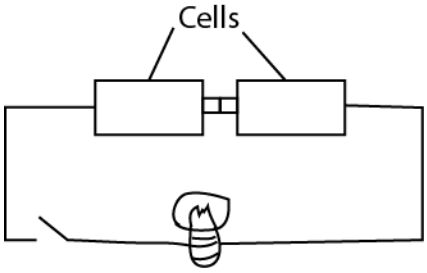
13. The diagram below shows a bar magnet with iron fillings around it. Study and use it to answer the questions that follow



Which property of magnets is shown in the diagram?

Magnets have magnetic field lines

14. David connected the circuit as below. Explain why a new bulb did not light when the on a switch is closed?



The cells were not connected properly.

15. What is the function of a dry cell?

Produces current I the circuit

16. Uganda electricity Board generates most of it electricity at Jinja.

(a) State the source of electricity energy

Running water

(b) How does the electricity generated at Jinja get to a consumer in Kampala?

Transmitted through wires

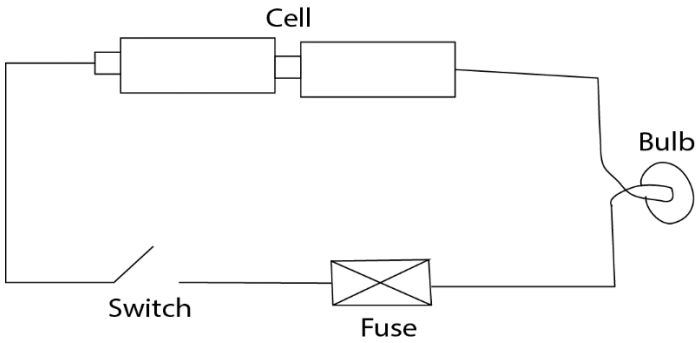
(c) Give two uses of electricity to a family?

Providing light at home

Cooking

Enable the use of electric appliance e.g. Radio, T.V set

17. In the diagram below, when the switch was closed, the bulb lit.



(a) How can you increase the brightness of light in the bulb?

By using newer dry cells

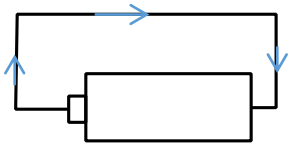
(b) After a short time, the switch was still on, the light in the bulb went off. State three possible causes for the light going off.

(i) The fuse could have broken the circuit due to high voltage

(ii) The bulb blew

(iii) The cell could be used up

18. In the diagram below indicate using an arrow the direction of the flow of electricity.



NB. Current moves from positive to negative terminal

19. Lightening is dangerous to man

(a) State two precautions you would take to avoid being struck by lightning.

Putting lightening conductors on buildings

Not standing under tall tree during rain

(b) Which forms of energy does lightening have?

Light energy

Sound energy

Heat energy

20. Explain why light is seen before sound is heard during lightening.

Light travels faster than sound

21. Uganda electricity board generates its electricity at Jinja.

(a) How does electricity reach a consumer in Mbale?

It is transmitted by wires

(b) Give two uses of electricity,

Provide light for seeing
Provide heat for cooking
Provide heat for ironing
Powers radios and televisions

(c) Name the causes of short circuit.

Contact between live uninsulated wires
Poor insulation
Overloading of the circuit

22. Give one example on how man uses water to produce energy.

For production of hydroelectricity

23. a) What is the use of fuse in a circuit?

Breaks under short circuit

(b) Give three reasons why a bulb of torch may not give light when the switch is on.

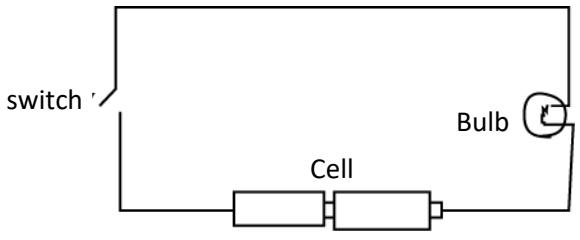
Improper arrangement of batteries

Loosely fixed bulb

Faulty bulb

Rusty or non-functioning switch

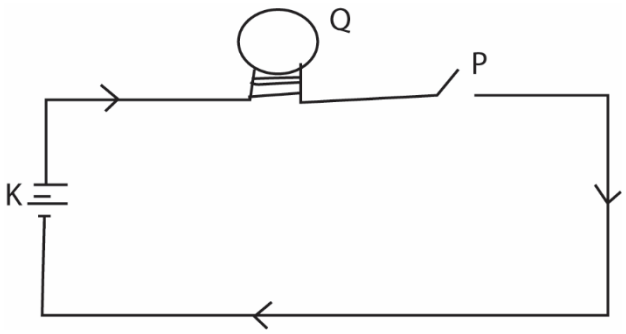
24. (a) Draw two dry cells arranged correctly and ready to give light in a bulb.



(b) If you get a new torch with new dry cells and new working bulb in place, but when you switch it on, the bulb does not light. Suggest two possible problems with the torch.

- Improper arrangement of battery cell
- loose connection of the bulb
- Switch could be nonfunctional

25. The diagram below shows an electric circuit. Use it to answer the questions that follow.



(a) Name part K: two **battery cells**

(b) Name part P: **switch**

(c) Give the type of energy that are produces at Q when P is closed.

Light energy

Heat energy

26. (a) What type of electricity is generated at Jinja?

Hydroelectricity

(b) What is the difference between solar ant thermal electricity?

Solar electricity is obtained from sunlight whereas thermal energy is obtained by burning fuel.

(c) Give any two advantages of solar electricity over the thermal electricity.

(i) Minimize destruction of forests

(ii) does on produce poisonous gases

(iii) it is cheap

27. (a) Why do people who work on electric wires wear rubber gloves?

To prevent being electrocuted

(b) Give any one use of each of the following:

(i) a switch **breaks the circuit and complete the circuit**

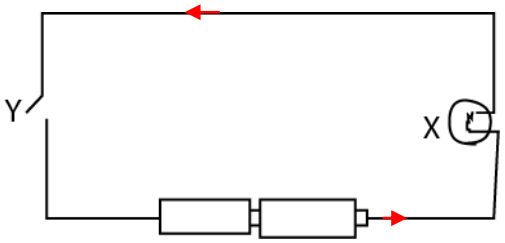
(ii) a fuse **breaks the circuit when there is short circuit**

28. Why is thunder heard after lighting has been during a rainy day?

Because light travel faster than sound

29. The diagram below is of an electric circuit

Use it to answer the question that follow



(a) Name the parts labeled **Y** and **X** in the diagram

(i) **Y**: switch

(ii**) X**: bullb

(b) Apart from light give any one other form of energy produced by the part labeled **X** when **Y** is closed.

Heat energy

(c) Show with the help of arrows the flows of current in the above diagram.

NB. Current moves from the positive to negative terminal

30. The diagram below shows wooden poles with electricity wires.

Use it to answer the question that follow

(a) State any one reason why the wires are loosely fixed.

To allow room for contraction and expansion of the wires

To prevent the wires from breaking in case of contraction

(b) What would happen to the wires if they were tightly fixed?

They would break when they are contracted on cold days/winter.

(c) Give any one reason why wooden poles are usually used to carry electricity.

To protect people and animals from electroshock when they touch the poles.

(d) Why are the wires placed very high up?

To reduce theft of the wires

To prevent children reaching up the wire

31. Suggest any one way in which human beings use energy light the sun.

To see

To make solar electricity

32. (a) State any one function of each of the following parts in simple electric circuit:

(i) Wire **conducts electricity.**

(ii) Battery **is the source of current**

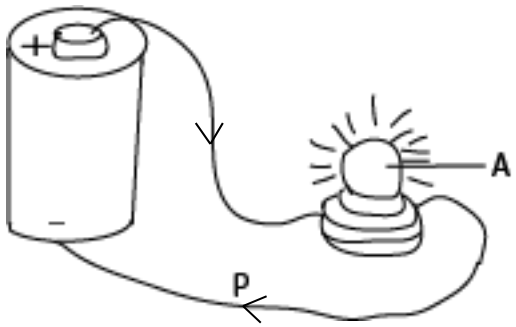
(b) Mention any two causes of a short circuit

(i) high voltage

(ii) contact between live naked wires in a circuit.

(iii) Overloading of the circuit

33. Study the diagram below and Use it to answer questions that follow.



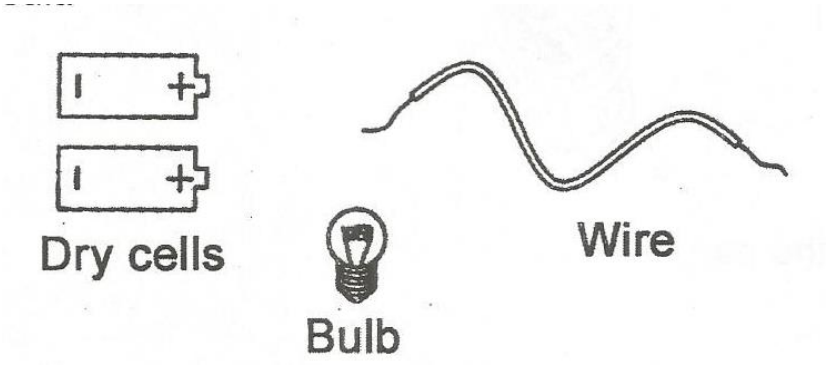
(a) Draw an arrow on line **P** to show the direction of the flow of electricity.

NB. Current moves from the positive to negative terminal

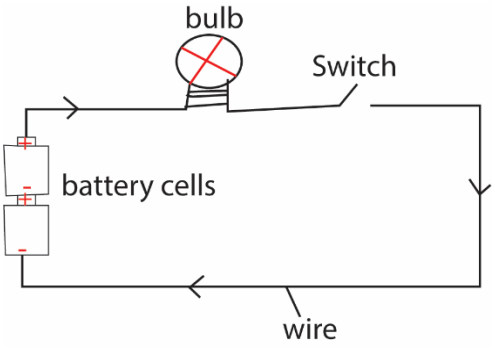
(b) In which way is a fuse similar to s switch in a simple electric circuit?

Both break the circuit

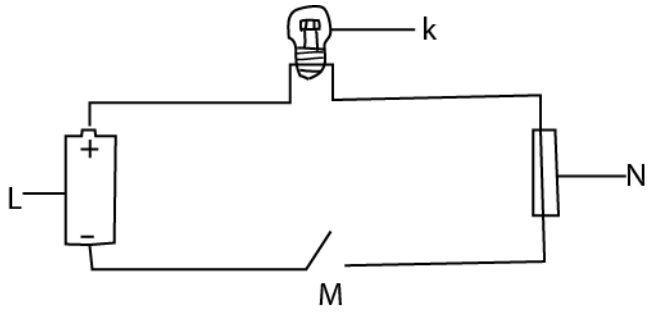
34. Arrange the part of an electric circuit below by drawing to show a complete circuit.



Solution



35. Study the diagram of an electric circuit below and use it to answer the questions that follow



(a) Name the parts marked K and N

(i) K: bulb

(ii) N: Fuse

(b) State the energy change that takes place at L when M is closed

Chemical energy is converted to electric energy.

(c) Give any one form of energy produces at K when M is closed

Light and heat

36. What form of energy is produced by dry cell?

Electrical energy

37. What type of electricity is lightning?

Static electricity

Revision questions for magnetism

38. (a) What is a magnet?

An object that has ability to attract other magnetic metals

(b) Give one example of how a doctor in a hospital can use a magnet.

To keep razor blades, dissection knives

To remove metallic substance from the eyes

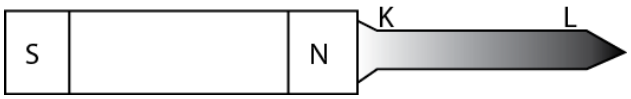
(a) Give two items found in homes which make use of magnets.

Loud speakers

Electric bell

Television

39. In the diagram below, when the nail was brought nearer to the magnet it was attracted as shown Use the diagram to answer questions (a) to (d) below.



(a) How does the nail get magnetized?

By induction

(b) Name the pole marked **L.**

North Pole

(c) Which other method can be used to magnetize the nail without using a magnet?

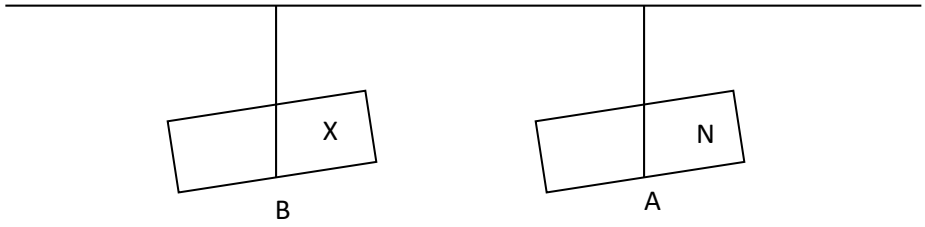
Electrical method

(d) Name the type of a magnet in (c)

Electromagnet

40. Two magnets A and B were suspended as shown in the diagram below

Use it to answer question that follows



If the pole marked N magnet A is the North Pole, what is the pole marked X on magnet B?

south Pole (because of repulsion)

41. (a) Give any one reason why a magnet cannot attract pieces of wood.

Wood is nonmagnetic.

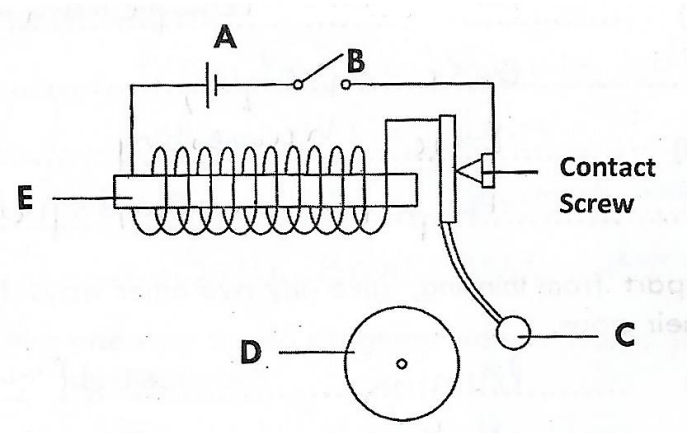
(b) Give any three practices that can lead to the destruction of a magnet

(i) Heating
(ii) hammering
(iii) Storing east -west direction

42. State the compass direction in which a freely suspended magnet will rest.

North-south direction

43. Study the diagram of an electric bell below and use it to answer questions that follow.



(a) Name the part marked A and C
(i) A **Dry cell**
(ii) C **hammer**

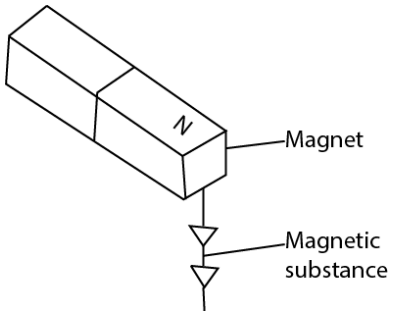
(b) What will happen to E when B is closed?

Become magnetized

(c) How useful is part D on the electric bell?

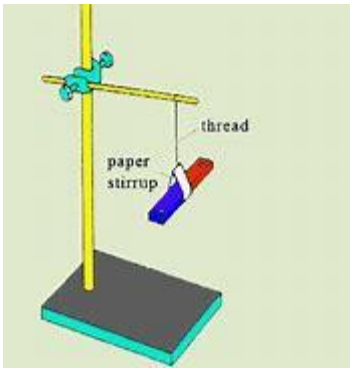
Produce sound

44. Name the method of making a magnet shown in the diagram below



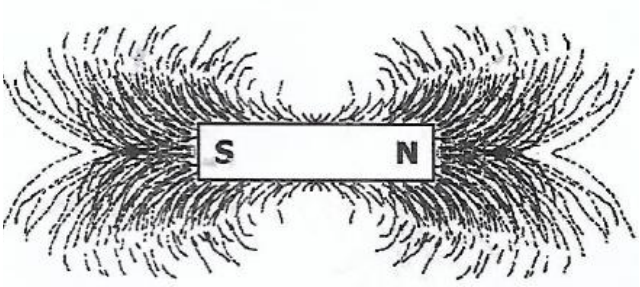
Induction

45. Which property of a magnet enables a magnet compass to work?



A freely suspended magnet rests in north-south direction

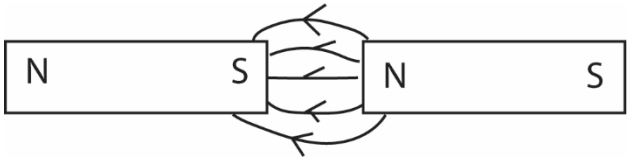
46. The diagram below shows a bar magnet with iron fillings around. Study and use it to answer the question that follows



Which property of magnets is shown in the diagram?

A magnet has a magnetic field lines

47. The diagram below shows two bar magnets placed close to each other
Use it to answer the question that follows



Use arrows to show what happens to the two bar magnet

Thank You

Dr. Bbosa Science