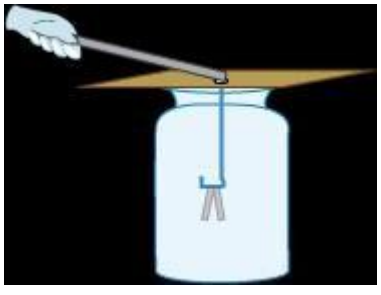
Some Natural Phenomena

- Objects get charged when rubbed with another material.

Objects that get charged	Material used for rubbing
Refill	Polythene, woollen cloth
Balloon	Polythene, woollen cloth, dry hair
Eraser	Wool
Steel spoon	Polythene, woollen cloth
Ebonite comb	Dry hair, silk cloth
Glass rod	Woollen cloth, silk cloth

- Rubbing induces electrical charge.
- Charges are of two type:
  - Positive charge
  - Negative charge
- Like charges repel each other.
- Opposite charges attract each other.
- Charge generated by rubbing is static-charge.
- Electroscope is used to detect whether an object is charged or not.
- A simple electroscope



- It cannot detect the nature of charge.
- Pith-ball electroscope and the gold-leaf electroscope are two classical types of electroscopes.

- Electric charge can be transferred from a charged object to another through a conductor.

- **Earthing** is a process of transferring charge from a charged object to the earth.

- Removing charge from a charged body is known as **discharging.**

- Buildings are provided with earthing so that in case of leakage of an electrical charge, people inside the building are not affected, and the charge is transferred to the ground safely.

- The static charge in the clouds is the cause of lightning.
- Generally lower portion of clouds get negatively charged and positive charge is induced on the objects below the cloud.

- When a huge amount of charge builds up, the insulating property of air breaks down which results in discharging of charge to the earth surface.

- The electrical discharge that causes lightning may take place between two clouds or between a cloud and the Earth.

- **Earthquake**
  - It is the sudden shaking or trembling of the earth's surface because of disturbance deep inside the earth's crust.
  - It cannot be predicted.

- **Causes**
  - The uppermost layer of the earth is called crust. Crust is fragmented and each fragment is called plate. Movements of earth's plates (there may be collision or a brushing pass between two plates along their boundary). Plate boundaries are called seismic zones or fault zones.

  - Earthquake may occur because of volcanic eruption.

  - Kashmir, Western and central Himalayas, North-East India, Rann of Kutch, Gangetic plains, and some parts of South India are earthquake prone.

- Power of earthquake is measured on Richter scale.
- The Richter scale is not a linear scale.

- The Richter scale is a logarithmic scale i.e. earthquake with magnitude 5 is ten times more destructive than an earthquake of magnitude 4.

- Earthquakes of intensities more than 7 on the Richter scale are very destructive.

- Seismograph is an instrument used to record the vibrations produced by an earthquake.

- The seismograph consists of a vibrating rod or pendulum, which starts to vibrate as soon as an earthquake occurs.

- The focus of an earthquake is the point in the Earth's crust from where the shock waves of the earthquake originate.

- Epicenter is the point on the surface of the Earth directly above the focus.

- Precautions to minimize the destruction caused by an earthquake:
  - Buildings constructed in seismic zones should be strong enough to withstand earthquakes of high magnitudes.

  - Specialist engineers and architects should be consulted to make quality buildings in these areas.

  - Roofs of houses must be made as light as possible, so that if they fall the damages incurred are not huge.

  - Heavy objects such as wall clocks, photo frames, decoration pieces etc. must be hanged in such a way that that they do not fall on anyone during an earthquake.

  - Fire fighting equipment must be installed properly in the buildings.

- Inside house → One should take shelter under a table. The head should be protected.

- Outside house → One should stay away from tall structures. One of the safe places is inside a car.