

SCIENCE**LIGHTNING & LIGHTNING SAFETY****LIGHTNING**

You might have seen sparks on a electric pole when wires become loose. This phenomenon is quite common when wind is blowing and shaking the wires. You might also have seen sparks when a plug is loose in its socket. Lightning is also an electric spark, but on a huge scale.

In ancient times, people did not understand the cause of these sparks. They were, therefore, afraid of lightning and thought that the wrath of gods was visiting them. Now, of course, we understand that lightning is caused by the accumulation of charges in the clouds. We need not be afraid of lightning, but we have to take precautions to protect ourselves from the deadly sparks.

The Sparks that the Greeks Knew About

The ancient Greeks knew as early as 600 B.C. that when amber (amber is a kind of resin) was rubbed with fur, it attracted light objects such as hair. You might have seen that when you take off woollen or polyester clothes, your hair stands on end. If you take off these clothes in the dark, you even see a spark and hear a crackling sound. In 1752 Benjamin Franklin, an American scientist, showed that lightning and the spark from your clothes are essentially the same phenomena. However, it took 2000 years for this realisation to occur. We shall now study some properties of electric charges. We shall also see how they are related to the lightning in the sky.

Let us perform some activities to understand the nature of electric charges. But recall first what you might have played as a game. When you rub a plastic scale on your dry hair, the scale can attract very small pieces of paper.

LIGHTNING SAFETY

During lightning and thunderstorm no open place is safe.

- Hearing thunder is an alert to rush to a safer place.
- After hearing the last thunder, wait for some time before coming out of the safe place.

Finding a Safe Place A house or a building is a safe place.

A house or a building is a safe place.

If you are travelling by car or by bus, you are safe inside with windows and doors of the vehicle shut.

Do's and Don'ts during a Thunderstorm**Outside**

Open vehicles, like motorbikes, tractors, construction machinery, open cars are not safe. Open fields, tall trees, shelters in parks, elevated places do not protect us from lightning strokes.

Carrying an umbrella is not at all a good idea during thunderstorms.

If in a forest, take shelter under shorter trees.

If no shelter is available and you are in an open field, stay far away from all trees. Stay away from poles or other metal objects. Do not lie on the ground. Instead, squat low on the ground. Place your hands on your knees with your head between the hands. This position will make you the smallest target to be struck.



fig. Safe position during lightning

Inside the house

Lightning can strike telephone cords, electrical wires and metal pipes (Do you remember, lightning is an electrical discharge?). During a thunderstorm contact with these should be avoided. It is safer to use mobile phones and cordless phones. However, it is not wise to call up a person who is receiving your phone through a wired phone.

Bathing should be avoided during thunderstorms to avoid contact with running water.

Electrical appliances like computers, TVs, etc., should be unplugged. Electrical lights can remain on. They do not cause any harm.

Lightning Conductors

Lightning Conductor is a device used to protect buildings from the effect of lightning. A metallic rod, taller than the building, is installed in the walls of the building during its construction. One end of the rod is kept out in the air and the other is buried deep in the ground. The rod provides easy route for the transfer of electric charge to the ground.

The metal columns used during construction, electrical wires and water pipes in the buildings also protect us to an extent. But do not touch them during a thunderstorm.