

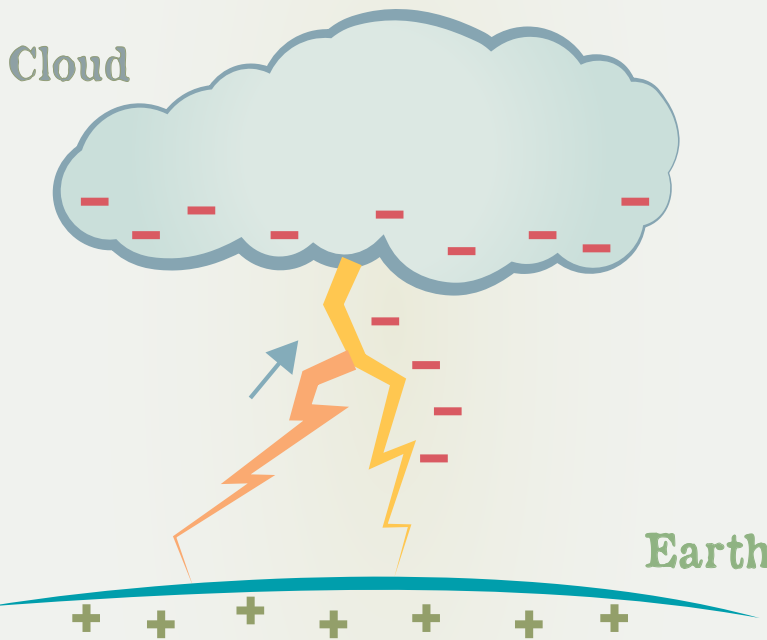
# The Physics of Lightning

What is happening when lightning strikes the ground?

As the negative charges approach the ground, a stream of positive charges repelled by the ground attract to the negative stream.

When connected, they have created path which allows a sudden surge of electrons to jump to the ground.

This is the lightning.



As the **NEGATIVE** charges collect at the bottom of the cloud it forces the negative charges in the ground to be forced away from the surface. This leaves the ground **POSITIVE**.

## DID YOU KNOW?

Cars are a very safe place to be, and it's not the rubber tires that protect you! This is a very common misconception. It is actually the metal that is surrounding you that acts like a cage of protection. This is due to the Skin Effect which says that electricity, like lightning, will travel only on the surface of enclosed metal objects. So while your car may be hit by lightning, if you stay inside you will be safe.

**CHALLENGE QUESTION:** Why are you safer if you are lower to the ground?

Lightning is charged ions, trying to cancel their charge by connecting with the ground, taking the shortest path.

Staying as low as possible is the best idea. The ground is hit by lightning often enough, but trees get struck more often.

