

Lightning



Lightning is a big charge of electricity that can reach from clouds to the grounds or to other clouds. It can start fires and it is strong enough to hurt or kill people. Lightning also helps out nature by putting nitrogen in the ground for plants to use. A lightning flash can happen in half a second. The flash superheats the surrounding air to five times the heat of the surface of the sun. The air around vibrates forming thunder.

Lightning is generated when warm updrafts sweep positive charges upwards causing the rain or snow droplets to rub against each other. The droplets carry electric charges and generate electricity in the cloud. The negatively charged particles are left at the bottom of the cloud and so the ground is more positively charged than the bottom of the cloud. Then a quick burst of electricity travels from the cloud to the ground.

Another way of describing how lightning happens - (thanks to S. L. for researching this):

The bottom of the cloud carries a negative charge. On the ground, buildings mountaintops and trees positive charges can be collected. A negative charge stepladder made of zigzag steps comes down from the clouds. You cannot see the steps but each one is about 150 feet long. Once the stepladder gets within 150 feet of a negative charge a surge of positive electricity goes up to meet it. This is called a streamer. The ladder and the streamer make a channel. An electrical current from the ground surges upwards through the channel. This is how lightning happens.

There are three different types of lightning: sheet, ball and forked. Forked lightning is the most deadly. It is the one that strikes tall buildings and trees.

There are lightning strikes every day. Scientists think that lightning hits somewhere on earth about one hundred times every second. 20,000,000 cloud to ground flashes have been detected every year in the US since 1989. The highest frequency of cloud to ground strikes is in Florida between Tampa and Orlando. More people are killed by lightning than by any other storm - including hurricanes and tornadoes!