

Challenge**LESSON 2*****Lightning: Facts, Myths, and Safety***

Lightning is the discharge of electric energy as the result of a buildup of positive and negative charges within a cumulonimbus cloud. The discharge moves toward the ground at about 96,000 km/s. Now that's lightning speed!

The discharge, a thunderbolt, has a temperature of about 22,000°C, which is hotter than the surface of the Sun. The surrounding air becomes superheated and suddenly expands. Then it contracts just as quickly. This rapid expansion and contraction produces a loud sound called thunder. It occurs simultaneously with the lightning discharge, but light travels faster than sound. At a distance, the flash will be seen before the sound can be heard. Count the seconds between the flash and the sound. Every 3 seconds represents 1 km.

Myths

The tallest object on a landscape is not always struck first. The path of lightning is not accurately predictable.

Surge protectors will not save your TV, computer, or other electronics from lightning. Surge protectors are designed to prevent damage by power surges between the power company and your house.

Benjamin Franklin was not struck by lightning. He saw the key on the end of his kite reacting to an electric field, so he wasn't struck. It was a dangerous experiment, though.

The rubber tires on a car do not protect you in a lightning storm. But you are relatively safe in a car because the charge travels through the metal around the car and goes to the ground. Just don't touch anything metal inside the car.

Safety

Lightning is a spectacular show by nature that can be beautiful and awesome. Lightning is also deadly. About 62 people, on average, are killed by lightning each year in the United States. Hundreds more are injured. The National Weather Service reports that for 2007, 45 people were killed and hundreds were injured. Of these,

- 98 percent were outside;
- 89 percent were male;
- 30 percent were males between the ages of 20 and 25;
- 25 percent were standing under a tree; and
- 25 percent occurred on or near the water.

Lightning is a serious danger. Use library resources to discover ways that people can protect themselves and their property. Design a brochure that summarizes the dangers of lightning. In your brochure, present ten rules for being safe in a lightning storm.