

# Lightning Safety

Just how likely are you to be struck by lightning? And what can you do about it?

In another EarthDate, you heard how lightning is essential to life on Earth. It frees up nitrogen in the atmosphere to make it available to plants, which form the base of our food web.

For that to happen, you'd think there must be a lot of lightning. And you'd be right.

Storms around the world produce about a *billion* and a half lightning strikes each year—which hit about 20,000 people. Of them, only 10 percent, or 2,000, die.

That's a lot, but it makes for pretty slim odds—about 1 in a million.

To make them even slimmer, try these simple guidelines:

First, the obvious: don't go out in a lightning storm. Most buildings have lightning rods, wiring, or plumbing that will guide the lightning safely into the ground.

But stay out of the shower and off the landline. Plumbing and electric lines could carry a charge.

If you *are* caught out, avoid high places, where you're closer to the clouds.

Also try to avoid flat open spaces, where you might be the tallest object.

And, large trees—lightning can vaporize the water inside them, causing them to explode.

If you can get to, or stay in, your car, that's a good place to be. The frame, wheels, and dripping rainwater can carry the charge to the ground, leaving you insulated.



Lightning strikes Canadian National Tower in Toronto.

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# Background: Lightning Safety

**Synopsis:** The frightening sound of thunder warns us that we are in danger from possible lightning strikes, even if it is not raining. How can we protect ourselves from lightning strikes?

- Lightning is one of the oldest observed natural phenomena on Earth, yet it is one of the least understood.
- More than 2,000 thunderstorms happen simultaneously every day around the globe—more than 14.5 million storms per year.
  - NASA satellites indicate that these storms produce at least 40 lightning strikes per second around the globe, which translates to more than 1.4 billion lightning strikes per year on our electrified planet.
- Cumulonimbus clouds typically produce lightning; their bases are less than a mile high, and their tops are nearly 10 miles high.
- Only about 25 percent of lightning strikes go from the clouds to the ground; the rest occur within the clouds and are called *lightning flashes*.
- Lightning can be seen from 100 miles away, but thunder can only be heard from about 15 miles away.
- You can use thunder to tell how far away a storm is.
  - Sound travels 1 mile in roughly 5 seconds.
  - Count the number of seconds between when you see the lightning and hear the thunder, then divide by 5. This gives you the distance to the storm in miles.
- Around the globe, about 2,000 people are killed each year by lightning.
  - Many more survive but suffer from symptoms including memory loss, dizziness, numbness, and burns.
  - There is about a 1 in 13,000 chance that an average American might be struck by lightning in his or her lifetime.
- Lightning safety tips:
  - Cars with roofs provide safe haven because their frames and tires carry the charge safely to the ground.
  - Most buildings are grounded by lightning rods or plumbing, but if occupants touch plumbing or running water, or use a phone connected to the building by a cord, they may be shocked if the building is struck. Cordless phones are safe to use.
  - Lightning can vaporize the water inside a tree, causing it to explode, so taking refuge beneath tall trees is a bad idea.

## References: Lightning Safety

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Contributors: Juli Hennings, Harry Lynch



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