Chapter 8

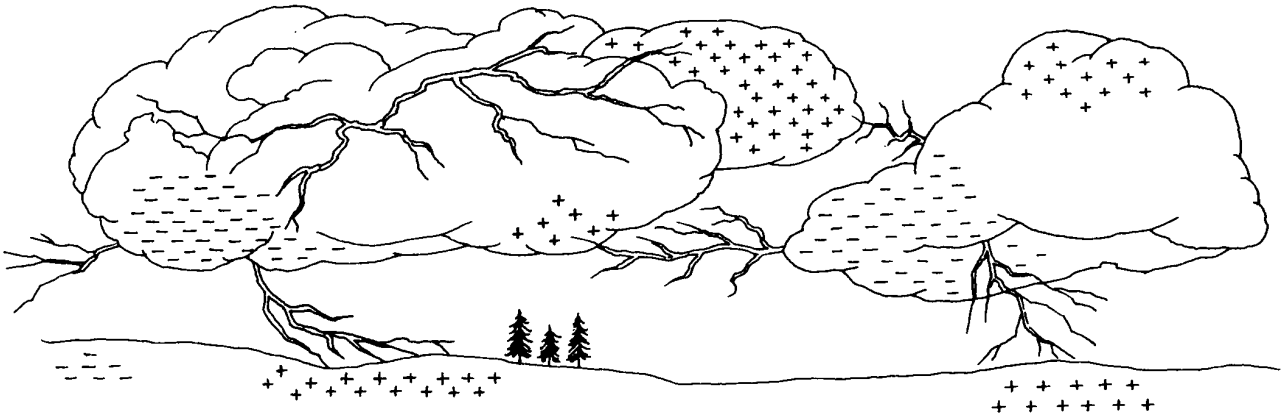
ENRICHMENT

Use with Section 1

• Static Electricity

Lightning Varieties

Lightning is one of nature's most spectacular phenomena. It is also one of the most common. At any given moment, about 2000 thunderstorms take place around the world. In the United States, lightning strikes hit millions of points every year.



The most familiar lightning bolts are *cloud-to-ground lightning*. The bottom of the cloud is negatively charged, while the ground is positively charged. Static energy moves from the bottom of the cloud to the ground in sections called *step-leaders*. That's why the bolts appear jagged. As a step-leader gets close to the ground, a positively charged bolt called a *leader* flashes up from the ground to meet it. This is ground-to-cloud lightning.

The most common lightning doesn't hit the ground. Lightning that goes between sections of a cloud is called *intracloud lightning*. It redistributes energy between positive and negative areas in the same cloud. Usually, intracloud lightning bolts are not visible. Instead it looks like a broad flash in the sky and is often called *sheet lightning*.

Lightning between oppositely charged areas of different clouds is called *cloud-to-cloud lightning*. Lightning can also move from a cloud to a charged air pocket. This lightning is called *cloud-to-air lightning*.

Answer the following questions, using complete sentences.

1. What are the common features of all of these forms of lightning?

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2. Why are we usually unaware of ground-to-cloud lightning?

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