Name: _____ Date: _____

Lightning and Thunder

Circle group

A flash of lightning and a boom of thunder can be scary. But they are two parts of one thing. Know how they work, and a storm is not so strange.

In a storm cloud, bits of ice and water bump into each other again and again. The bumps build up a huge amount of electric charge. When the charge gets big enough, it jumps through the air. It is a giant spark. That spark is lightning.

Lightning is very hot. It is hotter than the top of the sun. It heats the air around it in a flash. The air puffs out so fast that it makes a shock wave. We hear the shock wave as thunder.

Light goes much faster than sound. So you see the flash first. Then you hear the boom. This can tell you how far off a storm is. Count the seconds from the flash to the thunder. Five seconds is about one mile.

If you can hear thunder, lightning can reach you. The safest place is in a building, or a car with the windows up. Wait thirty minutes after the last rumble to go back out.

Questions

1. What is lightning?

_____

_____

2. What makes thunder?

_____

_____

3. Why do you see lightning first?

_____

_____

4. You count fifteen seconds from the flash to the thunder. How far off is the storm?

_____

_____

5. Why should you wait thirty minutes after the last thunder?

_____

Words to know

electric charge: a kind of energy that builds up and can jump as a spark
shock wave: a strong push of moving air
rumble: a low, rolling sound

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Lightning and Thunder

Triangle group

A flash of lightning and a boom of thunder can be scary. But they are two parts of the same event, and knowing how they work makes a storm less mysterious.

Inside a storm cloud, bits of ice and water bump into each other again and again. The bumping builds up a huge amount of electric charge. When the charge gets large enough, it jumps through the air as a giant spark. That spark is lightning.

Lightning is very hot, hotter than the surface of the sun. It heats the air around it in a split second. The air swells outward so fast that it makes a shock wave. We hear the shock wave as thunder.

Light travels much faster than sound, so you see the flash before you hear the boom. You can use this to figure out how far away a storm is. Count the seconds between the flash and the thunder. Every five seconds means about one mile.

If you can hear thunder, lightning can reach you. The safest place is inside a building or a car with the windows up. Wait thirty minutes after the last rumble before going back outside.

Questions

1. What is lightning?

_____

_____

2. What makes the sound of thunder?

_____

_____

3. Why do you see lightning before you hear thunder?

_____

_____

4. A storm flashes and you count fifteen seconds before the thunder. About how far away is it?

_____

_____

5. Why does the passage say to wait thirty minutes after the last thunder?

_____

_____

Words to know

electric charge: a kind of energy that builds up and can jump as a spark
shock wave: a strong push of moving air
split second: a tiny part of a second
rumble: a low, rolling sound

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Lightning and Thunder

Square group

A brilliant flash of lightning followed by a tremendous boom of thunder can be frightening. However, they are actually two parts of a single event, and understanding how they work makes a storm considerably less mysterious.

Inside a storm cloud, particles of ice and water collide with one another repeatedly. These collisions gradually build up an enormous amount of electric charge. When the charge becomes large enough, it leaps through the air as a gigantic spark. That spark is lightning.

Lightning is extraordinarily hot, even hotter than the surface of the sun. It heats the surrounding air in a fraction of a second, causing the air to expand outward so rapidly that it creates a shock wave. We hear that shock wave as thunder.

Because light travels much faster than sound, you see the flash before you hear the boom. You can use this difference to estimate the distance to a storm. Simply count the seconds between the flash and the thunder; every five seconds represents approximately one mile.

If thunder is audible, lightning is close enough to reach you. The safest shelter is inside a building or inside a car with the windows rolled up. Wait thirty minutes after the final rumble before venturing back outdoors.

Questions

1. How does the passage explain what lightning is?

_____

_____

2. What produces the sound of thunder?

_____

_____

3. Why do you see the flash before you hear the boom?

_____

_____

4. You count fifteen seconds between a flash and its thunder. Approximately how far away is the storm?

_____

5. Why does the passage recommend waiting thirty minutes after the final rumble?

Words to know

electric charge: a kind of energy that builds up and can jump as a spark
shock wave: a strong push of moving air
rumble: a low, rolling sound

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: Lightning and Thunder

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: Lightning and Thunder

Easier · 194 words · Flesch-Kincaid grade 1.7

1. A giant spark of electric charge that jumps through the air.
2. Lightning heats the air so fast that it puffs out and makes a shock wave. We hear it as thunder.
3. Light goes much faster than sound.
4. About three miles (15 divided by 5).
5. If you can hear thunder, lightning can reach you. The storm may still be close enough to hurt you.

Triangle: Lightning and Thunder

This passage · 195 words · Flesch-Kincaid grade 3.9

1. A giant spark of electric charge that jumps through the air.
2. Lightning heats the air so fast that the air swells outward and makes a shock wave, which we hear as thunder.
3. Light travels much faster than sound.
4. About three miles (15 divided by 5).
5. Lightning can still reach you if you can hear thunder, so the storm may still be close enough to be dangerous.

Square: Lightning and Thunder

Harder · 207 words · Flesch-Kincaid grade 8.2

1. A gigantic spark of electric charge that leaps through the air.
2. Lightning heats the air so rapidly that it expands outward and creates a shock wave, which we hear as thunder.
3. Light travels much faster than sound.
4. About three miles (15 divided by 5).
5. If thunder is audible, lightning can reach you, so the storm may still be close enough to be dangerous.