Cause and effect

Grade 4 Reading Worksheet

*The **cause** is why something happened.*

For example:
There was a lot of wind last night.

*The **effect** is what happened.*

For example:
A tree fell down on our street.

Read about thunder and lightning, and think about cause and effect:

Thunder and Lightning

Long ago, people made up myths and legends to explain what causes lightning and thunder. Having an explanation for something can make it less frightening. Lightning and thunder can be very frightening, especially because they often happen just before a big rainstorm.

We now know what causes lightning and thunder. Have you ever noticed that you often hear thunder just a few seconds after you see lightning? This is because it is lightning that causes thunder. If the storm is far away from you, there are a few seconds between the lightning and the thunder. If the storm is close to you, you hear the thunder almost at the same time that you see the lightning.

Lightning is caused by electricity building up inside a cloud. When a large mass of warm air and a large mass of cold air come together high above the Earth, it causes a lot of movement in the air. The cold air moves down while the warm air moves up, which creates something like friction. An electric charge builds up in the clouds. The charge gets stronger and stronger until it is released in a powerful spark called lightning.

When the lightning flashes, the air around it can reach temperatures about five times hotter than the surface of the Sun. The heated air expands into the cooler air around it, causing the shockwave that we call thunder.

Even though we usually see lightning before we hear the thunder that it causes, the two events happen just a fraction of a second apart. In addition, both light and sound travel through the air in waves. However, light waves travel faster than sound waves, so the light waves from the lightning get to us first.

A tiny version of an event similar to lightning and thunder can happen when you brush your feet along a carpet and then touch a doorknob. You can sometimes hear the little sizzle of mini-thunder and see the flash of mini-lightning.

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Then answer the following questions:

1. **Cause**: A warm air mass and a cold air mass come together above the earth.
   What is the **effect**?

   a. Cold air moves up.

   b. Warm air moves down.

   c. Greater air movement occurs.

2. **Cause**: Greater air movement occurs.
   What is the **effect**?

   a. The air becomes extremely cold.

   b. The air becomes extremely hot.

   c. Friction is created.

3. **Cause**: Lightning flashes.
   What is the **effect**?

   a. The air becomes extremely cold.

   b. The air becomes extremely hot.

   c. Friction is created.

4. **Cause**: Heated air expands into the cooler air around it.
   What is the **effect**?

   a. Lightning occurs.

   b. Thunder occurs.

   c. Rain occurs.

5. *Think about it!*
   You travel farther away from the site of a thunderstorm. Now you see lightning, but you have to wait to hear the thunder. What is the **effect** of traveling farther away from the storm?

   _____

   _____

   _____

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Answers

1. **Cause**: A warm air mass and a cold air mass come together above the earth.
What is the **effect**?

   a. Cold air moves up.

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   c. Greater air movement occurs.

2. **Cause**: Greater air movement occurs.
What is the **effect**?

   a. The air becomes extremely cold.

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3. **Cause**: Lightning flashes.
What is the **effect**?

   a. The air becomes extremely cold.

   b. The air becomes extremely hot.

   c. Friction is created.

4. **Cause**: Heated air expands into the cooler air around it.
What is the **effect**?

   a. Lightning occurs.

   b. Thunder occurs.

   c. Rain occurs.

5. *Think about it!*
You travel farther away from the site of a thunderstorm. Now you see lightning, but you have to wait to hear the thunder. What is the **effect** of traveling farther away from the storm?

   There is more time between the time you see the lightning and the time you hear the thunder.

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