**LIGHTENING**

Up in the clouds there are all kinds of little bits of rain and snow bouncing around. When those pieces bump into each other, they make an electrical charge which is sort of like when you drag your feet across the carpet and get a shock, only way more powerful.

Most lightning just shoots around in the cloud and we usually don’t even notice it, but every now and then some leaks out and shoots down to the earth. When that happens, the bright thing you see is only about as wide as your finger.

**THUNDER**

Thunder is caused by lightning. When a lightning bolt travels from a cloud to the ground it actually opens up a little hole in the air called a channel. Once the light is gone, the air collapses back in and creates a sound wave that we hear as thunder.

**HOW TO CALCULATE THE DISTANCE OF LIGHTNING**

The flash to bang method is an easy way to figure out how far away you are from a lightning strike:

1. Count the number of seconds that pass between a flash of lightning and the crack of thunder that follows it.
2. Divide that number by 5.
3. This will tell you how many miles away you are from the lightning that just struck.

For example: 5 seconds = 1 mile away

 10 seconds = 2 miles away

The National Weather Service recommends taking cover if the time between the lightning flash and the thunder bang is 30 seconds or less (6 miles or closer).

* Light travels much faster than sound through the air.
* Light travels at about 186,291 miles per second
* Sound travels at about 1,088 feet per second
* Travel time depends on air temperature
* Both sound and light travel faster in warm air.
* Warm are is usually less dense so light doesn’t have as much resistance and can travel faster.
* The molecules are more active in warm air which allows more vibration for sound to travel faster.