

## Fun Facts for Older Primary Students

# Thunder and Lightning



### What is thunder?

Thunder is the sound made by lightning. It is either a sharp, loud crack or a low rumble.

It is caused by the rapid expansion of air around the bolt of lightning.

### How does a thunder cloud develop?

A thunderstorm always starts from a **cumulus** cloud which can be recognized by its cotton-like, puffy shape.

If the conditions are right, the cloud begins to grow upwards.

When it starts to rain, we call it a **cumulonimbus** cloud.

If it rains heavily, blasts of air come out from the bottom of the cloud.

Eventually this thunder cloud rains itself out.



### Ingredients needed for a thunderstorm

We need 3 atmospheric ingredients for a thunderstorm:

**Moisture:** we need water in the atmosphere to form clouds and eventually, rain.

**Unstable air:** we need warm air to contrast with the air surrounding the clouds. This unstable air will cause the cloud to rise quickly.

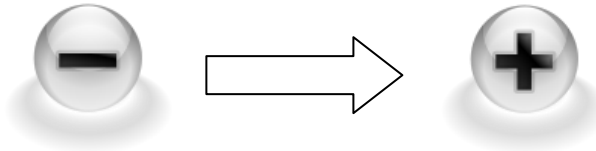
**Lift:** this is provided by warm or cold fronts, sea breezes etc.

## What is lightning?

Lightning is a big charge of electricity.

Electricity is made up of a **negative charge** and a **positive charge**, just like on a battery.

The electricity moves from the negative towards the positive.



A cloud has a negative charge and the ground has a positive charge.

If the charge difference between the two is big enough, a spark will jump from the negative to the positive. This is a lightning bolt; a giant spark.

## Where can lightning strike?

Lightning can strike almost anywhere.

It is a myth that lightning never strikes the same place twice.

In fact lightning can strike the same place more than once - often several times during the same storm.



**Fact 1:** The light from a lightning flash reaches your eyes instantly, but the sound from the thunder clap follows later because sound travels much slower than light. Sound takes approximately 3 seconds to travel 1 kilometre, so if you divide the number of seconds between seeing a lightning flash and hearing a thunderclap by 3, you'll know how many kilometres away the lightning is.

**Fact 2:** A lightning strike is almost 5 times hotter than the surface of the sun!