A scientific explanation

Here is a **scientific explanation** of the causes of thunder and lightning.

Thunder and lightning

Thunderclouds are huge and awesomely powerful. Very big thunderclouds tower 16 km (10 miles) or more into the air and contain enough energy to light a small town for a year. No wonder then, that they can unleash such devastating storms.

It takes very strong updraughts of air to build such huge and powerful clouds, which is why they tend to form along "cold fronts", or over ground heated by strong sunshine. Violent air currents sweep up and down outside the cloud, tearing the water droplets and ice crystals apart and then crashing them together again. These collisions load the cloud particles with static electricity – just as rubbing a balloon on a [sweater] does. Lightning is the sudden release of the charge built up on millions of particles within the thundercloud.

A flash of lightning heats the air along its path so dramatically that it expands at supersonic speed. This expansion causes a deafening crash of thunder.

From *How the Earth Works* by John Farndon

How is static electricity formed in clouds?

_____

_____

_____

What happens when the static electricity is released?

_____

Find words that could be used in *Thunder and Lightning* in place of the words below.

huge _____ awesomely _____

unleash _____ deafening _____

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