**Make your own lightning**

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**Aim:** To explain lightning, thunders

**Age:** 6-15

**Complexity & duration:** Low; 5-15 minutes

**Location:** Inside

**Cost:** < £4

**Materials & Equipment:** a balloon, a fluorescent light bulb

**Procedure:**

* **First, rub the ballon to your head for a couple of minutes**
* **Place the balloon to the fluorescent light bulb (tip: do it in a dark spot in the house to see what is happening)**

1. What do you see?

**Learning outcomes:**

1. This experiment gives a visual observation of lightning and gives an idea of what static electricity is.
2. Some videos showing this experiment and explaining lightening can be viewed here: <https://www.youtube.com/watch?v=bsUjBiZiUFg> , <https://www.youtube.com/watch?v=5WcVWFgourU> , (static charge experiments and explaining) <https://www.youtube.com/watch?v=lFtr3YK8BV8>

***Science fact:*** *Lightning is electricity and involves particles with negative and positive charges. The movement of the rain in the cloud can create an electrical charge. Usually, the big water droplets in a cloud are negatively charged and the small ones are positively charged. During a storm, the air moves around and makes these particles to crash each other and separate. The big water droplets which are negatively charged are placed downside of the cloud and they start falling to the ground. The movement of the negative charges of the cloud to the ground called the stepped leader. At the same time, positive charges from the surface fo the earth start to go upwards (this movement is called an upward leader) and when the stepped and the upward leader meet, they create a flash called lightening.*

*You can make your own lightning with the experiment described above. What you see is the result of static electricity. When you rub the balloon to your hair the balloon charged negatively. When you place the balloon to the bulb the negative charges of the bulb are moving away and the positive charges collide with the negative charges of the balloon, similarly to what is happening with the lightning!*

*Fact 1: White strikes (lightening) flashes between the cloud and the ground. Lightening can happen between the clouds or in the cloud, too.*

*Fact 2: Thunder is the sound caused by the lightning.*

*Fact 3: There are bolts of lightning striking somewhere on Earth every second.*

*Fact 4: The average temperature of lightning is around 20000 °C (36000 °F).*

*Fact 5: Astraphobia is the fear of thunder and lightning.*

*Fact 6: Lightning can strike without rain in some dry places.*

**RISK ASSESSMENT**

**Adult supervision is required for any experiment!**

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| HAZARD | Likelihood and Seriousness of Injury | Control Measures | Remaining Risk |
| Balloon | In case of Ingestion | <https://www.thh.nhs.uk/documents/_Patients/PatientLeaflets/paediatrics/Foreign_body_ingestion_in_children.pdf> | Low to high |
| Fluorescent bulb | In case of cut | <https://www.nhs.uk/conditions/cuts-and-grazes/> | Low to high |

**First Aid:** In case of a minor injury call NHS 111.

**Remember - never do experiments alone!**