



Junior Level Lesson 5: Electricity Outdoors - Staying Safe

Curricular Links

SESE › Energy and Forces › Magnetism and Electricity

SPHE › Myself › Safety and Protection

Objectives

1. Understand the dangers of electricity and how to stay safe with electricity outdoors
2. Understand static electricity and electric shock in simple terms
3. Identify dangers and how to stay safe with electricity around the school environment

Resources

Paper, pencils and the Stay Safe, Stay Clear 6 Safety Tips. Additional resources including lesson plans and activity sheets are also available and can be accessed by visiting www.esbnetworks.ie/education.

Introduction

Ask your pupils what they know about electricity. Use a mind map on the board to display pupils' ideas. Then inform pupils that: *Electricity is a type of energy that gives items the power to work.* Ask pupils to think of an example of how electricity flows through air i.e. lightning.

Static Electricity and Water - Experiment

Carry out this experiment as a class or in small groups. You will need: access to a tap, a dry plastic comb, a head of hair.

1. Turn on tap so that there is a gentle flow of water. Observe the flow of water.
2. Comb hair ten times, repeating the same stroke of the comb.
3. Then carefully bring the comb close to the flow of water without touching the water. Observe the flow now. Has the direction of the flow changed? Can you see the water 'bending'?

Discuss the experiment, eliciting that the electricity created by the action of combing hair attracted the water and changed its direction. Inform pupils that this is caused by 'Static Electricity' (the build up of electricity on the surface of an object). Ask pupils if they have ever gotten a 'shock' from touching the handle of a car door or a supermarket trolley. Explain that this is caused by a build-up of static electricity in the body

Development

Group Activity – Unscramble

Recap on the Stay Safe, Stay Clear 6 Safety Tips from Lesson 2 with the following activity. Inform pupils that people can get a dangerous electrical shock if they are not safe around electricity. Write these jumbled sentences on the board, assigning one sentence per group. Ask pupils to unscramble so that the class can find the Stay Safe, Stay Clear 6 Safety Tips to help them to stay safe around electricity (younger pupils can do this as a whole class activity):

1. near never wires climb trees overhead (never climb trees near overhead wires)
2. drone wires never fly near a kite or overhead (never fly a kite or drone near overhead wires)
3. overhead never fish wires near (never fish near overhead wires)
4. adult tell approach never a wire, fallen an (never approach a fallen wire, tell an adult)
5. pylon never a climb (never climb a pylon)
6. a sign danger away from places stay marked with (stay away from places marked with a danger sign)

When completed, discuss each safety tip, referring to pupils' personal experience as applicable.

***Remember to always Stay Safe, Stay Clear with electricity!**



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Whole Class Activity

True or False

Recap on the 4 stages of 'The Journey of Electricity' from Lesson 3: 1) Power stations, 2) Pylons, 3) Wooden poles and overhead wires, 4) Mini pillars.

Read the following sentences about poles, overhead wires and mini pillars. Ask pupils to listen and to stand up if they think the sentence is true and to stay seated if they think it is false. Discuss each statement:

1. Electricity travels through overhead wires. (True)
2. Overhead wires bring electricity from pylons to homes, businesses and communities around Ireland. (True)
3. You should never climb an electricity pole. (True, this is dangerous, you could get an electric shock)
4. Electricity can only flow through wires. (False - Electricity can also flow through air, objects and people.)
5. Mini pillars help bring electricity into our homes and schools. (True)

For Older Classes:

6. Electricity travels from mini pillars to our homes and schools through underground cables. (True)
7. Mini pillars are metal boxes which can be found near streams and rivers (False – They are found on footpaths or near buildings. Water and electricity don't go well together!)

Pair Work

I-Spy

Ask pupils in pairs to draw a simple map of the school grounds. As a class, walk around the school grounds and the area outside, spying wooden poles, overhead wires and mini pillars. In pairs mark these on your map. Back in the classroom, referring to the Stay Safe, Stay Clear 6 Safety Tips, discuss how you can stay safe around your school.

Conclusion

Give each pupil an A4 page, asking them to pick one of the Stay Safe, Stay Clear 6 Safety Tips and to create a poster to give other children the message about how to stay safe around electricity. Encourage them to give one clear message, using picture/s to reinforce it.

These posters can be entered into the Stay Safe, Stay Clear with ESB Networks Poster Competition. Winning entrants will receive prizes and a prize giving ceremony in schools for themselves and for their school. They will also be featured in a calendar that will be sent to primary schools nationwide.

Extension Activity

Create a school display about how you can Stay Safe, Stay Clear around the school grounds.