

# Electricity & Safety Unit

## Teachers notes - Lesson 2 - Slide 2

### Outcomes

Outcomes	Indicators
Describes safe practices that are appropriate to a range of situations and environments.	Practices emergency response procedures, for example, first aid and dial 000.
Makes informed decisions and accepts responsibility for consequences.	Devises strategies to respond to risky and dangerous situations, for example, electrical equipment.  Recognises a medical emergency and knows how to give and gain assistance.

Most of the time electricity is safe. But sometimes a dangerous electrical situation can happen and we risk receiving an electric shock if we don't know what to do. We have to be smart and we have to be careful or we could be in for a big shock!

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### Background notes



#### Outside safety

We all like to play outside, but there are electrical hazards that we need to know about. Electricity poles and wires are all around us. They can be above us, next to us, and even below us. Play in open spaces away from electricity poles, towers and powerlines.

#### Remember

- If you fly a kite and it gets caught in the overhead powerlines, live electricity could travel down the string and seriously hurt you. Don't fly kites around power lines!
- Never climb a tree that is near powerlines. Look up before you climb!
- After a storm if you see fallen powerlines stay well clear of them. There is a strong chance they are still live with electricity and are extremely dangerous.



#### Safety around metal

We all come into contact with metal objects on a daily basis – turning on a tap, playing with our computers and toys and even using the fridge. Because metal conducts electricity you have to be very careful when you use metal items.

#### Remember

- Never put a metal object like a knife into a toaster. It is very dangerous!
- Never put anything in a power point that's not meant for it. Electricity will travel right up the metal object into your body.
- Be careful when climbing a ladder at home. The powerlines connected to your house are usually protected, but they can be damaged by rubbing against the gutter or a tree or through exposure to the sun. If a person is on a metal ladder and touches the exposed line the electricity will travel through their body to the earth.



#### Safety around water

Water can conduct electricity because electrons can flow by hitching a ride on atoms and molecules in the water. Water contains dissolved substances, such as salt. These greatly increase the ability of water to conduct electricity. That's why electricity passes easily through our bodies – because our bodies contain water and salt. This is also why it's important to keep water away from electrical appliances.

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### Dangerous situations

Always be on the lookout for electrical dangers in and around your home. This could be anything from a faulty electrical lead to a 'stacked' power point – one with too many plugs in it. These situations could be life threatening and an electrician should be called in to fix them.

#### Remember

- Faulty appliances and damaged electrical leads should be disconnected at the power point and fixed or replaced by an electrician.
- Never stack power points. Use a power board or have an extra power point installed. Stacked power points can cause fires.
- Before you or your family do any major digging in the yard you should get Mum or Dad to ring 'Dial Before you Dig' on 1100. They can make sure there are no underground cables near your property. If you hit one you could receive an electric shock as well as possibly interrupting the power to your suburb.



### Electricity substations

You will find electricity substations and power equipment all over the place. They are behind fences, in buildings or on the side of the footpath and most have danger signs. Substations transform the voltage generated at power stations so it can be distributed to homes, schools and businesses. Sometimes they are near parks and play areas. Substations are safe, but you must follow the rules and stay away from them.

#### Remember

- Sometimes it's tempting to ignore signs and fences around substations. Remember, the warnings are there for everyone's protection, so make sure you follow them!
- Substations contain special equipment with invisible hazards. You don't even have to touch anything to get hurt. Just being too close to some substation equipment can be dangerous and may even kill you!



### Electrical emergencies

We all hope that we are never in an emergency involving electricity, but if we are, it's important to know what to do. If you come across an emergency involving electricity:

#### Remember

- Ensure your own safety.
- Get an adult.
- Ring 000.
- Turn the power off at the power point and remove the plug (if you are able to do so) without touching the cord.