Bright Sparks

Staying safe around electricity

Electricity Safety Booklet for P-6

The activities in this booklet align with content descriptions in the Australian Curriculum for Health and Physical Education and other key learning areas.

TasNetworks
Delivering your power

Contents

Overview

The Bright Sparks Program is a free service which aims to reduce the risk of electrical incidents and prevent tragic accidents by educating primary school children across Tasmania about electrical dangers, as well as encouraging safe and responsible practices.

Students learn the origins of electricity, its many uses and are taught how to avoid dangerous situations.

As part of the program, TasNetworks delivers interactive school presentations designed for two audience groups:

- Prep to Year 2
- Year 3 to Year 6

These presentations focus on defining electricity, electricity safety in the home and outside the home, and how electricity works (Year 3 to Year 6).

This lesson booklet provides opportunities to strengthen student understanding of electricity safety through a series of hands-on activities designed to complement the TasNetworks school presentations.

The lessons are best taught as soon after the TasNetworks school presentation as is practicable. However, they are flexible enough to be taught prior to the presentation, or as stand-alone lessons at any time throughout the school year.

Foundation

CURRICULUM LINKS

HEALTH AND PHYSICAL EDUCATION

Personal, Social and Community Health

Being healthy, safe and active

- **ACPPS003** Identify people and demonstrate protective behaviours and other actions that help keep themselves safe and healthy

Communicating and interacting for health and wellbeing

- **ACPPS004** Practise personal and social skills to interact positively with others

Contributing to healthy and active communities

- **ACPPS005** Identify and describe emotional responses people may experience in different situations

ENGLISH

Language: expressing and developing ideas

- **ACELA1437** Understand the use of vocabulary in familiar contexts related to everyday experiences, personal interests and topics taught at school

Literacy: Interacting with others

- **ACELY1646** Listen to and respond orally to texts and to the communication of others in informal and structured classroom situations
- **ACELY1784** Use interaction skills including listening while others speak, using appropriate voice levels, articulation and body language, gestures and eye contact

Literacy: Creating Texts

- **ACELY1651** Create short texts to explore, record and report ideas and events using familiar words and beginning writing knowledge

DRAMA

- **ACADRM027** Explore role and dramatic action in dramatic play, improvisation and process drama
- **ACADRM028** Use voice, facial expression, movement and space to imagine and establish role and situation

Foundation

TEACHER BACKGROUND INFORMATION

Most of the time, electricity is safe. But sometimes a dangerous electrical situation can happen and we risk being hurt 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!

INDOOR SAFETY

There are many indoor electrical safety issues we must be cautious about.

- **Broken cords and appliances:** broken cords are dangerous and give us no protection. Taping leads doesn't fix it, it just hides it and you could still get a shock if you use an appliance with a broken cord.
- **Power points:** discoloured, melted or cracked power points or light fittings can indicate overheating of household wiring.

  While it is normal for switches or power points to sometimes emit a tiny flash when you turn them on, be on the lookout for excessive noise or sparking or smell.
- **Electric heaters:** a heater is not a clothes dryer. Never dry washing too close to a heater - especially a radiator. The garments can overheat and ignite. Tasmanian Fire Service advise to have any items a minimum of 2 meters away.
- **Electric blankets:** electric blankets are designed to warm your bed before you get in. Once in, you should turn them off. Check to make sure you haven't accidentally switched the blanket on after you have just made the bed. Faulty or damaged blankets should be discarded.

Encourage students to check that power points in the classroom and at home are turned off before they plug in or unplug an electrical appliance and that they are turned off after use.

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. So, look up, look out before you fly and be careful!
- Never climb a tree that is near powerlines. Look up, look out before you climb!
- After a storm, fallen powerlines can be hidden in trees and branches. If you see a fallen powerline, there is a strong chance they are still live*. Stay at least 10 metres** clear of them, warn others and ask an adult to call Triple Zero (000.)

*Live powerlines mean that electricity is still running along them and around them (conducting electricity) –remember, you don't have to touch the powerline to get a shock.

***To help students understand the 10 metre distance, a TasNetworks representative will measure the distance out with students during the presentation. Teachers could provide some real-life examples (i.e. approximately one third of a netball court or two and a half medium size cars.)*

SAFETY AROUND WATER

Water conducts electricity because electrons 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. Even switching on a light switch with wet hands can be dangerous.

Remember:

- Never use electricity near water.
- Water is a conductor of electricity which means it can swim through the water and zap you.
- When electricity touches water it makes it bigger and more powerful.
- Water and electricity don't mix.

SAFETY AROUND METAL

We all come into contact with metal objects everyday – 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! Electricity will travel right up the metal object into your body. Even if the power is turned off, never stick something in to get the toast out – it could break off inside the toaster and the next time it is turned on it could blow up or shock someone.
- Never put anything in a power point that's not meant for it- only power plugs or power point protectors.
- 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 causing an electric shock.
- You don't need to be touching the powerline to receive a shock.
- Shocks and tingles can be a sign that there is something wrong with the electricity supply. If you get a shock from an electrical appliance or water taps, ask an adult to report it immediately. Shocks and tingles should be reported to TasNetworks on 132 004.

ELECTRICAL EMERGENCIES

We all hope that we are never in an emergency involving electricity (e.g. damaged cords, fallen powerlines or a car accident) but if we are, it's important to know what to do.

If you come across an emergency involving electricity you should:

- Ensure your own safety.
- Turn the power off at the power point and remove the plug (if it is safe for you to do so).
- Turn the electricity off at the main switch (ask an adult for help).
- Warn others and get an adult.
- Ring Triple Zero (000).

What to do if powerlines fall?

Severe weather, falling trees and vehicle accidents can bring down powerlines. Fallen powerlines are dangerous and should not be touched or approached under any circumstances. Always assume wires are live and capable of causing injury or even death.

If you find powerlines on the ground:

- Assume all powerlines are live and capable of causing injury or even death
- Keep yourself, other people and machinery 10 metres from powerlines
- Call us on 132 004 or emergency services on 000 for help immediately

Be aware any object that comes into contact with powerlines could be live. The area is more dangerous in wet conditions as water is an excellent conductor of electricity. Any metallic object, including fences, will be electrified if they touch or are even close to a live fallen powerline. Even a tree branch can be a potential conductor of electricity if it is in contact with a live powerline.

When a vehicle collides with a power pole

Vehicle accidents can sometimes involve our infrastructure, including collisions with power poles. If you find yourself in a situation where a powerline is in contact with your vehicle, stay inside the vehicle until help arrives. No one should touch or approach the vehicle. Instead, call emergency services immediately on 000 or us on 132 004.

If you believe your life is threatened by staying inside the vehicle:

1. Open the door
2. Avoid touching the ground and the car at the same time
3. Jump clear, landing with both feet together
4. Shuffle or make small jumps with your feet constantly together (kangaroo hop*) until you're at least 10 metres from the vehicle
5. If you fall when jumping clear of the vehicle, do not attempt to get up, roll away from the vehicle

KEY SAFETY MESSAGES

It is important to ensure that all students are aware of the safety messages at the completion of the activities.

- Always pick a safe place to play
- Stop, look up and look out
- Don't go near danger signs
- Don't play close to powerlines
- Kangaroo hop to safety

*Kangaroo hop is hopping with feet together away from the wires. We do this because it tricks the electricity into thinking only one part of us is touching the ground. There needs to be two points of contact with the electricity and the ground. Electricity works in a circuit and only moves in the one direction (it won't go up and down the same line.) It needs an entry point and an exit point to shock you.

Foundation Lessons

How can we stay safe with electricity?

Note to Teachers: If your students have seen the TasNetworks presentation, encourage them to think about what they might remember from it when completing the following activities.

LESSON 1 - Safe indoor play

- Ask students to give examples of types of indoor play that they think might be safe and types of play that are unsafe.
- Brainstorm a list of safe and unsafe indoor games.
- Give each group some magazines and a set of word cards (pX) that depict rooms in a home. (Alternatively, if computers are available, students can use a computer for this task instead of magazines.)
- Ask the students to cut out pictures of electrical devices that they might find in each room.
- Have the students copy the names of each room onto a piece of paper and glue the pictures they have cut out for each room to make a poster.
- Create a wall display of any topical words and messages.

LESSON 2 - What to do in unsafe indoor situations

- Regroup the class and ask them to bring their room posters with them.
- Discuss with the students the possible dangers associated with each appliance.
- Display a set of picture cards (pX) that depict dangers.
- Ask the students to suggest what to do if they encounter a dangerous situation with each appliance from it.)
- Remind students of the safety tips that they have learnt for dangerous situations.
    - Stay clear
    - Tell an adult
    - Call 000
- Ask the students to write a safety message on each poster.
- Place some of the posters on the display wall.
- Have children role play what they would say to an operator on the telephone if there was an emergency.

What happens when you call Triple Zero (000)?

- Stay calm and call Triple Zero from a safe place.
- When your call is answered you will be asked if you need Police, Fire or Ambulance
- If requested by the operator, state your town and location.
- Your call will be directed to the service you asked for.
- When connected to the emergency service, stay on the line, speak clearly and answer the questions.
- Don't hang up until the operator tells you to do so.

(Source: www.triplezero.gov.au)

If electronic devices are available, students can play the 'Triple Zero Kids Challenge' – download the app and Teacher's Guide at www.kids.triplezero.gov.au

Bright Sparks Supporting Activity Sheets

- **Power points are full of electricity**
- **What a mess!**
- **Don't be a drip near electricity**
- **Electrical safety at home**

LESSON 3 - Safe outdoor play

- Ask students to give examples of types of outdoor play that are safe and types of outdoor play that are unsafe.
- Make a list of the suggestions for safe and unsafe outdoor play.
- Have students offer suggestions about what they should do if they see someone playing unsafely.
- Discuss the emergency and safety messages.
- Ask the students whom they should go to in an emergency.
- Go outside and role-play safe outdoor play and what to do when someone is playing unsafely.
- Ask students to draw a picture of someone playing safely and have them write a safe message under the drawing. (This can be a modelled sentence for beginner writers OR use the supporting activity sheet (pX) to prompt further class discussions about safe play and what to do in emergency situations). If your students have seen the TasNetworks presentation, they may recall some of the safety messages:
  - Always pick a safe place to play
  - Stop, look up and look out
  - Don't go near danger signs
  - Don't play close to powerlines
  - Kangaroo hop to safety
- Have students show and discuss their messages and drawings.
- Highlight new words and topic words by adding them to the whiteboard.
- Create a display wall to place the lists and some chosen drawings.
- Add new safety vocabulary to the display.

Bright Sparks Supporting Activity Sheets

- Stop, Look Up and Look Out

LESSON 4 - What to do in unsafe outdoor situations

- Divide the class into groups and give each group a set of picture cards (pX).
- Ask the students to sort the cards into safe places and unsafe places and to discuss what is unsafe in the pictures.
- Ask each child to choose an unsafe card and draw a picture of what they should do when they encounter this situation (if available, computers can be used for this task).
- Have students write under their drawing what to do in unsafe situations. (Model the writing to make sure each student has the correct message.)
  - Stay clear
  - Tell an adult
  - Call Triple Zero (000)
- Add chosen drawings, safety vocabulary and safety tips to the display wall.

Kitchen

Bathroom

Living room

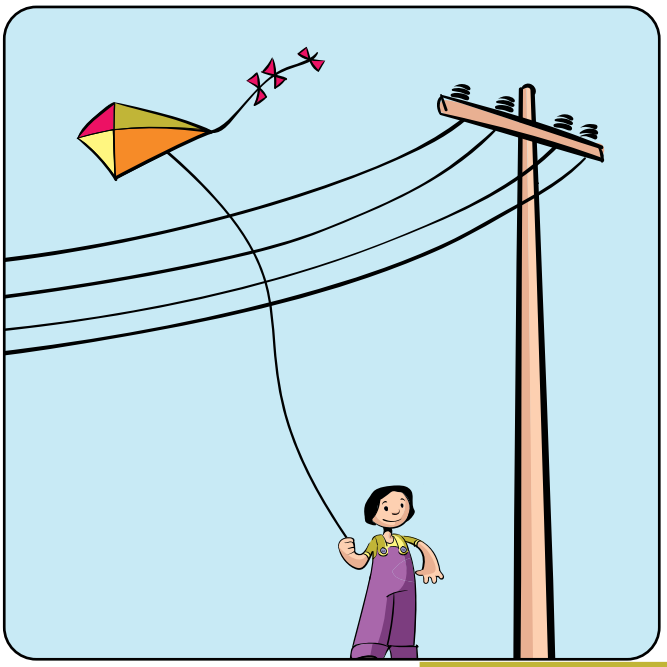
Bedroom

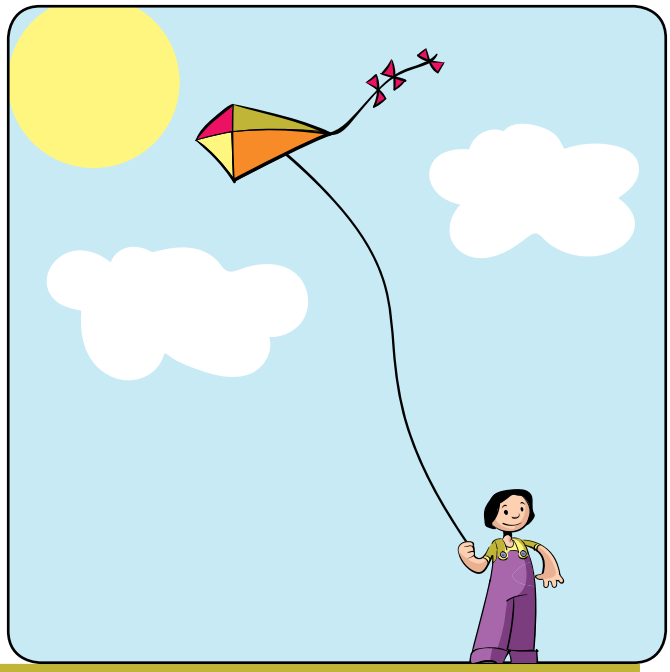
PREP – Picture Cards for Lesson 2

PREP – Supporting Activity Sheet for Lesson 3

ACTIVITY A

Which is a better place to fly a kite? Why is your choice a safe one?[MJ2]

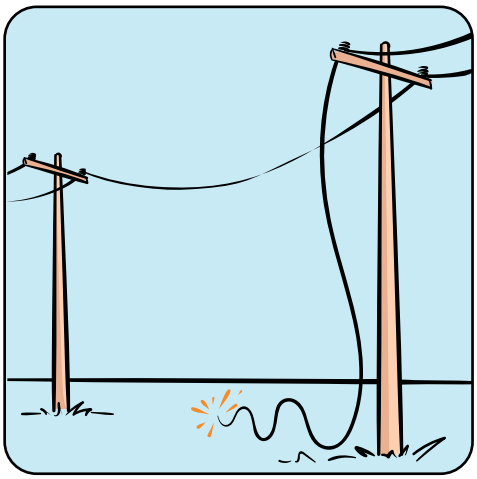


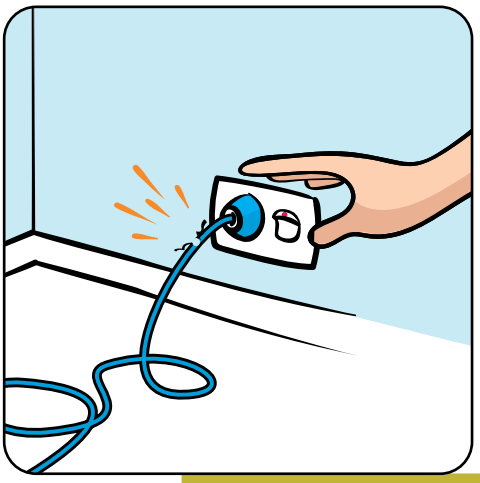


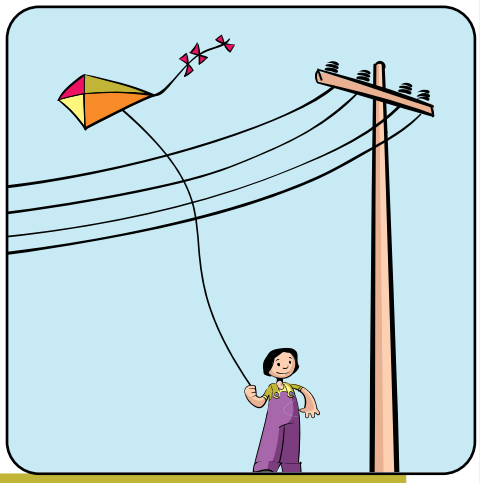
REMEMBER!
Be careful around electricity poles and wires when you play!

ACTIVITY B

What would you do in these situations?

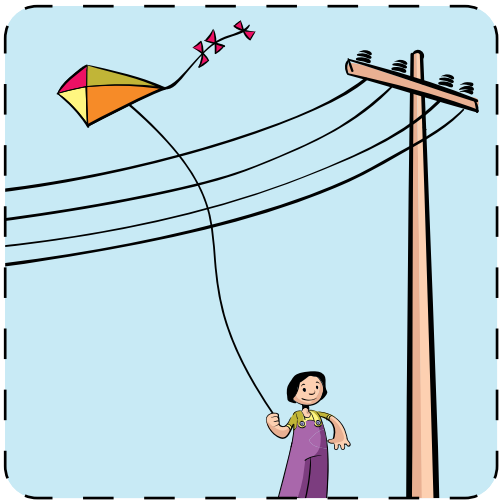


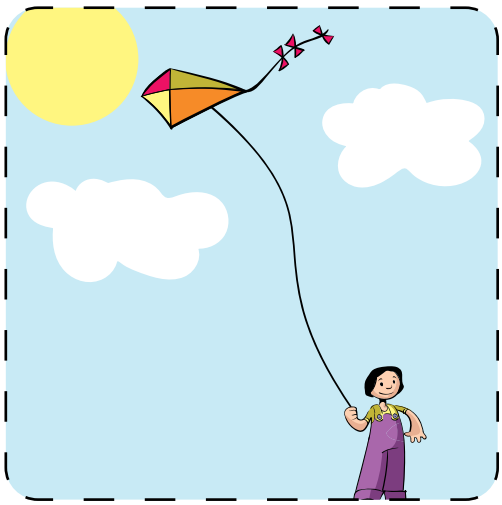


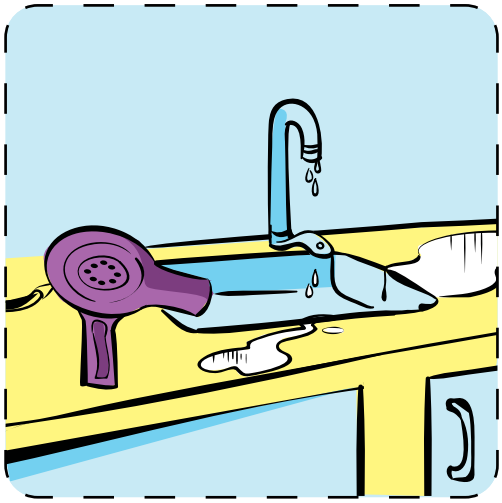


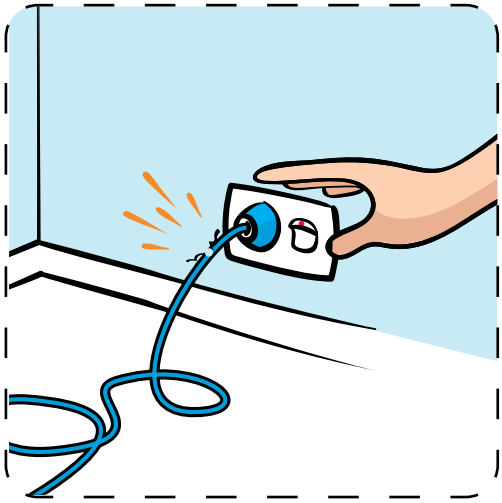
REMEMBER!
If you see a dangerous situation, tell an adult.

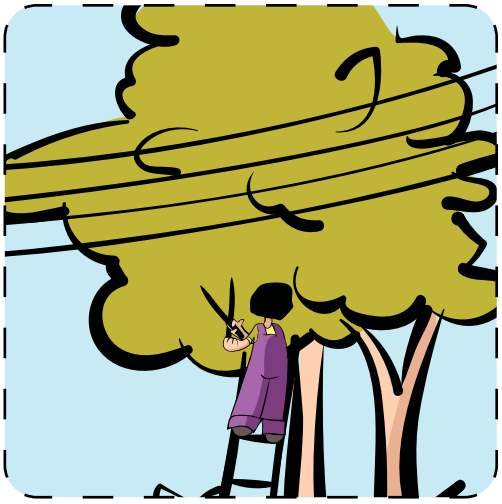
PREP – Picture Cards for Lesson 4











Year 1&2

CURRICULUM LINKS

HEALTH AND PHYSICAL EDUCATION

Personal, Social and Community Health

Being healthy, safe and active

- **ACPPS018** Recognise situations and opportunities to promote health, safety and wellbeing

Communicating and interacting for health and wellbeing

- **ACPPS020** Identify and practise emotional responses that account for own and others' feelings

Contributing to healthy and active communities

- **ACPPS022** Explore actions that help make the classroom a healthy, safe and active place

ENGLISH

YEAR 1

Language: Language variation and change

- **ACELA1443** Understand that people use different systems of communication to cater to different needs and purposes and that many people may use sign systems to communicate with others

Language: Language for interaction

- **ACELA1446** Understand that there are different ways of asking for information, making offers and giving commands

Language: Text structure and organisation

- **ACELA1447** Understand that the purposes texts serve shape their structure in predictable ways

Language: Expressing and developing ideas

- **ACELA1453** Compare different kinds of images in narrative and informative texts and discuss how they contribute to meaning
- **ACELA1454** Understand the use of vocabulary in everyday contexts as well as a growing number of school contexts, including appropriate use of formal and informal terms of address in different contexts

YEAR 2

Language: Language variation and change

- **UACELA1460** Understand that spoken, visual and written forms of language are different modes of communication with different features and their use varies according to the audience, purpose, context and cultural background

Language: Language for interaction

- **ACELA1462** Identify language that can be used for appreciating texts and the qualities of people and things

Language: Text structure and organisation

- **ACELA1463** Understand that different types of texts have identifiable text structures and language features that help the text serve its purpose
- **ACELA1464** Understand how texts are made cohesive through language features, including word associations, synonyms, and antonyms

Language: Expressing and developing ideas

- **ACELA1470** Understand the use of vocabulary about familiar and new topics and experiment with and begin to make conscious choices of vocabulary to suit audience and

YEAR 1

Literacy: Interacting with others

- **ACELY1656** Engage in conversations and discussions, using active listening behaviours, showing interest, and contributing ideas, information and questions
- **ACELY1788** Use interaction skills including turn-taking, recognising the contributions of others, speaking clearly and using appropriate volume and pace
- **ACELY1657** Make short presentations using some introduced text structures and language, for example opening statements

Literacy: Creating texts

- **ACELY1661** Create short imaginative and informative text that show emerging use of appropriate text structure, sentence-level grammar, word choice, spelling, punctuation and appropriate multimodal elements, for example illustrations and diagrams
- **ACELY1664** Construct texts that incorporate supporting images using software including word processing programs

YEAR 2

Literacy: Interacting with others

- **ACELY1666** Listen for specific purposes and information, including instructions, and extend students' own and others' ideas in discussions
- **ACELY1789** Use interaction skills including initiating topics, making positive statements and voicing disagreement in an appropriate manner, speaking clearly and varying tone, volume and pace appropriately
- **ACELY1667** Rehearse and deliver short presentations on familiar and new topics

Literacy: Creating texts

- **ACELY1671** Create short imaginative, informative and persuasive texts using growing knowledge of text structures and language features for familiar and some less familiar audiences, selecting print and multimodal elements appropriate to the audience and purpose
- **ACELY1674** Construct texts featuring print, visual and audio elements using software, including word processing programs

DRAMA

- **ACADRM027** Explore role and dramatic action in dramatic play, improvisation and process drama
- **ACADRM028** Use voice, facial expression, movement and space to imagine and establish role and situation

Year 1&2

TEACHER BACKGROUND NOTES

BEFORE YOU START THE LESSONS FOR YEAR 1 AND 2, REVIEW THE PREVIOUS PREP LESSONS.

Most of the time, electricity is safe. But sometimes a dangerous electrical situation can happen and we risk being hurt 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!

Discuss some of the key learnings from this lesson with students before commencing the next sequence.

DANGEROUS SITUATIONS

Always be on the lookout for dangers in and around your home. This could be anything from frayed and damaged electrical leads (where you can see the wires) to a 'stacked', 'overloaded' or 'piggy- backed' power point – one with too many plugs in it. These situations could be life threatening. Wrapping frayed or damaged cords with tape is not fixing them, a licensed electrical contractor should be called in to fix them instead of your parent/carer.

Remember:

- Faulty appliances and broken cords should be turned off at the power point and fixed by a licensed electrical contractor or replaced. Broken cords are dangerous and give us no protection. Taping leads doesn't fix them, it just hides the problem and you could still get a shock if you use an appliance with a broken cord.
- Never 'piggy back' or 'over load' double adapters in power points. Use a power board or have extra power points installed. Overloaded power points with 'piggy backed' plugs can overheat and cause fires.
- Before you or your family do any major digging in the yard, you should get a parent/carer to either call Dial Before You Dig on 1100, visit www.1100.com.au or download the free Dial Before You Dig app to make sure there are no underground cables near your property. If you hit one you could be hurt, as well as possibly interrupting the power to your suburb.

SAFETY AROUND METAL

We all come into contact with metal objects everyday – 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! Electricity will travel right up the metal object into your body. Even if the power is turned off, never stick something in to get the toast out – it could break off inside the toaster and the next time it is turned on it could blow up or shock someone.
- Never put anything in a power point that's not meant for it - only power plugs or power point protectors.
- 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, causing an electric shock.
- You don't need to be touching the powerline to receive a shock.
- Shocks and tingles can be a sign that there is something wrong with the electricity supply. If you get a shock from an electrical appliance or water taps, ask an adult to report it immediately. Shocks & tingles should be reported to TasNetworks on 132004.

SAFETY AROUND WATER

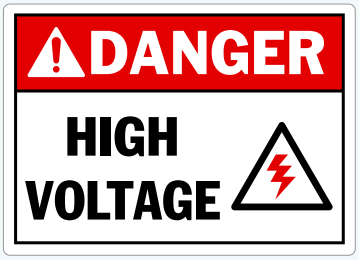
Like metal, water conducts electricity because electrons can flow by hitching a ride on atoms and molecules in the water. Water contains dissolved substances such as salt. These greatly increase the ability of water to conduct electricity. That's why electricity passes easily through our bodies – because our bodies contain water and salt. If you receive an electric shock, it can be very dangerous and even interfere with your heart making it beat irregularly.

Remember:

- Never touch electrical appliances or switches with wet hands.
- Don't use electrical appliances or touch switches while standing on wet ground with bare feet.
- Keep all electrical appliances away from water like swimming pools and filled baths and basins.
- Water and electricity don't mix.

DANGER SIGNS

Danger signs are safety signs for warning when a hazard or a hazardous condition is likely to be life-threatening. Danger safety signage has many uses and can warn of many dangerous situations – such as high voltage, fuel storage, radiation, chemicals, open holes and much more. Below are some examples:



KEY SAFETY MESSAGES

It is important to ensure that all students are aware of the safety messages at the completion of the activities.

- Always pick a safe place to play
- Stop, look up and look out
- Don't go near danger signs
- Don't play close to powerlines
- Kangaroo hop* to safety

*Kangaroo Hop is hopping with feet together away from the wires. We do this because it tricks the electricity into thinking only one part of us is touching the ground. There needs to be two points of contact with the electricity and the ground. Electricity works in a circuit and only moves in the one direction (it won't go up and down the same line.) It needs an entry point and an exit point to shock you.

Years 1&2 Lessons

What is a dangerous electrical situation?

Note to Teachers: If your students have seen the TasNetworks presentation, encourage them to think about what they might remember from it when completing the following activities:

LESSON 1 - Safety around electrical cables

- Assemble the class and tell them that they are going to continue their learning about electricity and why they must be very careful and very sensible around electrical appliances.
- Show the class some samples of electrical wires, cables and cords.
- Ask the students to discuss where they may have seen each sample and what it might be used for.
- Ask the students if they can identify a safe wire, cable or cord and an unsafe one. (Discuss the fact that electricity is invisible and wires should never be touched - if in doubt ask an adult.)
- Divide the class into groups and ask each group to present a role-play of what to do in an emergency situation such as unsafe wires.
- Provide each group with paper and pens.
- Ask them to make a pictograph list of when wires and cords might be dangerous (or a word list if students are capable.)
- Have each group report back to the class about their list.
- Discuss the safety messages associated with each situation.
  - Always pick a safe place to play
  - Stop, look up and look out
  - Don't go near danger signs
  - Don't play close to powerlines
  - Kangaroo hop to safety
- Create a wall display of any topical words and messages.

Bright Sparks Supporting Activity Sheets

- Cooking up trouble in the kitchen
- There is danger in Shocker's lounge room
- Shocker's bathroom is overflowing with danger

LESSON 2 - Safety messages for electrical cables

- Tell the class that they are going to use the lists that they created in the previous lesson to create a safety poster.
- Divide the class into groups and ask them to discuss the hazards they identified in their list and to choose one that they would like to illustrate.
- Ask each group to make a poster for one hazard they have chosen. The poster must include a safety message for avoiding the hazard (if computers are available, students can use them to design their posters).
- Assign roles for each group member and make sure they understand their individual roles. e.g. designer, scribe, reporter, etc.
- Ask each group to have their reporters share their posters with the class and discuss why they chose this hazard to illustrate and what their safety message is.
- Ask the class whether they agree with the safety message and what they would do in this situation.
- Add the posters and any new words and messages to the display wall.

LESSON 3 - Common safety signs and symbols

- Show the class some samples of common warning or safety signs (if computers are available, students could research safety signs online).
- Ask the class to identify each one and to discuss what the safety message is.
- Brainstorm other safety signs that the students may have seen and where they have seen them.
- Discuss why we have safety signs and what purpose they serve Divide the class into groups and ask students to think about some dangerous situations that they may encounter around electricity.
- Ask the students to create a group artwork that communicates safety messages and safety symbols. (A combination of painting and collage from magazine pictures would work well for this activity.)
- Give each group the opportunity to display and discuss their artwork.
- Encourage the students to ask critical questions about each piece of art like:
  - "How did you make the decisions about what your art would look like?"
  - "Why did you choose those pictures?"
  - "Why did you choose those colours?"
  - "How does your art communicate a safety message?"
  - "How you think you could have made your message stronger?"
- Display the art on the display wall AND/OR display their safety signs near the appropriate location. e.g. a picture warning against placing objects in sockets could be placed next to a socket.

Bright Sparks Supporting Activity Sheets

- Bright Sparks' lounge room
- Electrical safety at home

LESSON 4 - Electrical safety signs and symbols

- Review the safety messages:
  - Always pick a safe place to play
  - Stop, look up and look out
  - Don't go near danger signs
  - Don't play close to powerlines
  - Kangaroo hop to safety
- Show the class some electrical safety signs and symbols.
- Discuss where these might be displayed and why.
- Ask the students why it is important to have safety signs in some locations.
- Divide the class into groups and ask them to make a list of all the dangerous electrical hazards that they can think of. (Appliances near water, forks in toasters, overloaded power boards, frayed electrical cords, sticking objects in sockets, ladders near power lines, kites near power lines, etc.)
- Have each group choose one dangerous situation that does not have a safety or warning sign associated with it.
- Provide the students with the materials to design a safety sign for their chosen dangerous situation
- Ask students to share their safety signs with the class and discuss any new words.
- Display their safety signs near the appropriate location, e.g. a picture warnin against placing objects in sockets could be placed next to a socket.
- Add new words to display wall.

STEM DESIGN CHALLENGE

Design and make a 3D model that shows where your warning sign should be used. Use your model to teach the class about the dangerous situation.

Year 3&4

CURRICULUM LINKS

HEALTH AND PHYSICAL EDUCATION

YEAR 3

Personal, Social and Community Health

Being healthy, safe and active

- **ACPPS035** Describe and apply strategies that can be used in situations that make them feel uncomfortable or unsafe
- **ACPPS035** Describe and apply strategies that can be used in situations that make them feel uncomfortable or unsafe
- **ACPPS036** Identify and practise strategies to promote health, safety and wellbeing

Personal, Social and Community Health

Contributing to healthy and active communities

- **ACPPS040** Describe strategies to make the classroom and playground healthy, safe and active spaces

YEAR 4

Personal, Social and Community Health

Being healthy, safe and active

- **ACPPS053** Investigate community resources and ways to seek help about health, safety and wellbeing
- **ACPPS054** Plan and practise strategies to promote health, safety and wellbeing

SCIENCE

YEAR 3

Science as a Human Endeavour: use and influence of science

- **DACSHE051** Science knowledge helps people to understand the effect of their actions

Science Inquiry Skills: processing and analysing data and information

- **ACSIS057** Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends

Science Inquiry Skills: Communicating

- **ACSIS060** Represent and communicate observations, ideas and findings using formal and informal representations

YEAR 4

Science as a Human Endeavour: use and influence of science

- **ACSHE062** Science knowledge helps people to understand the effect of their actions

Science Inquiry Skills: processing and analysing data and information

- **ACSIS068** Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends

Science Inquiry Skills: Communicating

- **ACSIS071** Represent and communicate observations, ideas and findings using formal and informal representations

MATHEMATICS

YEAR 3

Statistics and Probability: Data representation and interpretation

- **ACMSP068** Identify questions or issues for categorical variables. Identify data sources and plan methods of data collection and recording
- **ACMSP069** Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs, with and without the use of digital technologies

YEAR 4

Statistics and Probability: Data representation and interpretation

- **ACMSP095** Select and trial methods for data collection, including survey questions and recording sheets
- **ACMSP096** Construct suitable data displays, with and without the use of digital technologies, from given or collected data. Include tables, column graphs and picture graphs where one picture can represent many data values

ENGLISH

YEAR 3

Language: Expressing and developing ideas

- **ACELA1484** Learn extended and technical vocabulary and ways of expressing opinion including modal verbs and adverbs

Literacy: Texts in context

- **ACELY1675** Identify the point of view in a text and suggest alternative points of view

Literacy: Interacting with others

- **ACELY1676** Listen to and contribute to conversations and discussions to share information and ideas and negotiate in collaborative situations
- **ACELY1792** Use interaction skills, including active listening behaviours and communicate in a clear, coherent manner using a variety of everyday and learned vocabulary and appropriate tone, pace, pitch and volume
- **ACELY1677** Plan and deliver short presentations, providing some key details in logical sequence

Literacy: Creating texts

- **ACELY1682** Plan, draft and publish imaginative, informative and persuasive texts demonstrating increasing control over text structures and language features and selecting print, and multimodal elements appropriate to the audience and purpose
- **ACELY1685** Use software including word processing programs with growing speed and efficiency to construct and edit texts featuring visual, print and audio elements

YEAR 4

Language: Expressing and developing ideas

- **ACELA1498** Incorporate new vocabulary from a range of sources into students' own texts including vocabulary encountered in research

Literacy: Interacting with others

- **ACELY1687** Interpret ideas and information in spoken texts and listen for key points in order to carry out tasks and use information to share and extend ideas and information
- **ACELY1688** Use interaction skills such as acknowledging another's point of view and linking students' response to the topic, using familiar and new vocabulary and a range of vocal effects such as tone, pace, pitch and volume to speak clearly and coherently
- **ACELY1689** Plan, rehearse and deliver presentations incorporating learned content and taking into account the particular purposes and audiences

Literacy: Creating texts

- **ACELY1694** Plan, draft and publish imaginative, informative and persuasive texts containing key information and supporting details for a widening range of audiences, demonstrating increasing control over text structures and language features
- **ACELY1697** Use a range of software including word processing programs to construct, edit and publish written text, and select, edit and place visual, print and audio elements

Year 3&4

TEACHER BACKGROUND NOTES

BEFORE YOU START THE LESSONS FOR YEAR 3 AND 4, REVIEW THE PREVIOUS YEAR 1 AND 2 LESSONS.

Most of the time, electricity is safe. But sometimes a dangerous electrical situation can happen and we risk being hurt 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!

Discuss some of the key learnings from this lesson with students before commencing the next sequence.

DANGEROUS SITUATIONS

Always be on the lookout for dangers in and around your home. This could be anything from frayed and damaged electrical leads (where you can see the wires) to a 'stacked', 'overloaded' or 'piggy- backed' power point – one with too many plugs in it. These situations could be life threatening. Wrapping frayed or damaged cords with tape is not fixing them. A licensed electrical contractor should be called in to fix the, instead of your parent or carer.

Remember:

Faulty appliances and broken cords should be turned off at the power point and fixed by a licensed electrical contractor or replaced. Broken cords are dangerous and give us no protection. Taping leads doesn't fix them, it just hides the problem and you could still get a shock if you use an appliance with a broken cord.

- Never 'piggy back' or 'overload' double adapters in power points. Use a power board or have extra power points installed. Overloaded power points with 'piggy backed' plugs can overheat and cause fires.
- Before you or your family do any major digging in the yard, you should get a parent/carer to either call Dial Before You Dig on 1100, visit www.1100.com.au or download the free Dial Before You Dig app to make sure there are no underground cables near your property. If you hit one you could be hurt, as well as possibly interrupting the power to your suburb.

ELECTRICITY SUBSTATIONS AND POWER STATIONS

You will find electricity substations and power equipment everywhere. 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. Never climb over the security fence into a substation or power station. The equipment inside can kill.

Remember:

- Sometimes it's tempting to ignore signs and fences around substations and power stations. Remember the warnings are there for everyone's protection, so make sure you follow them!
- Substations and power stations contain special equipment with invisible hazards. You don't even have to touch anything to get hurt. Just being too close to some electrical equipment can be dangerous and may even kill you!
- Don't attempt to retrieve balls or toys that may have gone over a substation or power station fence.

ELECTRICITY POLES AND TOWERS

Never attempt to climb an electricity pole or high voltage transmission tower. Near approach to high voltage lines is enough to kill you.

ELECTRICAL POWERLINES

Powerlines are part of our landscape and sometimes it's easy to forget they are there. But coming in to contact with powerlines can result in injury or even death. That's why if you're playing, working, driving or doing anything close to powerlines, you need to Look Up, Look Out.

It is unsafe to play with kites, or go fishing under powerlines. You do not need to be touching the powerline to get a shock because electricity conducts outside the powerline and we only need to just be close enough to it.

If something gets stuck on a powerline, you should:

- Leave it
- Call TasNetworks
- Don't touch it
- Stay at least 10 meters away

Throwing things over powerlines can make them sag and bring them closer to the ground making it unsafe.

If you see a fallen powerline:

- Don't touch it
- Kangaroo Hop* to safety
- Call emergency services on Triple 000

*Kangaroo Hop is hopping with feet together away from the wires. We do this because it tricks the electricity into thinking only one part of us is touching the ground. There needs to be two points of contact with the electricity and the ground. Electricity works in a circuit and only moves in the one direction (it won't go up and down the same line.) It needs an entry point and an exit point to shock you.

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. So, look up, look out before you fly and be careful!
- Never climb a tree that is near powerlines. Look up, look out before you climb!
- After a storm, fallen powerlines can be hidden in trees and branches. If you see a fallen powerline, there is a strong chance they are still live. Stay at least 10 metres* clear of them, warn others and ask an adult to call Triple Zero (000). Or TasNetworks 0n 132 004an adult

**To help students understand the 10 metre distance, a TasNetworks representative will measure the distance out with students during the presentation. Teachers could provide some real-life examples (i.e. approximately one third of a netball court or two and a half medium size cars.)*

ELECTRICAL EMERGENCIES

We all hope that we are never in an emergency involving electricity (e.g. damaged cords, fallen powerlines or a car accident) but if we are, it's important to know what to do.

If you come across an emergency involving electricity:

- Ensure your own safety
- Turn the power off at the power point and remove the plug (if it is safe for you to do so)
- Turn the power off at the main switch (ask an adult)
- Warn others and get an adult
- Ring Triple Zero (000)

Powerlines are part of our landscape and sometimes it's easy to forget they're there. Coming into contact with powerlines can result in serious injury or even death. That's why if you're working, driving or doing anything close to powerlines, you need to Look Up, Look Out.

Stay safe – follow these rules:

- Check the location of all powerlines before you start work
- Know the exact height of your vehicle and equipment – especially when your tray or excavator is fully raised or extended
- Always use an observer to monitor your clearances

- Never attempt to climb or throw objects at transmission towers – this can put you at risk of electrocution
- Never allow anyone to ride on a high load, especially when travelling underneath powerlines
- Irrigation pipes being moved near powerlines should be kept below head level to avoid any possible contact with overhead powerlines
- Keep jets of water from travelling irrigators clear of overhead powerlines as they can cause the powerlines to touch and could result in a loss of power supply, system disturbances or even a fire
- Never store or locate irrigation pipes, plant, machinery or any other potentially conductive material under powerlines

What to do if powerlines fall?

Severe weather, falling trees and vehicle accidents can bring down powerlines. Fallen powerlines are dangerous and should not be touched or approached under any circumstances. Always assume wires are live and capable of causing injury or even death.

If you find powerlines on the ground:

- Assume all powerlines are live and capable of causing injury or even death
- Keep yourself, other people and machinery 10 metres from powerlines
- Call us on 132 004 or emergency services on 000 for help immediately

Be aware any object that comes into contact with powerlines could be live. The area is more dangerous in wet conditions as water is an excellent conductor of electricity. Any metallic object, including fences, will be electrified if they touch or are even close to a live fallen powerline. Even a tree branch can be a potential conductor of electricity if it is in contact with a live powerline.

When a vehicle collides with a power pole

Vehicle accidents can sometimes involve our infrastructure, including collisions with power poles. If you find yourself in a situation where a powerline is in contact with your vehicle, stay inside the vehicle until help arrives. No one should touch or approach the vehicle. Instead, call emergency services immediately on 000 or us on 132 004.

If you believe your life is threatened by staying inside the vehicle:

1. Open the door
2. Avoid touching the ground and the car at the same time
3. Jump clear, landing with both feet together
4. Shuffle or make small jumps with your feet constantly together (kangaroo hop) until you're at least 10 metres from the vehicle
5. If you fall when jumping clear of the vehicle, do not attempt to get up, roll away from the vehicle

KEY SAFETY MESSAGES

It is important to ensure that all students are aware of the safety messages at the completion of the activities.

- Always pick a safe place to play
- Stop, look up and look out
- Don't go near danger signs
- Don't play close to powerlines
- Kangaroo hop to safety

Years 3&4 Lessons

How can we keep people safe around electricity?

Note to Teachers: If your students have seen the TasNetworks presentation, encourage them to think about what they might remember from it when completing the following activities.

LESSON 1 - Electrical safety in and around the home

During this activity, students will create an electrical safety survey to measure other student's knowledge of electricity safety for use in the next activity.

- Assemble the class and lead a discussion on electrical safety.
- Ask the class to identify all of the electrical safety hazards that they can think of in and around the home.
- Discuss what might happen when people are not aware of the potential hazards around electricity.
- Ask the students to explain the need for rules for safe behaviour around electricity.
- Divide the class into groups and ask them to research possible hazards around electricity and what people should be aware of to stay safe around electricity.
- Remind students of the safety messages:
  - Always pick a safe place to play
  - Stop, look up and look out
  - Don't go near danger signs
  - Don't play close to powerlines
  - Kangaroo hop to safety
- Have each group take notes on electricity hazards and safety tips.
- Based on their notes encourage each group to create a list of questions to survey others on their knowledge of electrical safety.
- Ask each group to design a survey from the questions they have compiled. (This could be done on paper or using an online survey program like SurveyMonkey - **https://www.surveymonkey.com/**)
- Start a word wall to display any new safety vocabulary introduced in the lesson.

Bright Sparks Supporting Activity Sheets

- **Cooking up trouble in the kitchen**
- **What a mess!**

LESSON 2 - Electrical safety survey

Students will need their electrical safety knowledge surveys from the previous activity for the following activity.

- Assemble the class and ask each group to share their surveys.
- Discuss the similarities in questions and allow time for each group to add or change their questions if they feel the need.
- Give each group the opportunity to survey teachers and students from other classes using the surveys they have created.
- Have students survey family members for homework.
- Have students tally up all of the results from their surveys.
- Ask the students to create a table for the responses and add all of the responses to the table.
- Ask the students to compile a graph of the responses with the use of technology or by drawing up their graph on a poster.
- Have each group present their graphs to the class.
- Make a note of any trends in the data presented and discuss these trends with the class.
- Ask students why they think the community is not aware of some dangers around electricity.
- Add any new words to the word wall.

Bright Sparks Supporting Activity Sheets

- Respect electricity
- Electrical safety at home

LESSON 3 - Electrical safety campaign

- Ask students to recite the safety messages (see Lesson 1) and what to do in emergencies:
  - Ensure your own safety
  - Turn the power off at the power point and remove the plug (if it is safe for you to do so) or turn power off at main switch (ask an adult)
  - Warn others and get an adult
  - Ring Triple Zero (000)
- Quiz students on electricity hazards, safety precautions and who to seek help from in an emergency situation.
- Explain to the class that they are going to continue to work in their groups to come up with some solutions to the lack of education around electrical safety that they identified in their surveys.
- Divide the class into their groups and ask them to select the messages that they feel the community knew least about.
- Ask each group to design an education campaign to teach their safety message. This could include signs, logos, mantras, jingles, skits, videos, etc.
- Encourage groups to assign roles for this campaign.
- Provide time for the planning phase of the education campaign, emphasising the need to ensure a strong safety message.
- Encourage students to make notes and draw up plans for their campaign including scripts where necessary.
- Allow students to use technology for researching, recording and filming their campaign.
- Have students add any new words to the word wall.

STEM DESIGN CHALLENGE

Design and make a 3D model for use in your presentation. Your model should include the electrical safety messages included in your project.

LESSON 4 - Electrical safety campaign presentation

- Ask each group to give a progress report to the class on their safety message campaign.
- Ensure that each group has taken into consideration just who their target audience is and how they can communicate their message to educate that audience.
- Ask students to give feedback and offer suggestions to other groups.
- Allow time for each group to edit their campaign and prepare to present their work to the class.
- Reassemble the class for group presentations.
- Encourage each group to take their presentation to their target audience.

Year 5&6

CURRICULUM LINKS

HEALTH AND PHYSICAL EDUCATION

Personal, Social and Community Health

Being healthy, safe and active

- **ACPPS053** Investigate community resources and ways to seek help about health, safety and wellbeing
- **ACPPS054** Plan and practise strategies to promote health, safety and wellbeing

Contributing to healthy and active communities

- **ACPPS058** Investigate the role of preventive health in promoting and maintaining health, safety and wellbeing for individuals and their communities

MATHEMATICS

Statistics and Probability: Data representation and interpretation

- **ACMSP118** Pose questions and collect categorical or numerical data by observation or survey

ENGLISH

YEAR 5

Literacy: Interacting with others

- **ACELY1699** Clarify understanding of content as it unfolds in formal and informal situations, connecting ideas to students' own experiences and present and justify a point of view
- **ACELY1796** Use interaction skills, for example paraphrasing, questioning and interpreting non-verbal cues and choose vocabulary and vocal effects appropriate for different audiences and purposes
- **ACELY1700** Plan, rehearse and deliver presentations for defined audiences and purposes incorporating accurate and sequenced content and multimodal elements

Literacy: Interpreting, analysing, evaluating

- **ACELY1701** Identify and explain characteristic text structures and language features used in imaginative, informative and persuasive texts to meet the purpose of the text
- **ACELY1703** Use comprehension strategies to analyse information, integrating and linking ideas from a variety of print and digital sources

Literacy: Creating texts

- **ACELY1704** Plan, draft and publish imaginative, informative and persuasive print and multimodal texts, choosing text structures, language features, images and sound appropriate to purpose and audience

YEAR 6

Literacy: Interacting with others

- **ACELY1709** Participate in and contribute to discussions, clarifying and interrogating ideas, developing and supporting arguments, sharing and evaluating information, experiences and opinions
- **ACELY1816** Use interaction skills, varying conventions of spoken interactions such as voice volume, tone, pitch and pace, according to group size, formality of interaction and needs and expertise of the audience
- **ACELY1710** Plan, rehearse and deliver presentations, selecting and sequencing appropriate content and multimodal elements for defined audiences and purposes, making appropriate choices for modality and emphasis

Literacy: Interpreting, analysing, evaluating

- **ACELY1711** Analyse how text structures and language features work together to meet the purpose of a text
- **ACELY1713** Use comprehension strategies to interpret and analyse information and ideas, comparing content from a variety of textual sources including media and digital texts
- **ACELY1801** Analyse strategies authors use to influence readers

Literacy: Creating texts

- **ACELY1714** Plan, draft and publish imaginative, informative and persuasive texts, choosing and experimenting with text structures, language features, images and digital resources appropriate to purpose and audience

Year 5&6

TEACHER BACKGROUND NOTES

BEFORE YOU START THE LESSONS FOR YEAR 5 AND 6, REVIEW THE PREVIOUS YEAR 3 AND 4 LESSONS

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. So, look up before you fly and be careful!
- Never climb a tree that is near powerlines. Look up before you climb!
- After a storm, fallen powerlines can be hidden in trees and branches. If you see a fallen powerline, there is a strong chance they are still live Stay at least 10 metres* clear of them, warn others and ask an adult to call Triple Zero (000.)

**To help students understand the 10 metre distance, a TasNetworks representative will measure the distance out with students during the presentation. Teachers could provide some real-life examples (i.e. approximately one third of a netball court or two and a half medium size cars.)*

*Live powerlines mean that electricity is still running along them & around them (conducting electricity) –remember, you don't have to touch the powerline to get a shock

SAFETY AROUND METAL

We all come into contact with metal objects everyday – 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! Electricity will travel through the metal object into your body.
- Never put anything in a power point that's not meant for it.
- 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 causing an electric shock
- Shocks and tingles can be a sign that something's wrong with the electricity supply. If you get a shock from an electrical appliance or water taps, ask an adult to report it immediately. Shocks & tingles should be reported to TasNetworks on 132 004

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.

Remember:

- Never touch electrical appliances or switches with wet hands.
- Don't use electrical appliances or touch switches while standing on wet ground with bare feet.
- Keep all electrical appliances away from water like swimming pools and filled baths and basins.

DANGEROUS SITUATIONS

Always be on the lookout for dangers in and around your home. This could be anything from frayed and damaged electrical leads (where you can see the wires) to a 'stacked', 'overloaded' or 'piggy- backed' power point – one with too many plugs in it. These situations could be life threatening. Wrapping frayed or damaged cords with tape is not fixing them. A licensed electrical contractor should be called in to fix the, instead of your parent or carer.

Remember:

- Faulty appliances and broken cords should be turned off at the power point and fixed by a licensed electrical contractor or replaced. Broken cords are dangerous and give us no protection. Taping leads doesn't fix them, it just hides the problem and you could still get a shock if you use an appliance with a broken cord.
- Never 'piggy back' or 'overload' double adapters in power points. Use a power board or have extra power points installed. Overloaded power points with 'piggy backed' plugs can overheat and cause fires.

Before you or your family do any major digging in the yard, you should get a parent/carer to either call Dial Before You Dig on 1100, visit www.1100.com.au or download the free Dial Before You Dig app to make sure there are no underground cables near your property. If you hit one you could be hurt, as well as possibly interrupting the power to your suburb.

ELECTRICITY SUBSTATIONS AND POWER STATIONS

You will find electricity substations and power equipment everywhere. 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. Never climb over the security fence into a substation or power station. The equipment inside can kill.

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 and power stations contain special equipment with invisible hazards. You don't even have to touch anything to get hurt. Just being too close to some electrical equipment can be dangerous and may even kill you!
- Don't attempt to retrieve balls or toys that may have gone over a substation or power station fence.

ELECTRICITY POLES AND TOWERS

Never attempt to climb an electricity pole or high voltage transmission tower. Near approach to high voltage lines is enough to kill you.

ELECTRICAL POWERLINES

Powerlines are part of our landscape and sometimes it's easy to forget they're there. But coming in to contact with powerlines can result in injury or even death. That's why if you're playing, working, driving or doing anything close to powerlines, you need to Look Up, Look Out.

It is unsafe to play with kites, or go fishing under powerlines. You do not need to be touching the powerline to get a shock because electricity conducts outside the powerline and we only need to just be close enough to it.

If something gets stuck on a powerline, you should:

- Leave it
- Call TasNetworks
- Don't touch it
- Stay at least 10 meters away

Throwing things over powerlines can make them sag and bring them closer to the ground making it unsafe.

If you see a fallen powerline:

- Don't touch it
- Kangaroo Hop* to safety
- Call emergency services on Triple 000

* Kangaroo Hop is hopping with feet together away from the wires. We do this because it tricks the electricity into thinking only one part of us is touching the ground. There needs to be two points of contact with the electricity and the ground. Electricity works in a circuit and only moves in the one direction (it won't go up and down the same line.) It needs an entry point and an exit point to shock you.

ELECTRICAL EMERGENCIES

We all hope that we are never in an emergency involving electricity (e.g. damaged cords, fallen powerlines or a car accident) but if we are, it's important to know what to do.

If you come across an emergency involving electricity:

- Ensure your own safety
- Turn the power off at the power point and remove the plug (if it is safe for you to do so)
- Turn to power off at the main switch (ask an adult)
- Warn others and get an adult
- Ring Triple Zero (000)

Powerlines are part of our landscape and sometimes it's easy to forget they're there. Coming into contact with powerlines can result in serious injury or even death. That's why if you're working, driving or doing anything close to powerlines, you need to Look Up, Look Out.

Stay safe – follow these rules:

- Check the location of all powerlines before you start work
- Know the exact height of your vehicle and equipment – especially when your tray or excavator is fully raised or extended
- Always use an observer to monitor your clearances
- Never attempt to climb or throw objects at transmission towers – this can put you at risk of electrocution
- Never allow anyone to ride on a high load, especially when travelling underneath powerlines
- Irrigation pipes being moved near powerlines should be kept below head level to avoid any possible contact with overhead powerlines
- Keep jets of water from travelling irrigators clear of overhead powerlines as they can cause the powerlines to touch and could result in a loss of power supply, system disturbances or even a fire
- Never store or locate irrigation pipes, plant, machinery or any other potentially conductive material under powerlines

Repairing damaged electrical infrastructure is a costly exercise for us and we may recover costs from individuals or businesses responsible for any damage to infrastructure as a result of encroaching the minimum safe clearance distances.

What to do if powerlines fall

Severe weather, falling trees and vehicle accidents can bring down powerlines. Fallen powerlines are dangerous and should not be touched or approached under any circumstances. Always assume wires are live and capable of causing injury or even death.

If you find powerlines on the ground:

- Assume all powerlines are live and capable of causing injury or even death
- Keep yourself, other people and machinery 10 metres from powerlines
- Call us on 132 004 or emergency services on 000 for help immediately

Be aware any object that comes into contact with powerlines could be live. The area is more dangerous in wet conditions as water is an excellent conductor of electricity. Any metallic object, including fences, will be electrified if they touch or are even close to a live fallen powerline. Even a tree branch can be a potential conductor of electricity if it is in contact with a live powerline.

When a vehicle collides with a power pole

Vehicle accidents can sometimes involve our infrastructure, including collisions with power poles. If you find yourself in a situation where a powerline is in contact with your vehicle, stay inside the vehicle until help arrives. No one should touch or approach the vehicle. Instead, call emergency services immediately on 000 or us on 132 004.

If you believe your life is threatened by staying inside the vehicle:

1. Open the door
2. Avoid touching the ground and the car at the same time
3. Jump clear, landing with both feet together
4. Shuffle or make small jumps with your feet constantly together (kangaroo hop) until you're at least 10 metres from the vehicle
5. If you fall when jumping clear of the vehicle, do not attempt to get up, roll away from the vehicle

KEY SAFETY MESSAGES

It is important to ensure that all students are aware of the safety messages at the completion of the activities.

- Always pick a safe place to play
- Stop, look up and look out
- Don't go near danger signs
- Don't play close to powerlines
- Kangaroo hop to safety

Years 5&6 Lessons

How can we keep people safe around electricity?

Note to Teachers: If your students have seen the TasNetworks presentation, encourage them to think about what they might remember from it when completing the following activities.

LESSON 1 - Electricity hazards

- Lead a discussion on the hazards that students might encounter around electricity. Discuss the safety messages and emergency procedures for electricity.

Safety messages

- Always pick a safe place to play
- Stop, look up and look out
- Don't go near danger signs
- Don't play close to powerlines
- Kangaroo hop to safety

Emergency procedures

- Ensure your own safety
- Turn the power off at the power point and remove the plug (if you are able to do so)
- Get an adult
- Ring 000

- Divide the class into groups and ask the students to create a list of potential electricity hazards in and around the home.
- Encourage them to think of dangerous situations in addition to those found at school, at home and in the playground e.g. the beach, the sporting field, shopping centres, etc.
- Ask the students to create a "what to do" list for each hazard that they have listed.
- Have the students choose their top three hazards and create a poster to warn others of the dangers.
- Reassemble the students and ask each group to share their hazards and safety tips with the class.
- Display the posters in the classroom or around the school.
- Create a word wall for any new words or meta-language.

Bright Sparks Supporting Activity Sheets

- Shocker's bathroom is overflowing with danger

LESSON 2 - Electricity safety audit

- Assemble the class and quiz them on the safety messages and emergency procedures.
- Explain to the class that they are going to conduct an electricity safety audit in the classroom or around the school.
- Discuss what things they may be looking for when conducting an electricity safety audit, e.g. overloaded power boards, frayed cords, etc.
- Divide the class into groups and ask the students to design an electricity safety audit sheet.
- Ask the students to compose a message notifying the classroom teachers that they will be conducting an electricity safety audit of their classrooms.
- Ask the students to carry out the electricity safety audit of the classroom or school.
- At the completion of the audit the students should compose letters to teachers with safety advice on making their classrooms safe.
- The letters should be delivered to the teachers.
- Ask the students to carry out their safety audit at home for homework.
- Add new words to the word wall.

STEM DESIGN CHALLENGE

Design and make a 3D model of an area in the classroom or school where a hazard has been identified as a result of your safety audit. Your model should show how the hazard can be avoided.

Bright Sparks Supporting Activity Sheets

- **Safety in the lounge room**
- **Electrical safety at home**

LESSON 3 - Powerline safety campaign video

- Ask the students to reflect on what they have learnt so far about electrical safety.
- Ask them to discuss what they believe the biggest issues of electrical safety are outside (e.g. substations, powerlines, etc.)
- Discuss with students what they should do if they see a fallen powerline (stay 10 metres away, warn others, tell an adult and call Triple Zero.)
- View the 'Always Look Up, Look Out Near Powerlines' and 'Stay Away from Fallen Powerlines' safety campaign videos. These videos can be located on the TasNetworks YouTube channel:

  www.youtube.com/user/TasNetworks
- Ask students to identify how the makers of these campaigns have used these concepts:
  - **INTENT**: what is the purpose of the advertisement? What is it trying to tell us?
  - **AUDIENCE**: who is the target audience? How do we know?
  - **STRUCTURE**: How long does it go for and what kind of techniques (visual and verbal) do they use?
  - **IMAGES**: What pictures, colours, scenery and props are used?
  - **CHARACTERS**: What sort of characters are used?
  - **SETTING**: What setting(s) have they used? Why?
  - **SOUND**: What kind of sound effects are used?
- Explain that they are going to work in groups to create a 30-second campaign video that focuses on educating people in their local community e.g. tradespeople, farmers, adults, young children, etc. about safety around powerlines. Try to link the campaign to powerline dangers in your local area:
  - Are storms and cyclones common in your town?
  - Are there farmers that use tractors or harvesters near powerlines?
  - Are there powerlines near your footy field or netball courts?
- Encourage groups to assign roles for this campaign.
- Provide time for the planning phase of the campaign, emphasising the need to ensure a strong safety message. When planning, consider: intent, audience, structure, images, characters, setting and sound.
- Allow students to use technology for researching, recording and filming their campaign.
- Have students add any new words to the word wall.

LESSON 4 - Powerline safety campaign presentation

- Ask each group to present their proposed campaign to the class.
- Ask students to give feedback and offer suggestions to other groups.
- Allow time for each group to edit their campaign.
- Reassemble the class for group presentations of their final campaigns.
- Encourage each group to take their presentation to their target audience.

GLOSSARY

Appliance: A device, machine, or piece of equipment, especially an electrical one that is used in the house, such as a cooker or washing machine.

Atom: The smallest unit of any chemical element, consisting of a positive nucleus surrounded by negative electrons. Atoms can combine to form a molecule.

Circuit: A complete path through which an electric current can flow.

Conduct: To allow electricity or heat to go through.

Conductor: A substance that allows electricity to go through it.

Electricity: The flow of electrical power or charge. A secondary energy source that we get from the conversion of other sources of natural energy like water, natural gas and coal, which are called primary sources.

Electrified: When an object becomes charged with electricity when it was not before, e.g. if a fallen powerline comes into contact with an object like a car, the car will become live with electricity.

Electrocution: When electricity is sent through someone's body, causing death.

Electron: The basic particle that orbits the nucleus of an atom.

It can be stimulated to movement by various forces like magnetism and has a negative charge.

Energy: The capacity to do work, or vigorous activity fuelled by various sources.

Excavator:	A large, powerful machine with a container connected to a long arm, used for digging up the ground.
Frayed:	In the case of electrical leads, it is when the insulating threads or plastic coating comes loose.
Hazard:	Something that is dangerous and likely to cause damage.
Ignite:	To (cause to) start burning.
Incident:	An event that is either unpleasant or unusual.
Infrastructure:	The basic systems and services, such as power supplies, that a country or organization uses in order to work effectively.
Irrigation Pipes:	Pipes that supply the land with water.
Molecule:	A particle made up of two or more atoms that are chemically bonded together.
Power Board:	A portable device consisting of a plug, power cord and one or more rows of electrical sockets, allowing multiple electrical devices to be powered from a single electrical socket.
Power Point:	A socket in a wall for connecting a device to an electricity supply.
Power Station:	A factory where electricity is produced.
Powerline:	A cable carrying electrical power, especially one supported by pylons or poles.
Powerline:	A structure used in electric power transmission and distribution to transmit electrical energy across large distances.
Practices:	The act of doing something regularly or repeatedly to improve your skill at doing it.
Substation:	A place where high-voltage electricity from power stations is converted to lower-voltage electricity for homes and businesses.
Transmission: Tower	A tall structure, usually a steel lattice tower, used to support an overhead powerline. Also called a Power Tower.
Voltage:	The force of an electric current, measured in volts.

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