



SAFETY HEROES

P-6

LESSON BOOKLET

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Part of Energy Queensland

INTRODUCTION

Electricity is part of our everyday lives.

We use it for lighting, air conditioning, computers, telephones and games.

You cannot always see it, but it's all around us.

Staying safe around electricity is everyone's responsibility. You should always watch out for yourself, your friends and family.

This Lesson Booklet for P-6 teachers aligns with the Australian Curriculum Version 9: Health and Physical Education and English, and some key content descriptions for Mathematics, Science and Drama. The relevant achievement standards have been included to assist teachers to plan assessment. The resource provides opportunities for students to learn about electricity safety through a series of activities. The content can be taught in an integrated way or in learning area lessons in either multi-age or year level groupings.

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Australian Curriculum HPE Content

Personal, social and community health:

Being healthy, safe and active

- Demonstrate protective behaviours, name body parts and rehearse help-seeking strategies that help keep them safe (AC9HPFP05).

Relevant achievement standard:

Students:

- Identify and demonstrate protective behaviours and help-seeking strategies to keep themselves safe.
- Identify how health information can be used in their lives.

Australian Curriculum English Content

Language: For expressing and developing ideas

Recognise and develop awareness of vocabulary used in familiar contexts related to everyday experiences, personal interests and topics taught at school (AC9EFLA08).

Literacy: Interacting with others

Interact in informal and structured situations by listening while others speak and using features of voice including volume levels (AC9EFLY02).

Literacy: Creating texts

Create and participate in shared editing of short written texts to record and report ideas and events using some learnt vocabulary, basic sentence boundary punctuation and spelling some consonant-vowel-consonant words correctly (AC9EFLY06).

Relevant achievement standards:

Students:

- Listen to texts, interact with others and create short spoken texts, including retelling stories. They share thoughts and preferences, retell events and report information or key ideas to an audience.
- They use language features including words and phrases from learning and texts.
- They retell, report information, and state their thoughts, feelings and key ideas. They use words and phrases from learning and texts.
- They form letters, spell most consonant-vowel-consonant words and experiment with capital letters and full stops.

Australian Curriculum Drama Content

Drama

Use play, imagination, arts knowledge, processes and/or skills to discover possibilities and develop ideas (AC9ADRF01).

- Exploring their speaking voice and discovering ways to use their voices/vocalisation to communicate ideas and feelings.
- Improvising movements to explain the steps in a process, and then using a camera to capture a series of images or a photographic story that can be displayed in the classroom to remind everybody about the process.

Create arts works that communicate ideas (AC9ADRFC01).

Relevant achievement standard:

Students:

- Use play, imagination, arts knowledge, processes and/or skills to create and share arts works in different forms.

Assessment ideas:

Give students a picture or series of pictures that depicts an electrical hazard or unsafe situation and ask them to use some of the words they have learned to explain the danger and what they should do to make themselves or others safe. Use a checklist or observation sheet to ensure they:

- can recognise and use some of the words that have been taught
- can retell what to do to make a situation or themselves safe
- can use their voice effectively to inform others of danger.

TEACHER BACKGROUND NOTES

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!



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 fallen 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).



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 (like a fallen powerline) 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).
- Warn others and get an adult.
- Call triple zero (000).

* To help students understand the 10 metre distance, teachers can measure it out on the school playground or provide some real-life examples (i.e. approximately one third of a netball court or two and a half medium size cars).

PREP LESSONS

LESSON 1 – Safe outdoor play

- Ask students to give examples of types of outdoor play that are safe and types of outdoor play that are unsafe. Discourage students from telling tales about the play habits of other students in this discussion.
- Make a list of the suggestions for safe and unsafe play.
- Have students offer suggestions about what they should do if they see someone playing unsafely.
- Discuss the emergency and safety messages they see in media and on safety signs
- Ask the students whom they should go to in an emergency.
- Go outside and role-play safe play and what to do when someone is playing unsafely.
- In pairs, develop short scenarios that students can act out to their peers to communicate safety messages.
- Ask students to draw a picture of someone playing safely and have them write a safe message under the drawing. This can be a modeled sentence for beginner writers **OR** use the SUPPORTING ACTIVITY SHEET 1 (p7) to prompt further class discussions about safe play and what to do in emergency situations.
- 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.

LESSON 2 – What to do in unsafe outdoor situations

- Divide the class into groups and give each group a set of picture cards (p8).
- 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.
- 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.

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

PREP LESSONS

LESSON 3 – Safe indoor play

- Discuss playing safely indoors with the whole class.
- Ask students to give examples of types of 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 (p9) that depict rooms in a home. 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.
- Add new safety vocabulary to the display.

LESSON 4 – What to do in unsafe indoor situations

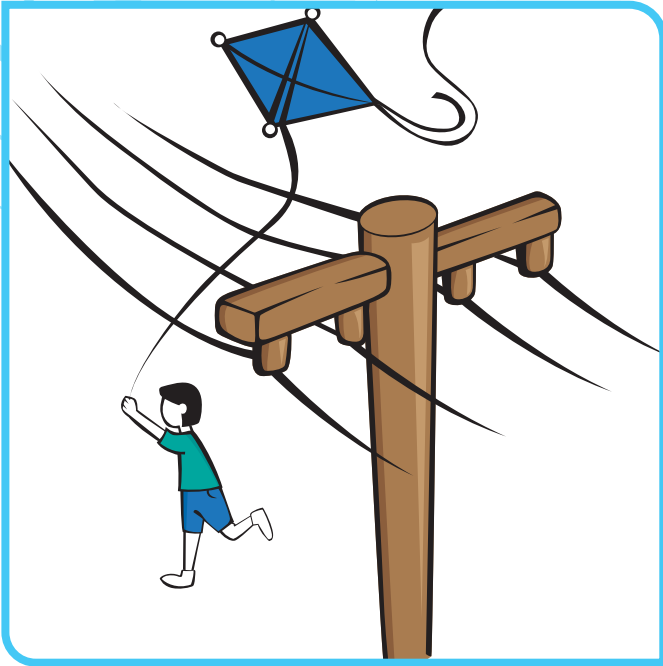
- Regroup the class and ask them to bring their room posters with them.
- Discuss with the students the possible dangers associated with each appliance.
- Display a set of picture cards (p10) that depict dangers.
- Ask the students to suggest what to do if they encounter a dangerous situation with each appliance.
- Remind students of the safety tips that they have learnt for dangerous situations.
 - Stay clear
 - Tell an adult
 - Call triple zero (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 and rehearse what they would say to an operator on the telephone if there was an emergency using relevant language, tone and vocal clarity.
 - **What happens when you call triple zero (000)?**
 - You will first hear this recorded message: “You have dialed emergency triple zero. Your call is being connected.”
 - An operator will answer your call and ask whether you need police, fire and rescue or ambulance.
 - You do not need to explain your emergency to the operator; simply let them know which service you need.
 - **If you call triple zero:**
 - stay calm and give the operator all the relevant details.
 - don't hang up until you have spoken to emergency services.

PREP

LESSON 1 SUPPORTING ACTIVITY SHEET

ACTIVITY A:

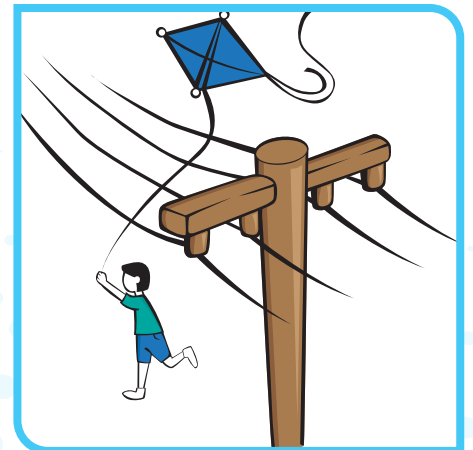
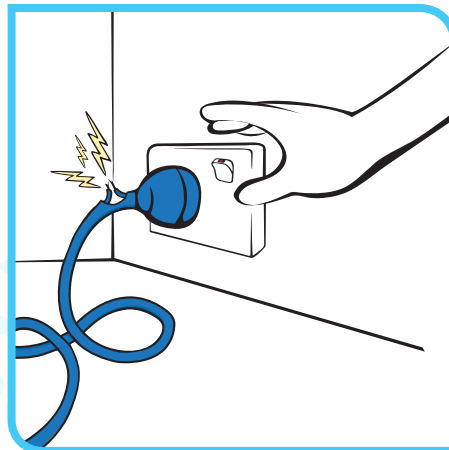
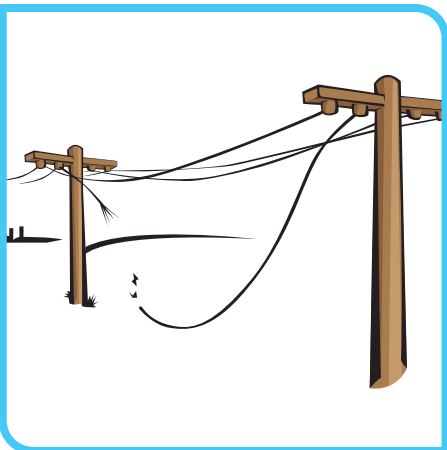
Which is a better place to fly a kite? Why is your choice a safe one?



Remember, be careful around electricity poles and wires when you play!

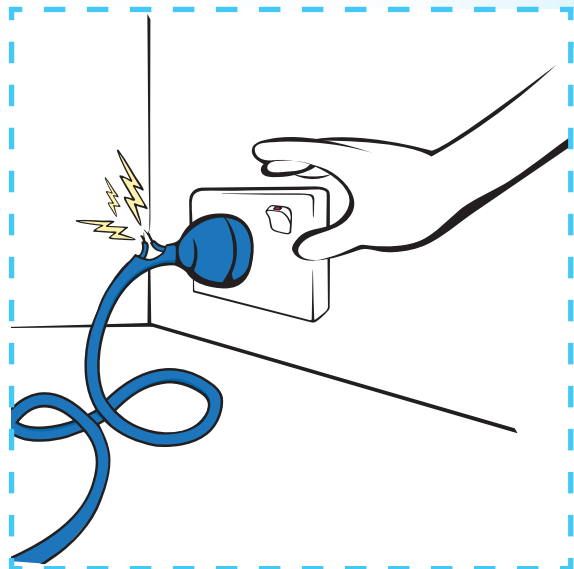
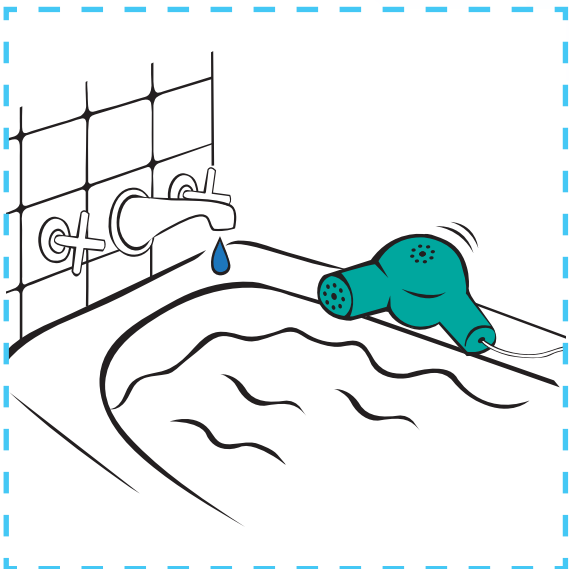
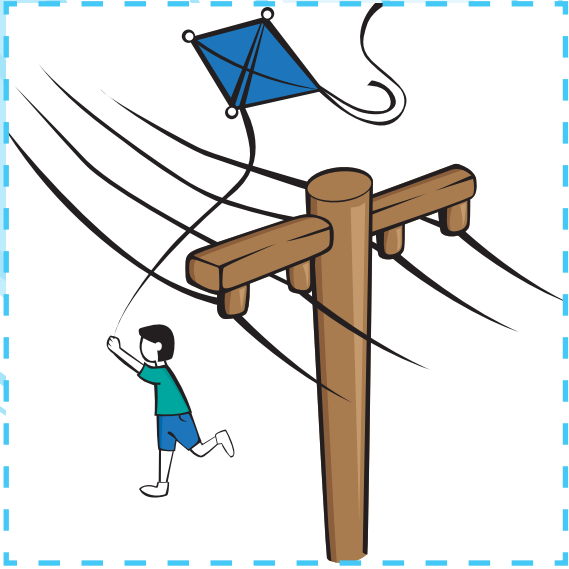
ACTIVITY B:

What would you do in these situations?



Remember, if you see a dangerous situation, tell an adult.

PREP LESSON 2 PICTURE CARDS



PREP

LESSON 3 WORD CARDS

KITCHEN

BATHROOM



LIVING ROOM

BEDROOM

PREP

LESSON 4 PICTURE CARDS



YEAR 1 AND 2

Australian Curriculum HPE Content

Personal, social and community health:

Being healthy, safe and active

Content Description

Identify and demonstrate protective behaviours and help-seeking strategies they can use to help them and others stay safe (AC9HP2P05).

Elaboration

- Recognising photos and locations of safe places and a network of people who can help.
- Discussing the importance of seeking help when problems are too big to solve by themselves.
- Exploring how characters in texts use protective behaviours and help-seeking strategies to keep themselves and others safe.

Contributing to healthy and active communities

Content Description

Investigate a range of health messages and practices in their community and discuss their purposes (AC9HP2P06).

Elaboration

Explore sustainable practices that students can implement in the classroom to improve the health and wellbeing of the class.

Australian Curriculum Drama Content

Use the elements of drama and imagination in dramatic play and/or process drama (AC9ADR2D01).

Create and co-create fictional situations based on imagination and/or experience (AC9ADR2C01).

Share their drama in informal settings (AC9ADR2P01).

Relevant Achievement Standard:

Students:

- pretend and imagine as they create roles and situations in improvised drama and/or dramatic play.
- perform their drama in informal settings.

Assessment Ideas:

Students choose one of the Safety Heroes and give them a name. They suggest a safety message that identifies their Safety Hero. They act out an improvised scenario where their Safety Hero delivers their safety message. They use appropriate vocabulary and create a convincing character.

YEAR 1 AND 2

Australian Curriculum English Content

YEAR 1	YEAR 2
Language: Language for interacting with others	
Understand how language, facial expressions and gestures are used to interact with others when asking for and providing information, making offers, exclaiming, requesting and giving commands (AC9E1LA01)	Explore how language can be used for appreciating texts and providing reasons for preferences (AC9E2LA02)
Language: Text structure and organisation	
Explore how texts are organised according to their purpose, such as to recount, narrate, express opinion, inform, report and explain (AC9E1LA03)	Identify how texts across the curriculum are organised differently and use language features depending on purposes (AC9E2LA03). Understand how texts are made cohesive by using personal and possessive pronouns and by omitting words that can be inferred (AC9E2LA04)
Language: For expressing and developing ideas	
Compare how images in different types of texts contribute to meaning (AC9E1LA08)	Experiment with and begin to make conscious choices of vocabulary to suit the topic (AC9E2LA09)
Literacy: Interacting with others	
Use interaction skills including turn-taking, speaking clearly, using active listening behaviours and responding to the contributions of others, and contributing ideas and questions (AC9E1LY02)	Use interaction skills when engaging with topics, actively listening to others, receiving instructions and extending own ideas, speaking appropriately, expressing and responding to opinions, making statements, and giving instructions (AC9E2LY02)
Literacy: Creating texts	
Create and deliver short oral and/or multimodal presentations on personal and learnt topics, which include an opening, middle and concluding statement; some topic-specific vocabulary and appropriate gesture, volume and pace (AC9E1LY07)	Create and edit short imaginative, informative and persuasive written and/or multimodal texts for familiar audiences, using text structure appropriate to purpose, simple and compound sentences, noun groups and verb groups, topic-specific vocabulary, simple punctuation and common 2-syllable words (AC9E2LY06)

Relevant Achievement Standards:

Year One:

Students:

- interact with others, and listen to and create short spoken texts including recounts of stories.
- share ideas and retell or adapt familiar stories, recount or report on events or experiences, and express opinions using a small number of details from learnt topics, topics of interest or texts.
- sequence ideas and use language features including topic-specific vocabulary and features of voice.
- report information and experiences, and express opinions.
- use topic-specific vocabulary.

Year Two:

Students:

- interact with others, and listen to and create spoken texts including stories.
- share ideas, topic knowledge and appreciation of texts when they recount, inform or express an opinion, including details from learnt topics, topics of interest or texts.
- organise and link ideas, and use language features including topic-specific vocabulary and features of voice.
- use punctuation for phrasing and fluency.
- use topic-specific vocabulary.

TEACHER BACKGROUND NOTES

Before you start the lesson for Year 1 and 2, review the previous prep lesson.

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' or 'piggy-backed' power point – one with too many plugs in it. These situations could be life threatening and a licensed electrical contractor should be called in to fix them instead of your Mum or Dad. Wrapping frayed or damaged cords with tape is not fixing them.

Remember:

- Faulty appliances and damaged electrical leads should be turned off at the power point and fixed or replaced by a licensed electrical contractor.
- Never 'piggyback' 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 Mum or Dad to visit Before You Dig Australia www.byda.com.au or download the free smartphone 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!
- 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.
- 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.



SAFETY AROUND WATER

Like metal, 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. 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.

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!

YEAR 1 AND 2 LESSONS

LESSON 1 – Safety around electrical wires and cords

- Assemble the class and tell them that they are going to learn about electricity and why we 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).
- Listen to a story where a character must respond to an emergency situation. Recount the story in their own words to demonstrate they understand the safety message.
- Divide the class into groups and give each group a scenario that has unsafe practices and ask each group to present a role-play of what to do in an emergency.
- 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.
 - **Don't play near electrical equipment or powerlines.**
 - If you see a dangerous situation, tell an adult.
 - **Know what to do in an electrical emergency.**
 - Be safe.
- Create a wall display of any topical words and messages.

LESSON 2 – Safety messages for electrical wires and cords

- 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.
- 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.

YEAR 1 AND 2 LESSONS

LESSON 3 – Safety signs and symbols

- Show the class some samples of common warning or safety signs.
- 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.

LESSON 4 – Electrical safety signs and symbols

- Review the safety messages from Lesson 1.
- Show the class some electrical safety signs and symbols.
- Discuss why signs and symbols are used and how they function as a text.
- Discuss where these might be displayed and why.
- Ask the students why it is important to have electrical 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 (e.g. Appliances near water, forks in toasters, overloaded power boards, frayed electrical cords, sticking objects in sockets, ladders near powerlines, kites near powerlines, drones near powerlines, 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 an electrical safety sign for their chosen dangerous situation.
- Ask students to share their safety signs with the class and discuss and write any new words.
- 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.
- Add new words to display wall.
- Create short texts about the purpose of signs and symbols in our environment.

EXTENSION STEM CHALLENGE

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

YEAR 3 AND 4

Australian Curriculum HPE Content

Personal, social and community health:

Being healthy, safe and active

Investigate and apply behaviours that contribute to their own and others' health, safety, relationships and wellbeing (AC9HP4P10).

Relevant Achievement Standard:

Students describe and apply protective behaviours and help-seeking strategies to keep themselves and others safe online and offline. They interpret health information to apply strategies to enhance their own and others' health, safety, relationships and wellbeing.

Australian Curriculum Drama Content

Use the elements of drama to explore and develop ideas for dramatic action in improvisations and/or devised drama (AC9ADR4D01).

Improvise and/or devise and shape drama using the elements of drama to communicate ideas, perspectives and/or meaning (AC9ADR4C01).

Perform improvised and/or devised drama in informal settings (AC9ADR4P01).

Relevant Achievement Standard:

Students:

- collaborate to improvise and/or devise drama that communicates ideas, perspectives and/or meaning. They perform their work in informal settings.

Australian Curriculum English Content

YEAR 3	YEAR 4
Language: For expressing and developing ideas	
Understand how verbs represent different processes for doing, feeling, thinking, saying and relating (AC9E3LA07)	Expand vocabulary by exploring a range of synonyms and antonyms, and using words encountered in a range of sources (AC9E4LA11)
Literacy: Texts in context	
Recognise how texts can be created for similar purposes but different audiences (AC9E3LY01)	
Literacy: Interacting with others	
Use interaction skills to contribute to conversations and discussions to share information and ideas (AC9E3LY02)	Listen for key points and information to carry out tasks and contribute to discussions, acknowledging another opinion, linking a response to the topic, and sharing and extending ideas and information (AC9E4LY02)
Literacy: Creating texts	
Plan, create, edit and publish imaginative, informative and persuasive written and multimodal texts, using visual features, appropriate form and layout, with ideas grouped in simple paragraphs, mostly correct tense, topic-specific vocabulary and correct spelling of most high-frequency and phonetically regular words (AC9E3LY06)	Plan, create, edit and publish written and multimodal imaginative, informative and persuasive texts, using visual features, relevant linked ideas, complex sentences, appropriate tense, synonyms and antonyms, correct spelling of multisyllabic words and simple punctuation (AC9E4LY06)
Plan, create, rehearse and deliver short oral and/or multimodal presentations to inform, express opinions or tell stories, using a clear structure, details to elaborate ideas, topic-specific and precise vocabulary, visual features, and appropriate tone, pace, pitch and volume (AC9E3LY07)	Plan, create, rehearse and deliver structured oral and/or multimodal presentations to report on a topic, tell a story, recount events or present an argument using subjective and objective language, complex sentences, visual features, tone, pace, pitch and volume (AC9E4LY07)

YEAR 3 AND 4

Australian Curriculum Science Content

YEAR 3	YEAR 4
Consider how people use scientific explanations to meet a need or solve a problem (AC9S3H02)	Consider how people use scientific explanations to meet a need or solve a problem (AC9S4H02)
Pose questions to explore observed patterns and relationships and make predictions based on observations (AC9S3I01)	Pose questions to explore observed patterns and relationships and make predictions based on observations (AC9S3I01)
Construct and use representations, including tables, simple column graphs and visual or physical models, to organise data and information, show simple relationships and identify patterns (AC9S3I04)	Construct and use representations, including tables, simple column graphs and visual or physical models, to organise data and information, show simple relationships and identify patterns (AC9S3I04)
Write and create texts to communicate findings and ideas for identified purposes and audiences, using scientific vocabulary and digital tools as appropriate (AC9S3I06)	Write and create texts to communicate findings and ideas for identified purposes and audiences, using scientific vocabulary and digital tools as appropriate (AC9S3I06)

Relevant Achievement Standard:

Year Three:

- Identify solutions that use scientific explanations.
- Pose questions to explore patterns and relationships and make predictions based on observations
- Communicate ideas and findings for an identified purpose, including using scientific vocabulary when appropriate.

Year Four:

- Explain the role of data in science inquiry.
- Identify solutions based on scientific explanations and describe the needs these meet.
- Pose questions to identify patterns and relationships and make predictions based on observations.
- Use simple procedures to make accurate formal measurements.
- Construct representations to organise data and information and identify patterns and relationships.
- Communicate ideas and findings for an identified audience and purpose, including using scientific vocabulary when appropriate.

Australian Curriculum Mathematics Content

Statistics:

Year Three:

- Acquire data for categorical and discrete numerical variables to address a question of interest or purpose by observing, collecting and accessing data sets; record the data using appropriate methods including frequency tables and spreadsheets (AC9M3ST01).
- Create and compare different graphical representations of data sets including using software where appropriate; interpret the data in terms of the context (AC9M3ST02).

Year Four:

- Conduct statistical investigations, collecting data through survey responses and other methods; record and display data using digital tools; interpret the data and communicate the results (AC9M4ST03).

Assessment Ideas:

In this unit students develop a safety campaign and present it to the class (Lessons 3 and 4). Assess the performance of each group, ensuring that they:

- accurately convey the safety message using appropriate vocabulary, textual features and sentence structure
- effectively communicate their ideas
- meet the needs of their target audience.

Students investigate the discovery and development of electricity and describe the ways in which the discovery has been used to benefit society. They present a scientific paper with illustrations and representations of data to support their ideas.

TEACHER BACKGROUND NOTES

Before you start the lesson for Year 3 and 4, review the previous Year 1 and 2 lesson.

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

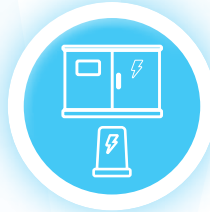


DANGEROUS SITUATIONS

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' or 'piggy-backed' power point – one with too many plugs in it. These situations could be life threatening and a licensed electrical contractor should be called in to fix them instead of your Mum or Dad. Wrapping frayed or damaged cords with tape is not fixing them.

Remember:

- Faulty appliances and damaged electrical leads should be turned off at the power point and fixed or replaced by a licensed electrical contractor.
- Never 'piggyback' 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 Mum or Dad to visit Before You Dig Australia www.byda.com.au or download the free smartphone 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

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.

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 (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).
- Warn others and get an adult.
- Call triple zero (000).

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!

YEAR 3 AND 4

LESSON 1 – Electrical safety in and around the home

- Assemble the class and lead a discussion on electrical safety.
- Ask the class to identify all 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 following safety messages:
 - **Don't play near electrical equipment or powerlines.**
 - If you see a dangerous situation, tell an adult.
 - **Know what to do in an electrical emergency.**
 - Be safe.
- 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.
- Start a word wall to display any new safety vocabulary introduced in the lesson.

LESSON 2 – Electrical safety survey

- 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 the results from their surveys.
- Ask the students to create a table for the responses and add all 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.

YEAR 3 AND 4

LESSON 3 – Electrical safety in and around the home

- Ask students to recite safety messages 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).
 - **Warn others and get an adult.**
 - **Call triple zero (000).**
- Quiz students on electricity hazards, safety precautions and who to seek help from in an emergency.
- 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.

EXTENSION STEM CHALLENGE

Design and make a 3D model for use in your Lesson 4 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.

LET'S GET CODING!

In collaboration with Code Club Australia powered by Telstra Foundation, we have created a Safety Heroes Scratch project targeted at Years 3 and 4 students.

Aligned with the Digital Technologies Curriculum, it's designed to be delivered in a 45 minute lesson. It will help students create an interactive quiz game about important electrical safety messages.

We have a beginner and advanced step-by-step lesson plan available via our website.

YEAR 5 AND 6

Australian Curriculum HPE Content

Personal, social and community health:

Being healthy, safe and active

- Investigate different sources and types of health information and how these apply to their own and others' health choices (AC9HP6P09).
- Analyse how behaviours influence the health, safety, relationships and wellbeing of individuals and communities (AC9HP6P10).
- Analyse and rehearse protective behaviours and help-seeking strategies that can be used in a range of online and offline situations (AC9HP6P08).

Relevant Achievement Standard:

Students:

- Explain how communication skills, protective behaviours and help-seeking strategies keep themselves and others safe online and offline.
- Analyse health information to refine strategies to enhance their own and others' health, safety, relationships and wellbeing.

Australian Curriculum Mathematics Content

Statistics:

Plan and conduct statistical investigations by posing questions or identifying a problem and collecting relevant data; choose appropriate displays and interpret the data; communicate findings within the context of the investigation (AC9M5ST03).

Relevant Achievement Standard:

Year Five:

They plan and conduct statistical investigations that collect nominal and ordinal categorical and discrete numerical data using digital tools. Students identify the mode and interpret the shape of distributions of data in context. They interpret and compare data represented in line graphs.

Year Six:

They compare distributions of discrete and continuous numerical and ordinal categorical data sets as part of their statistical investigations, using digital tools. Students critique arguments presented in the media based on statistics. They assign probabilities using common fractions, decimal and percentages.

Australian Curriculum Science Content

Physical Sciences:

- Investigate the transfer and transformation of energy in electrical circuits, including the role of circuit components, insulators and conductors (AC9S6U03).

Relevant Achievement Standard:

Students identify the role of circuit components in the transfer and transformation of electrical energy.

Australian Curriculum Drama Content

Explore ways to combine the elements of drama to communicate ideas, perspectives and/or meaning in improvisations, devised drama and/or scripted drama (AC9ADR6D01).

Develop characters and situations, and shape and sustain dramatic action to communicate ideas, perspectives and/or meaning in improvised, devised and/or scripted forms (AC9ADR6C01).

Rehearse and perform improvised, devised and/or scripted drama in informal and/or formal settings (AC9ADR6P01).

Relevant Achievement Standard:

Students work collaboratively as they combine elements of drama to shape and sustain dramatic action. They improvise and/or devise drama and/or interpret scripts. They perform their drama in informal and/or formal settings.

Assessment Ideas

- Students conduct an electrical safety audit.
- Interpret provided graphs and tables demonstrating electrical accidents.
- Students choose one of the Safety Heroes (on the cover of the booklet) and develop a presentation to the class (or a younger audience) with a safety message supported by visual and statistical evidence.

YEAR 5 AND 6

Australian Curriculum English Content

YEAR 5	YEAR 6
<p>Literacy: Interacting with others</p>	
<p>Use appropriate interaction skills including paraphrasing and questioning to clarify meaning, make connections to own experience, and present and justify an opinion or idea (AC9E5LY02)</p>	<p>Use interaction skills and awareness of formality when paraphrasing, questioning, clarifying and interrogating ideas, developing and supporting arguments, and sharing and evaluating information, experiences and opinions (AC9E6LY02)</p>
<p>Literacy: Analysing, interpreting and evaluating</p>	
<p>Explain characteristic features used in imaginative, informative and persuasive texts to meet the purpose of the text (AC9E5LY03)</p> <p>Use comprehension strategies such as visualising, predicting, connecting, summarising, monitoring and questioning to build literal and inferred meaning to evaluate information and ideas (AC9E5LY05)</p>	<p>Analyse how text structures and language features work together to meet the purpose of a text, and engage and influence audiences (AC9E6LY03)</p> <p>Use comprehension strategies such as visualising, predicting, connecting, summarising, monitoring and questioning to build literal and inferred meaning, and to connect and compare content from a variety of sources (AC9E6LY05)</p>
<p>Literacy: Creating texts</p>	
<p>Plan, create, edit and publish written and multimodal texts whose purposes may be imaginative, informative and persuasive, developing ideas using visual features, text structure appropriate to the topic and purpose, text connectives, expanded noun groups, specialist and technical vocabulary, and punctuation including dialogue punctuation (AC9E5LY06)</p>	<p>Plan, create, edit and publish written and multimodal texts whose purposes may be imaginative, informative and persuasive, using paragraphs, a variety of complex sentences, expanded verb groups, tense, topic-specific and vivid vocabulary, punctuation, spelling and visual features (AC9E6LY06)</p>

Relevant Achievement Standard:

Year Five:

Students:

- Interact with others, and listen to and create spoken and/or multimodal texts including literary texts. For particular purposes and audiences,
- Use language features including topic-specific vocabulary and literary devices, and/or multimodal features and features of voice.
- Read, view and comprehend texts created to inform, influence and/or engage audiences.
- Explain how characteristic text structures support the purpose of texts.
- Create written and/or multimodal texts, including literary texts, for particular purposes and audiences, developing and expanding on ideas with supporting details from topics or texts.
- Use paragraphs to organise, develop and link ideas. They use language features including complex sentences, tenses, topic-specific vocabulary and literary devices, and/or multimodal features.

Year Six:

Students:

- Interact with others, and listen to and create spoken and/or multimodal texts including literary texts.
- Use and vary language features including topic-specific vocabulary and literary devices, and/or multimodal features and features of voice.
- Read, view and comprehend different texts created to inform, influence and/or engage audiences.
- Identify how texts have similar and different text structures to reflect purpose.
- Create written and/or multimodal texts, including literary texts, for particular purposes and audiences, developing, explaining and elaborating on relevant ideas from topics or texts.
- Use text structures and vary paragraphs to organise, develop and link ideas.
- Use and vary language features including sentence structures, topic-specific vocabulary and literary devices, and/or multimodal features.

TEACHER BACKGROUND NOTES

Before you start the lesson for Year 5 and 6, review the previous Year 3 and 4 lesson.

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



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 fallen trees and branches. If you see fallen powerlines, 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, teachers can measure it out on the school playground or provide some real-life examples (i.e. approximately one third of a netball court or two and a half medium size cars).



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 must 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 through 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.
- 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.



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 in bare feet.
- Keep all electrical appliances away from water like swimming pools and filled baths and basins.

TEACHER BACKGROUND NOTES

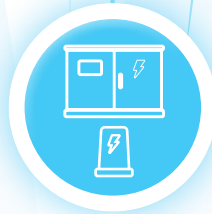


DANGEROUS SITUATIONS

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' or 'piggy-backed' power point – one with too many plugs in it. These situations could be life threatening and a licensed electrical contractor should be called in to fix them instead of your Mum or Dad. Wrapping frayed or damaged cords with tape is not fixing them.

Remember:

- Faulty appliances and damaged electrical leads should be turned off at the power point and fixed or replaced by a licensed electrical contractor.
- Never 'piggyback' 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 Mum or Dad to visit Before You Dig Australia www.byda.com.au or download the free smartphone 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

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.

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 (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).
- Warn others and get an adult.
- Call triple zero (000).

YEAR 5 AND 6

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

- Don't play near electrical equipment or powerlines.
- If you see a dangerous situation, tell an adult.
- Know what to do in an electrical emergency.
- Be safe.

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.
- Call triple zero (000).
- Divide the class into groups and ask the students to create a list of potential electricity hazards.
- 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.

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 school.
- At the completion of the audit the students should compose letters to teachers with safety advice on making their classrooms safe.
- Ask the students to carry out their safety audit at home for homework.
- Add new words to the word wall.

YEAR 5 AND 6

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 our safety campaign video. This video can be located on the Ergon Energy Network YouTube channel.
- Ask students to identify how the makers of this campaign 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. farmers, tradespeople, young children 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 sugar cane 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.

EXTENSION STEM CHALLENGE

Design and make a 3D model of an evacuation site for use in emergency situations. Your model could be specific to a school, work place or community area such as a sports ground or swimming pool.



STAY SAFE

**For more electrical
safety information visit:**

ergon.com.au/safetyheroes
energex.com.au/safetyheroes



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