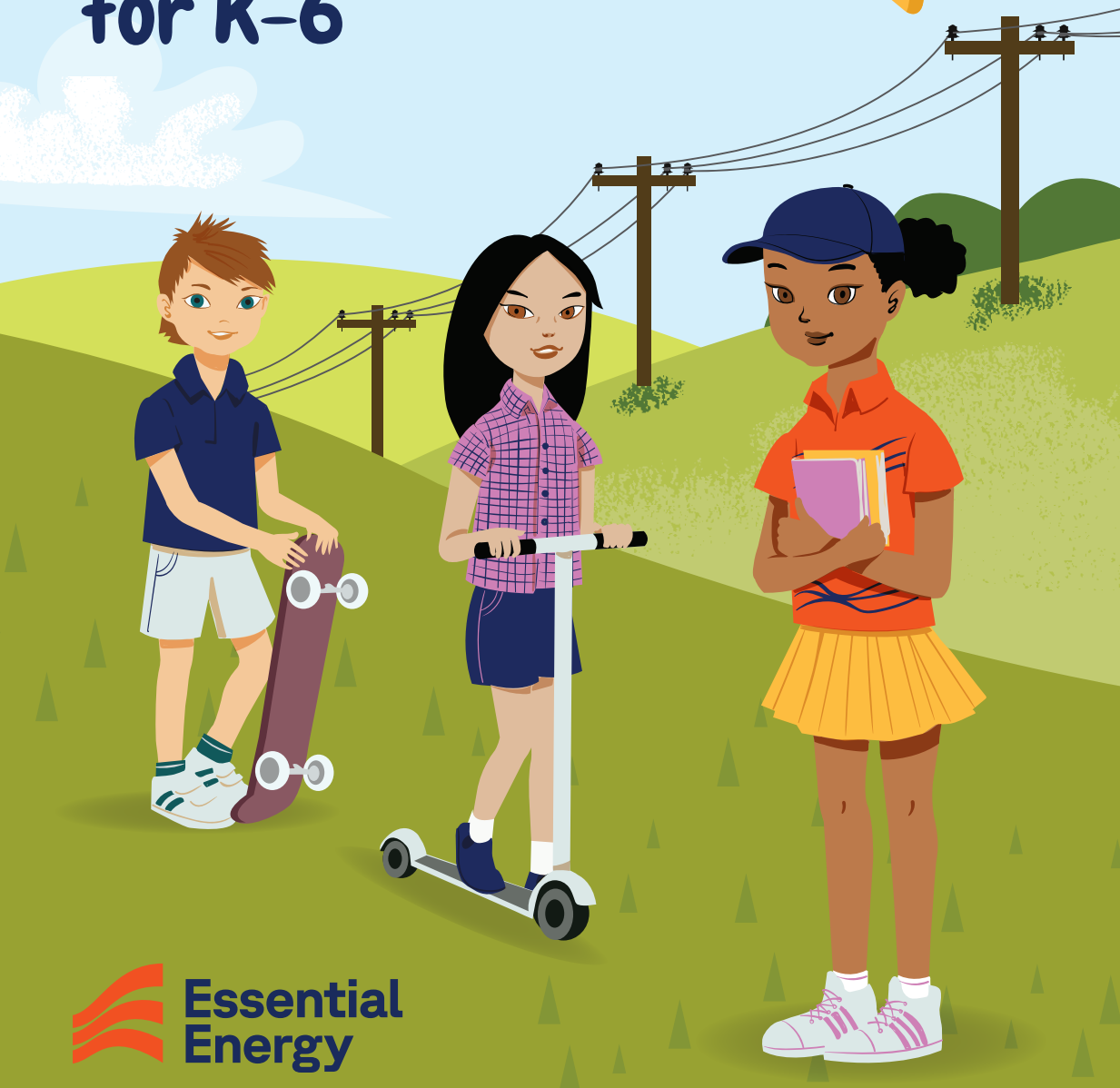
Be a Safety Star

Electricity Safety Lesson Book

for K–6



Essential Energy

Early Stage 1 Content and Outcomes

PDHPE Content:	**Outcomes:**
• Students demonstrate an understanding of strategies that promote a sense of personal identity and build resilience and respectful relationships • Students understand the significance of contextual factors that influence health, safety, wellbeing, and participation in physical activity • Students enact and strengthen health, safety, wellbeing, and participation in physical activity • Students develop and use self-management skills that enable them to take personal responsibility for their actions and emotions and take positive action to protect and enhance the health, safety, and wellbeing of others	• **PDe-2** identifies people and demonstrates protective strategies that help keep themselves healthy, resilient and safe • **PDe-5** explores possible solutions to movement challenges through participation in a range of activities • **PDe-6** explores contextual factors that influence an individual's health, safety, wellbeing and participation in physical activity • **PDe-7** identifies actions that promote health, safety, wellbeing and physically active spaces • **PDe-9** practises self-management skills in familiar and unfamiliar scenarios • **PDe-10** uses interpersonal skills to effectively interact with others
ENGLISH Content:	**Outcomes:**
Oral language and communication	• **ENE-OLC-01** communicates effectively by using interpersonal conventions and language with familiar peers and adults
Vocabulary	• **ENE-VOCAB-01** understands and effectively uses Tier 1 words and Tier 2 words in familiar contexts
Phonological awareness	• **ENE-PHOAW-01** identifies, blends, segments, and manipulates phonological units in spoken words as a strategy for reading and creating texts
Print conventions	• **ENE-PRINT-01** tracks written text from left to right and from top to bottom of the page and identifies visual and spatial features of print
Phonic knowledge	• **ENE-PHOKW-01** uses single-letter grapheme-phoneme correspondences and common digraphs to decode and encode words when reading and creating texts
Reading fluency	• **ENE-REFLU-01** reads decodable texts aloud with automaticity
Reading comprehension	• **ENE-RECOM-01** comprehends independently read texts using background knowledge, word knowledge and understanding of how sentences connect
Creating written texts	• **ENE-CWT-01** creates written texts that include at least 2 related ideas and correct simple sentences
Spelling	• **ENE-SPELL-01** applies phonological, orthographic and morphological generalisations and strategies to spell taught familiar and high frequency words when creating texts
Handwriting	• **ENE-HANDW-01** produces all lower-case and upper-case letters to create texts
Understanding and responding to literature	• **ENE-UARL-01** understands and responds to literature read to them

Early Stage 1 Content and Outcomes

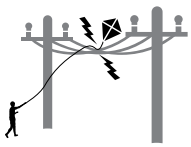
CREATIVE ARTS Content:	**Outcomes:**
• Students engage in devising, shaping and symbolically representing imaginative situations, ideas, feelings, attitudes and beliefs	• **DRAES1.1** uses imagination and the elements of drama in imaginative play and dramatic situations
MATHEMATICS Content:	**Outcomes:**
Statistics and Probability	• **MAE-DATA-01** contributes to collecting data and interprets data displays made from objects

Early Stage 1 Teacher Background Notes

Most of the time, electricity is safe. But sometimes a dangerous electrical situation can happen and we risk being electrocuted if we don't know what to do. We have to be smart and 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 be careful!

- Never climb a tree that is near powerlines. Look up before you climb!
- If you see fallen powerlines after a storm, stay well clear of them.
- Never swim or go near water in an electrical storm.
- Never play near high voltage areas – substations, transformers, or power stations.
- If you see a dangerous situation - stay clear and tell an adult.

Safety around water

Water can conduct electricity because electrons can flow by hitching a ride on atoms and molecules in the water. Water contains dissolved substances, such as salt.

These greatly increase the ability of water to conduct electricity. That's why electricity passes easily through our bodies – because our bodies contain water and salt. This is also why it's important to keep water away from electrical appliances.

Electrical emergencies

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

If you come across an emergency involving electricity:

- 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

Key safety messages

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

- Be careful when you play around poles and wires
- If you see a dangerous situation, tell an adult
- Know what to do in an electrical emergency
- Be safe

Early Stage 1 Lessons

Lesson 1 – Safe outdoor play

- Discuss playing safely outdoors with the whole class.
- Ask students to give examples of types of play that are safe and types of play that are unsafe (discourage students from telling tales about the play habits of other students in this discussion).
- Make a list of the examples for safe and unsafe play.
- Have students read together any Tier 1 words written in the lists and highlight the Tier 2 words.
- Demonstrate correct formation of letters when modelling writing.
- Demonstrate phonological strategies to read unfamiliar words while creating the lists.
- Have students offer suggestions about what they should do if they see someone playing unsafely.
- Discuss the emergency and safety messages.
- Ask the students who they should go to in an emergency.
- 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).
- 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 topical (Tier 2) words 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 (p6).
- Ask the students to sort the cards into safe places and unsafe places and to discuss what is unsafe in their data displays.
- 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 this unsafe situation (model the writing to make sure each student has the correct message).
  - Stay clear
  - Tell an adult
  - Call 000
- Add chosen drawings, words, and safety tips to the display wall.
- To conclude the lesson, tell students that they are going to play a game like “Simon Says” to teach them how to play safe outdoors. This game may be best played outside.
  - Instruct the students to listen very carefully and when Simon doesn’t say, they need to squat down, and when Simon does say, they need to jump up and wave their hands in the air.
  - Play “Simon Says,” (make sure the messages that Simon says are safe ones e.g. Simon says hop in the playground; Simon says run around in a field; Simon says jog in the park; throw a ball at a powerline; fly a kite near a powerline; go swimming when there’s a storm etc.).
  - Continue playing until you have one student left. This student is the “Electricity Safety Captain”.

Early Stage 1 Lessons

Lesson 3 – Safe indoor play

- Discuss playing safely indoors with the whole class.
- 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.
- Divide the class into groups and ask each group to discuss the rooms in the house that are unsafe to play in.
- Give each group some magazines and a set of word cards (p7) that depict rooms in a house. 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.
- Have students read together any Tier 1 words written in the lists and highlight the Tier 2 words to the class.
- Add any new words to the wall display.

Lesson 4 – What to do in unsafe indoor situations

- Discuss with students what electricity is and what it means to be safe around electricity.
- Give each student a set of picture cards (p8) that depict dangers.
- Discuss the dangers in each picture.
- Remind students of the safety tips that they have learnt for dangerous situations.
  - Stay clear
  - Tell an adult
  - Call 000
- Ask the class to come up with a safety message for each picture card and write them on the whiteboard.
- Demonstrate correct formation of letters when modelling writing.
- Demonstrate phonological strategies to read unfamiliar words while creating the lists.
- Tell the students you would like them to listen to some questions and think about some good answers. “What would you do if…?”
  - your younger (brother/sister) wanted to stick a metal knife in a power point?
  - you saw your friend about to use a fork to get his toast out of the toaster?
  - you saw a power point that had a lot of plugs attached to it?
  - you saw an electrical heater with a damaged power cord?
  - you saw a hairdryer plugged in and turned on, and left close to the bathroom sink?

Lesson extension activity

- Ask each group to role play some of the answers to the “What would you do if…?” questions.

Early Stage 1 Lessons

Lesson 5 – How to get help

- Begin by reminding the students of what to do in an emergency,
  - Stay clear
  - Tell an adult
  - Call 000
- Explain that when someone calls 000, the emergency responders need to know where to send help. This is why it is important to know their address and phone number.
- Lead a discussion about addresses and phone numbers. Ascertain whether students know their own. (Assign as a homework task for those that do not)
- Emphasize that it is important for them to know their address and phone number so they can tell the emergency operator where they are if they ever need help.
- Show students pictures of emergency situations and ask them to identify what is happening in each picture.
- Lead a discussion about different types of emergencies they might encounter, such as someone being hurt, a fire, or something dangerous happening.
- Demonstrate on an old mobile phone how to call 000 and what to say to the operator. Emphasize that they should only call 000 if it's a real emergency, and not for things like toys being lost or minor grazes and bruises.
- Divide the students into small groups and provide each group with a toy phone or old mobile phone. Make sure each group has at least one student that can recite their address and phone number.
- Assign each group a different emergency scenario (fire, someone very ill, etc.)
- Have each group act out their scenario, pretending to call 000 and talk to the operator about what's happening. Encourage them to practice saying their name, their location, and what the emergency is.
- Review what they've learned about calling 000 in an emergency and remind them to always stay calm and call for help if they need it.
- Encourage them to talk to their families about what they've learned and to practice their emergency phone call at home.

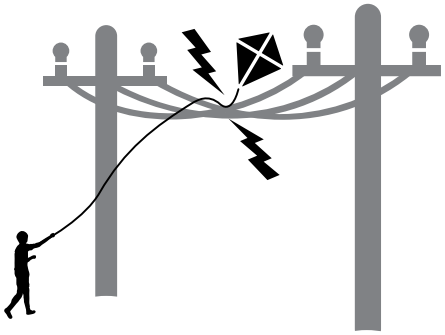
Lesson extension activity

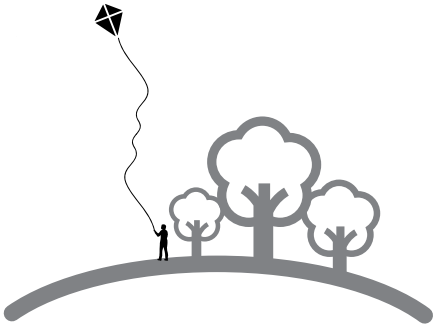
- Follow up the homework activity and assign rewards, (stickers, points etc) when students can recite their addresses and phone numbers

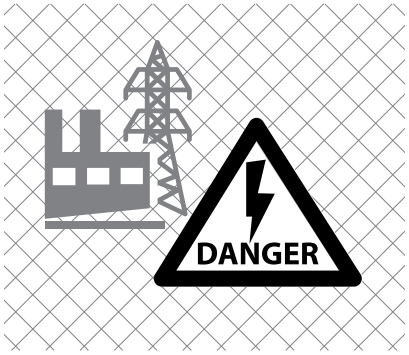
Game – Emergency rescue relay

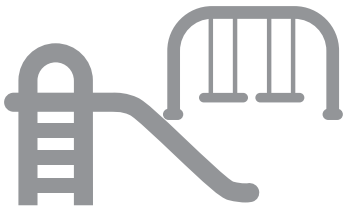
- Set up a relay course outdoors using obstacles and props. For example, students might have to hop over hurdles, crawl under limbo sticks or a tarp, or zigzag through cones.
- Divide the class into teams of equal size.
- Explain to students that they are going to participate in an Emergency Rescue Relay game.
- Emphasize that in emergencies, quick response is crucial, just like in this game.
- Use a timer to time each team's completion of the relay course.

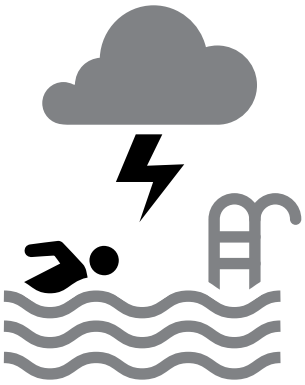
Early Stage 1 Picture Cards - Lesson 2

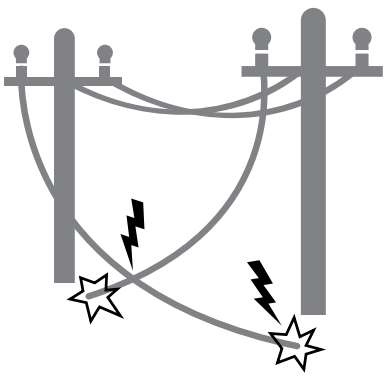












Early Stage 1 Word Cards - Lesson 3

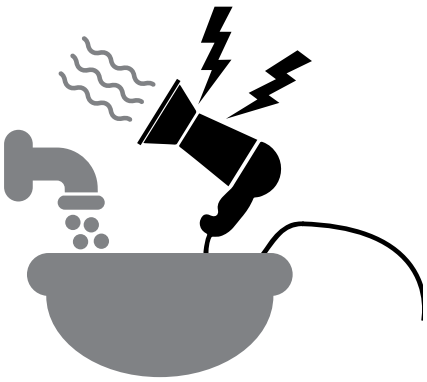
Kitchen

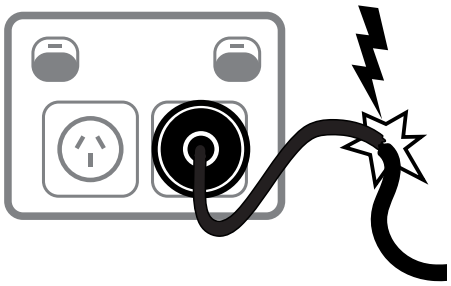
Bathroom

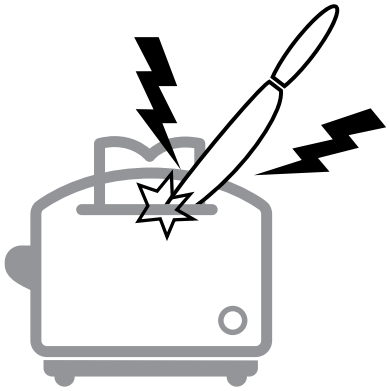
Living room

Bedroom

Early Stage 1 Picture Cards - Lesson 4







Stage 1 Content and Outcomes

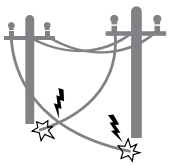
PDHPE Content:	**Outcomes:**
• Students demonstrate an understanding of strategies that promote a sense of personal identity and build resilience and respectful relationships • Students understand the significance of contextual factors that influence health, safety, wellbeing and participation in physical activity • Students enact and strengthen health, safety, wellbeing and participation in physical activity • Students develop and use self-management skills that enable them to take personal responsibility for their actions and emotions and take positive action to protect and enhance the health, safety and wellbeing of others	• **PD1-2** recognises and describes strategies people can use to feel comfortable, resilient and safe in situations • **PD1-4** performs movement skills in a variety of sequences and situations • **PD1-6** understands contextual factors that influence themselves and others' health, safety, wellbeing and participation in physical activity • **PD1-7** explores actions that help make home and school healthy, safe and physically active spaces • **PD1-8** participates in a range of opportunities that promote physical activity • **PD1-9** demonstrates self-management skills in taking responsibility for their own actions
SCIENCE AND TECHNOLOGY Content: Students develop and apply skills in: • scientific inquiry through the process of working scientifically • design and production processes in the development of solutions • design and production of digital solutions	**Outcomes:** • **ST1-1WS-S** observes, questions and collects data to communicate and compare ideas • **ST1-2DP-T** uses materials, tools and equipment to develop solutions for a need or opportunity • **ST1-3DP-T** describes, follows and represents algorithms to solve problems

Stage 1 Content and Outcomes

MATHEMATICS Content:	Outcomes:
Statistics and probability	• **MA1-DATA-01** gathers and organises data, displays data in lists, tables and picture graphs • **MA1-DATA-02** reasons about representations of data to describe and interpret the results.
ENGLISH Content:	**Outcomes:**
Oral language and communication	• **EN1-OLC-01** communicates effectively by using interpersonal conventions and language to extend and elaborate ideas for social and learning interactions
Vocabulary	• **EN1-VOCAB-01** understands and effectively uses Tier 1, taught Tier 2 and Tier 3 vocabulary to extend and elaborate ideas
Phonic knowledge	• **EN1-PHOKW-01** uses initial and extended phonics, including vowel digraphs, trigraphs to decode and encode words when reading and creating texts
Reading fluency	• **EN1-REFLU-01** sustains reading unseen texts with automaticity and prosody and self-corrects errors
Reading comprehension	• **EN1-RECOM-01** comprehends independently read texts that require sustained reading by activating background and word knowledge, connecting and understanding sentences and whole text, and monitoring for meaning.
Creating written texts	• **EN1-CWT-01** plans, creates and revises texts written for different purposes, including paragraphs, using knowledge of vocabulary, text features and sentence structure
Spelling	• **EN1-SPELL-01** applies phonological, orthographic and morphological generalisations and strategies when spelling words in a range of writing contexts
Handwriting	• **EN1-HANDW-01** uses a legible, fluent and automatic handwriting style, and digital technology, including word-processing applications, when creating texts
Understanding and responding to literature	• **EN1-UARL-01** understands and responds to literature by creating texts using similar structures, intentional language choices and features appropriate to audience and purpose

Stage 1 Teacher Background Notes

Dangerous situations



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

Remember:

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

Electrical emergencies

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

If you come across an emergency involving electricity:

- 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

Key safety messages

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

- Be careful when you play around poles and wires
- If you see a dangerous situation, tell an adult
- Know what to do in an electrical emergency
- Be safe

Stage 1 Lessons

Lesson 1 – Safety around electrical cables

- Assemble the class and tell them 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).
- Discuss the safety messages associated with each situation.
  - Be careful when you play around poles and wires
  - If you see a dangerous situation, tell an adult
  - Know what to do in an electrical emergency
  - Be safe
- Provide each group with butcher's paper and markers.
- 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 data displays.
- Create a wall display of any topical and Tier 2 words and messages.

Lesson 2 – How to identify a damaged cable

- Review the previous lesson on electrical safety and introduce the topic of safety around frayed electrical cables.
- Present visual examples of frayed electrical cables and discuss the potential hazards associated with frayed cables, such as risk of electric shock, short circuits, and fire hazards.
- Engage the learners in a discussion about how to identify signs of damage in electrical cables and encourage them to look for fraying, exposed wires, burns, cracks, or unusual sounds/ smells.
- Emphasize the importance of regular inspection of cables, especially in high-use areas.
- Present safety measures and best practices for handling frayed cables and damaged appliances:
  - Never use appliances with frayed cables; replace or repair them immediately.
  - Avoid using damaged appliances and unplug them until repaired.
  - Educate household members about the dangers of damaged cables and appliances.
  - Practice proper storage of cables to prevent tangling and damage.
  - Encourage reporting of any electrical issues promptly to an adult.
- Divide the students into small groups and provide scenarios involving frayed cables.
- Ask each group to discuss and come up with a safety plan or action steps to address the scenario.
- Allow each group to share their ideas with the class.

Lesson extension activity

Assign homework tasks such as conducting a safety inspection of electrical cables at home and reporting any issues found.

Lesson 3 – Safety messages for electrical cables

- Tell the class that they are going to use the lists they created in the previous lesson to create a group artwork that incorporates safety messages and safety symbols (a combination of painting and collage from magazine pictures would work well for this activity).
- Divide the class into groups and ask them to discuss the reasons they chose the representations in their data (the hazards they identified) and ask them to choose one that they would like to illustrate.
- 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.
- 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?"
  - "Do you think your art gives a safety message?"
  - "Do you think you could have made your message stronger?" Etc.
- Display the art on the display wall.
- Add the posters and any new words and messages to the display wall.

STEM design challenge

Design and make a 3D model that shows where your group safety poster should be displayed, e.g. a computer work station where wires and cords are visible.

Use your model to teach the class about the dangerous situation.

Stage 1 Lessons

Lesson 4 – Electrical cable safety survey

- Make colour photocopies of the posters from the previous lesson.
- Discuss the safety messages outlined in the posters.
- Explain that you are going to gather data about student knowledge of electricity safety via a survey.
- Brainstorm with the class a list of questions that could be used to make up the survey for other classes. Provide each group with a copy of the survey and a clipboard.
- Send one group to each class and ask them to conduct the survey.
- When the students have returned to class, have each group gather and organise their data, collate their responses to the surveys and chart their results using tables or picture graphs.
- Ask each group to interpret their responses and compare their charts and to discuss the misconceptions or situations where students need to learn more.
- Discuss which of the photocopied posters should be given to each class based on the answers to the survey, e.g. if most students in a class do not think it is a problem to use a frayed electrical cord, a poster with a warning about this could be given to them to display.
- Deliver the posters to the classrooms and ask the teacher to display them.

Lesson extension activities

- Take photos of the posters to put in the school newsletter.
- Have students write a safety message to go with the photo.
- Posters could also be displayed in the office, canteen and staffroom.

Stage 1 Lessons

Lesson 5 – Warning signs

- Review the safety messages:
  - Be careful when you play around poles and wires
  - If you see a dangerous situation, tell an adult
  - Know what to do in an electrical emergency
  - Be safe
- Lead a discussion about warning signs and safety messages that are all around us.
- Discuss traffic rules such as stop signs and green arrows.
- Discuss what might happen if drivers did not follow traffic signs and signals.
- Continue by asking students if they should follow warning signs when choosing safe places to play?
- Show examples of safety signs and signals and discuss what each one means and where it might be displayed.
- Once students are familiar with the signs, take them outside and explain that they are going to play a game that is like musical statues:
  - Instead of dancing, students will role play safe outside play.
  - The teacher will hold up a safety sign to warn them it's not safe to play.
  - When a sign is held up, the students stop moving and become a statue.
  - If a student is still moving, they are asked to sit down and help be a safety judge.
  - The last student standing is the "Safety Captain".

Game – Electrical cable limbo

- Set up an electrical cable as a limbo pole and instruct the learners to form a line behind the limbo line, facing the cable.
- Emphasize the importance of maintaining balance and avoiding contact with the cable to prevent damage or injury.
- Start playing music and after each participant successfully limbos under the cable, lower it slightly to increase the challenge.
- Continue lowering the cable after each round until only one participant remains.
- Conclude the game by reinforcing the importance of safety around electrical cables and the significance of maintaining balance and coordination.

Stage 2 Content and Outcomes

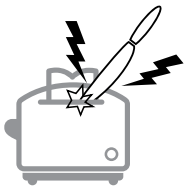
PDHPE Content:	**Outcomes:**
• Students demonstrate an understanding of strategies that promote a sense of personal identity and build resilience and respectful relationships • Students understand the significance of contextual factors that influence health, safety, wellbeing and participation in physical activity • Students enact and strengthen health, safety, wellbeing and participation in physical activity • Students develop and use self-management skills that enable them to take personal responsibility for their actions and emotions • Students take positive action to protect and enhance the health, safety and wellbeing of others	• **PD2-2** explains and uses strategies to develop resilience and to make them feel comfortable and safe • **PD2-4** performs and refines movement skills in a variety of sequences and situations. • **PD2-6** describes how contextual factors are interrelated and how they influence health, safety, wellbeing and participation in physical activity • **PD2-7** describes strategies to make home and school healthy, safe and physically active spaces • **PD2-9** demonstrates self-management skills to respond to their own and others' actions
ENGLISH Content:	**Outcomes:**
Oral language and communication	• **EN2-OLC-0**1 communicates with familiar audiences for social and learning purposes, by interacting, understanding and presenting
Vocabulary	• **EN2-VOCAB-01** builds knowledge and use of Tier 1, Tier 2 and Tier 3 vocabulary through interacting, wide reading and writing, and by defining and analysing words
Reading fluency	• **EN2-REFLU-01** sustains independent reading with accuracy, automaticity, rate and prosody suited to purpose, audience and meaning
Reading comprehension	• **EN2-RECOM-01** reads and comprehends texts for wide purposes using knowledge of text structures and language, and by monitoring comprehension
Creating written texts	• **EN2-CWT-01** plans, creates and revises written texts for imaginative purposes, using text features, sentence-level grammar, punctuation and word-level language for a target audience • **EN2-CWT-02** plans, creates and revises written texts for informative purposes, using text features, sentence-level grammar, punctuation and word-level language for a target audience • **EN2-CWT-03** plans, creates and revises written texts for persuasive purposes, using text features, sentence-level grammar, punctuation and word-level language for a target audience
Spelling	• **EN2-SPELL-01** selects, applies and describes appropriate phonological, orthographic and morphological generalisations and strategies when spelling in a range of contexts

Stage 2 Content and Outcomes

ENGLISH Content (continued):	**Outcomes (continued):**
Handwriting	• **EN2-HANDW-01** forms legible joined letters to develop handwriting fluency • **EN2-HANDW-02** uses digital technologies to create texts
Understanding and responding to literature	• **EN2-UARL-01** identifies and describes how ideas are represented in literature and strategically uses similar representations when creating texts
MATHEMATICS Content: Students: • collect, represent, analyse, interpret and evaluate data, assign and use probabilities, and make sound judgements	**Outcomes:** • **MA2-18SP** selects appropriate methods to collect data, and constructs, compares, interprets and evaluates data displays, including tables, picture graphs and column graphs
SCIENCE AND TECHNOLOGY Content: Students develop and apply skills in: • scientific inquiry through the process of working scientifically • design and production processes in the development of solutions • design and production of digital solutions	**Outcomes:** • **ST1-2DP-T** uses materials, tools and equipment to develop solutions for a need or opportunity • **ST2-3DP-T** defines problems, describes and follows algorithms to develop solutions

Stage 2 Teacher Background Notes

Safety around metal



We all encounter metal objects on a daily basis – turning on a tap, playing with our computers and toys and even using the fridge. Because metal conducts electricity, you 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 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. Switch on to safety.

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, 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 you are able to do so)
- Get an adult
- Ring 000

Key safety messages

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

- Be careful when you play around poles and wires
- If you see a dangerous situation, tell an adult
- Know what to do in an electrical emergency
- Be safe

Stage 2 Lessons

Lesson 1 – Electrical safety

- 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.
- 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 behavior 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:
  - Be careful when you play around poles and wires
  - 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).
- Give each group the opportunity to survey teachers and students from other classes using the surveys they've created.
- 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 picture or column 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.
- Start a word wall to display any new words or meta-language introduced in the lesson.

Stage 2 Lessons

Lesson 2 – Electrical safety messages

- Assemble the class and ask students to recite safety messages and what to do in emergencies.
    1. Ensure your own safety
    2. Turn the power off at the power point and remove the plug (if you are able to do so)
    3. Get an adult
    4. Ring 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 their survey respondents knew the 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 the project.
- Provide time for the planning phase of the education campaign, emphasising the need to ensure a strong key message.
- Encourage the students to make notes and draw up plans for their project including scripts where necessary.
- Allow students to use technology for recording, filming and researching their project.
- Have students add any new words and meta-language to the word wall.

Lesson 3 – Electrical safety message presentation

- Assemble the class and quiz the students on safety messages and what to do in emergencies.
- Ask each group to give a progress report on their safety message project.
- Ensure that each group has taken into consideration just who their target audience is and how they can distribute their message to educate that audience.
- Ask students to give feedback and offer suggestions to other groups.
- Allow time for each group to complete their project and prepare to present their work to the class.
- Reassemble the class for group presentations.
- After the presentations, discuss with the class how each group should spread their message (visit junior classes, play jingles at assembly, put on skits as an assembly item, place an ad in the school newsletter).
- Encourage each group to take their presentation to their target audience.

STEM design challenge

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

Stage 2 Lessons

Lesson 4 – How to be safe with metal objects near electricity

- Review the safety messages from the previous lesson
- Explain that electricity is a powerful force that we use to power things like lights, TVs, and computers, but it can also be dangerous if we're not careful.
- Show visual aids of common electrical sources in the home (outlets, appliances, etc.) and discuss what they are used for.
- Emphasize that metal objects can conduct electricity, making them dangerous to touch or use near electrical sources.
- Conduct a demonstration using a lightbulb, battery, and metal object (such as a paperclip).
- Show how the metal object completes the circuit and causes the lightbulb to light up.
- Emphasize that this demonstrates how electricity can flow through metal objects, making them potentially dangerous around electrical sources.
- Divide the class into groups and give each group a picture of a scenario involving metal objects and electricity (e.g., a child sticking a fork into an outlet, a person using a metal object near a plugged-in toaster).
- Ask each group to first identify whether each situation is safe or unsafe and then write down an explanation of their reasoning to report back to the class.
- Guide the discussions towards understanding that metal objects should never be inserted into outlets or used near appliances that are plugged in or turned on.
- Remind students that if they ever see a dangerous situation involving electricity, they should tell an adult immediately.
- Ask students to share one thing they learned about staying safe around electricity with metal objects.

Lesson extension activity

Provide each group with materials to create their own electric circuits and experiment with conductive and non-conductive materials.

Game – Shockproof Scavenger Hunt

- Make an obstacle course in the playground using assorted sports equipment.
- Hide small cardboard pictures of electrical items throughout the obstacle course.
- The students must gather all the pictures and complete the course in the fastest time.

Stage 2 Lessons

Lesson 5 – "Electrical Kaboom" game

- Brainstorm what the students know about electrical safety.
- Explain that you are going to play a game called "Electrical Kaboom" so the students will need to remember their safety messages.
- Print a copy of Electricity Safety Quiz questions and answers (pp. 20 & 21).
- Sit the students in a circle and give each child an answer card.
- Read out a question. The child with the coordinating answer card must call out "Kaboom".
- If they do not call out "Kaboom", or if they call "Kaboom" to the wrong question, they must sit in the middle of the circle.
- The remaining child is the Electrical Safety Captain.

Lesson extension activities

- This activity could be extended by having the groups write their own question cards to test the other teams instead of providing them with the printed cards.
- Provide each group with a set of question and answer cards to play "Concentration" (place all cards face down and students turn two cards over at a time to find pairs – a question with its answer).

Stage 2 Safety Quiz Questions - Lesson 5

1	2	3	4
Why is it important to stay clear of powerlines when you are flying a kite?	Why is it dangerous to put a knife or a fork in a toaster?	What number should you call if you see an electrical emergency?	Why is it dangerous to stack or overload power points?
5	**6**	**7**	**8**
Why is it dangerous to use an appliance that has a damaged cord?	Name two outdoor electrical situations that could be dangerous.	If you see an electrical hazard, what 3 things should you do?	Why should you stay away from electrical substations?
9	**10**	**11**	**12**
Why is it important to look up before you climb?	Name two electrical situations that could be dangerous in the kitchen.	What should you do if you see a powerline that has come down?	Why is it dangerous to use hairdryers near water?
13	**14**	**15**	**16**
What should you do if you are carrying a ladder near a powerline?	Name three electrical situations that could be dangerous in the bathroom.	Why could digging potentially be a dangerous situation?	Why shouldn't you stand under a tree during an electrical storm?
17	**18**	**19**	**20**
What should you do if you see an appliance with a damaged power cord?	You see a young child trying to stick a spoon into a power point. What should you do?	Why isn't it safe to drink near a computer?	Why must we be safe around electricity?

Stage 2 Safety Quiz Answers - Lesson 5

1

If you are flying a kite and it gets caught in overhead powerlines, the electricity can travel down the cord and potentially cause serious harm.

2

Electricity can travel up the metal knife or fork into your body.

3

You should call 000.

4

Stacked or overloaded power points can cause fires.

5

Damaged power cords can cause an electric shock and/or fires.

6

Overhead powerlines

Underground cables

7

Stay clear

Don't touch

Tell an adult

8

Electrical substations have high voltage electricity. You can get hurt without even touching anything.

9

It is important to look up before you climb a tree because there might be powerlines overhead.

10

Electrical appliances near water in the sink

Metal objects near electrical appliances

11

Stay clear

Don't touch

Tell an adult

12

Water and electricity don't mix. If you drop a switched on electrical appliance in water, you could be electrocuted.

13

You should look up to make sure the ladder does not touch a powerline.

14

Electrical appliances near water.

Turning on electrical appliances with wet hands.

Touching sockets with wet hands.

15

You should be careful when digging as there could be underground powerlines.

16

Lightening can cause trees to fall during an electrical storm. It can also strike a tree and electricity can conduct through the tree due to its water content.

17

You should not use appliances with damaged cords. Replace the appliance with a new one.

18

Move the young child away.

Make sure the power point is switched off.

Tell an adult.

19

Spilling a drink on a computer will damage the computer and could cause an electrical fire.

20

Electricity can be dangerous. It can cause fires and electrocution so we must use it safely.

Stage 3 Content and Outcomes

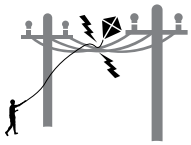
PDHPE Content:	**Outcomes:**
• Students understand the significance of contextual factors that influence health, safety, wellbeing and participation in physical activity • Students enact and strengthen health, safety, wellbeing and participation in physical activity • Students develop and use self-management skills that enable them to take personal responsibility for their actions and emotions • Students take positive action to protect and enhance the health, safety and wellbeing of others	• **PD3-2** investigates information, community resources and strategies to demonstrate resilience and seek help for themselves and others. • **PD3-6** distinguishes contextual factors that influence health, safety, wellbeing and participation in physical activity which are controllable and uncontrollable • **PD3-4** adapts movement skills in a variety of physical contexts. • **PD3-7** proposes and implements actions and protective strategies that promote health, safety, wellbeing and physically active spaces • **PD3-8** creates and participates in physical activities to promote healthy and active lifestyles • **PD3-9** applies and adapts self-management skills to respond to personal and group situations
ENGLISH Content:	**Outcomes:**
Oral language and communication	• **EN3-OLC-01** communicates to wide audiences with social and cultural awareness, by interacting and presenting, and by analysing and evaluating for understanding
Vocabulary	• **EN3-VOCAB-01** extends Tier 2 and Tier 3 vocabulary through interacting, wide reading and writing, morphological analysis and generating precise definitions for specific contexts.
Reading comprehension	• **EN3-RECOM-01** fluently reads and comprehends texts for wide purposes, analysing text structures and language, and by monitoring comprehension.
Creating written texts	• **EN3-CWT-01** plans, creates and revises written texts for multiple purposes and audiences through selection of text features, sentence-level grammar, punctuation and word-level language.
Spelling	• **EN3-SPELL-01** automatically applies taught phonological, orthographic and morphological generalisations and strategies when spelling in a range of contexts, and justifies spelling strategies used to spell unfamiliar words.
Handwriting	• **EN3-HANDW-01** sustains a legible, fluent and automatic handwriting style • **EN3-HANDW-02** selects digital technologies to suit audience and purpose to create texts.
Understanding and responding to literature	• **EN3-UARL-01** analyses representations of ideas in literature through narrative, character, imagery, symbol and connotation, and adapts these representations when creating texts. • **EN3-UARL-02** analyses representations of ideas in literature through genre and theme that reflect perspective and context, argument and authority, and adapts these representations when creating texts.

Stage 3 Content and Outcomes

CREATIVE ARTS Content:	**Outcomes:**
Students will develop knowledge, skills and understanding: • in performing drama by actively engaging in drama forms	• **DRAS3.3** devises, acts and rehearses drama for performance to an audience
MATHEMATICS Content:	**Outcomes:**
Students: • collect, represent, analyse, interpret and evaluate data, assign and use probabilities, and make sound judgements	• **DRAS3.3** devises, acts and rehearses drama for performance to an audience
SCIENCE AND TECHNOLOGY Content:	**Outcomes:**
Students develop and apply skills in: • scientific inquiry through the process of working scientifically • design and production processes in the development of solutions • design and production of digital solutions	• **ST3-1WS-S** plans and conducts scientific investigations to answer testable questions, and collects and summarises data to communicate conclusions • **ST3-2DP-T** plans and uses materials, tools and equipment to develop solutions for a need or opportunity • **ST3-3DP-T** defines problems, describes and follows algorithms to develop solutions

Stage 3 Teacher Background Notes

Outside safety

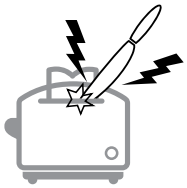


We all like to play outside, but there are electrical hazards that we need to know about. Electricity poles and wires are all around us. They can be above us, next to us, and even below us. Play in open spaces away from electricity poles, towers and powerlines.

Remember:

- If you fly a kite and it gets caught in the overhead powerlines, live electricity could travel down the string and seriously hurt you. So be careful!
- If you see fallen powerlines after a storm, stay well clear of them. There is a strong chance they are still alive.

Safety around metal



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

Remember:

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

Safety around water

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

Dangerous situations

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

Remember:

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

Stage 3 Teacher Background Notes

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.

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

Electrical emergencies

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

If you come across an emergency involving electricity:

- 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

Key safety messages

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

- Be careful when you play around poles and wires
- If you see a dangerous situation, tell an adult
- Know what to do in an electrical emergency
- Be safe

Stage 3 Lessons

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:

- Be careful when you play around poles and wires
- If you see a dangerous situation, tell an adult
- Know what to do in an electrical emergency
- Be safe

Emergency procedures:

1. Ensure your own safety
2. Turn the power off at the power point and remove the plug (if you are able to do so)
3. Get an adult
4. Ring 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

- Lead a discussion on the hazards that students might encounter around electricity.
- Discuss the safety messages and emergency procedures for electricity (see Lesson 1 above).
- Explain to the class they are going to conduct an electricity safety audit in the classroom and 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.
- After the school safety audit, groups can tally up their results and convert them to percentages.
- Ask each group to compare their results with other groups in the class.
- 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.

Stage 3 Lessons

Lesson 3 – Safety message cartoons and stories

- Assemble the class and ask the students to reflect on what they have learnt so far about electrical safety.
- Guide the discussion towards helping students recognise that although electricity is mainly used indoors, a lot of equipment outdoors supplies electricity to their homes as well.
- Explain that sometimes younger students don't realise how much they are around electricity outdoors, e.g.
  - when flying a kite, they could be close to overhead powerlines;
  - when climbing a tree, the upper branches of the tree may be close to overhead powerlines.
- Ask students to brainstorm ideas for a short story or cartoon strip with a message to warn younger students about electrical safety.
- Once they have all their ideas listed, encourage students to centre their stories and cartoons around the electrical hazard they feel is most important for younger students to understand.
- Hopefully, this will encourage a diverse range of stories.
- Ask students to write and illustrate their story to help promote the safety of younger students.
- Inform students that the main message to be communicated to young students is that when they see an electrical hazard, they need to:
  - Stay clear
  - Don't touch
  - Tell an adult
- Allow students an appropriate amount of time to develop their stories and illustrate or import pictures of themselves doing the right thing with electricity.

Lesson extension activities

- Buddy up with a junior class and ask students to read their stories to a buddy.
- Compile a safety book of the short stories and cartoons.

Lesson 4 – Safety message role-play

- Ask the class to recite the safety messages and emergency procedures.
- Divide the class into groups and ask each group to work together to write a script for a skit or a commercial that delivers a safety message.
- Explain to students that while the script may be humorous the safety message must be very serious and must be designed to educate a particular audience.
- The group should discuss who their target audience is and why the message they have chosen is appropriate.
- Students may choose to act out their play, or video their performance for the class.
- Have each group perform their skit or commercial for the class, or organise a time for the videos to be viewed.
- The best of the productions, or those written for children, could be presented at the weekly assembly.

Stage 3 Lessons

Lesson 5 – Safety with electricity near water

- Review electrical safety messages from previous lessons.
- Ask students what they know about combining electricity and water.
- Show visual aids or props demonstrating scenarios where electricity and water might come into contact, such as dropping a hairdryer in the bathtub or using an electrical appliance near a swimming pool.
- Ask the students why mixing electricity and water can be dangerous. Guide them to understand that water conducts electricity, and if electricity travels through water, it can give us an electric shock.
- Emphasize that electric shocks can be harmful or even deadly, so it's important to always be safe around electricity and water.
- Together with the class, create a list of safety rules for using electrical appliances near water. The list should include:
  - Keep electrical devices away from water sources like sinks, bathtubs, and swimming pools.
  - Never touch electrical appliances with wet hands or when standing in water.
  - Always unplug electrical devices before cleaning them or touching them near water.
  - If an electrical device falls into water, don't touch it! Instead, tell an adult immediately.
- Ask the students to write a paragraph about what they have learned in the lesson and to create a cartoon strip demonstrating their understanding of safety with electricity near water.

Game – Cable Maze

- Make a maze out of ropes and electrical cables. You can make squiggles, straight lines, curves, etc.
- Explain that the students are water so they can touch the ropes but they cannot touch the electrical cables.
- Start the adventure by guiding the children through the maze yourself, demonstrating how to carefully walk on the ropes but with one foot either side of the electrical cables.
- If a student touches a cable they are out.

STEM design challenge

Design and make a 3D model of a holder for a hairdryer to keep it safe in the bathroom. Your project should include a written description of how your model works and also include the appropriate electrical safety messages.