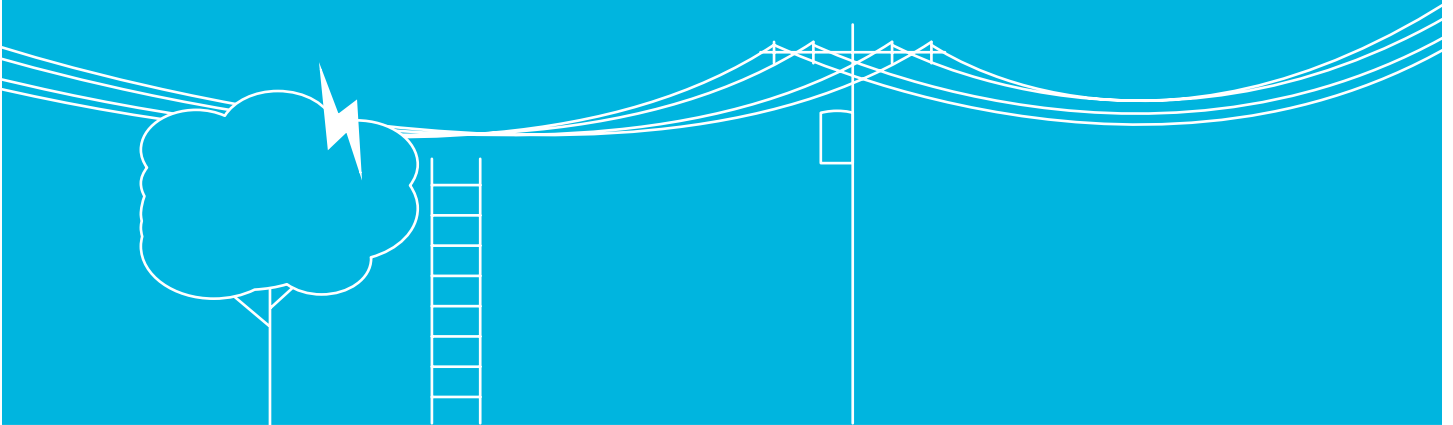


Crossing the line:

The dangerous rise of incidents involving power lines and ‘weekend loggers’



Report

May 2018

Crossing the line: The dangerous rise of incidents involving power lines and ‘weekend loggers’

Despite warnings from BC Hydro to keep a minimum three metres from power lines when trimming trees or doing other yard work, a surprising number of British Columbians are unprepared or unaware of vital safety rules.

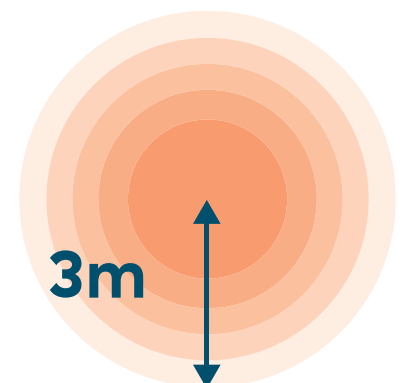
Highlights

- Incidents involving ‘weekend loggers’ are up 60% from 2013, and most of these accidents occur in the spring and summer when British Columbians are spending more time in their yards gardening.
- Since 2013, almost 400 of these types of incidents have been reported to BC Hydro and attended to by a BC Hydro crew. Most involve trimming and pruning trees and branches that fall on power lines and cause power outages. However, there is the risk of this resulting in serious injury, or even death.
- Results from a new survey commissioned for BC Hydro indicates that almost 7,500 British Columbians have had a close call with electricity while pruning trees or doing work on a roof, such as cleaning gutters or replacing shingles.
- 80% of those surveyed do not know how far their tools should be from overhead power lines when doing yard work.
- Almost 6 in 10 British Columbians handle trimming of bushes, hedges and trees without the help of a professional.
- More than 3 in 10 are under the mistaken impression that tools and ladders need to touch a power line to be dangerous, 3 in 10 also mistakenly believe that rubber-soled shoes or gloves protect them from danger when trimming near power lines, and 18% believe trees cannot conduct electricity.

Solutions

- BC Hydro is increasing promotion of backyard electrical safety rules around an “If you’re near, stay clear” message this spring that focusses on spreading the word about three metres being the minimum safe distance from power lines. This supports extensive safety information on bchydro.com.
- BC Hydro’s Power Smart for Schools program delivers electrical safety information to elementary and secondary students and their families, through online resources and via in-class education. During Electrical Safety Day in May 2018, BC Hydro went to over 200 schools in over 60 B.C. communities reaching over 9,000 students. And 120 BC Hydro employees visited a classroom to educate students on safety.
- BC Hydro also provides free electrical safety awareness training to trades workers and to first responders, including police, fire and ambulance personnel.

If you’re near, stay clear.
Stay 3 metres from power lines.



Rising number of ‘weekend loggers’ in dangerous power line incidents

Accidental contact with power lines can cause serious injury or death. While most British Columbians understand the basics of how to avoid contact and dangerous situations, a surprising number are unaware of the most basic rules around yard work electrical safety.

Since 2013, nearly 400 ‘weekend logger’ incidents were reported, most of them mistakes by homeowners or contractors that led to power line damage or power outages. And a new survey indicates that many electrical incidents in B.C. go unreported.

The survey of 800 British Columbians, conducted by Vancouver-based Pollara Strategic Insights, found that many people have either experienced electrical contact while doing yard work or know someone who has been injured in an electrical incident. In addition, 7% of those surveyed said they have had at least one close call with electricity while doing yard work, cleaning gutters or working on a roof – extrapolated to the wider population that amounts to almost 7,500 close calls over the years.

The survey also shows that only one in five British Columbians know that persons and tools should be at least three metres away from power lines when pruning trees or doing other work in their yards or on the roofs of their homes.

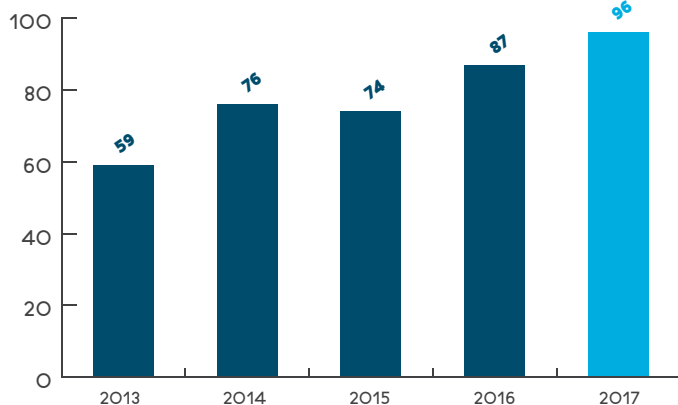
Why all electrical contact must be avoided

Household electrical voltage can be fatal, and the normalization of such contact incidents in any way, can lead to the illusion that electrical contact cannot kill. Most service lines from BC Hydro poles to houses carry both 120-Volts and 240-Volts, the higher voltage used to power large appliances such as clothes dryers and stoves.

The severity of injury from electrical shock depends on the amount of electrical current and the length of time the current passes through the body. Prolonged exposure to even 120-Volt household electrical current – something that can happen when muscles in hands and arms “freeze”, or continue to hold on as a reflex to the shock – can lead to respiratory paralysis to the point that breathing stops.

The three-metre safe distance requirement is vitally important around BC Hydro distribution lines, the pole-to-pole lines that carry electricity from substations to homes and businesses and carry 25,000 Volts.

‘WEEKEND LOGGER INCIDENTS’



Incidents have increased by 60% over the past 5 years.

“‘Weekend logger’ dropped tree on to power line, breaking primary wire... After dropping tree on line, made two additional cuts to tree and was shocked by line.” – June 14, 2017

“Homeowner had tree get away from him and hit primary power line. Ran before contact and was in clear when tree contacted primary [power line].” – August 3, 2017

“Homeowner was trimming trees and cut service hotleg with saw. Crew de-energized and repaired service. Talked to homeowner about dangers of working near energized lines.” – August 21, 2016

When accidents and near misses occur, few are reported

The electrical contact incidents BC Hydro most often hears about are so-called ‘weekend logger’ events in which pruning or falling of trees produces damage to power lines and – in many cases – creates power outages. The majority of these incidents happen in the spring and summer months.

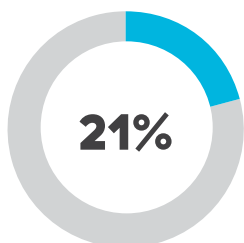
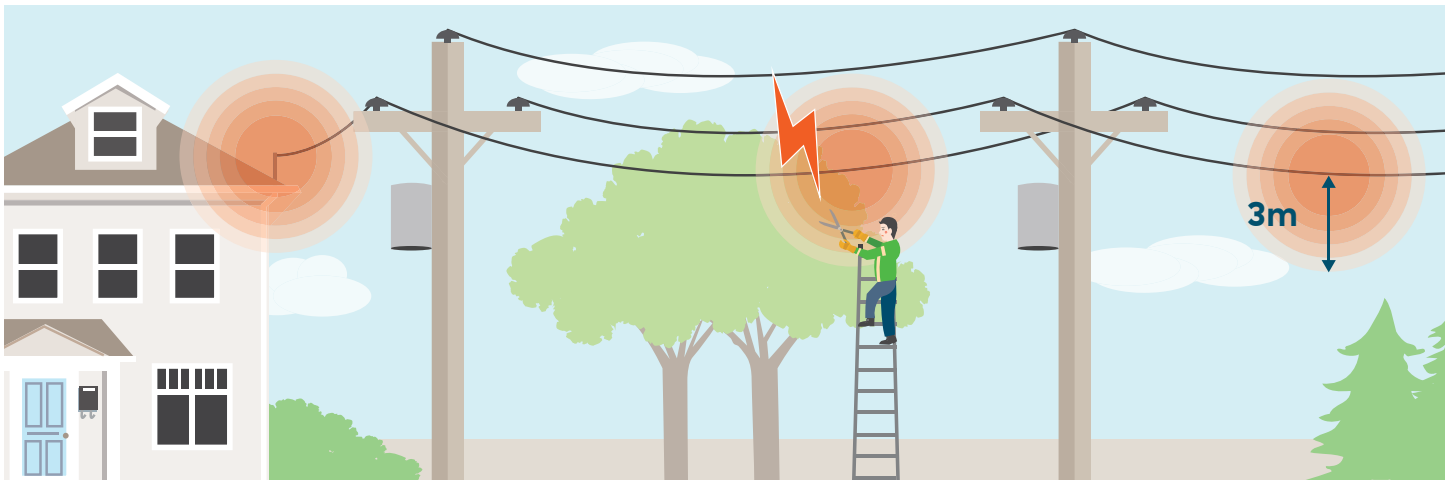
From 2013 through 2017, there were 380 reports of these accidents in which BC Hydro crews were called out to make repairs.

In 2017, the number of reported weekend logger incidents reached 96, more than a 60% increase over the 2013 numbers. Evidence from the recent survey suggests that this only represents a fraction of incidents as a significant number of electrical contact events or near misses have not been reported.

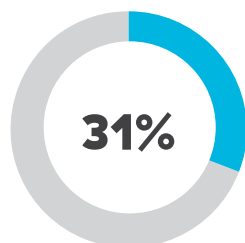
- Nearly one in six of those surveyed (17%) say they know someone who has been injured as the result of electrical contact.
- One in 20 say they have experienced an electric shock while doing yard work.
- 7% say they have had a close call with electricity while working in the yard or on their roof.

Dangerous gaps in knowledge

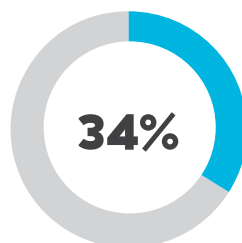
A BC HYDRO-COMMISSIONED SURVEY SHOWS DANGEROUS FLAWS IN KNOWLEDGE AROUND YARD WORK AND POWER LINES.



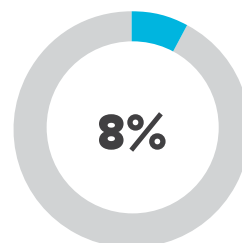
know that 3 metres
is the safe distance
from power lines



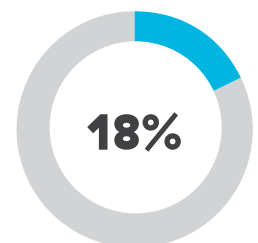
think that rubber
gloves or rubber soles
in shoes are
protection against
electrical shock when
trimming trees



think that tools and
ladders are only an
electrical hazard if
they actually touch
a power line



think the tool they're
using will insulate
them against
electrical shock if
it contacts a
power line



think trees can't
conduct electricity

Vast majority of British Columbians unaware of 3-metre rule

Few British Columbians 21% in the survey – know that people and their tools need to be at least 3 metres from power lines when pruning trees or doing other work in and around their homes.

BC Hydro has communicated widely in recent years that the public must stay at least 10 metres away – at least the length of a bus – from a downed or damaged power line. The 3-metre rule applies to undamaged distribution power lines – those BC Hydro power lines in neighbourhoods that run from pole to pole and carry enough voltage to arc to persons or materials, even if there is no contact.

To be on the safe side, BC Hydro uses various communication channels in efforts to let all in B.C. know that no work, tool – or recreational activity such as trampolining – should come within three metres of power lines. BC Hydro safety messaging generally makes no distinction for lower-voltage service lines: the twisted lines that run from power poles to homes and which, technically, require only a one-metre safe distance. Realizing that most people do not differentiate between distribution (pole to pole) lines and service lines (the one from the pole to your home), BC Hydro wants British Columbians to be on the safe side and stay three metres away from all power lines.

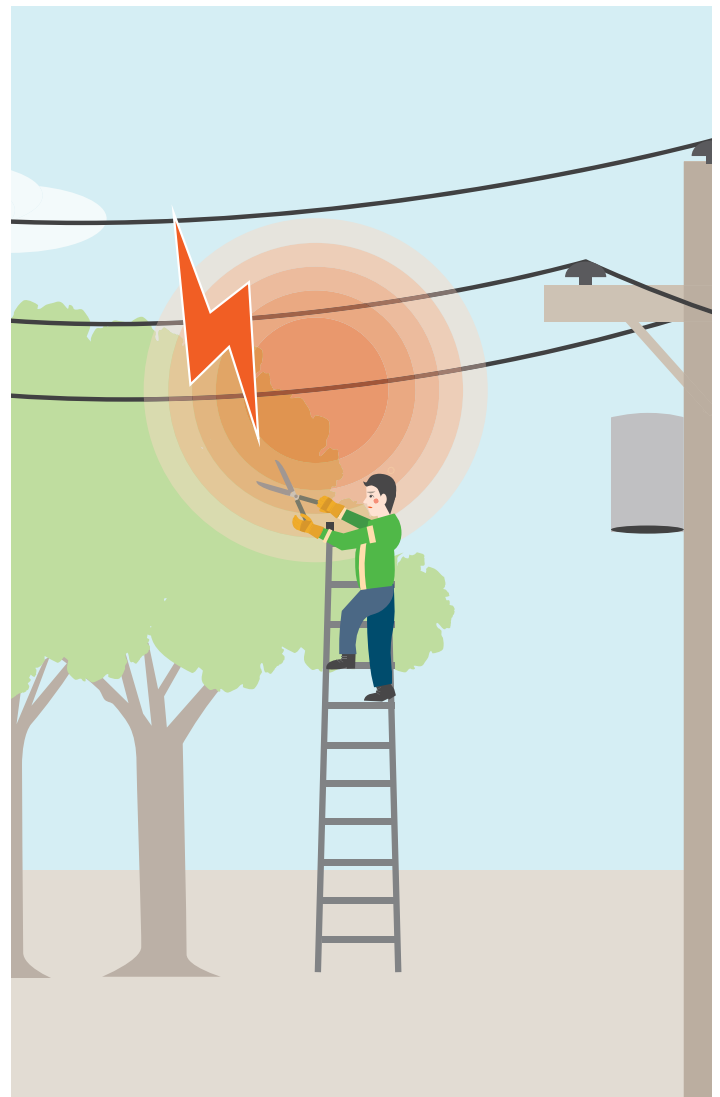
Tools, trees and ladders won't protect you, but many don't know that

While BC Hydro recommends that homeowners hire a certified utility arborist to prune trees and bushes near power lines, almost 6 in 10 British Columbians conduct pruning in their yard without the help of a professional. About 80% of those did not know what the safe distance is between people and/or tools and power lines.

More than 3 in 10 British Columbians believe tools and ladders need to touch a power line to be dangerous. In fact, the electricity voltage from the pole-to-pole distribution lines in B.C. neighbourhoods is capable of “arcing” or jumping to persons or objects – including tools – that come within three metres of the power line.

The survey showed several other dangerous misconceptions around electrical safety and yard work, including:

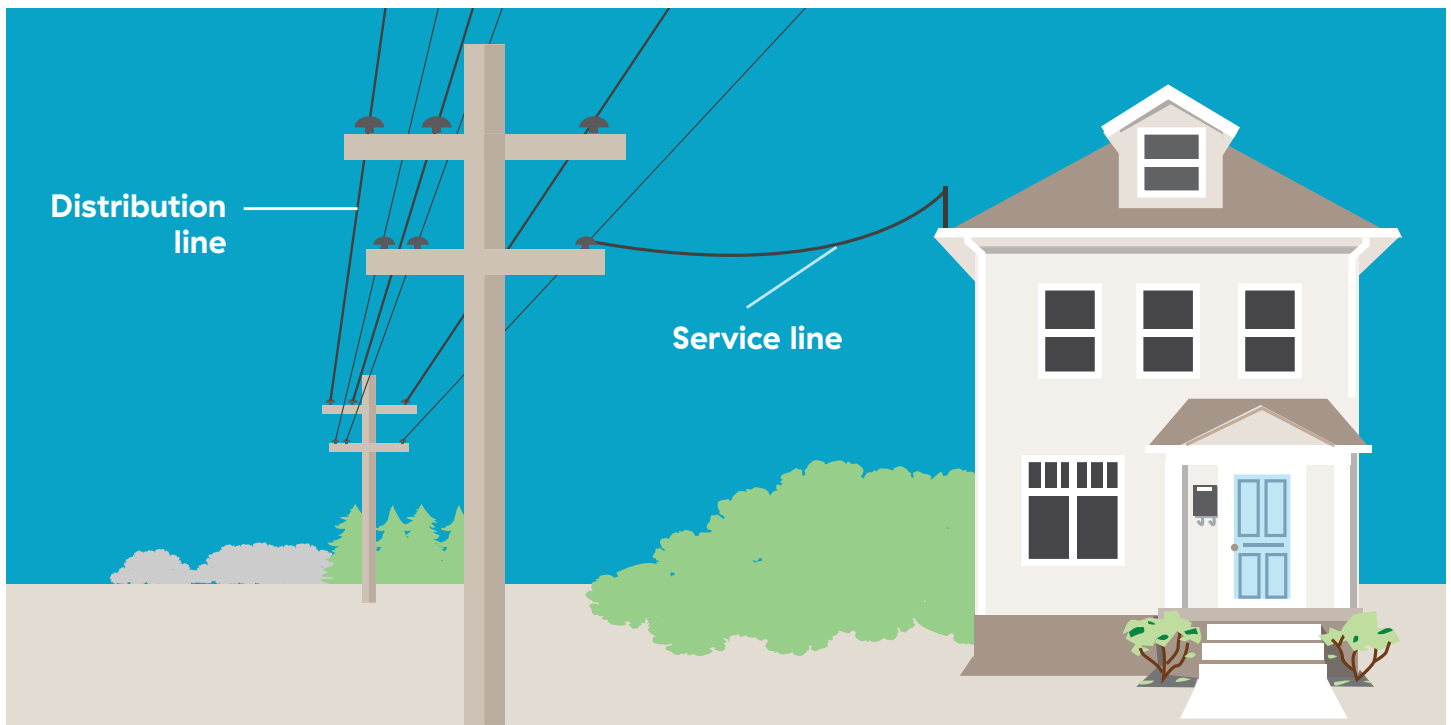
- 8% said that if the tool they are using touches a power line, the tool will absorb the shock and keep them safe.
- 3 in 10 believe that rubber-soled shoes or gloves protect them from danger when trimming near power lines.
- 18% believe trees cannot conduct electricity.
- Almost 1 in 10 thinks it is safe to remove branches from a tree that has fallen or become entangled on a power line on their property, so long as the branches are not touching the line directly.



Solutions

What home owners can do

- Property owners are responsible for keeping the service wires on their properties – the twisted lines that run from the BC Hydro pole to their homes – clear of vegetation. Branches rubbing on service wires wear through the wires' weather coating and may cause home electrical appliance damage.
 - If any part of a tree or hedge is within three metres of a power line, property owners must call **1 800 BCHYDRO (1 800 224 9376)**.
 - People who choose to do their own pruning must know safe distance rules that focus on a minimum of three metres of clearance from persons, equipment and all parts of a tree.
 - Anyone who cannot do their own pruning or is unsure how to do it safely is urged by BC Hydro to contact a certified utility arborist to prune trees.
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What BC Hydro is doing

- For trees that are near distribution power lines – the higher-voltage lines that stretch between BC Hydro poles – BC Hydro uses certified arborists who are qualified to work close to energized lines and are trained in proper pruning techniques.
 - BC Hydro's hazard tree program is aimed at preventing trees and branches from falling on transmission and distribution power lines. Trees identified as too tall, dead or dying, diseased, unstable, or with damaged root systems, are often removed.
 - BC Hydro is launching a new spring safety campaign – the latest in a series of safety promotions – aimed at helping British Columbians better understand how to stay safe around electricity.
 - Past campaigns have focussed on motor vehicle accidents and downed power lines, including “Down, danger, dial” messaging that reminds the public that when power lines are down or damaged, it's vital to stay at least 10 metres back and call 911.
 - This spring's safety campaign, which supports extensive safety information that's on bchydro.com year round, leans on the promotion of backyard electrical safety around an “If you're near, stay clear” message. Key to this message is education around the three-metre safe distance required when pruning trees or doing any yard or roof work.
 - BC Hydro's Power Smart for Schools program delivers electrical safety information to elementary and secondary students and their families through online resources and via in-class education. During Electrical Safety Day in 2018, BC Hydro visited over 200 schools in over 60 B.C. communities reaching over 9,000 students. And 120 BC Hydro employees visited a classroom to educate students on safety.
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Power Smart for Schools Teaching Resources Take Action Events & News Log in

Safety

What should you know? Electrical safety

Explore the relationship between electricity and personal safety through skills and a slideshow.

Grade 8 Group Work 1 hour

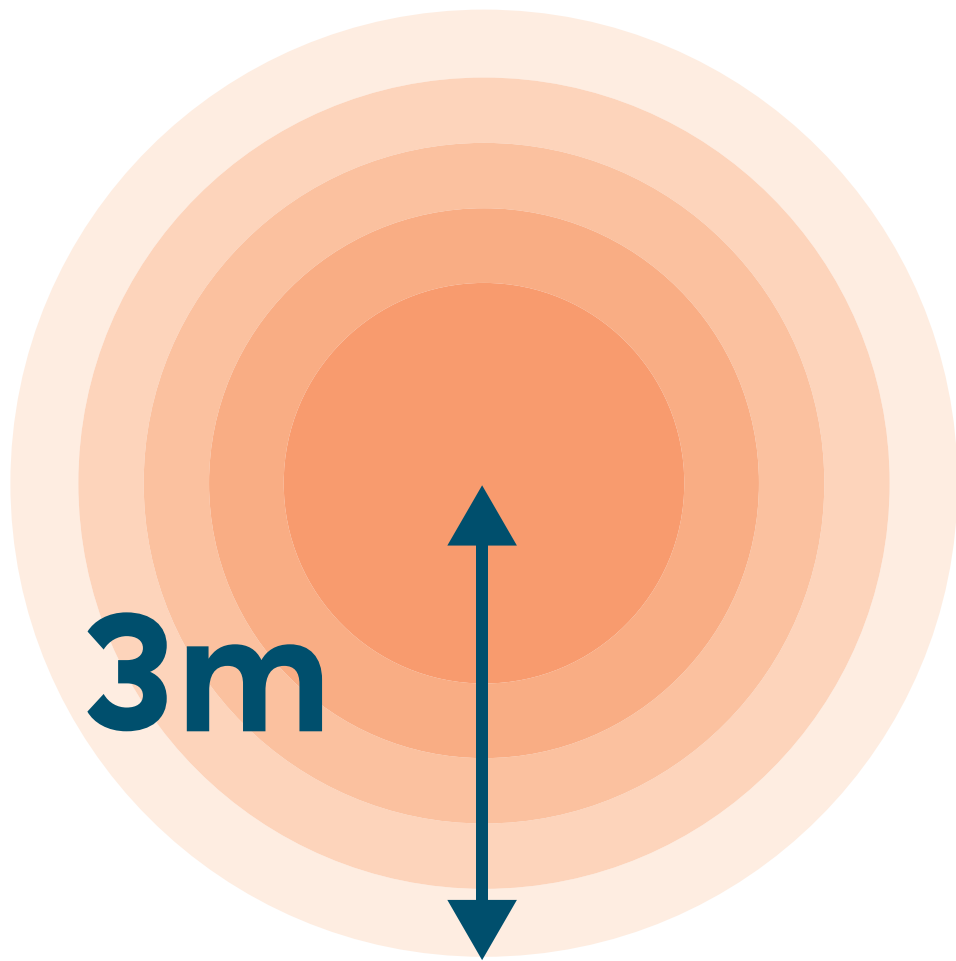
Overview

Electricity is everywhere and powers many of the things we use each day. However, it can also be dangerous. In this activity, your students will learn how to stay safe around electricity in an emergency. They'll demonstrate their learning by acting out different safety scenarios.

What you'll need

- "What should you know? Electrical safety" slideshow
- "What should you know? Electrical safety" worksheet – 1 per student
- "What should you know? Electrical safety" scenarios – 1 scenario per group
- "Group work evaluation rubric" – 1 per group

- What Should You Know Slideshow 107.9 KB PDF
- What Should You Know Worksheet 819 KB PDF
- Group Work Evaluation Rubric 571.6 KB PDF
- What Should You Know Safety Scenarios 192.8 KB PDF



If you're near, stay clear.

Stay 3 metres from power lines.