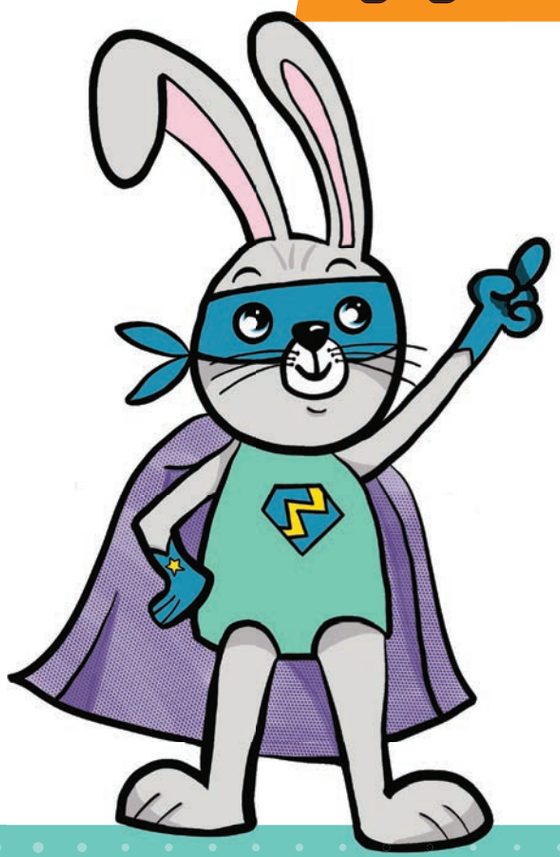
hydro one

MIND THE LINES

What is electricity?

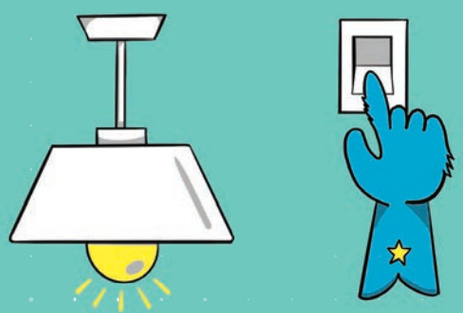


Electricity is an energy that can be found everywhere, which means we have to stay safe around it.

Electricity powers items like lights, your fridge, and television.

Electricity is transported to our homes and schools through **power lines**. It can also be stored in **batteries**.

Switches power lights and appliances using electricity that travels through wires behind the wall.



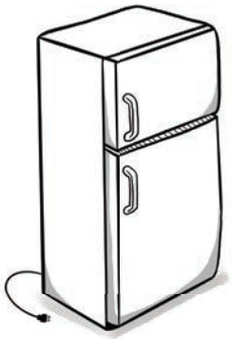
What is the most common way you can tell something uses electricity?

Write your answer here

Always ask an adult for help to plug or unplug devices, so you do not get an electric shock.

Power up

What are these objects? Write the names under the pictures.



These objects all have a **cord and plug**. They need **electricity** to work.

Draw a picture of something else in your home that uses electricity.

Where does electricity come from?

Electricity can be found in nature and it can be created using water, wind, sun, natural gas and nuclear energy.

Electricity travels through wires called **power lines**. They can be found underground or above ground on poles.

Connect the dots to follow the power line from generation to home.

READY, SET, GO!

Start

Home

The power line goes into your home and electricity travels through wires inside the walls to the **outlets** and **switches** all over your house.

Electricity is made in places called **generating stations**.

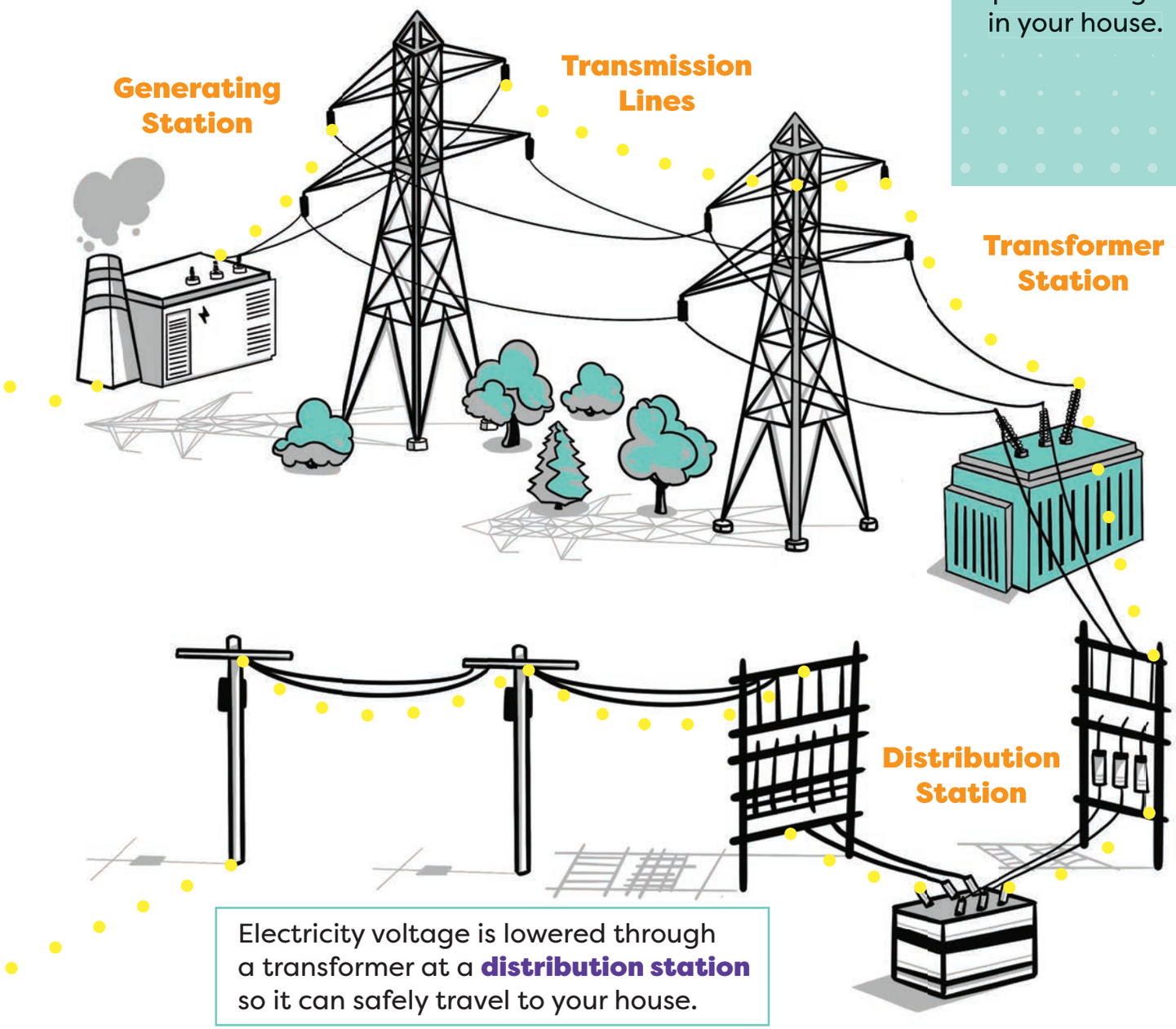
Electricity travels along transmission power lines to transformer stations.

Transmission power lines are big power lines and can carry more electricity.

At the **transformer station**, the electricity is raised to travel along transmission power lines to a distribution station.

Electricity is measured in **volts**.

Transformers are used to make those volts higher to transport them, and lower to power things in your house.



Electricity voltage is lowered through a transformer at a **distribution station** so it can safely travel to your house.

Play it safe outside

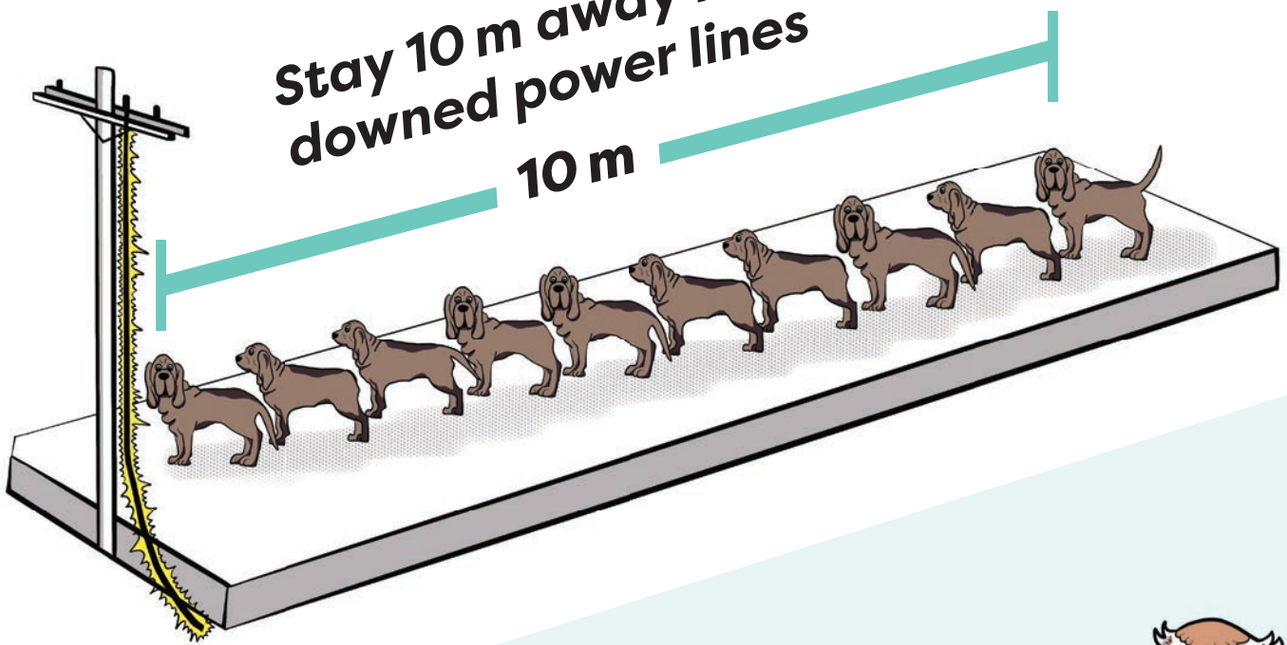
Some power lines are underground and you have to be very careful when you dig holes for a garden, tree or fence.

You need to know where the power lines are before you dig.

FOR ADULTS
An adult has to contact OntarioOneCall.ca before digging.

Stay 10 metres away from broken or fallen power lines — 10 metres is about 10 big dogs long.

Sometimes when there is a big storm or accident, power lines fall down. When this happens, the ground around the lines might be electrified and that is dangerous.

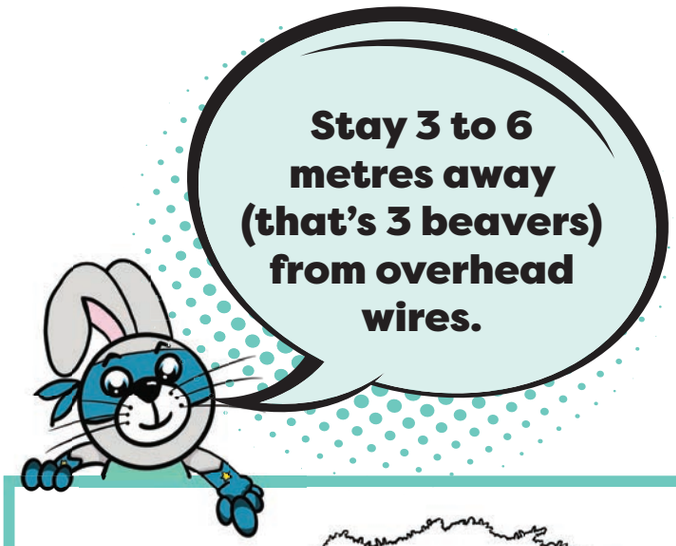


Step potential is the ability electricity has to move through your body as you step away from the source. As electrical current flows through the ground, the voltage decreases in rings as you move away.

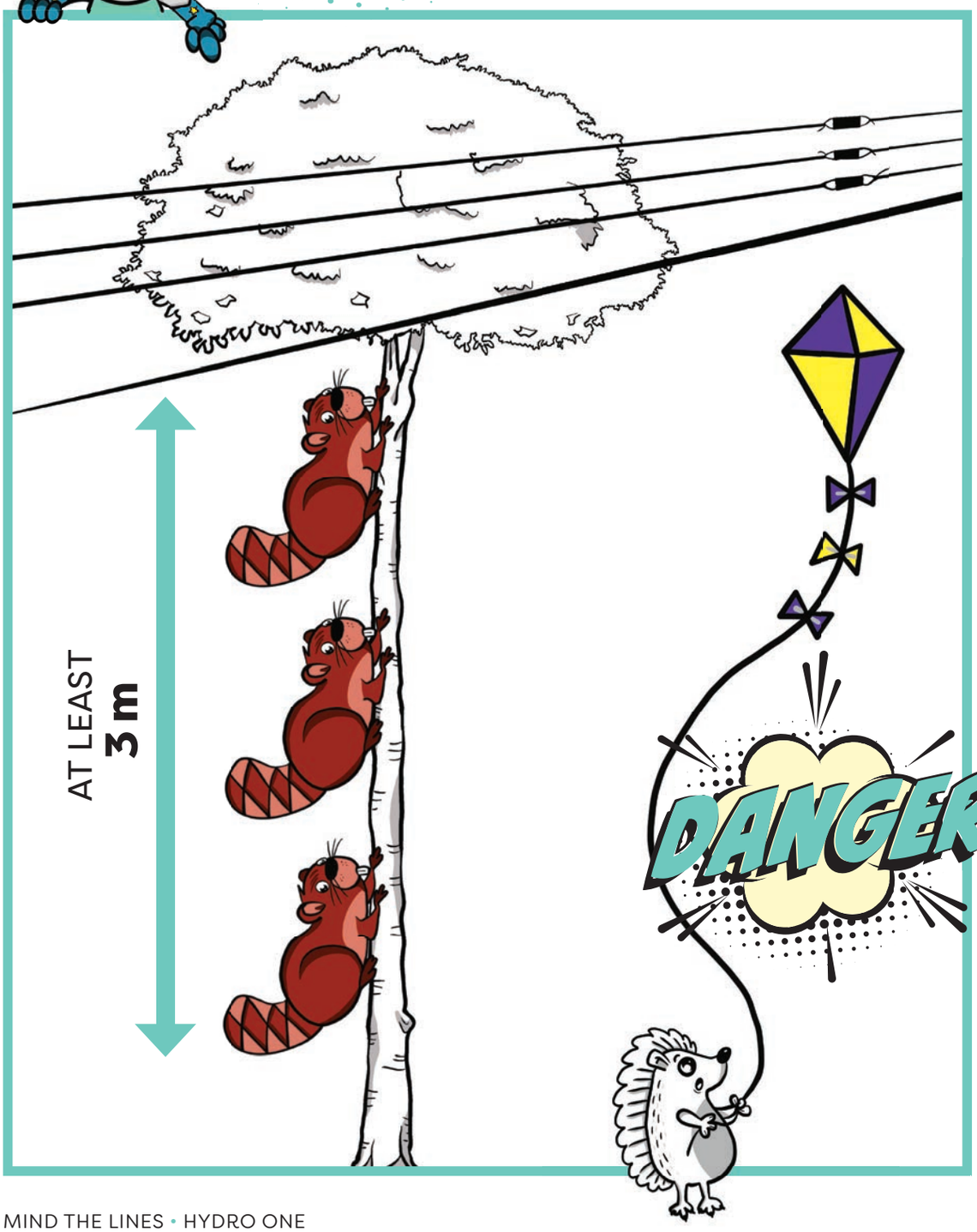
Keep your legs together and shuffle your feet to keep the electricity in the ground. 10 metres is the safe distance.

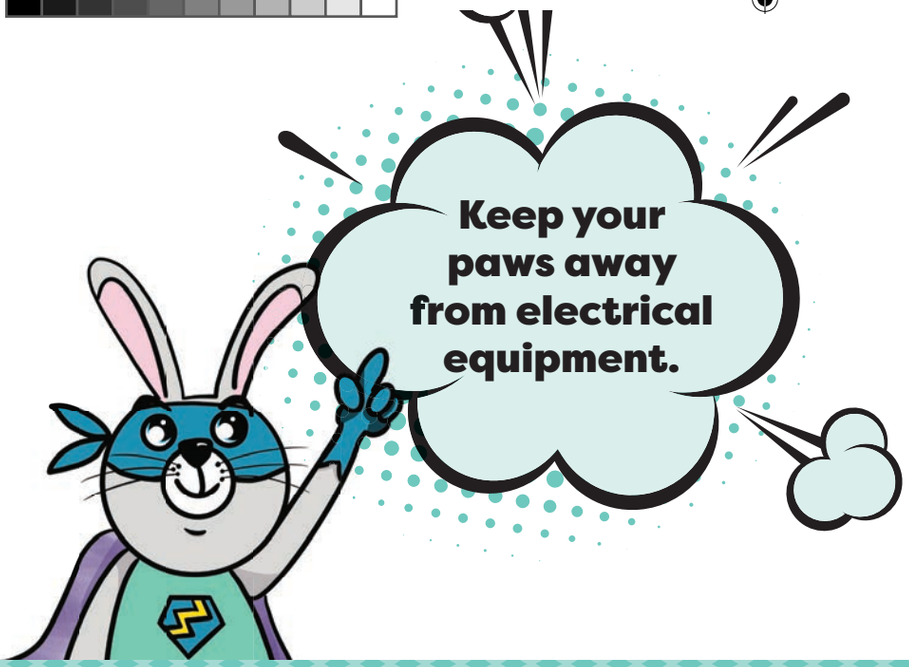
FOR ADULTS

A broken or fallen power line is an emergency. Call 911.

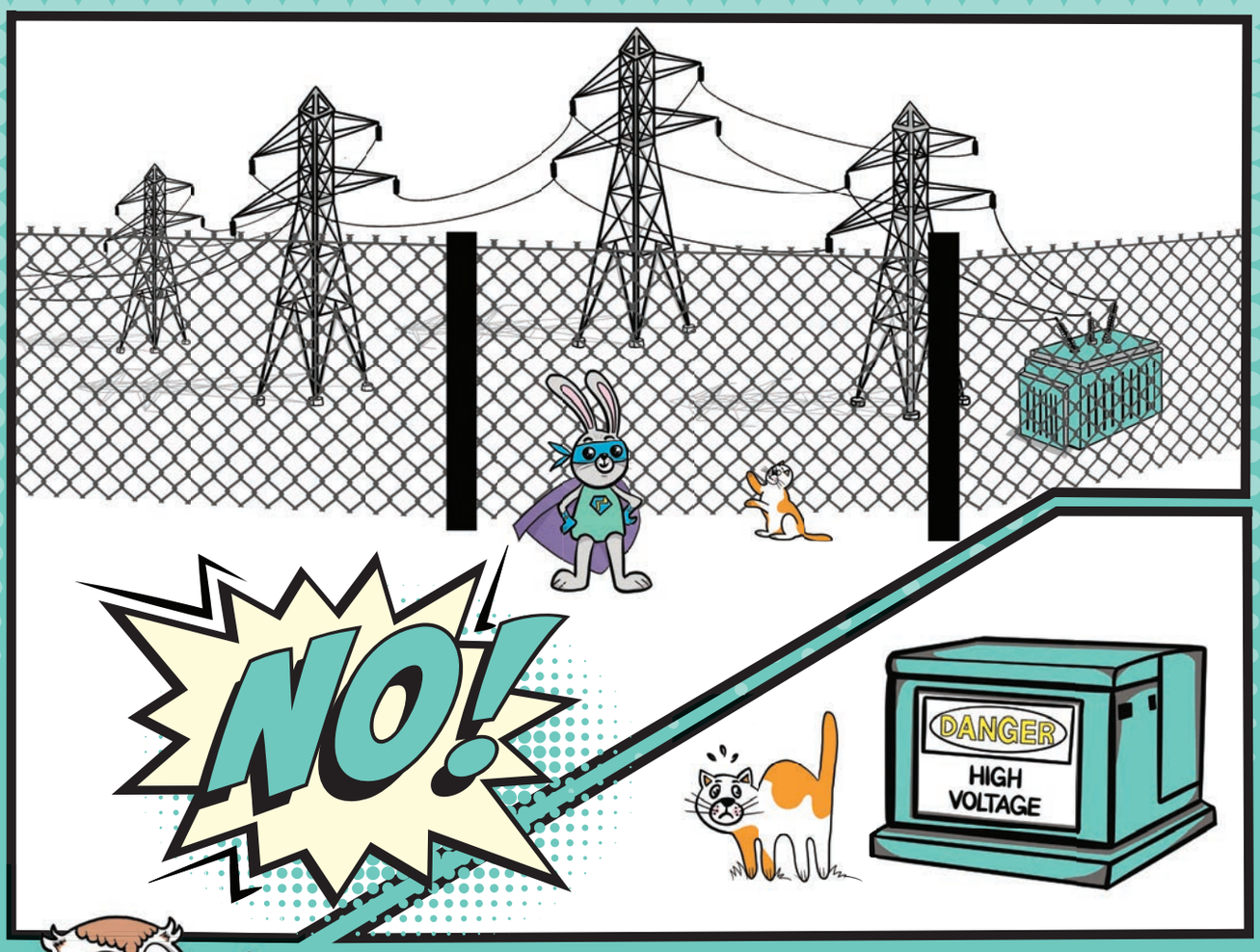


Only play with kites, balls, drones and balloons in open spaces. Stay far away from power lines.





Do not open the metal transformer boxes you see in your neighbourhood. Do not sit on them either!

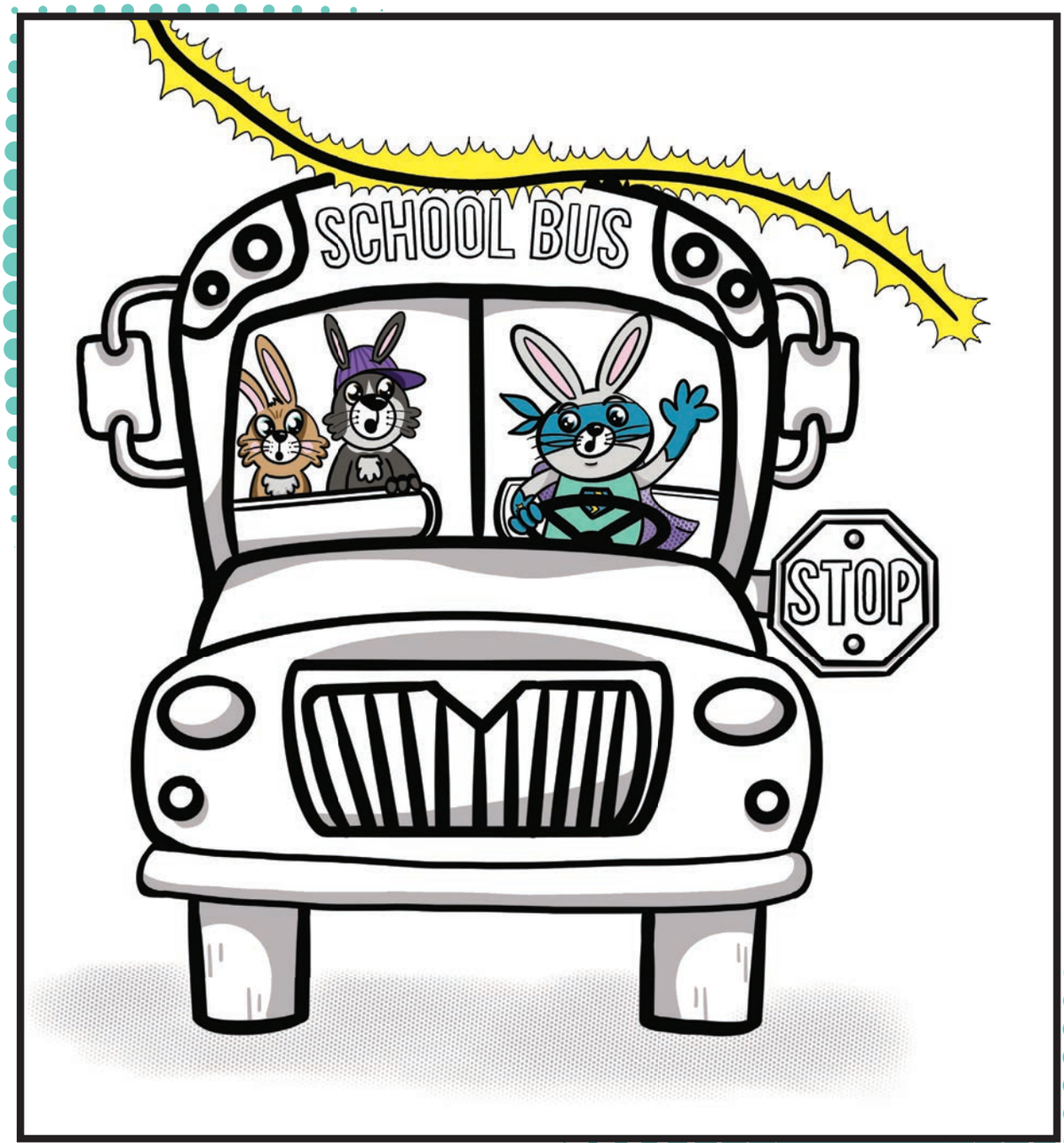


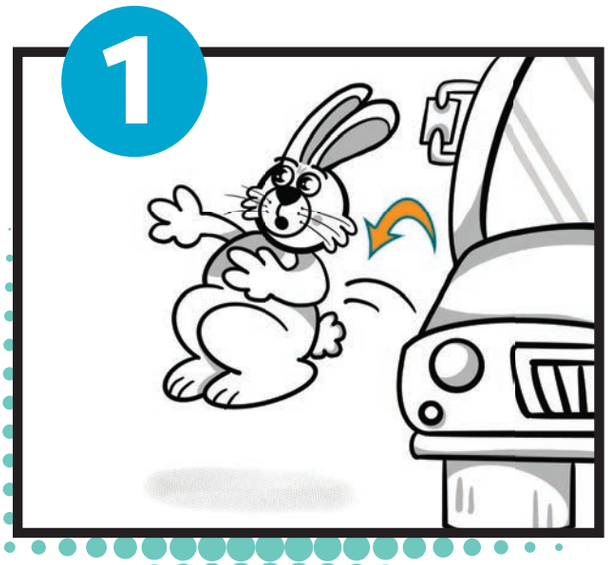
Never climb fences near electrical equipment. If a ball or something else goes inside the fenced area, do not attempt to get it. Ask an adult to call 1-800-434-1235 for help.

Fallen power line? Stay in your vehicle unless there is a fire.

If a power line falls on top of your car or school bus, stay inside the vehicle and call 911 for help.

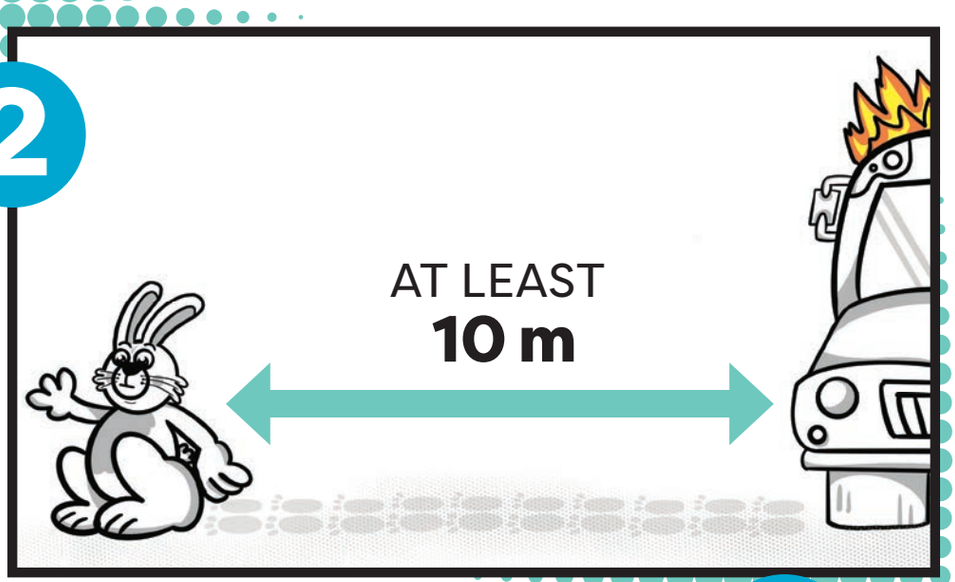
If a fire starts, you must leave the vehicle quickly and safely.
Do not touch the vehicle and the ground at the same time.





Do the **bunny hop** — jump to the ground with both feet together and without touching the vehicle.

Can you do the bunny hop?
Practice now.

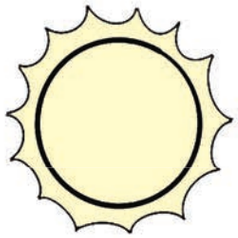


Once you are on the ground, move at least 10 metres away by doing the **shuffle** — keep both feet close together on the ground and drag your feet to safety.

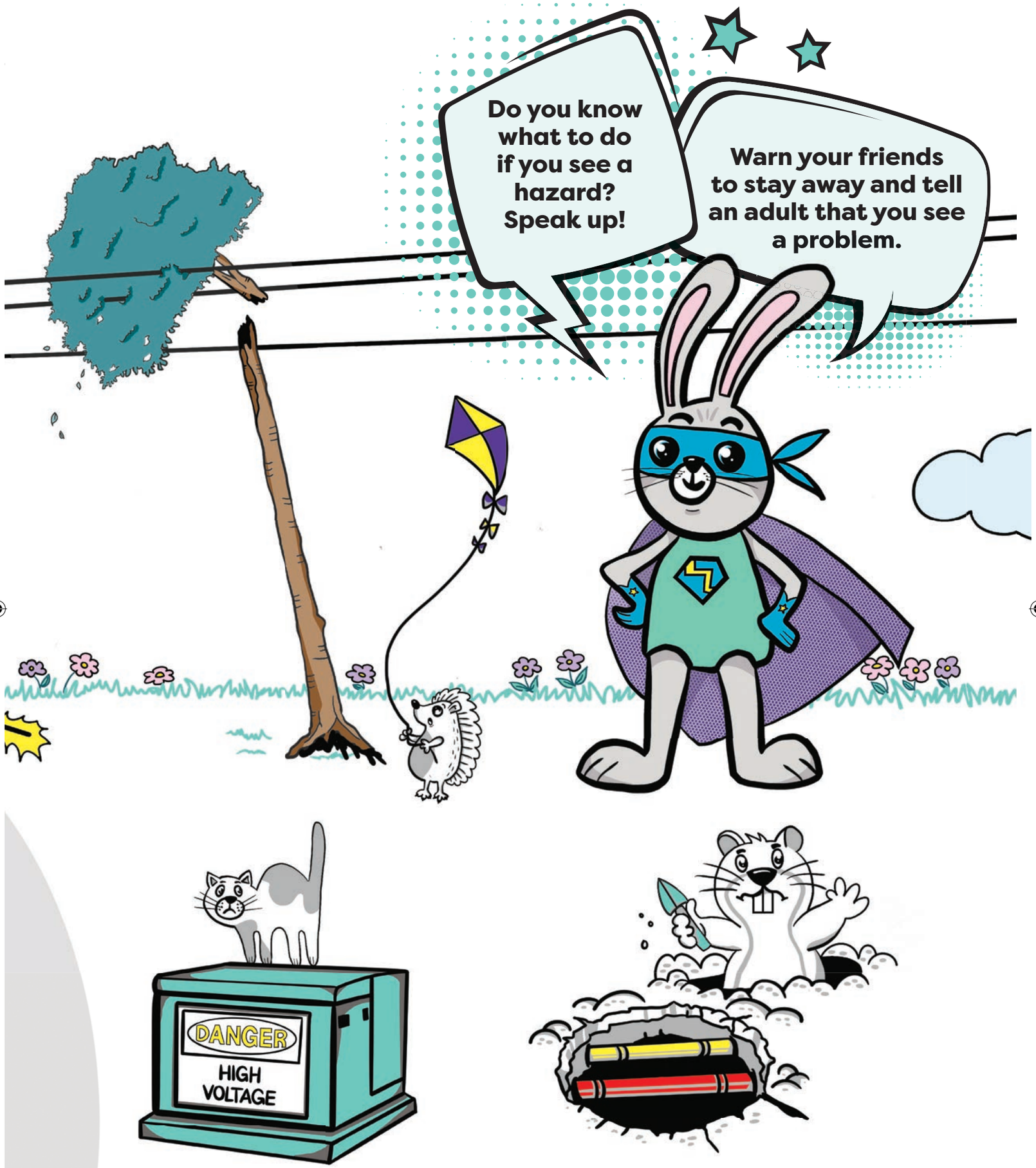
Can you do the shuffle?
Practice now.

Once you are safe, call 911.

Safety check outside



Can you find all the dangers in the picture?
Circle them all.

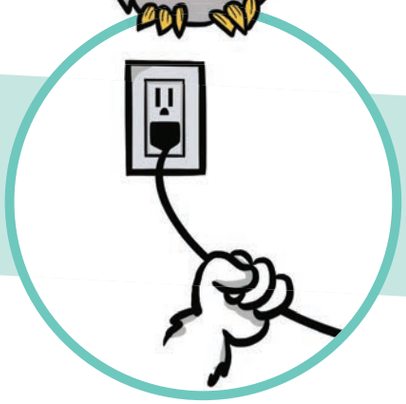

Do you know what to do if you see a hazard? Speak up!
Warn your friends to stay away and tell an adult that you see a problem.
DANGER
HIGH VOLTAGE

Play it safe at home

Electricity makes our lives better by powering the things we need, but electricity can be very dangerous and can hurt you…or worse. It can cause serious injuries and fires.

THE RULES

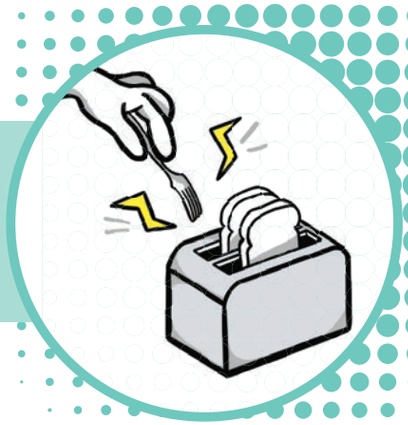
Never put unintended objects, like forks, in an electrical outlet.



Never pull a plug out by its cord. It can damage the cord and the plug.

Never use anything electrical near water.

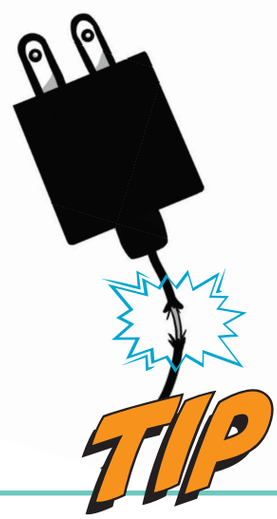
Never put anything metal in the toaster.



Never leave electrical cords out where you can trip over them or where pets can chew them.

You should always ask an adult for help with anything electrical. Do you know why?

Write your answer here

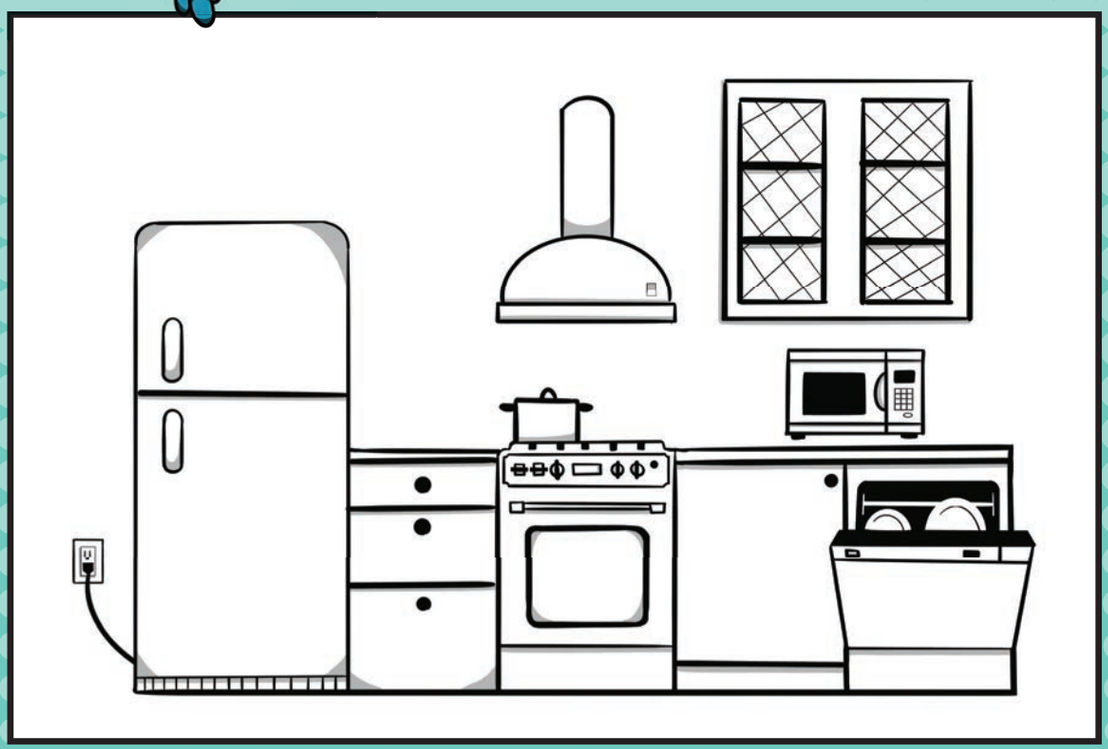


TIP

Tell an adult right away if you see a broken electrical cord at home. Do not touch it! It can give you a shock and hurt you.

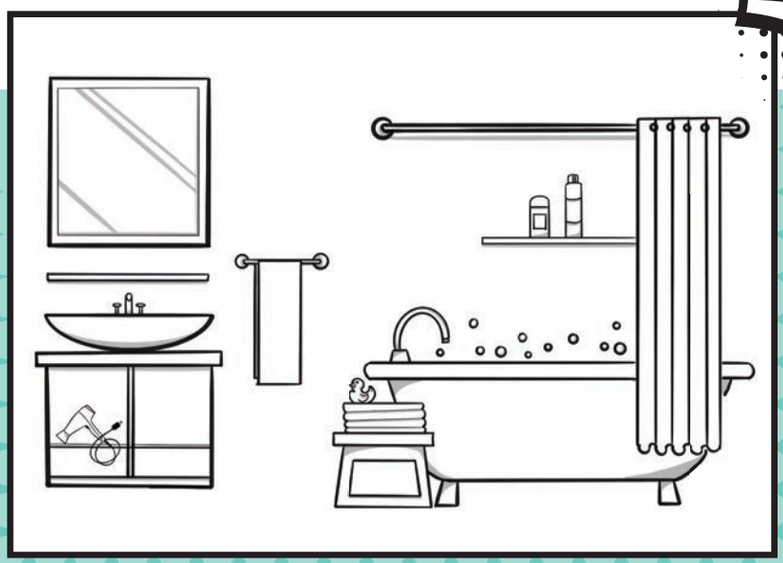
What uses electricity at home?

Colour the objects that use electricity in your home.

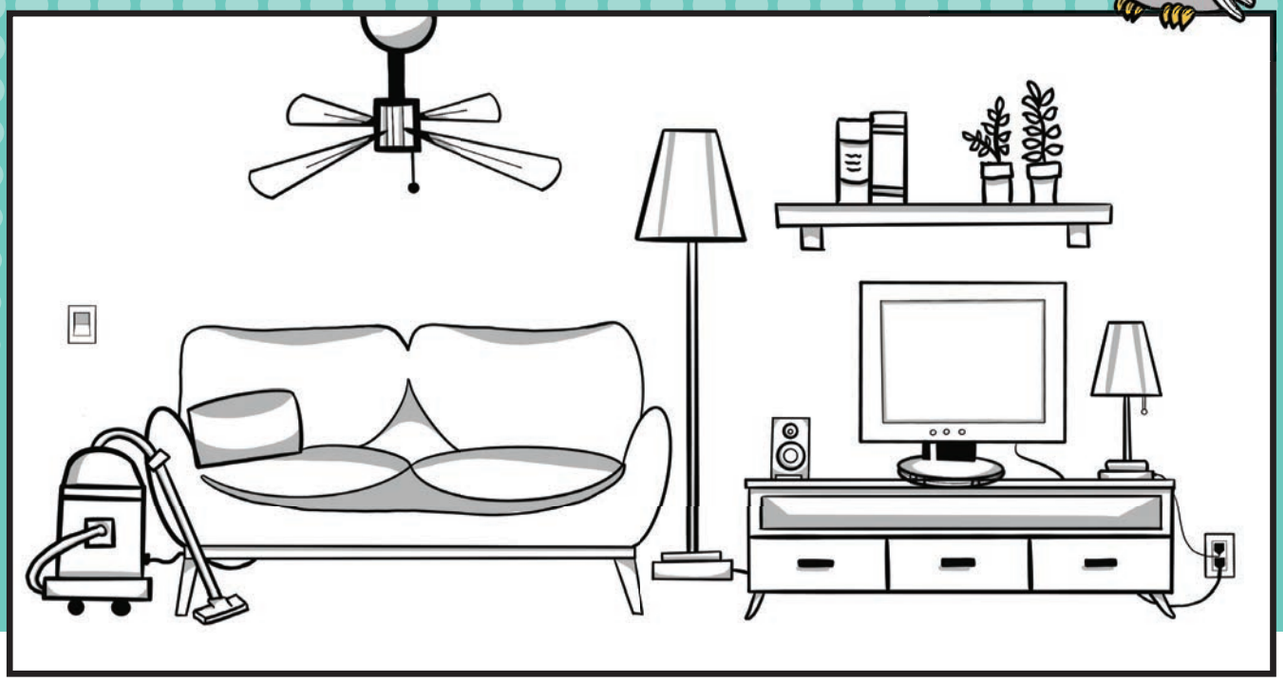


How many objects did you colour that use electricity?

_____



Good Job!

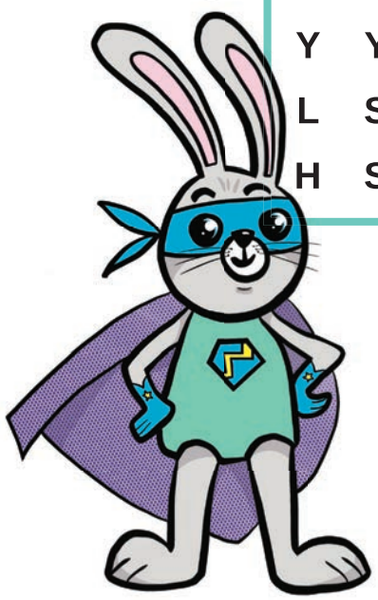


Learning checkup

Try these activities to find out what you have learned.

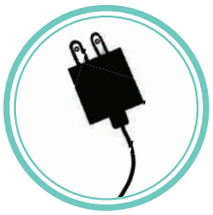
Find the words and circle them.

S	T	D	C	D	G	B	I	Z	I	N	O	Z	A	D
H	R	B	B	R	Q	U	B	O	E	T	Y	A	K	N
U	A	I	C	Q	V	L	Y	T	R	T	R	H	H	M
F	N	D	O	G	N	N	U	E	I	Y	S	F	V	D
F	S	E	R	L	N	B	W	C	G	L	A	S	T	J
L	F	R	D	U	I	O	I	R	G	F	F	W	V	I
E	O	X	B	R	P	R	E	D	E	S	E	I	O	U
E	R	B	T	O	T	N	W	A	C	B	T	T	L	G
T	M	S	H	C	E	W	N	N	H	G	Y	C	T	E
O	I	P	E	Q	O	M	Z	G	A	P	C	H	S	N
D	U	L	A	B	A	T	T	E	R	I	E	S	Q	E
S	E	T	Z	W	P	S	F	R	G	M	B	H	I	R
Y	Y	Z	L	W	G	Z	X	O	E	Q	W	M	L	A
L	S	B	M	E	I	D	B	U	R	P	L	U	G	T
H	S	O	A	M	T	B	R	S	W	O	P	N	B	E



BATTERIES
BUNNY
CHARGE
CORD
DANGEROUS
DISTRIBUTE
ELECTRICITY
ENERGY
GENERATE
HOP
OUTLET
PLUG
POWER
SAFETY
SHUFFLE
SWITCH
TRANSFORM
VOLTS

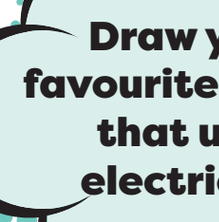
Cord and plug



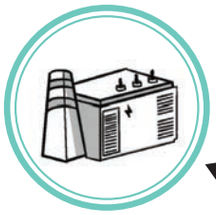
Electrical outlet

Bunny hop

Transmission lines



Generating station



Draw a line to match the words with the pictures.

Draw your favourite object that uses electricity.

Homework!

How many light switches can you see in your home? **Count them.**

Safety at work

Hydro One workers stay safe at work by wearing special **safety gear**.

Do you know what these things are and why we wear them to stay safe?

Talk about them in your class and with your friends and family.

hard hat

safety glasses

high visibility vest

arc flash/flame resistant clothing

work gloves

safety boots

Glossary

Electricity is an energy that can be found everywhere. Electricity powers items like lights, your fridge, and television.

Power lines transport electricity to our home and schools. They can be underground or above ground.

A **cord and plug** can make objects work that need electricity when connected to an electrical outlet.

Electrical outlets connect electrical lines to wires to give power to your home.

Switches connect to wires inside walls to power lights and appliances.

A **generating station** is where electricity is made.

Transmission power lines are big power lines and can carry more electricity.

A **transformer station** raises electricity to transport it to a distribution station.

A **distribution station** lowers the voltage of electricity so that it can safely travel to your house and school.

Volts is how electricity is measured.

Step potential is the ability electricity has to move through your body as you step away from the source.

Bunny hop is jumping from a vehicle to the ground with both feet together and without touching the vehicle.

Shuffle is keeping both feet close together on the ground and dragging your feet to safety until you are at least 10 metres away.

Safety gear is clothing and objects that safety workers wear to stay safe at work.

Draw something dangerous that you should stay away from:

Draw your favourite animal being safe with electricity:

All the answers

Page 2

- It has a cord and a plug. There is a switch or outlet on the wall. It has wires.

Page 3

- Refrigerator
- Hair dryer
- Lamp
- Cell phone
- Computer

Pages 12 and 13

1) The rabbit must stay in the vehicle and call 911. Look at page 10.
2) If the rabbit must leave the vehicle, the rabbit must NOT touch the vehicle and ground at the same time. Look at page 11.
3) The dog is TOO CLOSE to the broken power line. Look at page 7.
4) The porcupine must NOT fly a kite so close to power lines. Look at page 8.
5) The cat must NOT be on the metal transformer box. Look at page 9.
6) The gopher must NOT dig without knowing where the power lines are. Look at page 6.

Page 15

- Electricity is dangerous and can hurt you if you do not follow the rules.

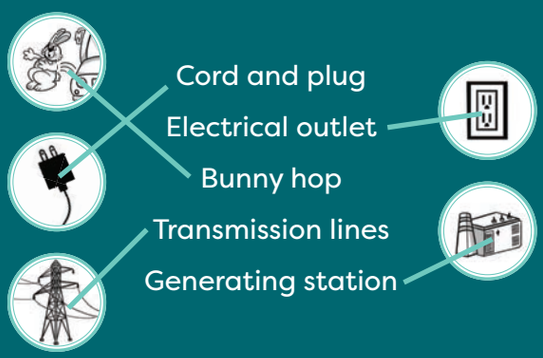
Pages 16 and 17

- Kitchen: refrigerator, stove, fan, microwave, dishwasher, outlet (on the wall)
- Office: computer, cell phone, lamp, headphones
- Bathroom: hairdryer
- Living room: outlet (on the wall), vacuum, fan, lamps (2), TV, switch (on the wall), stereo
- Total: 19

Page 18

S	T	D	C	D	G	B	I	Z	I	N	O	Z	A	D
H	R	B	B	R	Q	U	B	O	E	T	Y	A	K	N
U	A	I	C	Q	V	L	Y	T	R	T	R	H	H	M
F	N	D	O	G	N	N	U	E	I	Y	S	F	V	D
F	S	E	R	L	N	B	W	C	G	L	A	S	T	J
L	F	R	D	U	I	O	I	R	G	F	F	W	V	I
E	O	X	B	R	P	R	E	D	E	S	E	I	O	U
E	R	B	T	O	T	N	W	A	C	B	T	T	L	G
T	M	S	H	C	E	W	N	N	H	G	Y	C	T	E
O	I	P	E	Q	O	M	Z	G	A	P	C	H	S	N
D	U	L	A	B	A	T	T	E	R	I	E	S	Q	E
S	E	T	Z	W	P	S	F	R	G	M	B	H	I	R
Y	Y	Z	L	W	G	Z	X	O	E	Q	W	M	L	A
L	S	B	M	E	I	D	B	U	R	P	L	U	G	T
H	S	O	A	M	T	B	R	S	W	O	P	N	B	E

Page 19



hydro one

For more electrical safety resources, visit HydroOneRemotes.ca