



Sparky's job is to protect his family, making sure everything is safe in the house, in the garden and in the outside world.

But does Sparky know enough about electrical safety to really protect them?

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SPARKY and the ELECTRICAL PILLAR



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SPARKY and the **ELECTRICAL PILLAR**

Illustrated by Alison Mutton



This is my family.
I protect us and our home. That is my job.

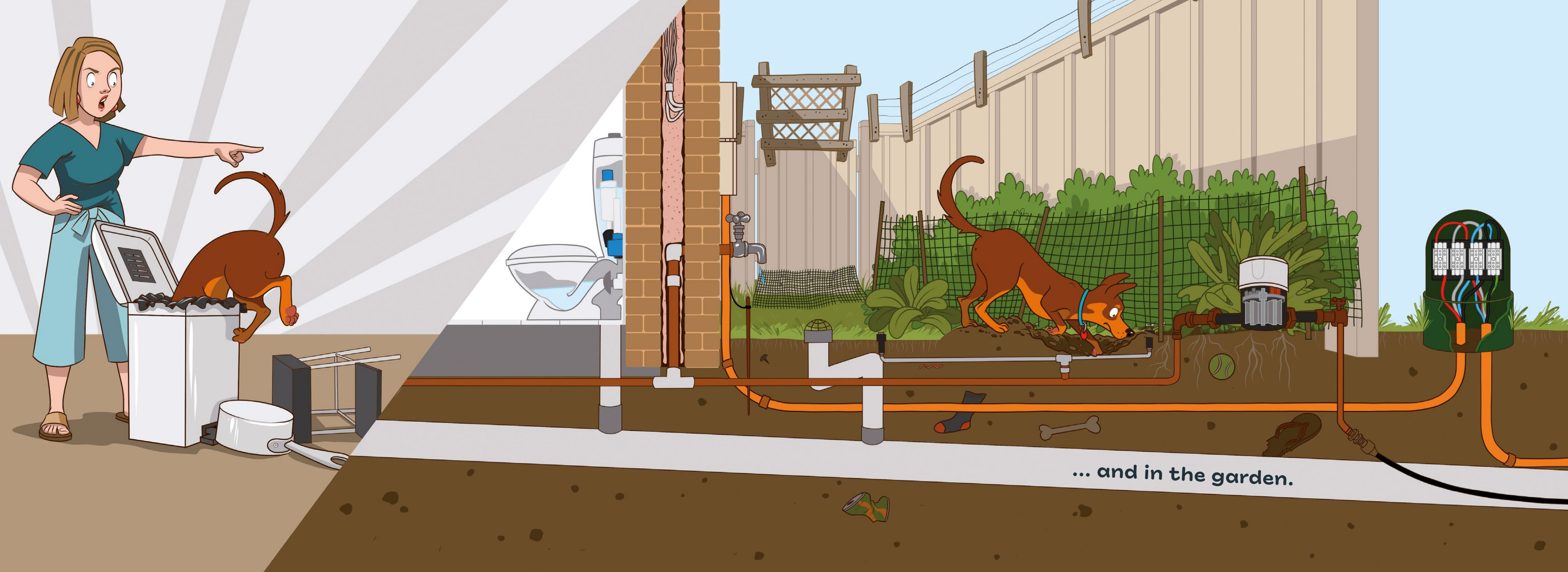


I do my job,
inside the house ...

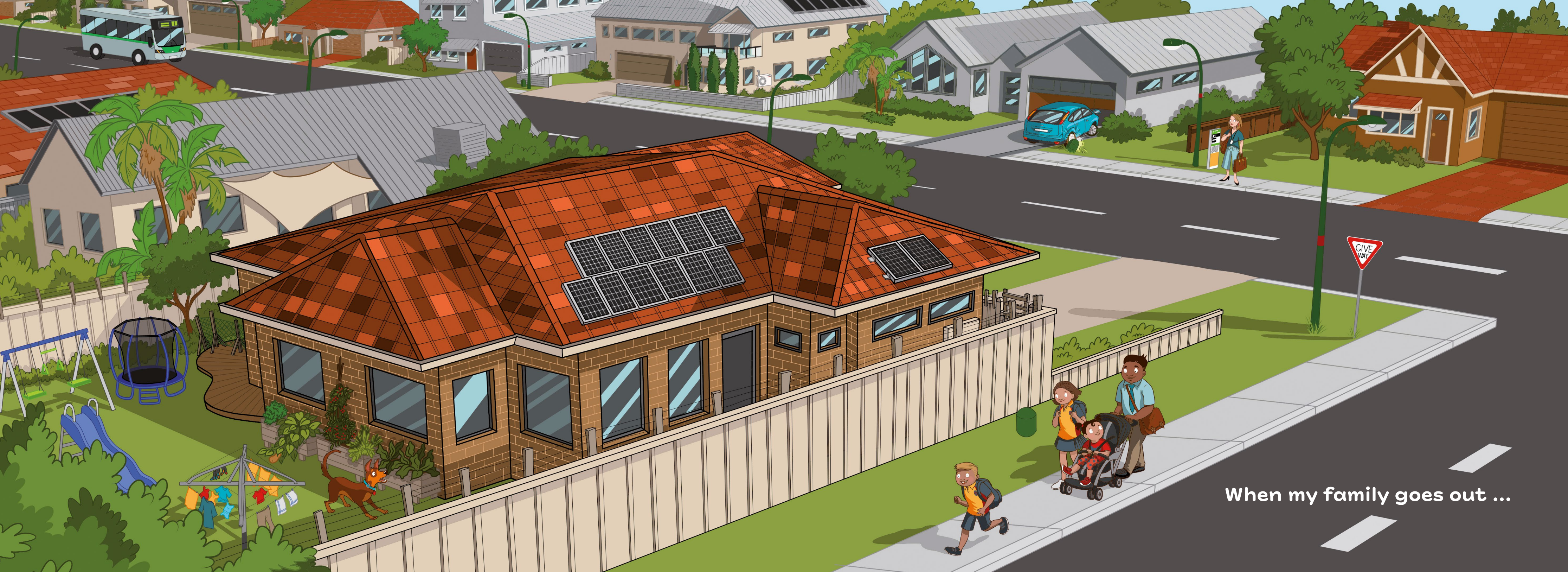
All gone!

Mum, Sparky's
squashing me!

He's making
me too hot!

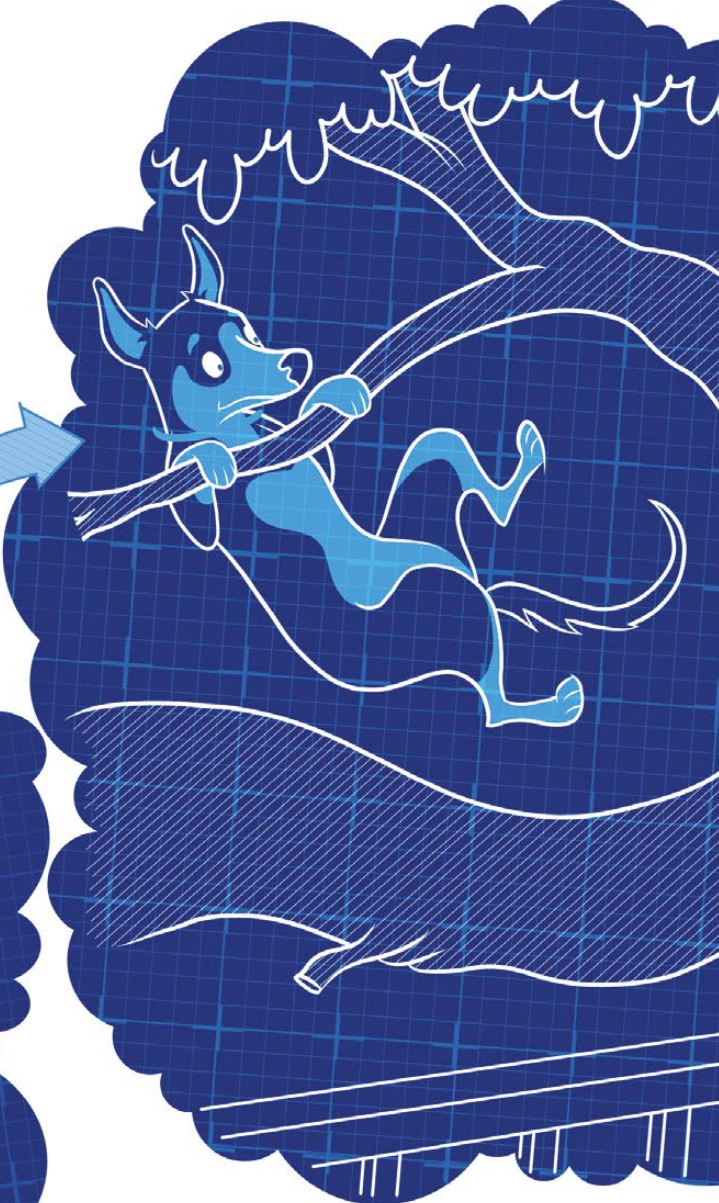
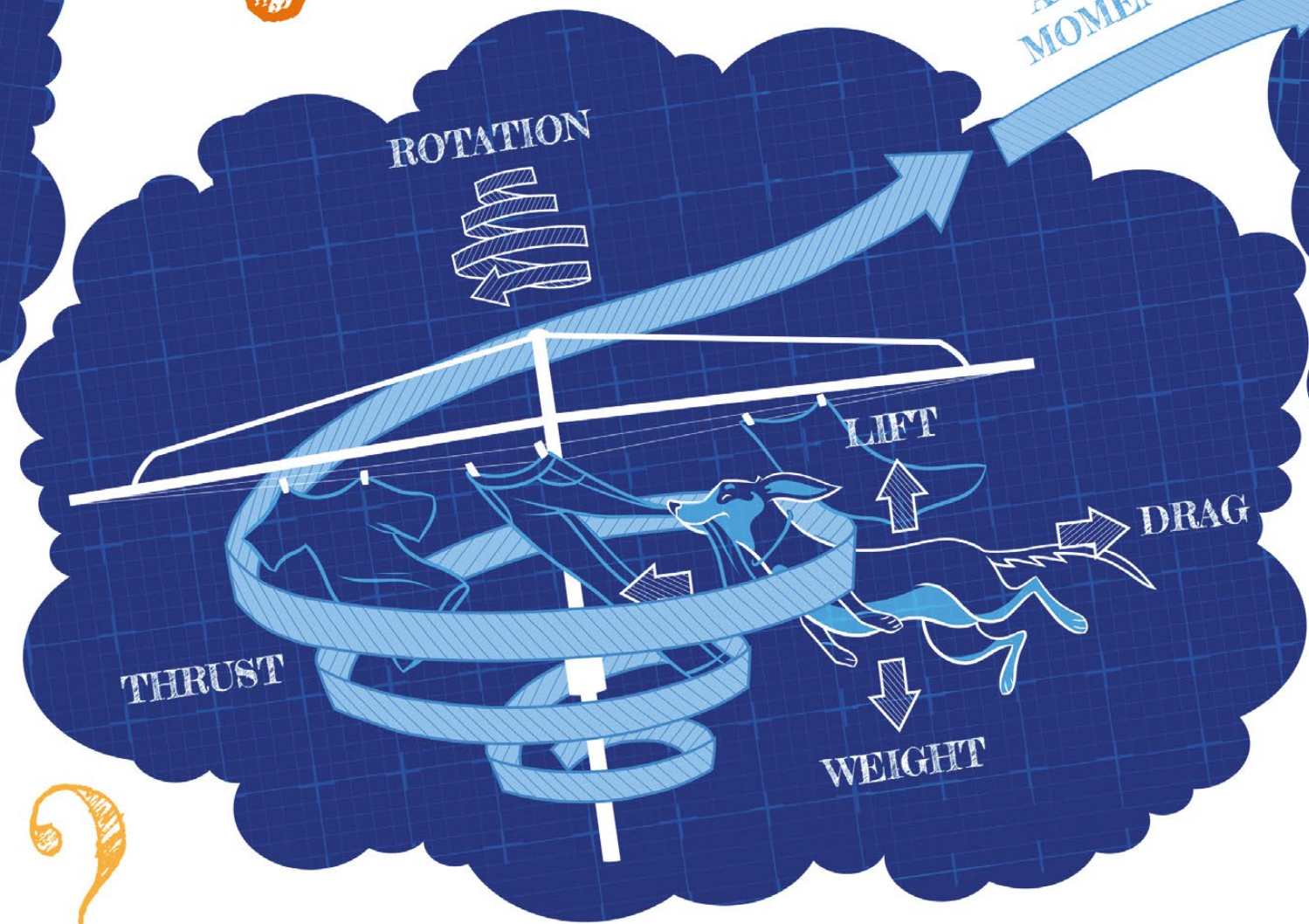
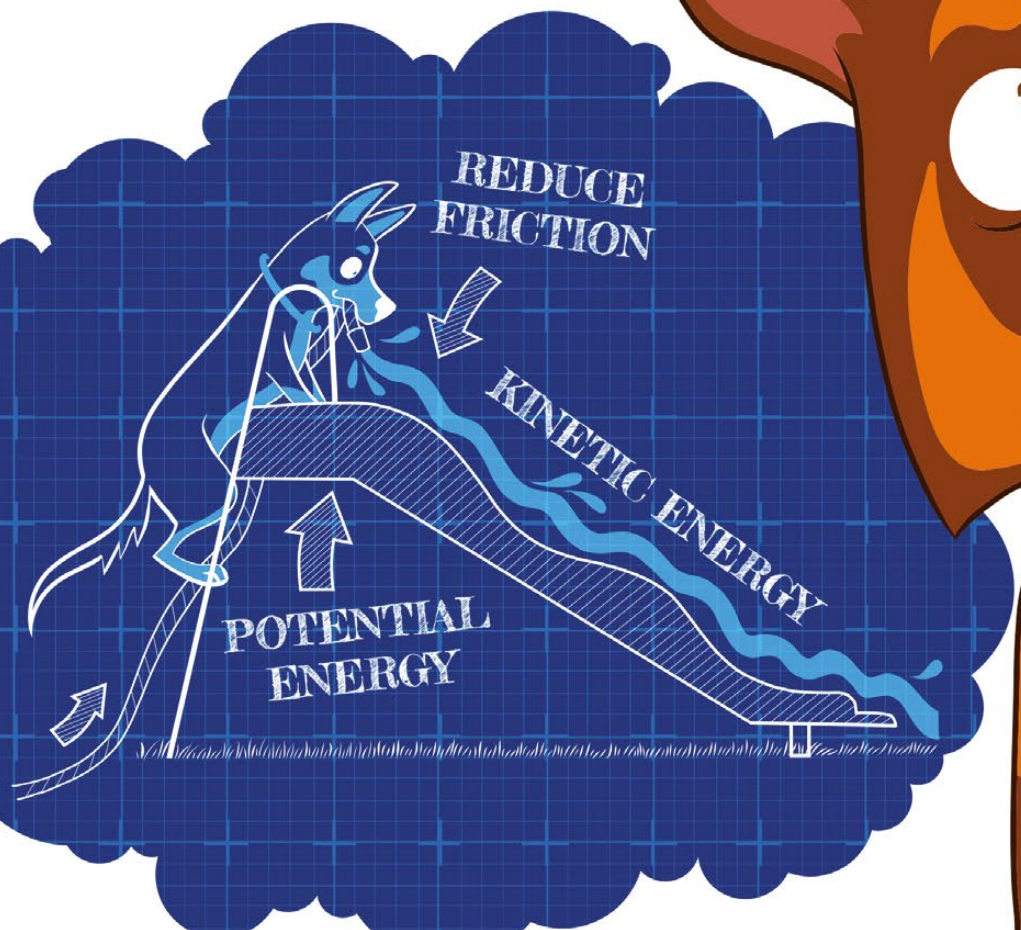


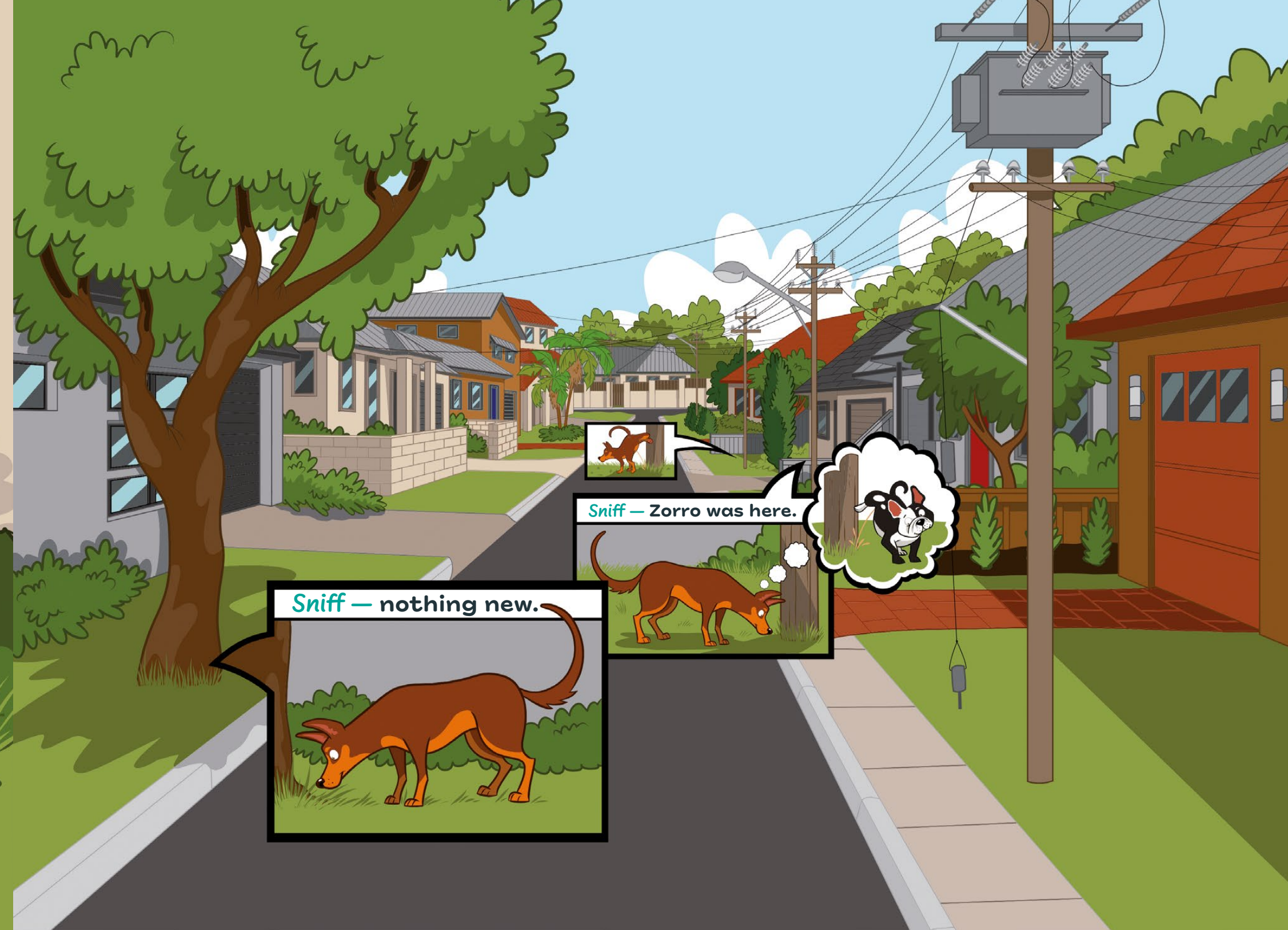
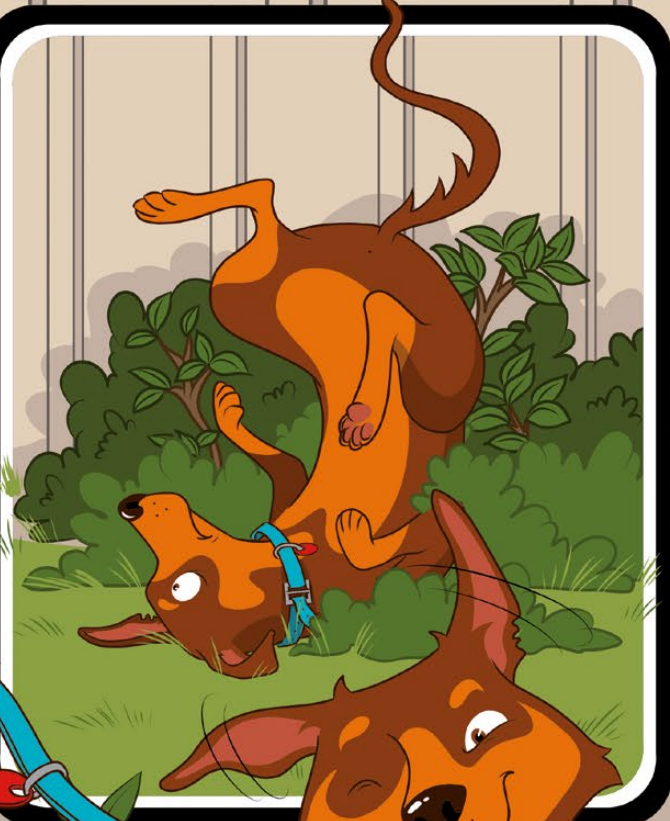
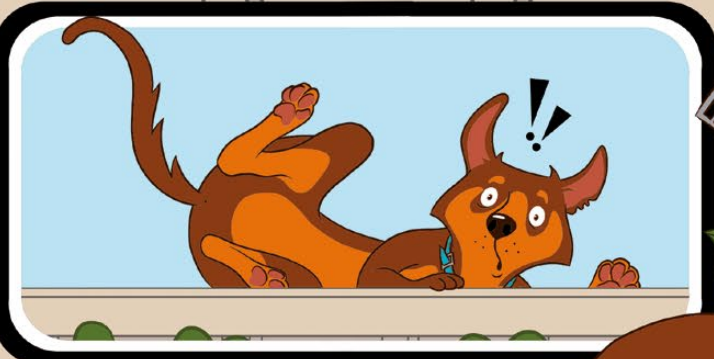
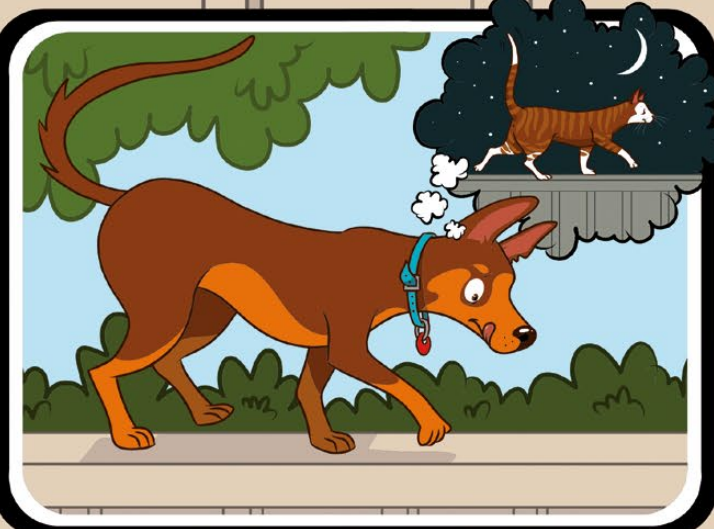
... and in the garden.



When my family goes out ...

... I like to check on everything.
But first, how to get out?





Here's a trail!



Eek — angry bees.



Uck — sticky flowers.



Urp — slippery stones.



Hmm ...





I'll just let the others
know I've been ou—









Sparky!

How did you get out?

Oh, look! That could be dangerous.
We'd better move well away and
I will call Western Power.

GRRRR



Thank you for calling us.
That mini pillar was badly
damaged and could have
hurt someone.



It was our dog
Sparky that seemed
to know.

Well, what a
good dog he is.

Hmmm.

This is my family.
I protect us and our home.
That is my job.

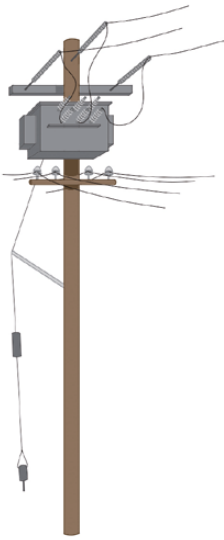


Today, I did a good job.

Electricity

Electricity is a form of **energy** that we can make (generate) and move around (transmit and distribute) to use in our homes and schools to **power** appliances. It is very **useful**, but it is powerful so it can be **dangerous**.

Electricity is measured by its pressure or force – voltage, and its rate of flow (speed) – current. It needs both to be at a certain level to hurt. When electricity is travelling long distances it is at a high voltage. When it is in your house it is a low voltage, however all electricity in overhead wires and underground cables and in your house has that potential to hurt.

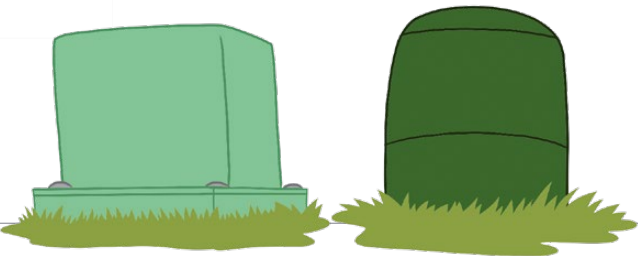


Power pole and power lines

Electricity travels on a path, known as a circuit, along wires made of good conductors such as aluminium. The power poles hold the wires up out of the way for safety. If you ever see a power line on the ground stay 8 metres away and call 000 or Western Power on **13 13 51**.

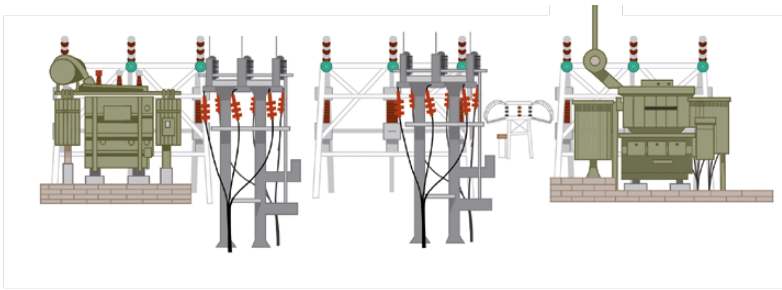
Green dome or mini pillar

Sometimes electricity goes underground instead of overhead. Green mini pillars are connection points for underground power that allow technicians to work on them. The pillars are strong to protect the wires and they are coloured green to blend in with their surroundings. Pillars are safe, but can become dangerous if damaged. If you see a damaged pillar report it to Western Power on **13 13 51**.



Substation

Electricity that has travelled a long way at a high voltage (transmission), needs to be converted to a lower voltage at a substation, so that it can continue safely to where it's needed (distribution). Only trained people can enter substation sites.



Electrical cabinet

An electrical cabinet houses a transformer for underground power and protects it. Transformers in your neighbourhood change high voltage, to a lower voltage. This, then allows electricity to move safely to your home or school to power your appliances. Voltage is the push of the electricity, similar to the force of water coming out of a tap.



Teaching Ideas

Sparky and the Electrical Pillar has several themes for discussion.

Doing a job



What is a job?

What does Sparky think is his job?

What sort of things does he do to carry out the job normally?

What does he do on this particular day that he thinks is a good job?

Why are Sparky's family not impressed with him?

Protection and safety

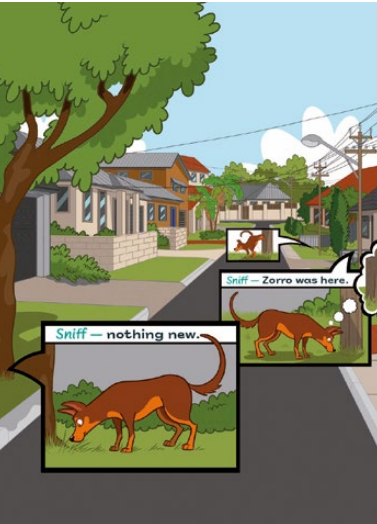


What things around us do we have to be careful about for our safety?

What things help to protect us?

What can you see around us that is there to help keep us safe?

Observing the world through our senses



What are our senses? When do we use them?

What senses does Sparky use?

Do dogs and people use senses in the same way?

Streetscape

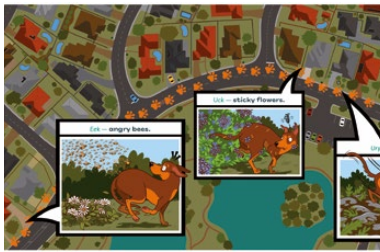


What do you notice on the streets around us?

What are they for? What can you see everywhere and what can you only see in some places?

How do you find your way around the streets?

STEM behaviour



How does Sparky find out about things?

How does Sparky get out of the backyard?

What sort of thinking and behaviour does he show?

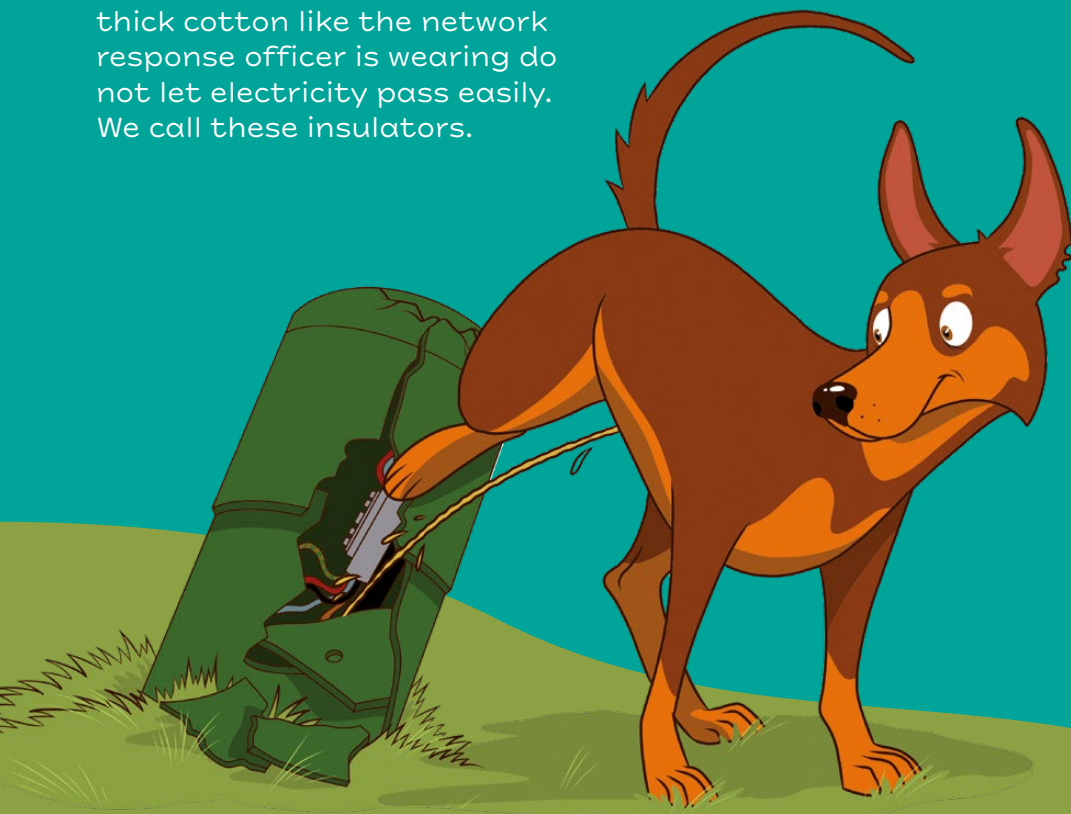
For Sparky classroom activities visit westernpower.com.au/community/our-education-program/

About electric shocks

Sparky gets an electric shock from the damaged and exposed mini pillar. The live cables inside carry electricity and this is what passed along Sparky's stream of urine and his body giving him a shock. Sparky's urine provided an alternate path to earth for the electricity in those cables. Electricity will always take the easiest path to earth, such as the ground.

Some materials allow electricity to travel more easily than others. We call these conductors. Impure water, in this case the urine and the water content of Sparky's body, is a conductor. Other materials like rubber on the bottom of shoes or thick cotton like the network response officer is wearing do not let electricity pass easily. We call these insulators.

Nerves and muscles in our bodies (this includes our heart) and animals, use electrical signals to work. Electricity from wires running through the body causes muscles to contract, which can cause someone to be thrown back, like Sparky, or unable to let go of what they are holding. An electric shock can cause injury, disorientation, burns and death. Someone who has received an electric shock should always be medically treated even if they appear okay.



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