8 How important is electricity?

Key Words

1 8.1 **Preview the Key Words.**

shove (v)

hologram

mission

generate

nuclear fusion

frustrated

grounded

confused

2 **Read the definitions and mark (✔) the correct Key Word.**

a the combination of two or more particles to make energy — ☐ confused ☐ nuclear fusion

b a three-dimensional image made with light beams — ☐ frustrated ☐ hologram

c an important assignment — ☐ mission ☐ shove

d unable to fly — ☐ generate ☐ grounded

Pre-reading

3 **Look at the pictures on pages 105–111 and circle the correct options.**

What is the story about?	Where does it happen?	When does it take place?
ghosts	in a forest	in the past
a superhero	in a city	in the present
a spaceship	in a house	in the future

4 8.2 **Listen and read.**

The Peace Maker

By Joep van der Werff • Illustrated by Berenice Muñiz

CRASH! BANG! Everyone in the time machine was pushing each other. They were all trying to get out. OUCH! The time machine wasn't working because there was no electricity. The door was shut, and everyone inside wanted to leave!

BANG! "Take your elbow out of my eye!" OUCH! "I can't! This guy is pushing my arm!" Everybody was pushing and shoving. In this way, they'd never get through the door.

ZOOM! A boy in a superhero suit suddenly appeared in the time machine. Who was this? Let me describe him. He wasn't tall, and he wasn't short. He didn't have big muscles, either. He was wearing a blue suit with a big yellow symbol on his chest. Was he a real superhero?

The boy took a deep breath and blew. And a little blue air came out of his mouth.

"What's going on?" a man in the time machine asked. "I feel more relaxed."
"Me, too," the woman next to him said.
You can go first. I'm not in a hurry."
"No, you go first. I insist," said the man.

Amazingly, the door opened and the time travelers walked out, one by one, in perfect order, without pushing. They all looked around and said, "Why were we fighting? What was wrong with us?" Then, a woman noticed the boy in the superhero outfit. She shouted, "Look! It's JJ! He's the guy who can make peace anytime, anywhere!" Everyone started clapping. The boy just smiled, turned around, and walked away.

JJ was a famous superhero. But he couldn't fly, or take giant steps, or be in different places at the same time. So he was just walking down the street when he received a hologram message from his mom: "Be home at 6 o'clock for dinner, JJ!" Then, he received another hologram with a new mission.

JJ was excited! He saw the Electric City Power Plant in the distance. It was a big factory from the 21st century where electricity was originally generated using coal. Now it used clean and safe nuclear fusion to make electricity. JJ ran around the power plant. He was looking for a door or an entrance. And suddenly ... PLOP! SPLASH! He fell into the canal! He looked around, but no one had seen him. How lucky!

In the meantime, people in the city didn't have any electricity. And they were very frustrated!

- The Sloan family was hungry. They couldn't cook because their microwave oven wouldn't turn on.
- The Watsons couldn't wash their clothes because the wash robots needed electricity.
- Nobody could communicate because the hologram senders weren't working. (It was a good thing that superheroes, like JJ, and their families had batteries with extra energy!)
- The Chang children couldn't go to school, and their parents couldn't go to work because the self-flying drones were grounded.

In Electric City, life without electricity was very difficult!

JJ saw a big, strong, ugly man with huge muscles at one of the doors of the power plant. "Is that giant guarding the entrance?" JJ asked himself. "Yes, he is!"

JJ walked around the corner to look for another entrance. There were more ugly giants at the other doors! He was still very wet. And suddenly, he got worried. Will his peace-making powers work if he is wet? Should he go back home? But there wasn't enough time to change into a dry superhero suit AND finish the mission AND be back home for dinner.

In the meantime, one of the giants had seen him! BOOM! BOOM! BOOM! He was walking toward JJ!

"Hey, you!" the giant shouted. "Go play superheroes in the park. Get out of here. NOW!"

"OK, I'm just going to try my superpowers," JJ said to himself. He blew carefully, but nothing happened. "Do I need to get closer to the ugly giant?" our hero thought. He took a small step forward and the giant took—BOOM!—a big step forward. "Hey, kid, go home before I throw you in the canal!" the giant shouted.

"No, please, Mr. Giant. I'm already wet," pleaded JJ. He was very scared, but he blew again. And again! The giant suddenly looked confused.

JJ blew some more blue air at him. And, suddenly, the giant smiled.

"How can I help you?" he asked politely.
"My name is JJ. I come in peace," JJ answered. "Can you please open the door for me? I need to talk to your boss."
"Sure. My name is Marcus," the giant said in a friendly voice and started to open the door. But now three even bigger and uglier giants were running toward JJ. So he started to run!

"Wait!" shouted Marcus. "This kid is my friend. Be nice to him!"

The three giants stopped right in front of JJ. They looked very surprised. JJ blew and blew in their faces. Then, suddenly, the three giants began to smile. They reached out to shake JJ's hand.

"JJ, meet Mason, Morris, and Michael," said Marcus.

"Nice to meet you all," JJ said. "Let me explain why I'm here."

JJ spoke to the giants for a few minutes. They all listened carefully and nodded. Then, they went inside together.

"Our boss's name is Johnny. Let us do the talking," said Marcus as he opened the door to an office.

Inside the office, a wicked-looking giant named Johnny stared at JJ with his big red eye.

"What are you doing here?" he yelled.

"Hello, Boss," Marcus said. "This is JJ—he's our friend. He thinks it's a bad idea for you to rob the city's electricity. What do you think of that?"

WHAM! Giant Johnny hit the table with his enormous fist. "I need the city's electricity to power my spaceship so I can go home. Now get out of here."

But JJ took a small step forward. Johnny frowned. JJ took another step forward and blew. But nothing happened.

"I can't stop now," thought JJ. He took a big step toward Johnny and blew in the giant's face with all the air he had! And finally ...

"Hmm ... what do you want, kid?" the giant asked. Johnny was friendlier now!

"Mr. Johnny, sir, Electric City can help you get home to your planet. But you must promise never to return here," said JJ.

"Well, there is nothing on this planet that interests me. If you can help me get home, I'll be happy."

So JJ sent a quick hologram to the mayor of Electric City. The mayor spoke with the workers in the power plant, and the workers helped charge the batteries on the giant's spaceship. Then, Johnny got in his spaceship and flew home! Everyone at the Electric City Power Plant cheered.

But what happened to the four friendly giants?

"Hi, Mom," said JJ as he walked into the kitchen. "I brought a few friends for dinner. Is that OK?"

Marcus, Mason, Morris, and Michael entered the kitchen. They had to bend down to fit through the door. They smiled, showing their big teeth.

Can you imagine what JJ's mom said when she saw the four friendly giants? "AAAAAAAGH!" Now that wasn't very polite, was it?

Key Words

1 Read the clues. Complete the crossword puzzle with the Key Words.

Across

2 having a hard time understanding something

3 feeling angry because you can't do something

4 to push someone in a strong way

Down

1 to make or create something

Comprehension

2 Mark (✔) three things people in Electric City could not do.

- ☐ use their drones
- ☐ use their microwave ovens
- ☐ travel in outer space
- ☐ use their shampoo or soap
- ☐ use their hologram senders

3 Match the dialogue with the characters.

1 "What do you want, kid?"

2 "Be home at 6 o'clock for dinner, JJ!"

3 "I'm already wet."

4 "How can I help you?"

a Giant Marcus

b JJ

c JJ's mom

d Giant Johnny

4 Complete the graphic organizer.

~~I don't think JJ is a strong superhero.~~
I don't think the giants in the story were scary.
JJ can blow blue air to make people peaceful.
The story is about a superhero named JJ.
There were five giants in the story.
Superhero stories are exciting!

Facts	Opinions
	I don't think JJ is a strong superhero.

Digging Deeper

5 How did JJ feel in these scenes? Circle.

1 JJ was walking down the street when he received a hologram message with a new mission.

a worried
b excited

2 JJ fell into the canal, got wet, and had to face a scary giant standing at the door of the power plant.

a sad
b scared

3 The power plant workers helped charge the batteries on Johnny's spaceship, and he flew home.

a happy
b worried

6 Why did JJ lose confidence in his superpower when he first met Giant Marcus?

_____

7 What is JJ's superpower and why is it important?

_____

Personalization

8 Mark (✔) the items that are powered by electricity.

☐ tablet	☐ bicycle	☐ TV	☐ car	☐ computer
☐ stove	☐ light bulbs	☐ fridge	☐ hairdryer	☐ skateboard

9 Imagine there is no electricity.

a How do you keep your food cold?

_____

b How do you do your homework when it's dark?

_____

c What do you do for fun?

_____

10 Imagine you can have a superpower. What is it? What can you do with it?

_____

_____

_____

8 How important is electricity?

Key Words

1 8.3 **Preview the Key Words.**

appliance

contaminate

air conditioner

clothes dryer

plug in

gadget

eco-friendly

shrub

2 **Read the glossary entries and write the Key Words.**

a _____ *noun* a machine that helps cool a room or a building

b _____ *noun* a machine used to do chores, for example, wash clothes or cook, that uses electricity or gas

c _____ *verb* to connect a cord to an electrical outlet

d _____ *noun* a bush or other plant that is smaller than a tree

Pre-reading

3 **Look at the title of the article on page 115. Circle the phrases that relate to the article.**

watering plants and flowers

using eco-friendly appliances

reducing the use of electricity

walking to school

protecting animals

helping the environment

4 8.4 **Listen and read.**

Protecting the Environment:

How to Lower Your Electricity Footprint

By Fabiola Rodríguez

What Is an Electricity Footprint?

It's time to wake up. You turn on the lights. You can hear your mom preparing a shake in the blender. In the bathroom, your older sister is using the hairdryer. And in the room next door, your dad turns on the washing machine. When you sit down at the table, your grandma takes your breakfast out of the microwave oven.

Every time someone turns on an electrical appliance, they leave a mark called an electricity footprint. We use this concept to show the impact on the environment every time an electrical device is used. The size of our electricity footprint is linked to the amount of greenhouse gases released into the atmosphere.

Why Is Your Electricity Footprint Important?

But what is the relationship between greenhouse gases and electrical appliances? Well, 65% of the world's electricity is made from fossil fuels. By burning fossil fuels, like oil and coal, we not only contaminate the atmosphere, but also produce large amounts of greenhouse gases. This is causing the Earth to warm up too much.

But don't worry! You can help protect the environment by reducing your electricity footprint. One option is to use electrical appliances that save electrical energy. Another option is to switch off what you are not using. And don't forget to talk to your family about installing solar panels, or using wind power or hydroelectric power. These use renewable energy resources, such as the sun and the wind, instead of fossil fuels to make electricity.

Quiz Time!

Calculate Your Electricity Footprint!

Let's check how high or low your electricity footprint is. Take a piece of paper and write down your answers to the following questions. Add up your results and compare them with the numbers in the table at the end of the quiz. This will give you an idea of your electricity footprint.

Scores		
a = 2	b = 1	c = 0

1 Do you use an air conditioner at home?

- **a** yes
- **b** sometimes
- **c** no

2 What does your family use to heat your food?

- **a** an electric oven
- **b** a microwave oven or gas stove
- **c** a solar oven

3 How do you heat your house?

- **a** with electricity
- **b** with gas
- **c** We don't heat the house.

4 How many times a week does your family use a washing machine to wash clothing?

- **a** three or more times
- **b** twice
- **c** once

5 How do you and your family dry your clothes?

- **a** with an electric clothes dryer
- **b** with a gas clothes dryer
- **c** We hang the clothes outside.

6 Do you turn off the lights when you leave a room?

- **a** no
- **b** sometimes
- **c** yes

7 How do you usually watch movies or play video games?

- **a** on a TV
- **b** on a tablet or cell phone
- **c** I don't watch movies or play video games.

8 How do you and your family dry your hair?

- **a** with an electric hairdryer
- **b** with a towel
- **c** in the sun

9 Do you plug in your tablet, computer, cell phone, or other electrical gadgets for long periods of time?

- **a** yes
- **b** sometimes
- **c** never

10 What do you and your family use to clean the floor?

- **a** a vacuum cleaner
- **b** an eco-friendly vacuum cleaner
- **c** a broom or a mop

Results

14–20: Oh, no! You need to reduce your electricity footprint. But don't worry! We will give you some tips that can help.

7–13: OK. It's not bad, but it's not perfect. However, you are on the right track to reduce your electricity footprint.

0–6: Excellent work! You are making a great effort—let's help others reduce their electricity footprint.

Tips to Reduce Your Electricity Footprint:

- Remind your family to unplug the electronic devices that are not being used.
- Switch the lights off every time you leave a room.
- Ask your family if you can switch to LED light bulbs.
- Use less heat. Wear a sweater instead of turning on the heat!
- Avoid using the air conditioner. Did you know that plants can help keep a room cool? Having trees or shrubs outside around your house can lower the temperature inside!

These are just a few things that you can do to reduce your electrical footprint.

But you can find new ways, too!

Key Words

1 Read and write the Key Words.

a to pollute or the environment ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

b an appliance used to dry wet clothes ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

c a small device or tool ___ ___ ___ ___ ___ ___

d good for the environment ___ ___ ___ – ___ ___ ___ ___ ___ ___ ___ ___

Comprehension

2 Read and mark (✔) the best summary of the article.

a An electricity footprint is what we do to protect the environment. ☐

b We can protect the environment by reducing our electricity footprint. ☐

c Every time an electrical object is used, we increase our electricity footprint. ☐

3 Circle the correct option to complete each sentence.

1 Your electricity footprint increases every time you …

a use electrical appliances. b turn off appliances. c use wind power.

2 The relationship between fossil fuels and electricity is that …

a electricity can make fossil fuels. b electricity is better than fossil fuels. c fossil fuels can make electricity.

3 We can keep our house cool by …

a switching on the lights. b turning off the microwave oven. c planting trees or shrubs outside.

4 Complete the graphic organizer.

I don't think we use a lot of electricity.
Plants help keep a room cool.
Burning fossil fuels contaminates the air.
Solar panels are awesome!

Facts	Opinions
_____	_____
_____	_____
_____	_____
_____	_____

Digging Deeper

5 **Read the article on pages 115–117 again. Then, complete the chart.**

What is the problem?	What is the cause?	What are the possible solutions?
High electricity footprint harm the environment.	We waste too much _____. We use _____ to produce electricity.	_____ _____ _____ _____ _____

6 **Now you know what "electricity footprint" means. What is a water footprint?**

_____

_____

Personalization

7 **Which of the tips to reduce our electricity footprint do you think is the most useful? Why?**

_____

_____

_____

8 **Look and circle the appliances and gadgets your family uses at home.**

9 **Write what you can do to help reduce your family's electricity footprint.**

_____

_____

_____

_____

_____

_____

_____