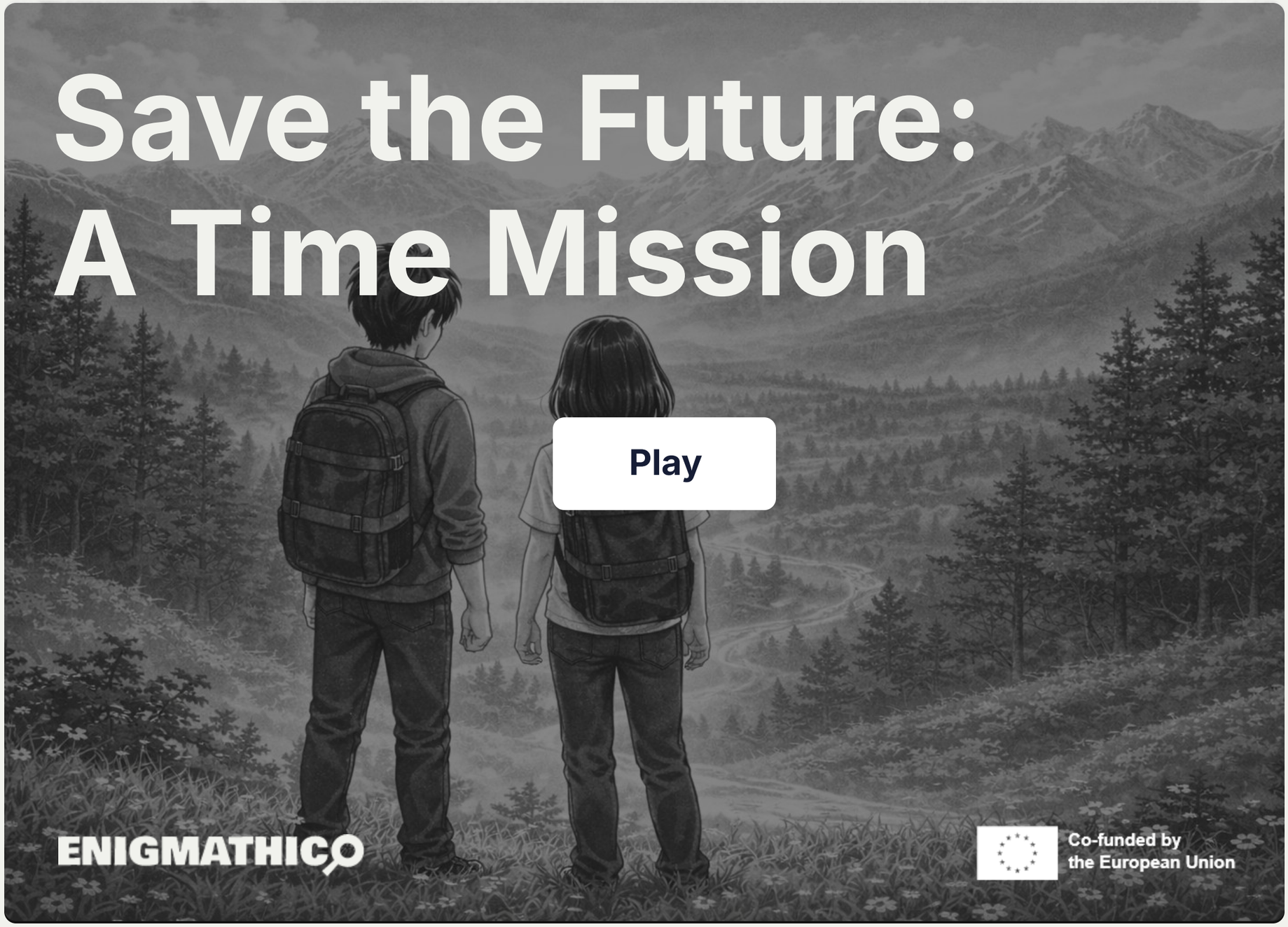
Save the Future: A Time Mission



Play

ENIGMATHICO

Co-funded by the European Union

Activities

Glossary

Bonus

Summary

Chapter 1

The Trash Trap

Chapter 2

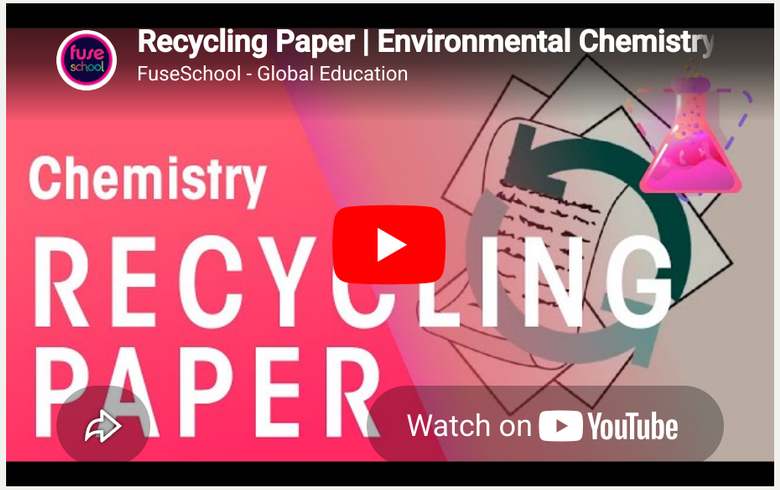
Powering the City

Chapter 3

The Class Footprint

Bonus

These educational videos explain the production processes of paper, glass, and metals and their impact. Learn more about their recycling processes.



Bonus

Documentary about plastic recycling.

Learn all about composting and its benefits.

Bonus

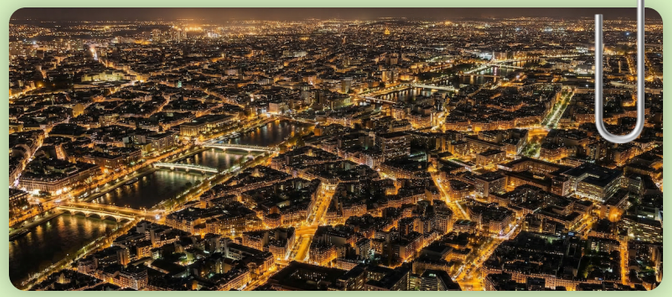
Learn everything about smog.

Activities - Level 1

Activity 1

Part A:
The Trash Trap

Part B:
Recycling Report



Activity 2

Part A:
Solar rooftops

Part B:
The Power of choices

Activity 3

Part A:
The daily journeys of the class

Part B:
Rethinking the journeys

Activities - Level 2

Activity 1

Part A:
The Trash Trap

Part B:
Recycling Report

Activity 2

Part A:
Solar rooftops

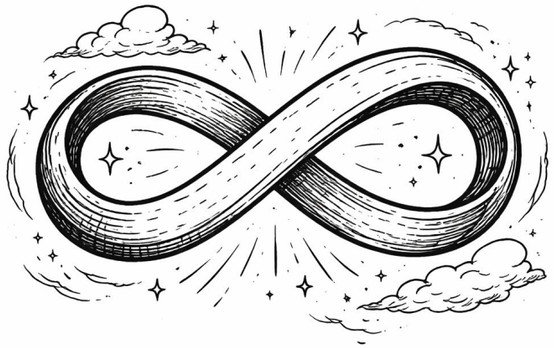
Part B:
The Power of choices

Activity 3

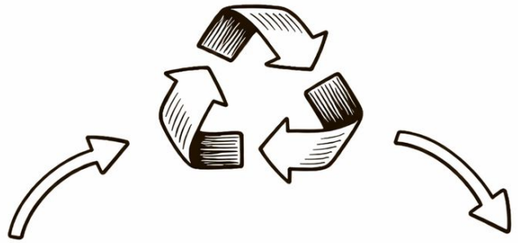
Part A:
The daily journeys of the class

Part B:
Rethinking the journeys

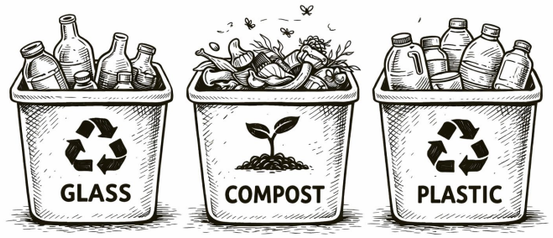
Glossary



Infinity Symbol



The 3Rs

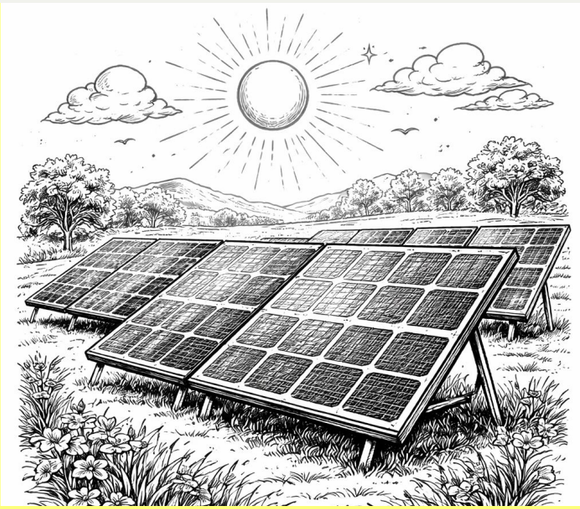


Recycling bins

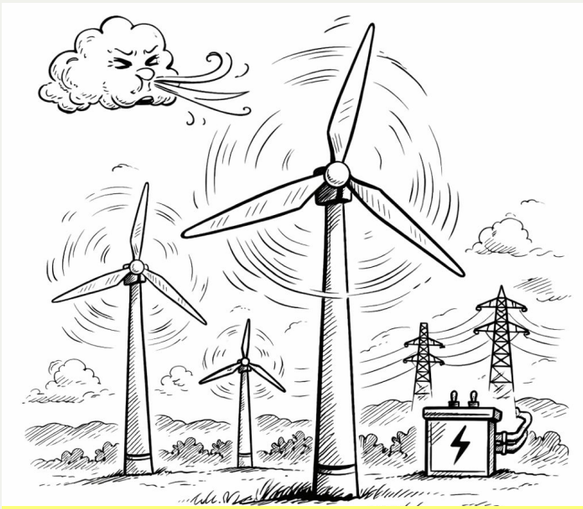
Blackout

Glossary

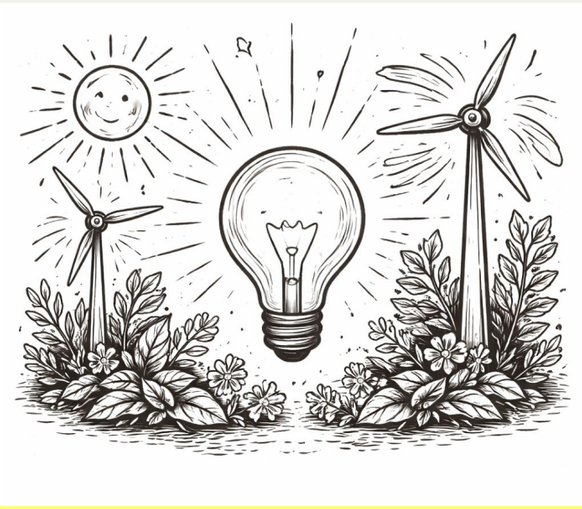
Model of the city



Solar panels



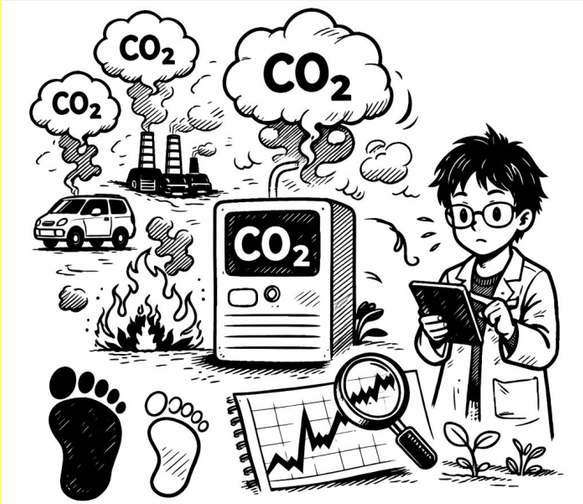
Renewable sources of power



Saving power

Glossary

Smog

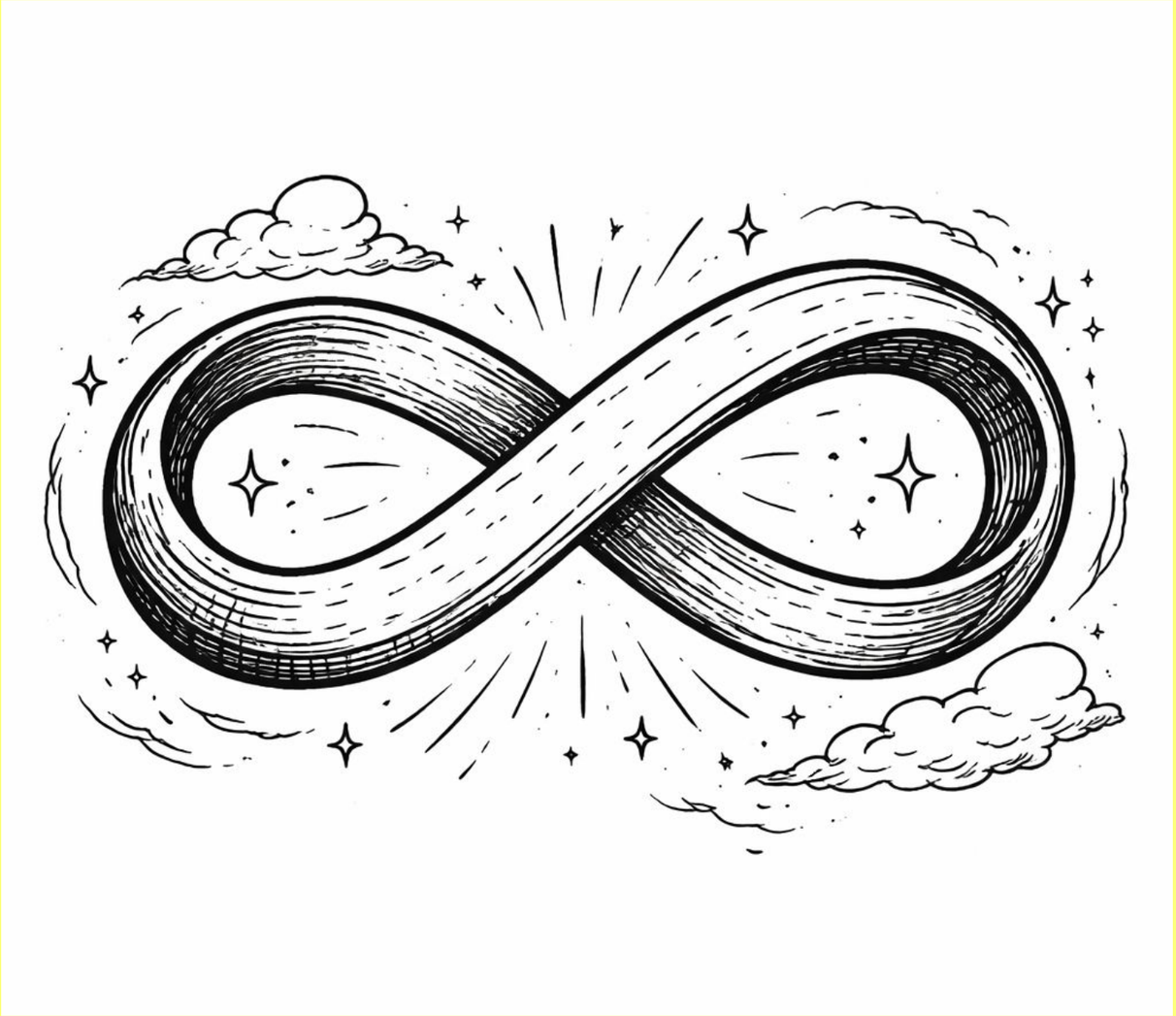


CO_2

Carbon footprint

Infinity Symbol (∞):

Infinity means endless. It reminds us that the future can always grow and change.

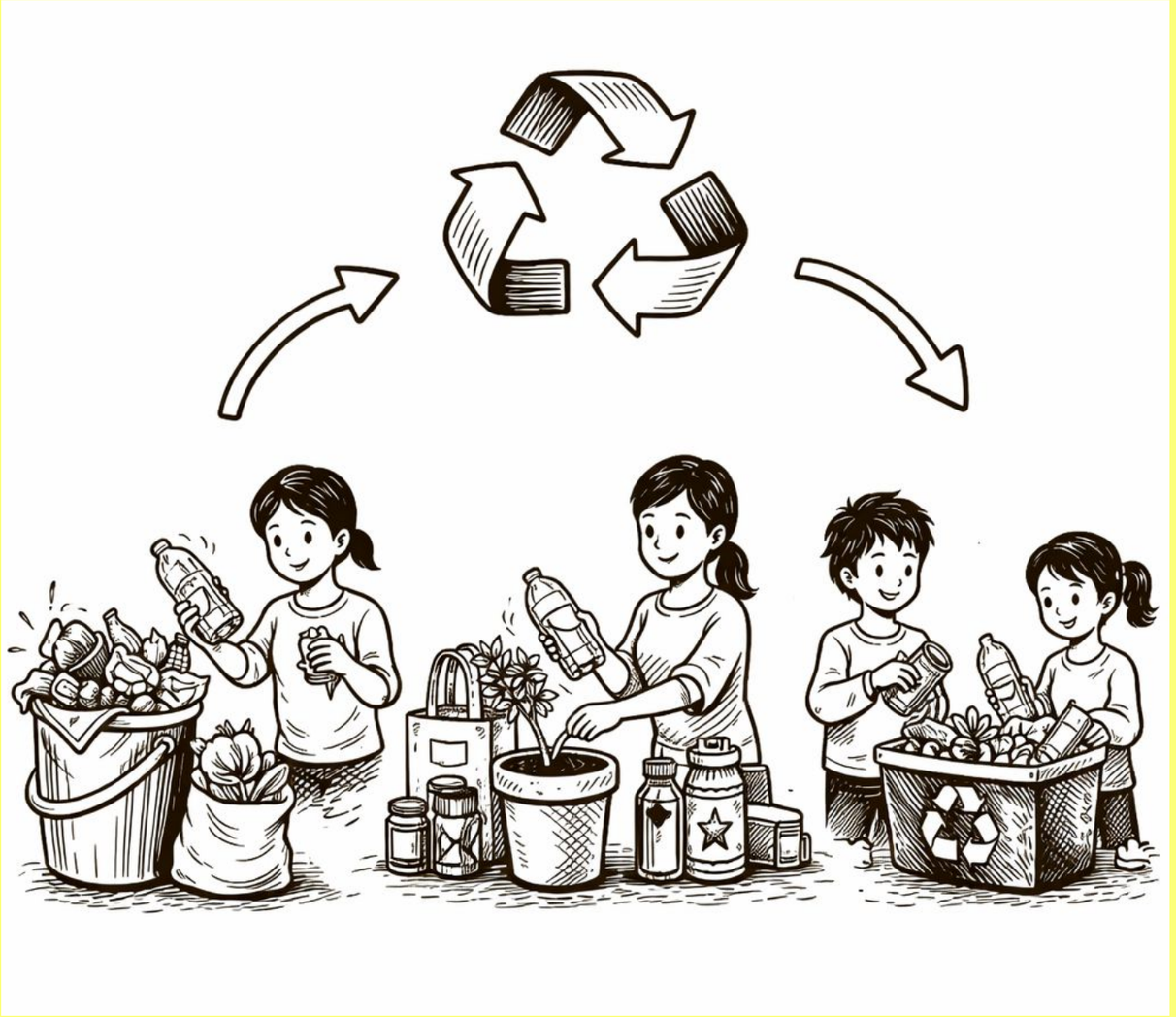


The 3Rs

The 3Rs are simple actions we can do every day:

Reduce: take fewer plastic bags when shopping.
Reuse: use your water bottle again instead of throwing it away.
Recycle: put paper, plastic, glass, and metal in the right bins.

All three steps matter. First we try to reduce, then reuse, and finally recycle what is left.



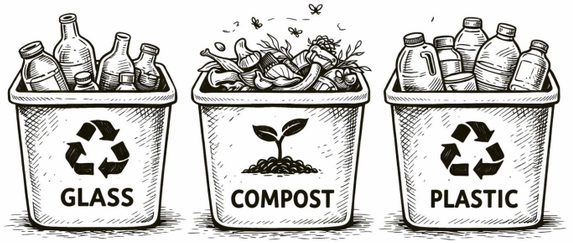
Recycling bins

Plastic bin
A plastic bottle can take 450 to 1000 years to decompose in landfill!
Many plastics can't be recycled. That's why reducing and reusing plastic is even more important than recycling it.

Glass bin
Glass can be recycled again and again without losing quality.
Every recycled bottle saves energy, enough to power a light bulb for 4 hours!

Metal bin
Recycling one aluminium can saves enough energy to run a TV for 3 hours!

Compost bin
Food scraps and garden waste break down naturally into compost.
This rich soil helps plants grow and reduces the amount of waste sent to landfills.



Think about it:
Some things can’t be recycled, but we can try to avoid or replace them.

What could you do differently next time?

Blackout

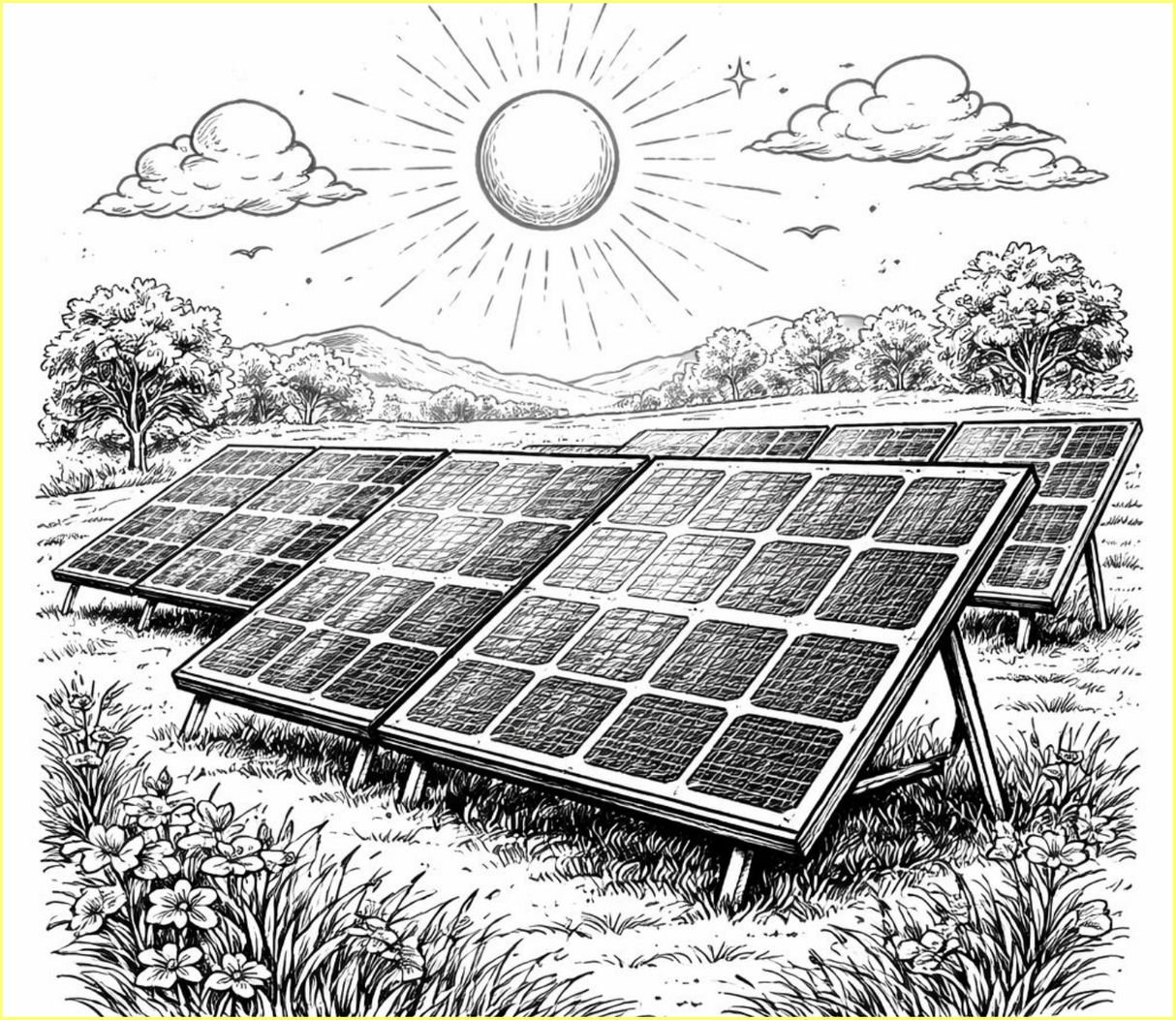
A blackout means the power supply suddenly fails. It can happen when too many people use electricity at the same time.

Model of the city

City planners sometimes use scale models to test ideas before making changes in real life.

Solar panels

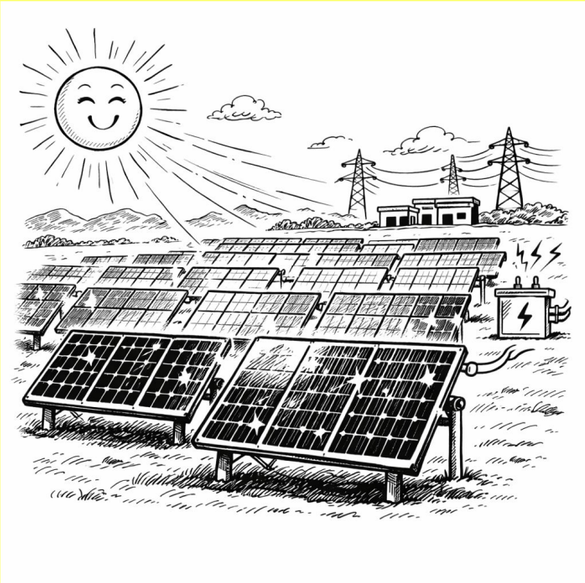
Solar panels capture sunlight and turn it into electricity. They work best when facing South, where the sun shines longer in Europe and in the Northern Hemisphere.



Renewable sources of power

Wind turbines
They use the wind to spin their blades and create electricity.

Hydroelectric dam
A river’s flow pushes turbines, creating steady power.



Solar farm
A large field of panels that produces more energy than rooftops alone.

Saving Power: Everyday Actions

Even small daily actions can make a big difference for our planet!

- **Turn off the lights** when you leave a room.
- **Use natural light** instead of lamps during the day.
- **Choose energy-saving appliances.**
- **Unplug chargers and devices** when not in use.
- **Walk, cycle, or share rides** instead of always using cars.

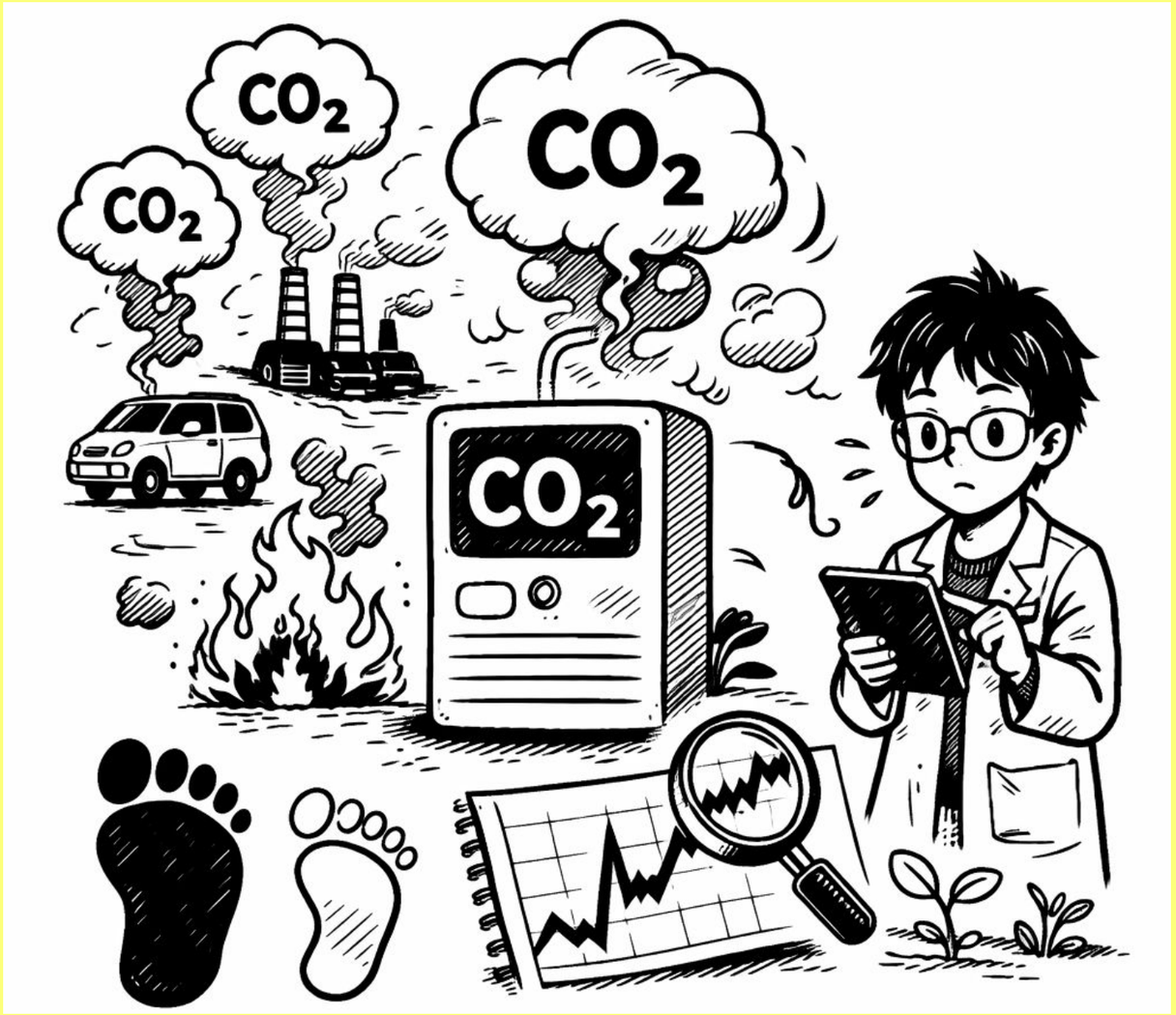
Smog

Smog comes from two words: smoke and fog. It happens when smoke from cars, factories, or other pollution mixes with fog in the air. This creates a thick cloud over the city that makes it hard to breathe and is bad for our health.

CO_2

What is CO_2 (carbon dioxide)?
CO_2 is a gas in the air. Plants need it to grow. But too much CO_2—from cars, factories, or fires—harms the climate and our health.

What do CO_2 measuring stations do?
They are devices that measure how much CO_2 is in the air. This helps scientists check air quality and reduce pollution.



Carbon footprint

A carbon footprint is the total amount of CO_2 and other gases produced by our daily activities, such as travelling, heating, using electricity, and shopping.
It’s like measuring how much we affect the environment. The smaller our footprint, the kinder we are to the Earth.

Chapter 1

The trash trap

It was early morning in late spring,
already warm, with a light breeze in the trees.
Iris and Orestes were on a school field trip
to the nearby mountain, walking along a wide
path lined with tall pines and birdsong.

The teacher led the group, reminding everyone
to stay together, while most pupils chatted
and enjoyed the fresh air.
Orestes briefly glanced at his smartwatch.

Iris: Come on, stop checking your wrist,
look around!

Then Iris noticed something: a narrow side trail, partly hidden by long grass and small bushes.

Iris: Look! Where does that go?

Orestes: Let’s check!

The narrow trail curved away from the main path and led them deeper into the forest. After a few minutes, they reached a rocky slope.

At the base was the dark opening of a small cave. From above, a beam of sunlight came through a gap in the rock, lighting up something metallic on the ground. It looked heavy, old, and completely out of place in the forest.

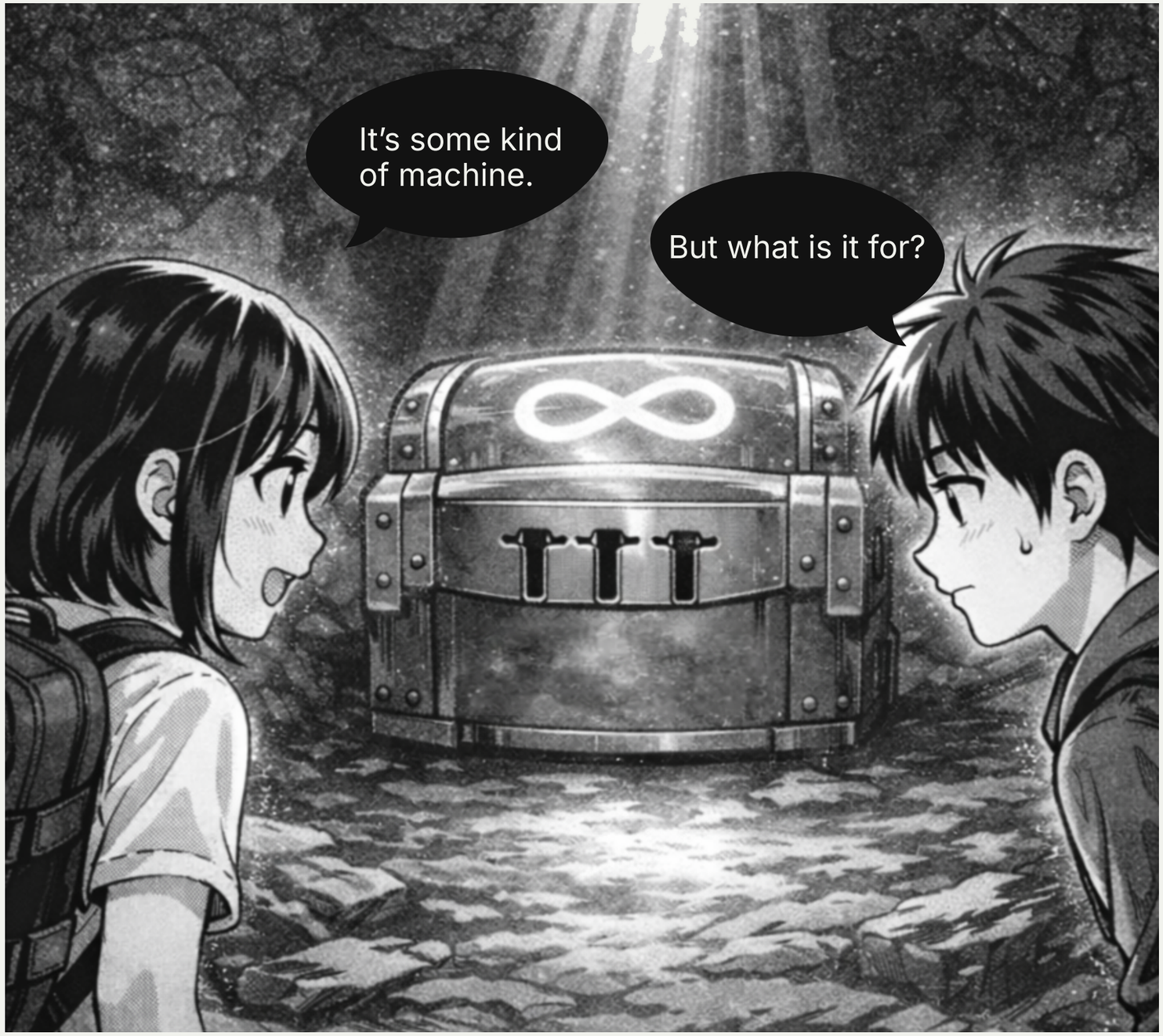
Orestes: That’s not a rock...

Iris: It’s... something else.

They stepped inside. In the middle lay a smooth metallic object, unlike anything they had seen before.
On its surface glowed the **infinity symbol.**
Three narrow key-shaped slots were carved into one side.

Iris: It’s some kind of machine.

Orestes: But what is it for?



Iris reached out and touched the glowing symbol.

The machine trembled softly. A low hum filled the cave, and light spread across its surface until everything around them shone too brightly to see.

Orestes: What’s happening?

Iris: I… I think it’s starting!

The light faded, and Iris and Orestes were back on the mountain path, but the place had changed. The air felt heavy, the sky dull. The pine forest was mostly gone, replaced by bare soil and a few trees.

In the distance, unfamiliar towers rose above the city, wrapped in a thin haze.

Iris: Are we back where we started?

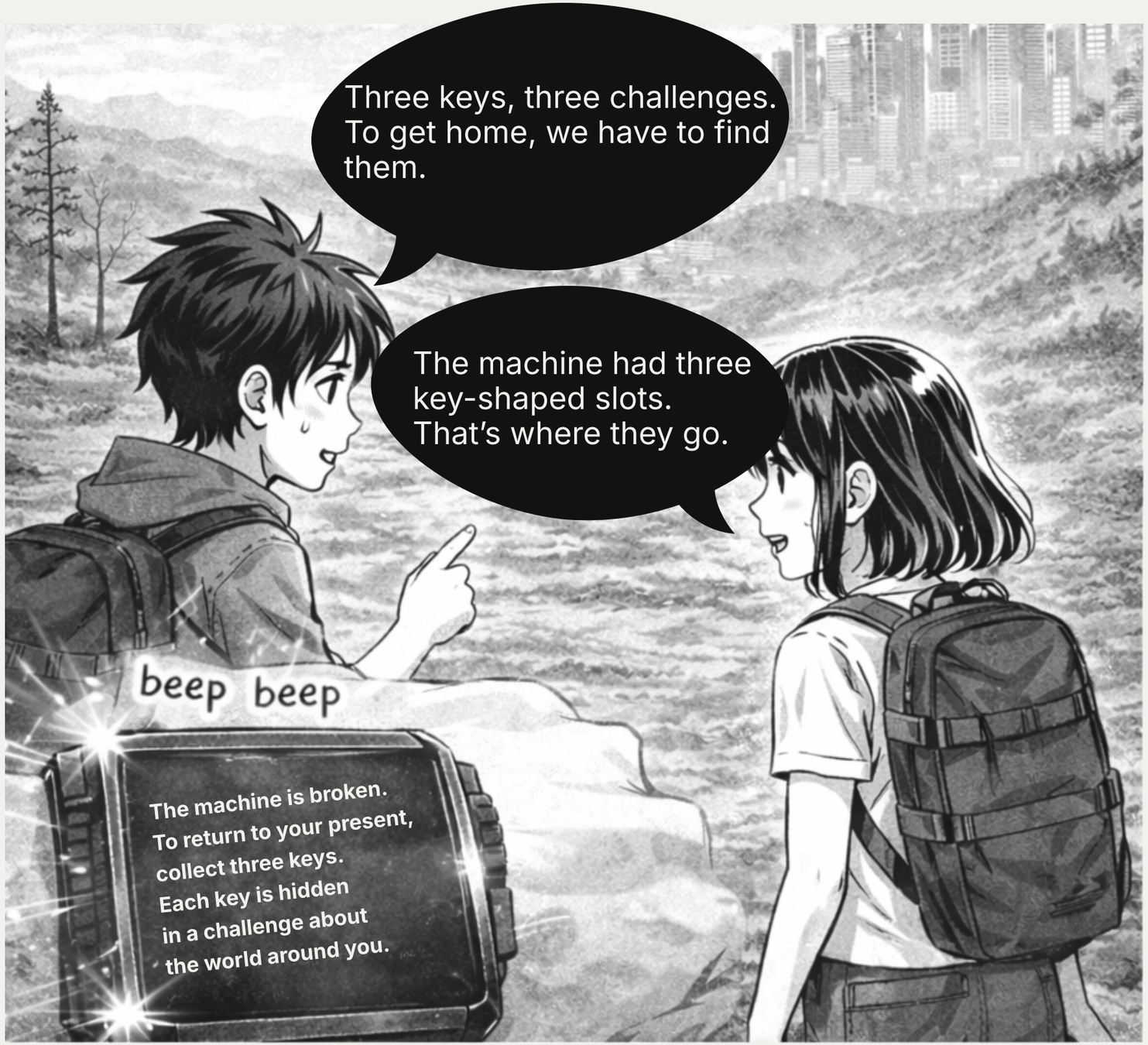
Orestes: I think so... but it doesn’t look the same. Look! There are hardly any trees.

As Iris and Orestes tried to make sense of what had happened, a soft beep came from Orestes’s wrist. His smartwatch lit up, displaying glowing words:

The machine is broken.
To return to your present, collect three keys.
Each key is hidden in a challenge about the world around you.

Iris: Three keys, three challenges.
To get home, we have to find them.

Orestes: The machine had three key-shaped slots. That’s where they go.



Determined to find their way back home, Iris and Orestes followed the path to the school. It was strangely silent, no voices, no laughter, and the playground was empty.
In the schoolyard, mixed waste lay scattered everywhere, while the faded recycling bins stood forgotten in a corner.

Orestes: It looks like everything just piled up here.

Iris: Why would it be left like this?

As they neared the building, Iris and Orestes peeked through dusty windows.
Inside, a faded notice board held old posters, their words still readable.
“Reduce, Reuse, Recycle: Our Eco Promise.”
Another poster proudly declared:
“Recycling Results: Our School Saves 10 Trees a Year!"
Iris: So our school really cared about recycling.

Orestes: Then why does the yard look so neglected now?

The **recycle bins** stood quietly in the yard, as if waiting for someone to bring them back to life. The faded posters about recycling seemed to whisper a promise that had once been strong, but was now forgotten.

Iris: The posters, the bins, the silence... something is waiting for us.

Orestes: But where is the challenge hidden?

Activity 1

Part A
The trash trap

Let's take a look at recycling
and sorting garbage.
Discuss which materials go where
and why some items may go to landfill!

Download

Team Roles

Coordinator

Keeps the team focused and makes sure everyone joins in.

Recorder

Writes down the results in the table.

Materials Keeper

Handles the Object Cards and moves them to the bins.

Presenter

Shares the team's results with the class.

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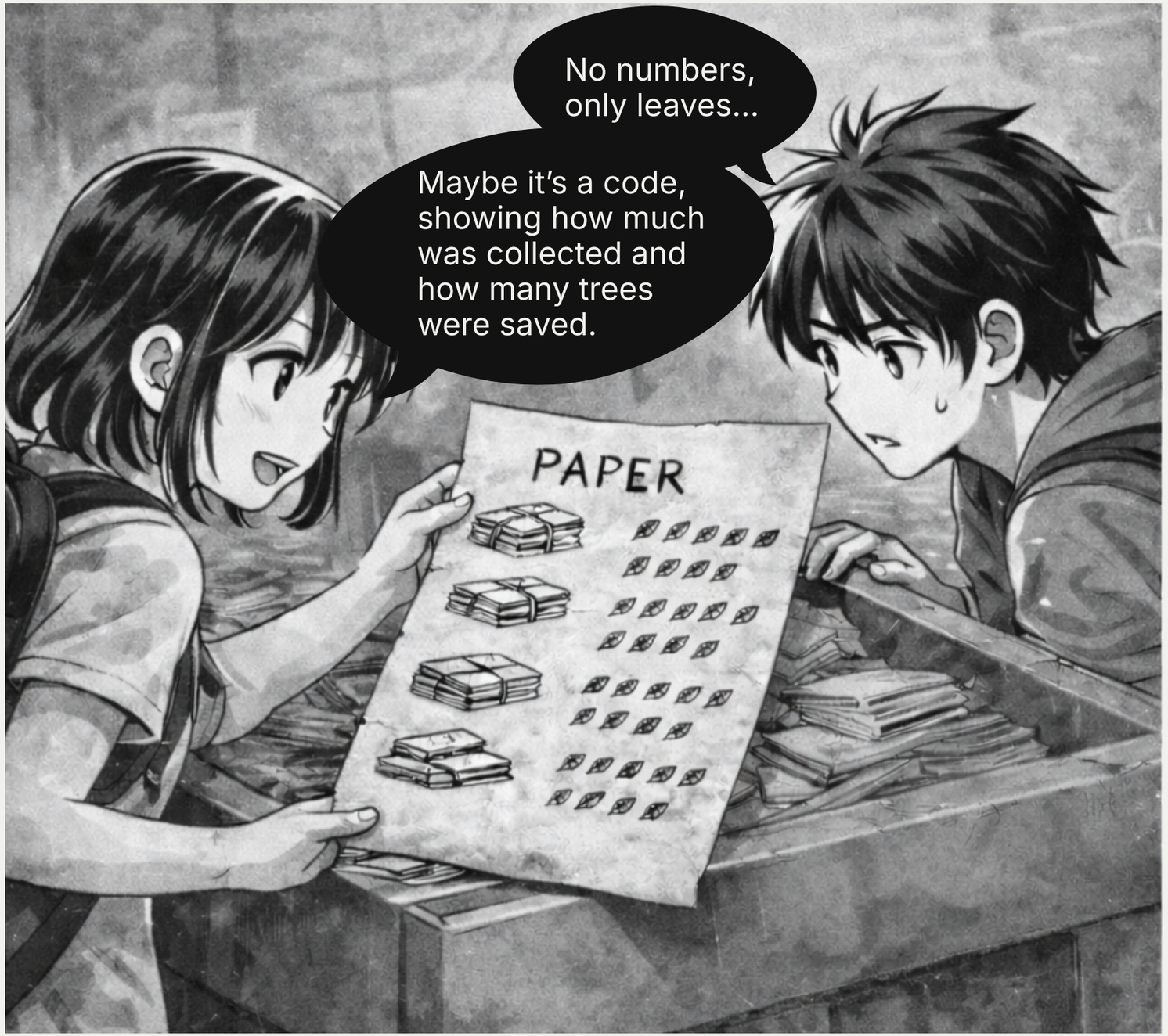
Iris: We did it! But... is that enough?
I don’t see the key yet.

Orestes: Maybe sorting was only the first step.
The posters talked about saving trees.
What if the challenge is about understanding the real impact, not just sorting things?

Iris leaned toward the paper bin and spotted a folded, yellowed sheet.
It showed drawings of paper items, each marked with rows of green leaves.

Orestes frowned: No numbers, only leaves...

Iris smiled: Maybe it’s a code, showing how much was collected and how many trees were saved.



Activity 1

Part B
Recycling report

What do the leaves represent?
There is more to the Recycling Report, discover the impact the school once had.

Download

Team Roles

Coordinator

Keeps the team focused and makes sure everyone joins in.

Recorder

Writes down the results in the table.

Calculator

Explores numbers and checks the team's reasoning

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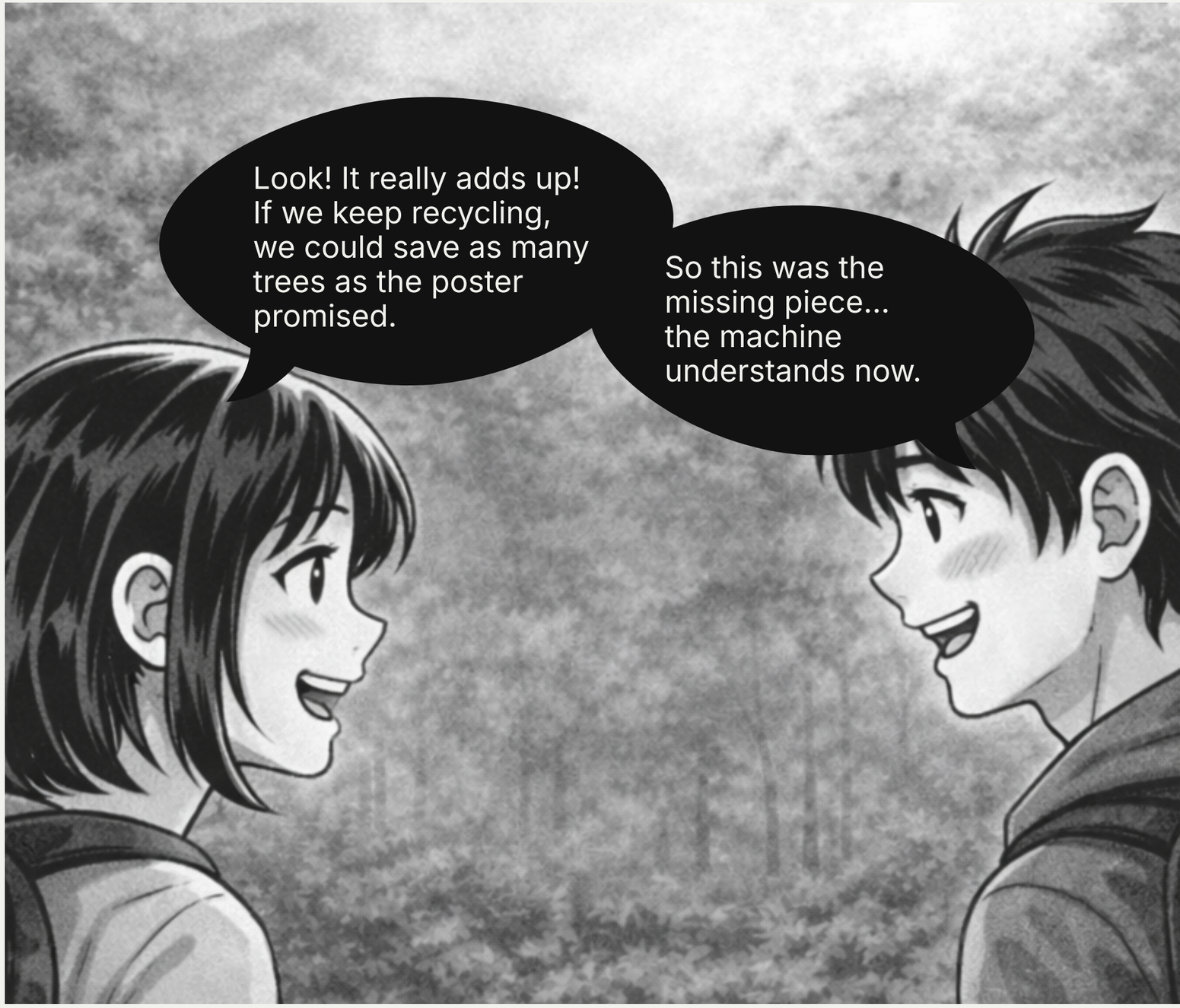
Shares the team’s results with the class.

The children finished their calculations.

Iris: Look! It really adds up! If we keep recycling, we could save as many trees as the poster promised.

Orestes: So this was the missing piece... the machine understands now.

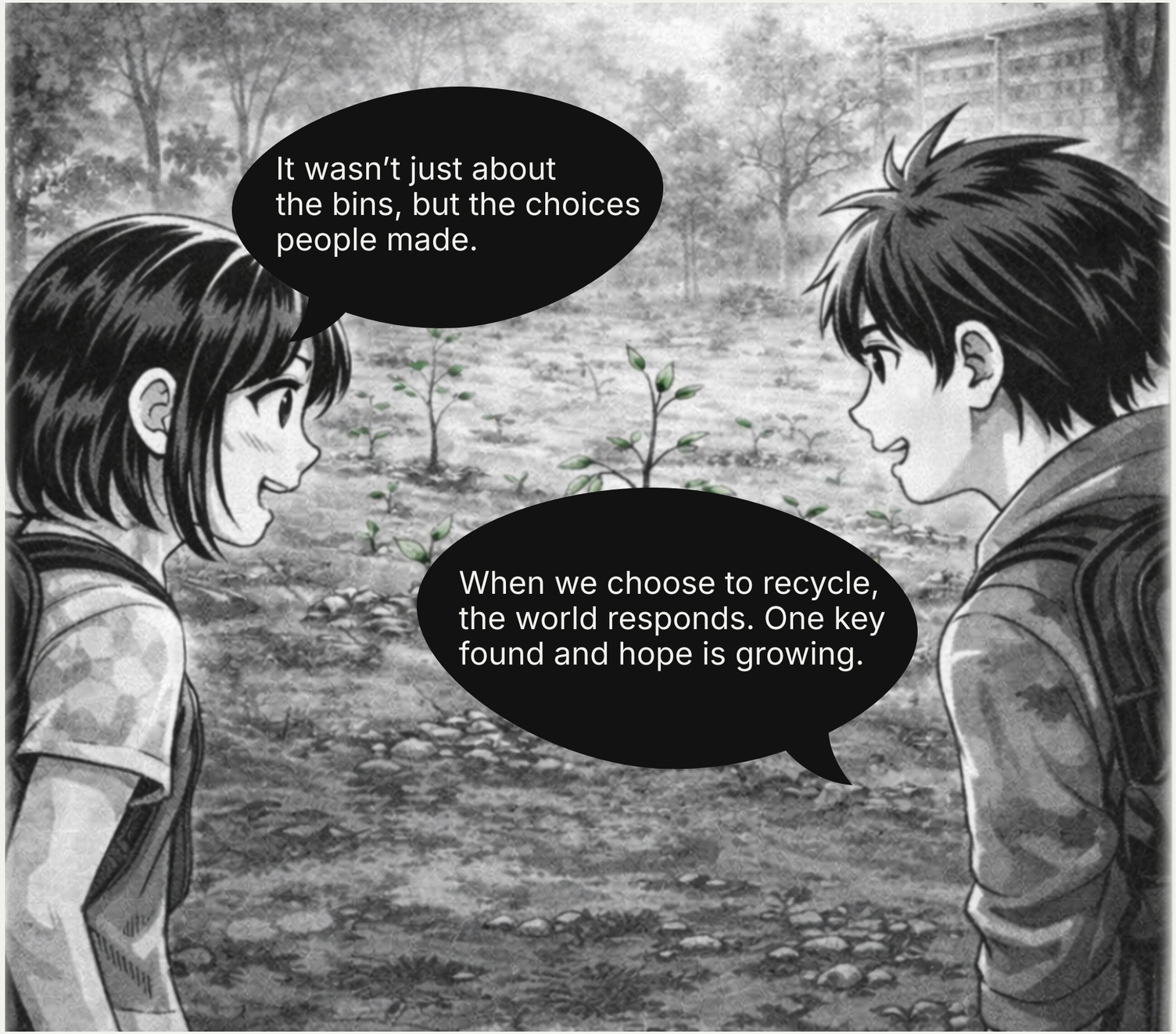


Suddenly, the paper bin glowed brightly.
From its light, a shining key-shaped symbol rose slowly into the air. It floated for a moment, then disappeared. The first slot on the time machine was now filled.

As the green key faded, the schoolyard began to change. Green shoots and young saplings appeared.

Iris: It wasn’t just about the bins, but the choices people made.

Orestes: When we choose to recycle, the world responds. One key found and hope is growing.



Chapter 2

Powering the City

With the first key in hand, Iris and Orestes felt a surge of excitement as they headed toward the city center. Lights flickered in windows and along the streets.

Iris: The city feels bigger than before...
and look at all those glowing signs.
There are so many of them!

Orestes: It looks alive again,
though there’s still a faint haze in the air.

Suddenly, the lights began to flicker. One by one, windows went dark, streetlights faded, and the glowing signs blinked off.

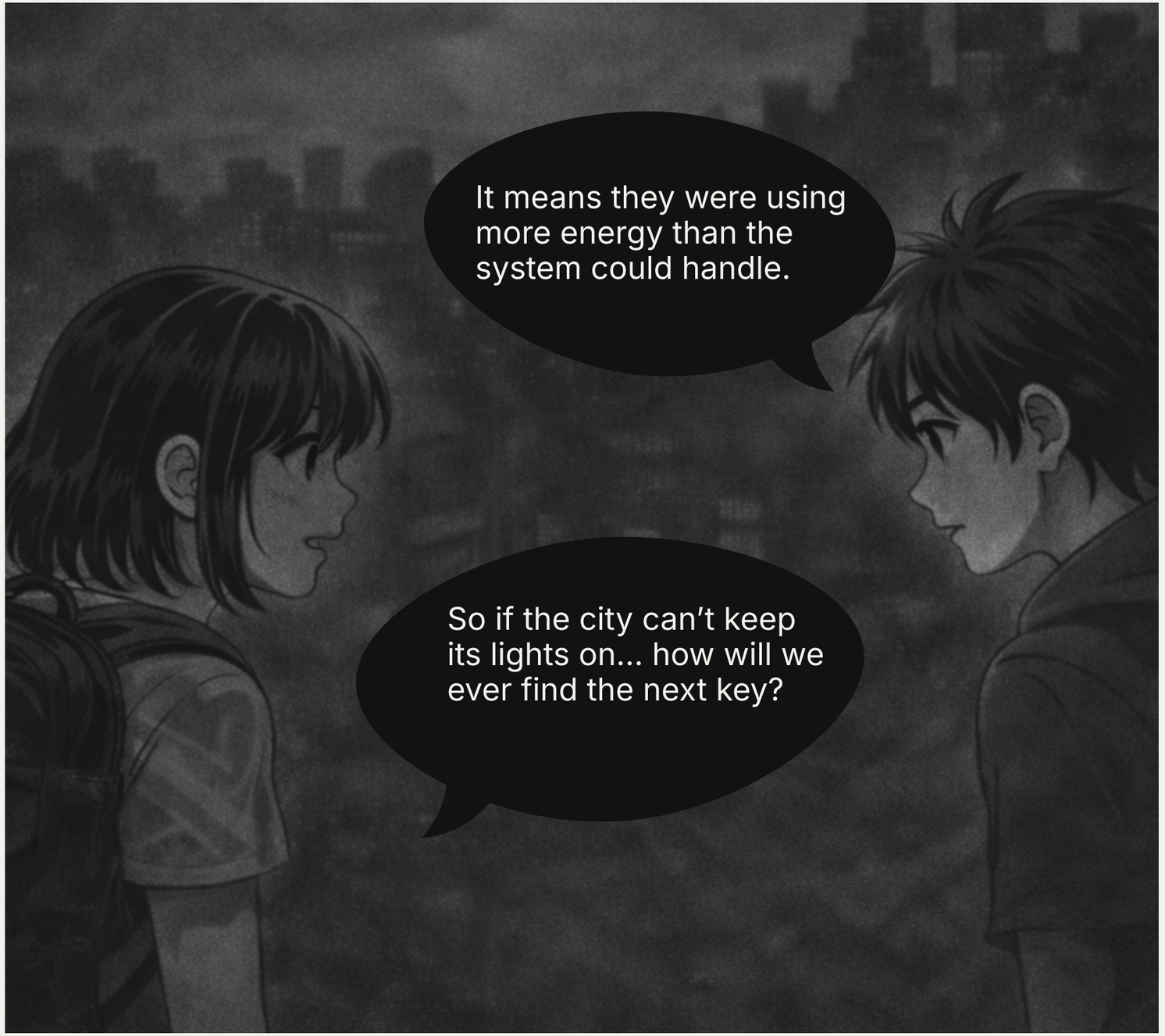
In just a few seconds, the city was plunged into silence and darkness.

Orestes looked at his smartwatch, where red letters flashed: BLACKOUT

Orestes: It means they were using more energy than the system could handle.

Iris looked around, worried.

Iris: So if the city can’t keep its lights on… how will we ever find the next key?



Just as the silence grew heavier,
Iris noticed a faint glow in the distance.

Between two tall buildings,
a narrow alley flickered with warm light.

Orestes: Wait... do you see that?
Something’s still shining.

Iris: Let’s go, maybe it’s a clue!

They followed the glow into the alley and stopped in front of a small door.

It was a door ajar, and warm light spilled through the crack.

Iris: Someone must be inside...

Orestes: Should we go in?

They peeked through the door ajar.
Inside, they saw a small workshop filled with scattered tools, sheets of paper, and models of rooftops with tiny solar panels.

Orestes: This doesn’t look abandoned... someone has been working here.

Iris: Maybe this is where we’ll find the next clue.

Iris and Orestes stepped inside, studying the scattered notes and small solar models.
Suddenly, the door creaked open.
A young researcher entered.

Startled, they jumped back.

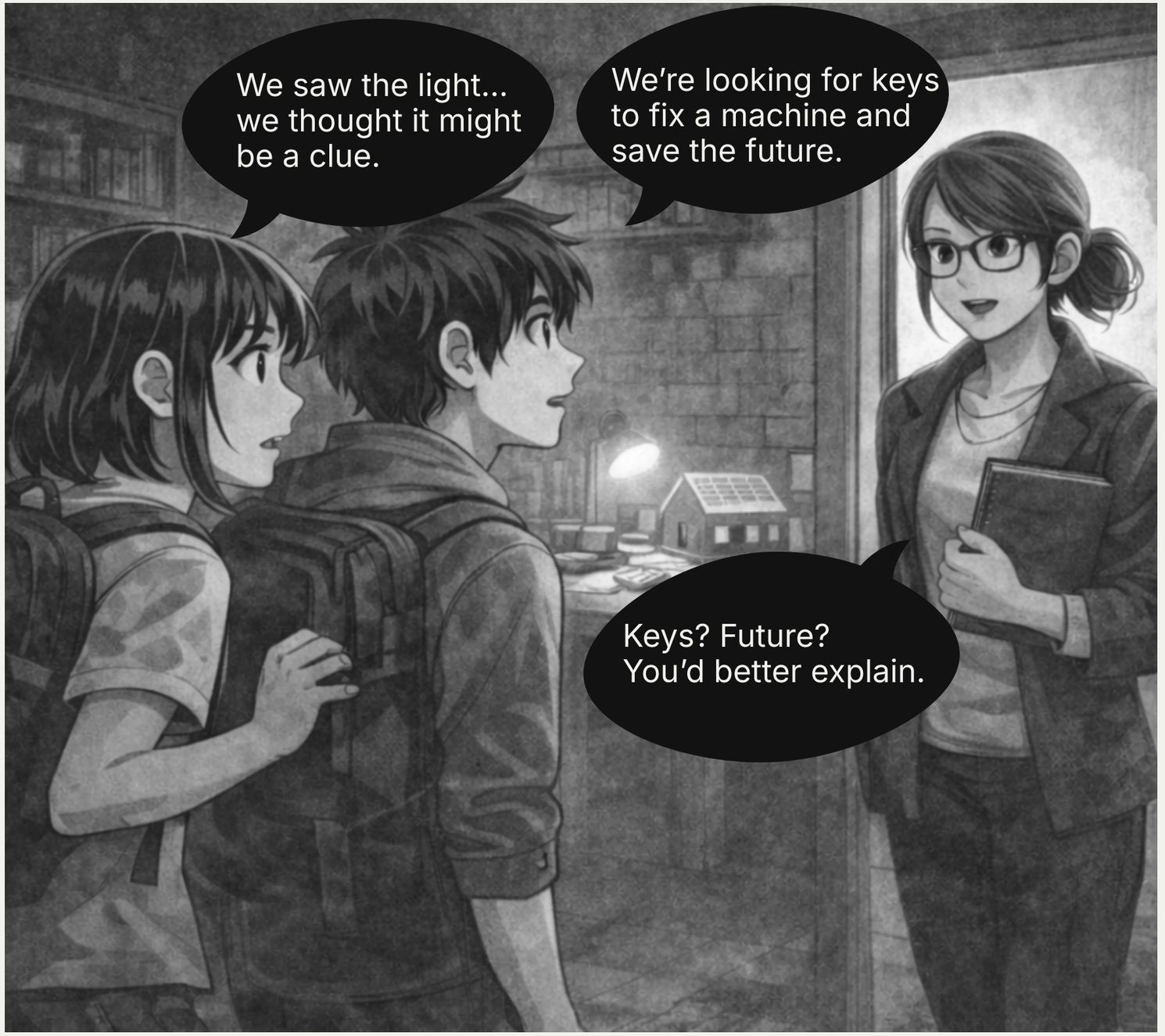
Researcher: What are you doing in my workshop?

For a moment, no one spoke. Iris and Orestes exchanged a nervous glance.

Iris: We saw the light… we thought it might be a clue.

Orestes: We’re looking for keys to fix a machine and save the future.

Researcher: Keys? Future? You’d better explain.

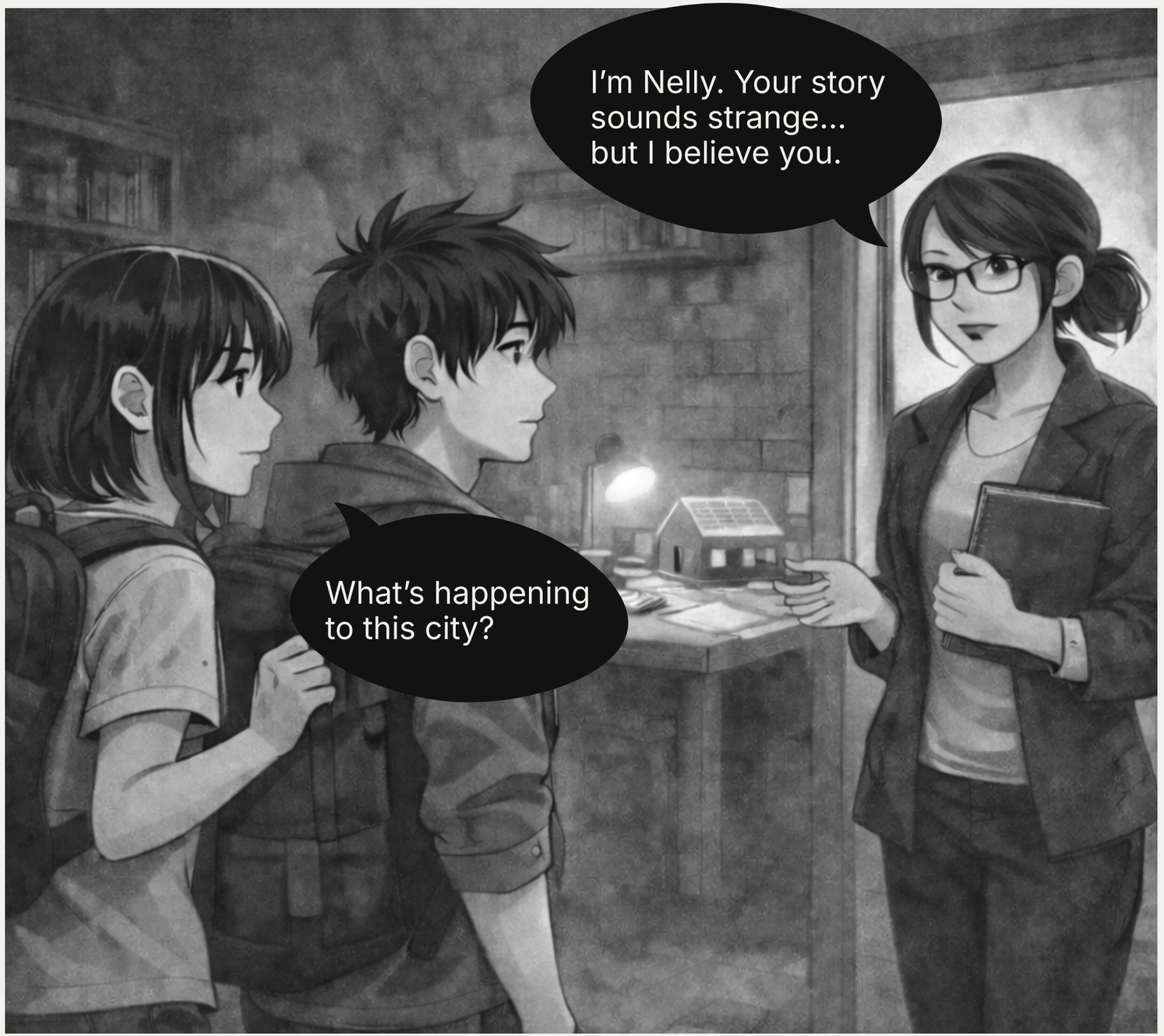


Slowly, the tension faded as they explained the time machine, the broken future, and their search.

The young woman listened, puzzled.

Researcher: I’m Nelly. Your story sounds strange… but I believe you.

Iris: What’s happening to this city?



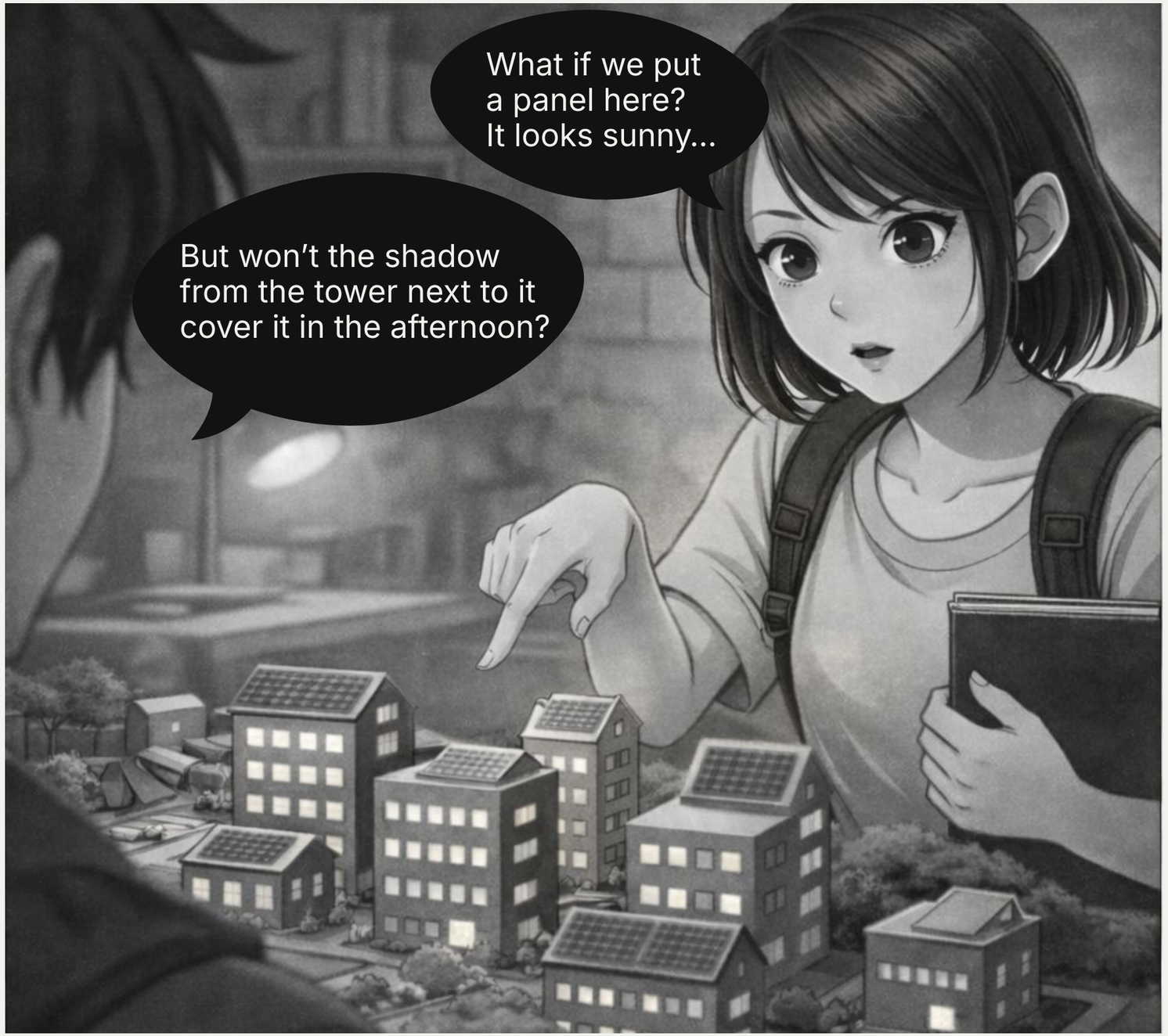
Nelly: This city once had endless energy, but it was wasted. Producing more power isn’t enough. Without saving energy, nothing lasts. Too many lights, too much demand, and empty rooftops. I’ve tried different rooftops, but it never works. The city is divided into neighbourhoods, if each finds a solution, the lights might return.

Orestes: Maybe we could try to help?

Iris leaned over the model of the city, pointing at a tall building.

Iris: What if we put a panel here? It looks sunny...

Orestes shook his head: But won’t the shadow from the tower next to it cover it in the afternoon?



Nelly: The city is made of many neighborhoods. Each one must find light again. If we explore the rooftops in different parts of the city, we can see how much energy the whole city can gain.

Orestes: What do you think? Which rooftops would work best? Will you help us?

Activity 2

Part A
Solar rooftops

Build your city board, and experiment on how the city can gain power again with solar power!

Download

Team Roles

Planner

Studies the map and makes sure everyone joins in.

Engineer

Writes down the results in the table.

Calculator

Calculates the kWh for the roofs and the neighborhood.

Reporter

Presents the team's strategy with the class.

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Presents the team's strategy with the class.

After testing the rooftops, tiny lights flickered on the model. A few buildings lit up, but most streets stayed dark.

Iris: It worked, but only partly. Solar panels alone can’t power the whole city. What else can we try?

Orestes: A real city needs more than rooftops. Without other energy sources, it won’t be stable. We’ll need every kind of renewable energy to make it shine again.

Nelly opened a drawer and spread out more models on the table: tall wind turbines, a winding river with a dam, and areas of open land where solar farms could grow.

Nelly: A city needs many kinds of power. Wind, water, sunlight... each one can bring back a different part of the light.

Iris: We've brought life to the rooftops. Now, what could power the rest?

Orestes: Let's find out together.

Activity 2

Part B
The Power of Choices

There are still parts of the city without power! Let's think about other renewable energy to bring the lights back to the city.

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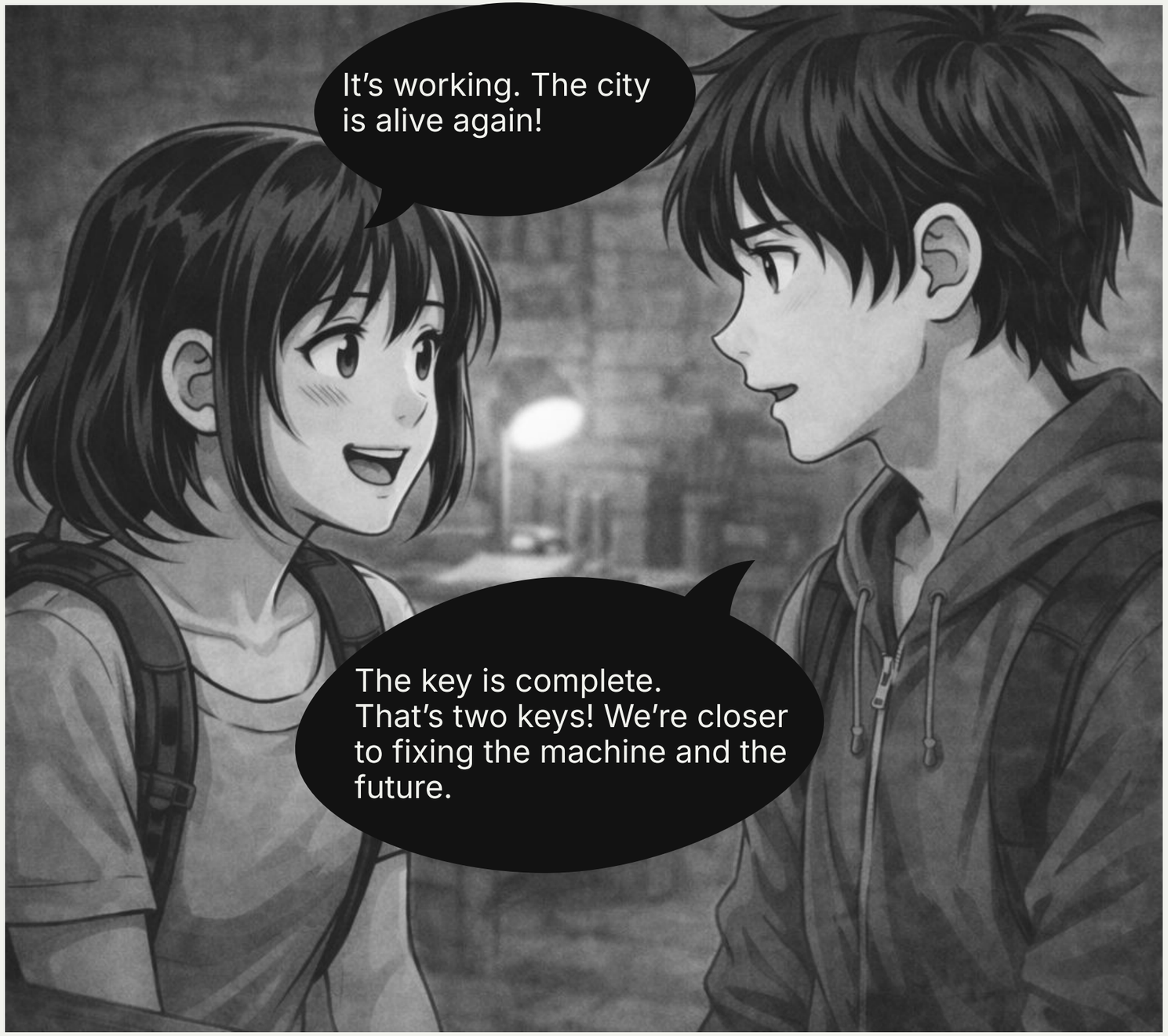
The city lit up as the final fragment joined the others, forming a glowing key that rose into the sky.

Iris: It’s working. The city is alive again!

Orestes: The key is complete. That’s two keys! We’re closer to fixing the machine and the future.

From now on, people would also have to save energy every day.



Chapter 3

The Class Footprint

After falling asleep in the workshop, the children woke at dawn and stepped outside. The city was quiet, but the sky looked pale and the air felt heavy. The hope of the night before had faded.

Iris: The sky isn’t blue anymore... it looks different.

Nelly explained that it was not morning mist, but smog—smoke and gases from cars and chimneys caused by burning dirty fuels.

As they walked, heavy air and smoke filled the street. She pointed to a small station measuring CO_2 levels—far higher than normal.

Orestes: And unless we reduce it, the city will never breathe clean again?

A sharp beep broke the silence. Orestes' smartwatch flashed red, warning that CO_2 levels were critical and the air system unstable. Nelly explained that to help the city, they first had to understand where pollution came from and how everyday choices added up.

Iris: So if we understand what causes the pollution, we can start to change it?

Orestes: Then even small daily actions can make a real difference.

Nelly: Think of your classmates. Every day they go to school and then back home again. Each one has a different way of travelling: walking, cycling, by car or bus. Each of those daily journeys leaves a carbon footprint in the air.

Iris: Yes... I remember them.

Orestes: Maybe if we write them down, we can see how big that footprint really is.

Iris opened the notebook.

Iris: Lucas lives only 0.5 km in a straight line from the school, and yet his father drives him by car every day. Emma lives 5 km away and comes by bus. And Alex, just 1 km away, comes with his bike.

Orestes: Each of us had a different way to get to school. If every trip leaves a trace, imagine what that means for the air we all share.
Will you help us find out the footprint of our class?

Activity 3

Part A
The Daily Journeys of the Class

How do you get to school and back home again? Let's calculate the CO_2 footprint of the class.

Download

Team Roles

Coordinator

Keeps the team focused and makes sure everyone joins in.

Transport Controller

Distributes the cards and fills the tables.

Calculator

Calculates the CO_2 footprint from transportation.

Reporter

Presents the team’s results with the class.

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Iris compared how classmates traveled to school—by car, bus, or bike. When Nelly calculated the results, the class’s carbon footprint appeared on the screen, bigger than expected for just one day.

Iris: Our footprint is much bigger than we thought.
Orestes: And that’s only for one day. Imagine a whole year.
Nelly: Some trips can’t change, but others might—if we find new ideas.

Orestes: Let’s see which journeys could change, and how we can make the footprint smaller.

Nelly: If we find new ways to travel, maybe the air — and the city — can breathe again. Could you help us?

Activity 3

Part B
Rethinking the Journeys

How can we reduce the footprint?
Which journeys can change to produce fewer emissions?

Download

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Transport Controller

Distributes the cards and fills the tables.

Calculator

Calculates the CO_2 footprint from transportation.

Reporter

Presents the team's results with the class.

Activity 3

Part B Rethinking the Journeys

Now lets compare the footprints and find the percentages.

Download

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Nelly: Well done. You reduced the footprint, but transport is only one part of a city’s carbon impact.

Iris: So for clean air, we must think about energy, food, waste, and everything else too?

Orestes: The third key is glowing! Every small choice adds up.

Light flashed, then silence. Iris opened her eyes on the grass where the trip had begun. Orestes looked around, stunned.

Orestes: Was it a dream?

Iris: Maybe. But it felt real, and that future is still possible.

They returned to school changed.
They had learned that real change starts with our daily choices, beginning today.

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