Ting and the Possible Futures

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"Tunza" means "to treat with care or affection" in Swahili. UNEP hopes to inspire caring for the Earth through creative literature that sparks the interest and awareness of children, their parents and teachers.

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"I hope this thing works," whispered Ting, echoing the thoughts of her friends Maria, David and Faiz. The four had spent nearly every weekend together to finish the Possible Future Transporter in time for this year's Science Fair.

Ting set the Transporter's controls as the friends had agreed: "Location: Same." "Time: 50 Years From Now." And finally, "Scenario: Business as Usual."

"I can't imagine being as old as my grandparents—but I just can't wait to see what the world might be like then." Flipping the Go switch, she gave a thumbs-up to her friends—and disappeared.

Hitting the ground in a gust of gritty wind, Ting recognized the schoolyard. A woman approached. She looked vaguely familiar.

"Ting?! You made it! I'm Maria—I teach science here."

"Great to see you," Ting tried to say through a coughing fit.

"You'll want a breathing mask to filter out the coal soot. A lot of kids in my class have asthma."

"Thank you. Why's it so dirty and dry?"

"The climate changed dramatically, just as scientists said it would. But most people kept arguing and waiting for somebody else to do something.

"Oh, we put up a few solar and wind plants. But mostly we burned more and more coal and oil and chopped down more trees, releasing more carbon dioxide into the air. That and other greenhouse gases trapped more and more heat.

"It looks like the worst predictions from back in our day are coming true—a rise in temperature of about 6 degrees Celsius, 11 Fahrenheit, by the end of the century. That's an average—some places more, some less."

“A few degrees make so much difference?”

“They do. The last ice age was just a few degrees cooler from when we were kids.”

“Could we visit the town where we used to sail?” Ting asked, anxious for some fresh air. “I’d love to see the ocean.”

“Sure,” said Maria. “I’ll call Faiz to meet us. But I’ll warn you, it’s not the same.”

“What?! Our beach, and all those houses and shops—they’re under water!”
“Yes, including my family’s,” said Faiz. “It got so warm that the ice caps on Greenland and West Antarctica started to melt. There’s no stopping them now.

“Hurricanes and typhoons hit extra hard too these days.”

“Hundreds of millions of people live on the coast....” said Ting.

“Right. Some cities built big sea walls and levees to keep the water out. But not everybody could. Millions and millions of ‘climate refugees’ have been rushing inland.”

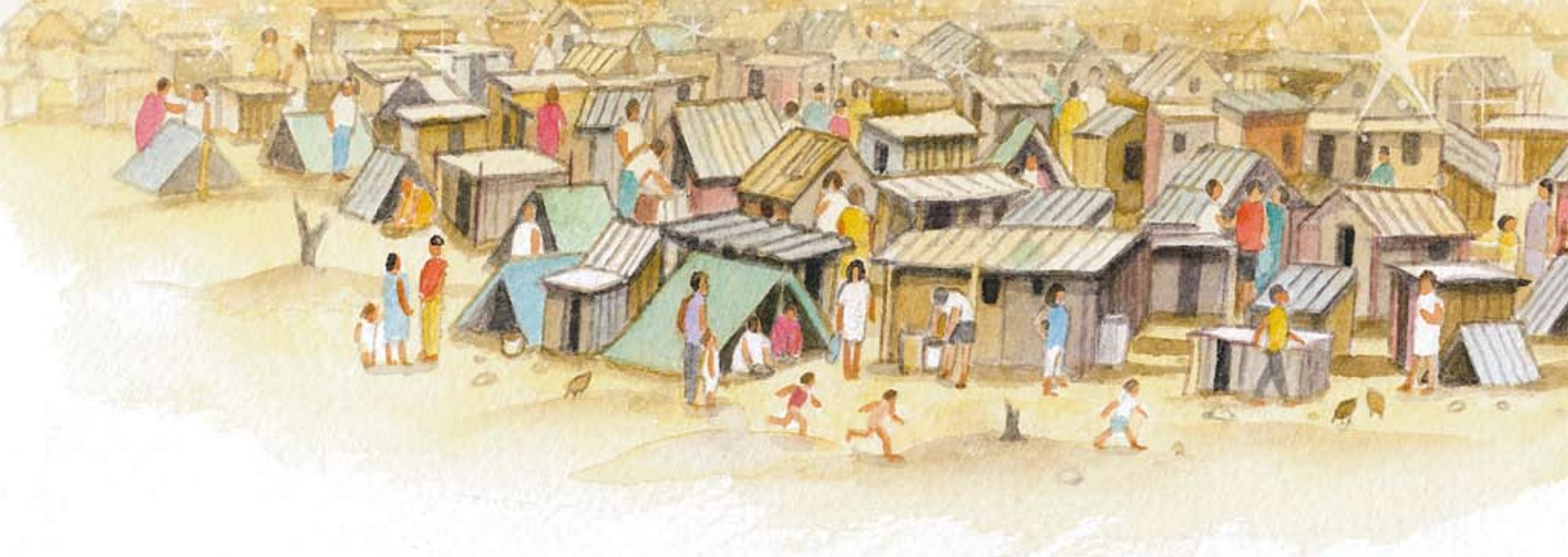
Ting started to cry. “I can’t believe this could really happen. Reading about it was one thing, but seeing it....”

“There are lots of possible futures, Ting. It doesn’t have to be this way....

To cheer her up he added, “Hey—how’d you like to visit our old friend David?”

They drove to what had been a busy market town. After greeting David, Ting said, “I remember buying fruit and vegetables here. There were mountains of them! And all those green fields and woods, those bright red and blue birds....”

“The rains shifted,” said David. “Drought came to us, and floods to our neighbours. It didn’t help that people chopped down the trees, because trees can hold the water and nourish the soil. Now we have to import a lot of food.”



“What are all those shacks?”

“That’s a shantytown built by climate refugees. Some came from the coast, some from farms that went dry.... I lost my farm, too.”

“I’m so sorry; I know how much you loved to grow things.”

“At least I have a job. I distribute food relief.”

“It’s good to see you all again,” Ting said. “But I need to see if we might have a different possible future.”

“Okay. Then please go back to your time and tell people, Ting. We’re counting on you!” said David.

This time, Ting set the Transporter to “Best Case.”

“Welcome to our beautiful school!” Maria greeted her. “I’ve been waiting for you.”

After admiring the solar tiles, the school gardens, the orchard, the windmills, Ting asked, “How did you build this future?”

"The world agreed decades ago that we simply had to keep the Earth's fever from getting any worse. Our goal was to become 'carbon neutral'—not add any more carbon dioxide into the air from human activities.

"The funny thing is that we'd known what to do for a long time. Once we really tried, we found we could live just as well—or better—with far less energy. And we could meet our needs from "renewables"—sources like wind and sun that don't run out.

"A lot of it was so simple. For example, we insulated the school building so it takes less heat and air conditioning to be just as comfortable as before. We changed to light bulbs that only take about one-quarter of the electricity of the old kind, for the same amount of light.

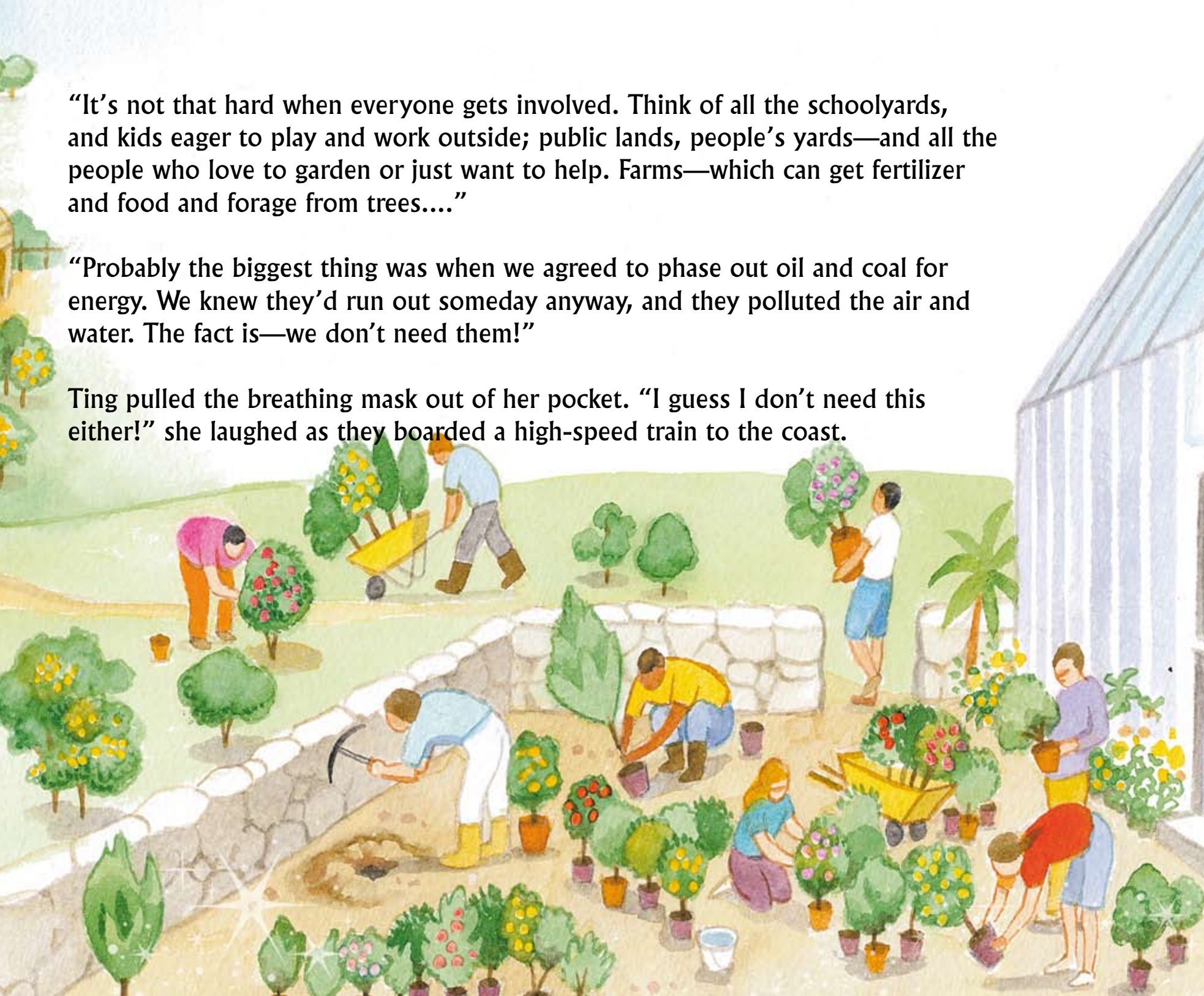
"Then to 'offset,' or soak up the carbon dioxide we couldn't avoid making, people in every country planted trees. Billions of trees."

"Billions?"

"It's not that hard when everyone gets involved. Think of all the schoolyards, and kids eager to play and work outside; public lands, people's yards—and all the people who love to garden or just want to help. Farms—which can get fertilizer and food and forage from trees...."

"Probably the biggest thing was when we agreed to phase out oil and coal for energy. We knew they'd run out someday anyway, and they polluted the air and water. The fact is—we don't need them!"

Ting pulled the breathing mask out of her pocket. "I guess I don't need this either!" she laughed as they boarded a high-speed train to the coast.



“The town... it’s...still there!” stammered Ting, greeting Faiz.

“When we humans face a really big danger, we nearly always pull together,” Faiz said. Many times, unfortunately, it’s been for war. But this time we moved to heal our planet.

“See the wave farm? That’s my contribution: it turns the power of these pounding waves into electricity. We’re working on another electric plant to harness the force of the changing tides. Some generators use heat from natural hot springs or from underground. Even methane gas from pig manure.”

“I didn’t realize we had so many options,” said Ting.

“Few did,” admitted Faiz. “But since we put our minds to it, countries and cities and even neighbourhoods have created all sorts of solutions.

“Here’s one: a miniature fuel cell. It works like a battery, but there are bacteria inside making hydrogen. We run some vehicles on electricity, others on hydrogen.”

“People back in time said all this would cost too much,” said Ting.

“Not nearly as much as NOT doing it,” replied Faiz. “As it turned out, going carbon neutral did wonders for our economy.

"Changing our energy use created millions of 'green jobs'. In some countries, factories that were shut for years came back to life making wind machines and solar panels."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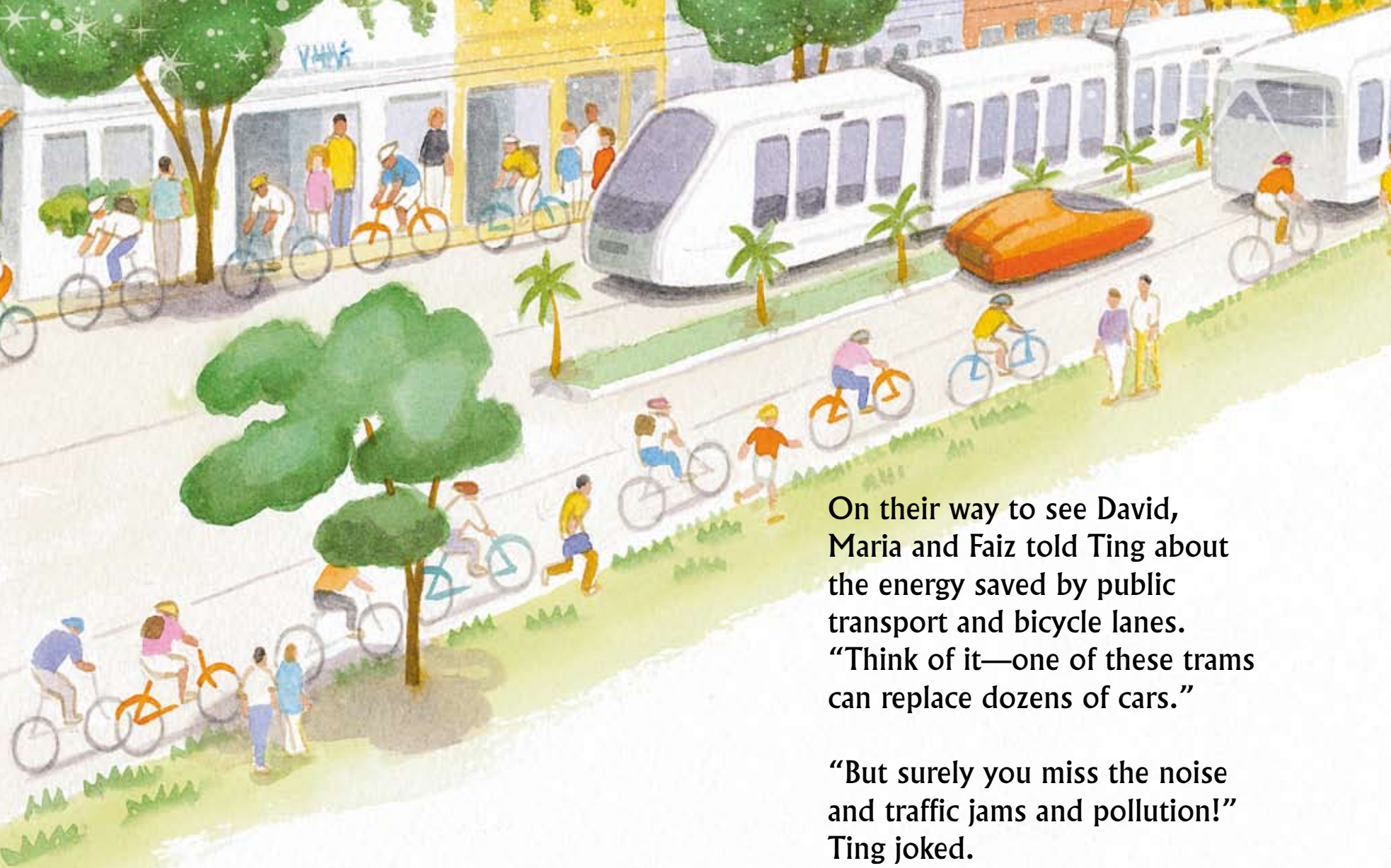
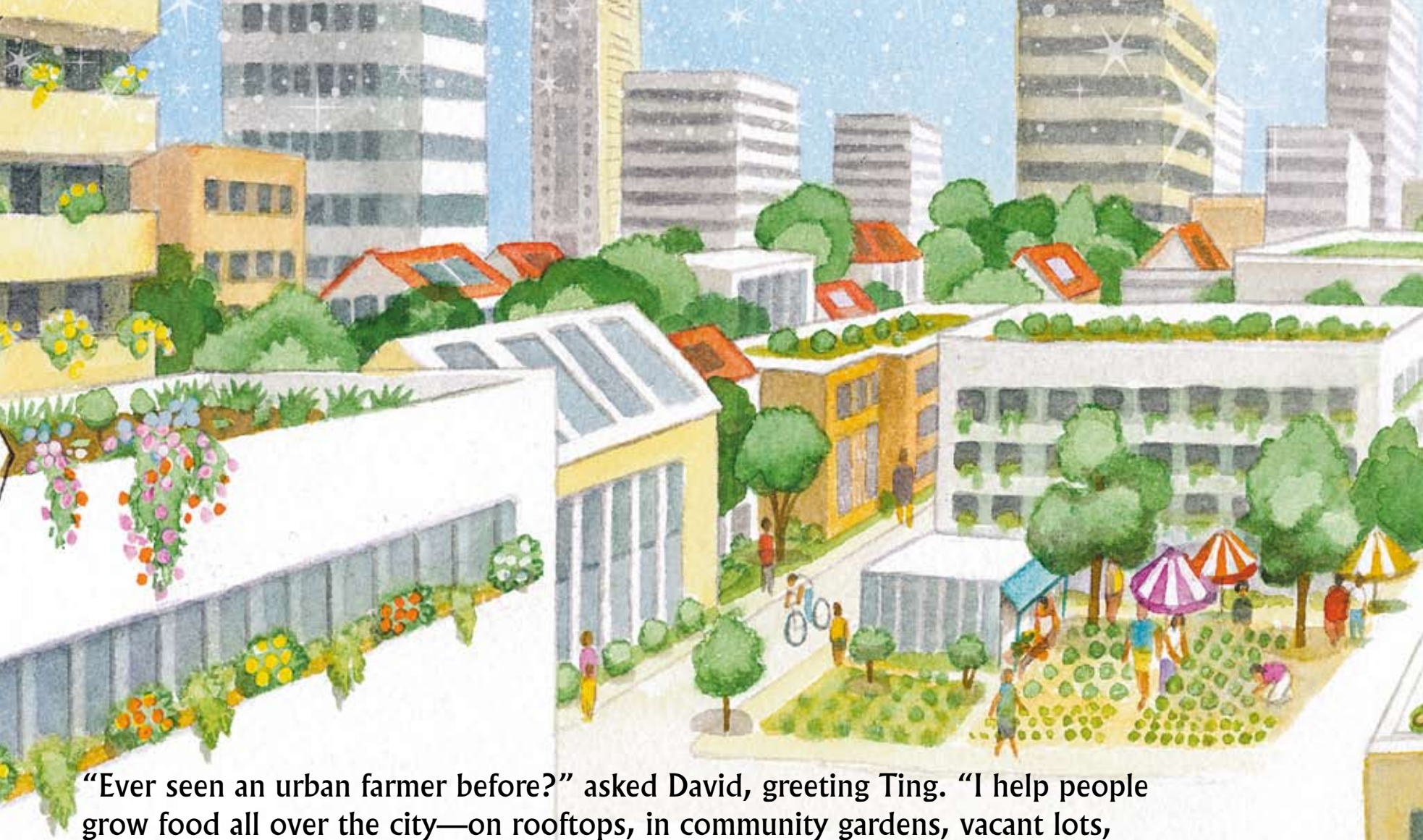


On their way to see David, Maria and Faiz told Ting about the energy saved by public transport and bicycle lanes. "Think of it—one of these trams can replace dozens of cars."

"But surely you miss the noise and traffic jams and pollution!" Ting joked.

"People are fitter since we walk and bicycle more than we used to," said Maria. "Remember how big I was in school?"



"Ever seen an urban farmer before?" asked David, greeting Ting. "I help people grow food all over the city—on rooftops, in community gardens, vacant lots, schoolyards.... Kids love stepping outside to pick lunch. And you should see how many people come to our markets on weekends.

"Growing food where people live saves a lot of energy. Back when I was a kid, a carrot might travel hundreds or even thousands of miles. Now we eat fresher meals and spare the fuel too."

Ting looked at Maria and David. “So you did it. The climate’s just like it was before….”

“Not quite,” David said quietly. “Carbon dioxide lingers in the air for a long time. Even after we stopped adding more, the temperature still warmed a bit, and the rains changed some. Farmers had to try different crops. There are some climate refugees.

“But we changed our ways before the problems got way of control. And as you can see, most of us live well.”

Ting was dizzy with all the new ideas when she whooshed back to the Science Fair.

Before she knew it, the headmistress presented her with a blue ribbon for her project.

"She's lying!" some kids yelled when Ting described what she had seen. "She just ran around the block or something." The crowd murmured. Was this a hoax?

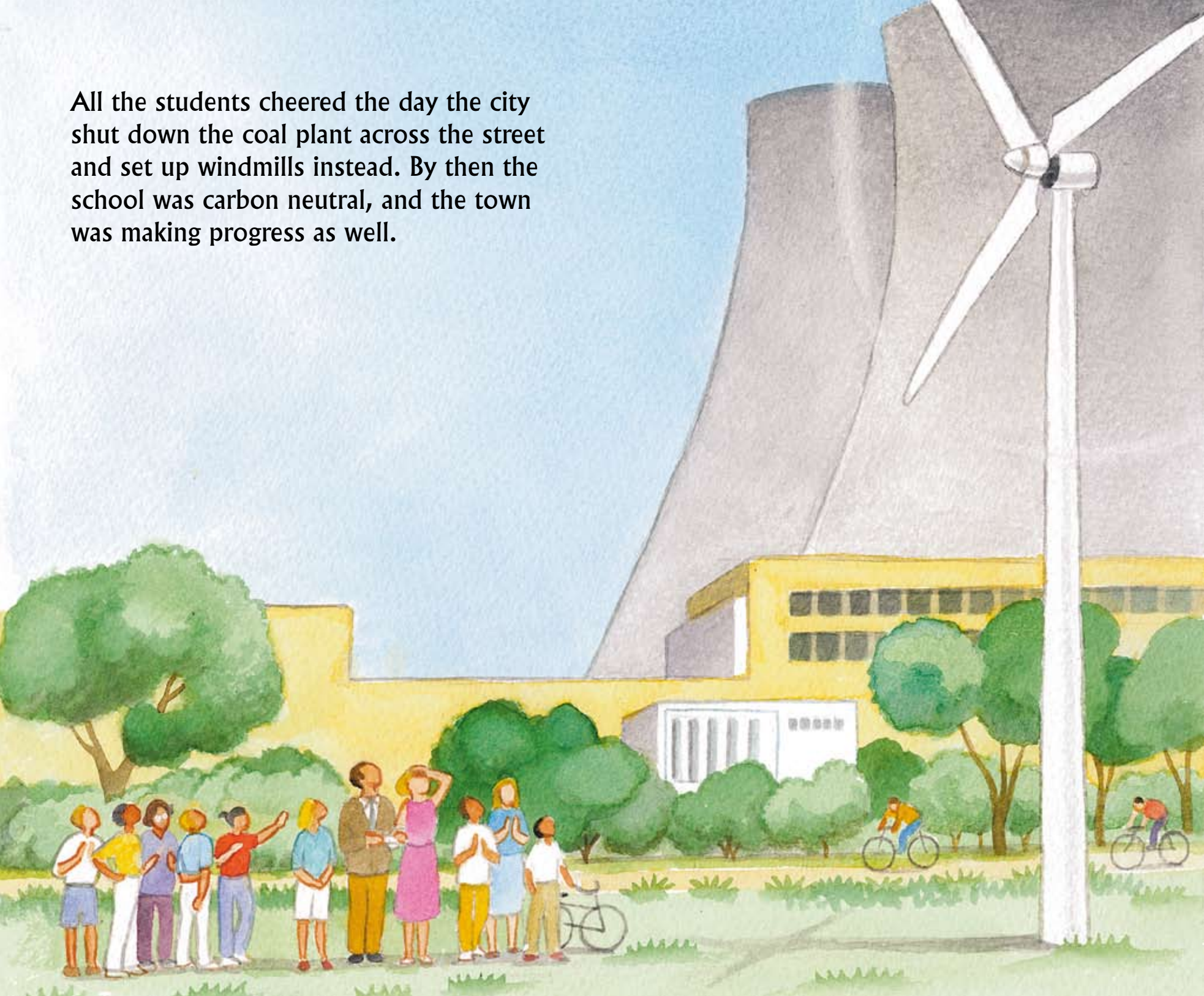
Ting pulled out the breathing mask and fuel cell. No one had seen anything like them. The audience realized she must really have travelled through time.

“I say we start right here, right now, to protect our climate—and build our dream future,” Ting concluded.

Ting's science class led an energy audit to find out how much electricity and heating oil the school used, plus how much fuel the school buses burned. They insulated the walls and ceiling, put in thicker windows, and switched to more efficient light bulbs. Then they put up solar panels for electricity.

The school board voted to start replacing the diesel buses with "hybrids"—vehicles that use both liquid fuel and electricity. Children offset the diesel by planting trees throughout the community.

All the students cheered the day the city shut down the coal plant across the street and set up windmills instead. By then the school was carbon neutral, and the town was making progress as well.



Some facts and figures on climate change

1. Until recently, we thought that the atmosphere was so vast that we humans could not change it or affect the climate. Now we know differently.

2. Our air now contains more carbon dioxide than at any time in close to a million years. The major causes are burning oil and coal, and destroying trees. Carbon dioxide and other 'greenhouse' gases trap heat from the sun.

3. As a result of increasing greenhouse gases our climate is changing. Many signs are already here: rising sea levels, rapidly melting ice at both North and South Poles, and glaciers melting worldwide. Insect-borne diseases like malaria spreading to new areas, farming seasons changing, more frequent droughts in some places and floods in others. More severe hurricanes and other "natural" disasters….

4. But a greater worry is that if we do not act very soon, the climate may reach a "point of no return" where more warming may be impossible to stop. For example, if it gets warm enough that huge ice sheets on Greenland and Antarctica start to melt, we could not stop them. But we can probably prevent that point.

5. The use of fossil fuels—and output of carbon dioxide—is still growing. Yet many scientists believe that to protect our climate, carbon output will instead need to fall by between 40 and 85 per cent by 2050—and then drop to zero.

6. The easiest way to make a big difference quickly is to improve energy efficiency—getting more work from every bit of energy. Countries including the United States, Germany, and Japan have already doubled energy efficiency since 1973, but can still do more. In 1980, China used three times as much energy per unit of GDP as it does today. Even less industrialized countries, which use far less energy, can improve their efficiency.

7. We can make cars and other vehicles that use far less energy than most of the vehicles being used today. Using hybrid electric/petrol technology, some new cars are expected to go 151 miles on one gallon of petrol, (about 100 km per 15 litres)—many times what most cars get today.

8. Another way to reduce climate change is to shift from oil and coal to 'renewable' energy—energy from sources that "won't" run out.

9. Enough sunshine reaches the Earth in two hours to meet the world's energy needs for a year. New, better, cheaper ways of harnessing it are being developed every year. The manufacture of solar cells has grown nearly 50 per cent a year over the last five years.

10. Wind farms are also growing rapidly. Some wind turbines are 90 metres tall, and they can make 20 times as much electricity as turbines from 20 years ago. Denmark is planning to get half of its electricity from wind. Engineers are developing better batteries and other systems to store energy and provide it even when the wind weakens.

11. Many experts believe we could get all the energy we need from renewables—sun, wind, waves, plant matter, heat from within the Earth—within a few decades, making oil and coal nearly unnecessary.

12. Some of the world's largest companies—as well as thousands of new, small ones—are investing in energy efficiency and renewable energy. They understand that "green energy" is good for the climate—and for business.

What can you do?

1. Organize an energy audit for your home and school: How much electricity do you use every month? What takes the most? (Often at home it's the refrigerator, heater or air conditioner.) How can you increase your energy efficiency or turn to renewables? Even if you have to hire someone to help or invest in new equipment, you will save money in the long run.

2. Buy only energy-efficient appliances. Many countries require labels on new appliances that show how much energy they use. Turn off everything electrical when you're not using it. Better, unplug electronics—they waste energy just by being plugged in.

3. Change a light bulb—or dozens. Compact fluorescent lightbulbs last about five times as long as old-fashioned bulbs and use about 25 per cent of the electricity for the same amount of light. In fact, several countries have outlawed old-fashioned "incandescent" lightbulbs.

4. If most people drive where you live, organize a "car-free day." Get students and adults to pledge to walk, bicycle or take a train or bus, since cars add far more carbon per person to the air than public transport. People may discover that they enjoy not being stuck in a car!

5. Plant lots of trees, preferably a variety. Trees add shade, beauty, fruit, nuts… Some even fertilize the soil for your garden. And of course they absorb carbon dioxide. A school or environmental club can help you figure out the best types for your area. You can learn more, join with others around the world, and register your trees at www.unep.org/billiontreecampaign.

6. Recycle. Ask shopkeepers to sell recycled products if they don't already. Recycling paper saves trees; recycling most materials saves energy. Re-use paper and plastic bags whenever you can.

7. Show your political leaders you're serious about climate change. Write to them. Visit them. Speak out at public meetings—many policy makers love to hear from young people.

8. Remember your choices matter. The future belongs to YOU!

At the next year's Science Fair, Ting reset the Transporter to "Most Likely Future if Progress Continues". She wanted to see if what they had done would make any real difference.

"This time," she told the crowd, "I saw that if we work hard, the whole world can be carbon neutral—and we'll likely save our climate, our coasts, our food supplies.

"So we challenge all the schools in the city—and the country—and the world—to join us in carbon neutrality. Then we'll go beyond our schools to everywhere...."

Maria, Faiz and David flashed Ting a thumbs-up.

"Let's work toward a cleaner, greener, healthier tomorrow."

The school gave Ting a standing ovation. Her classmates shouted, "We're ready NOW!"