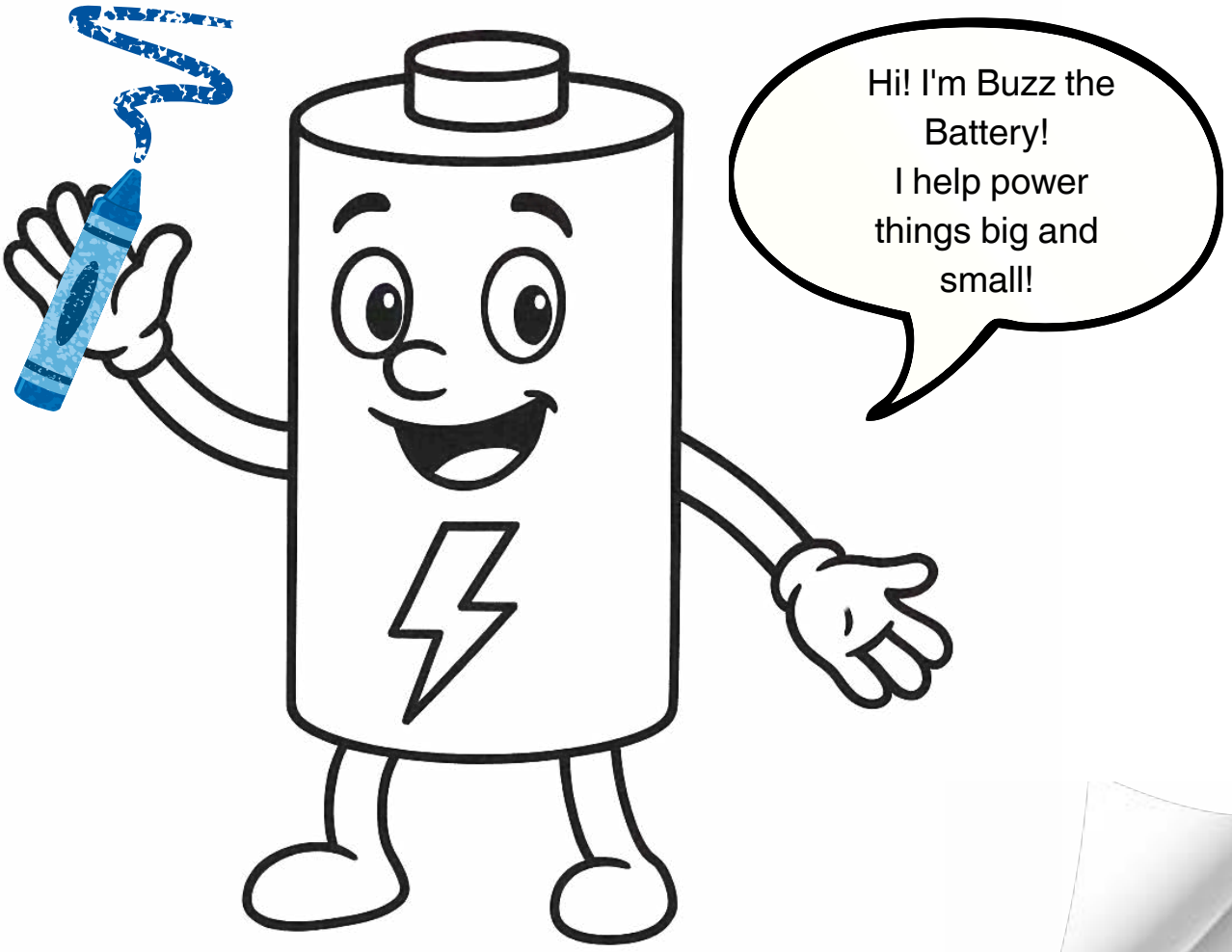
Brought to you by the National Science Foundation and Binghamton University

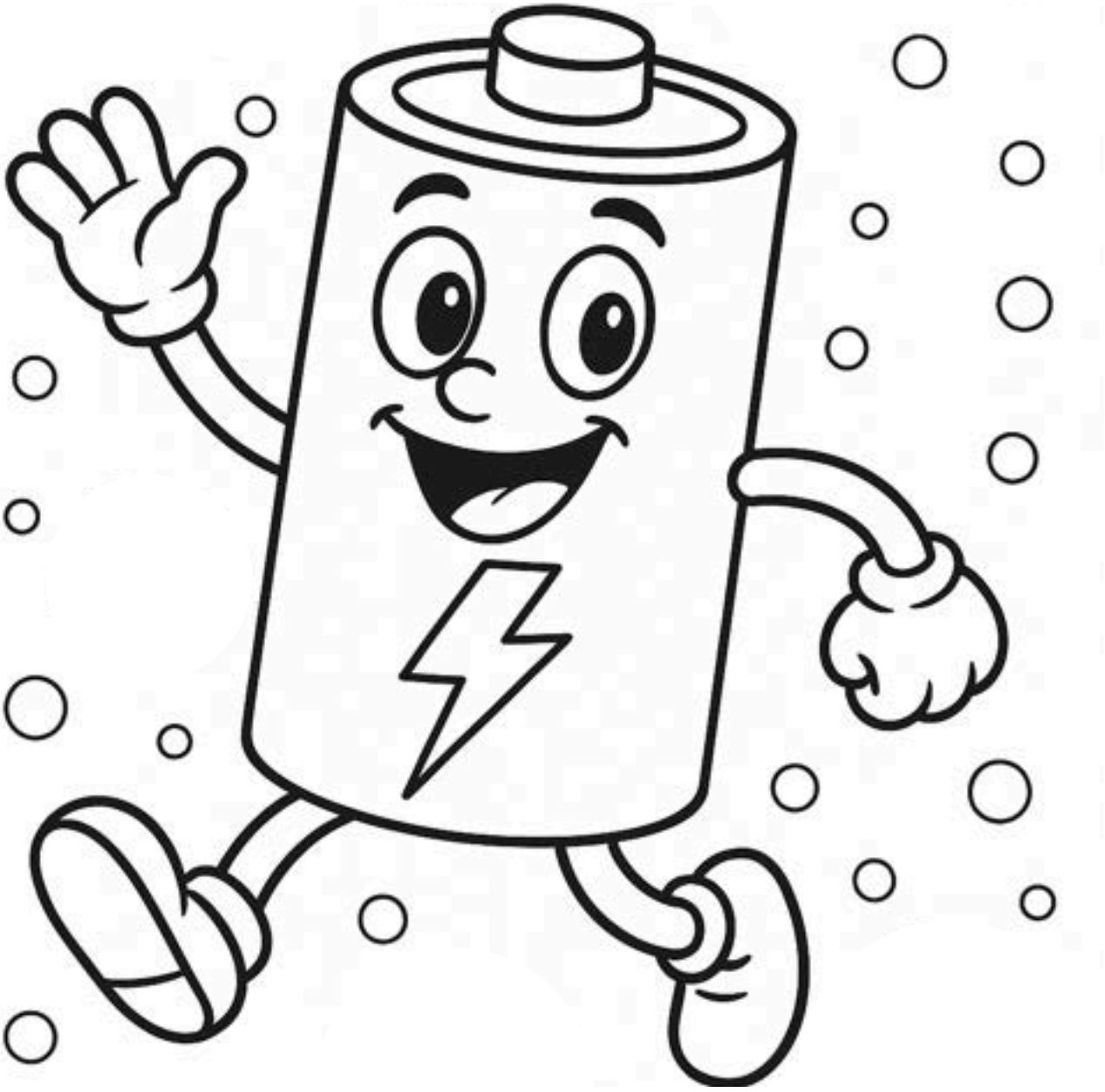
Energy Storage Engine
In Upstate New York

BATTERIES IN ACTION!

COLORING BOOK



Hi! I'm Buzz the Battery!
I help power things big and small—from your toys to electric cars.



Let's go on an adventure to learn what I can do!

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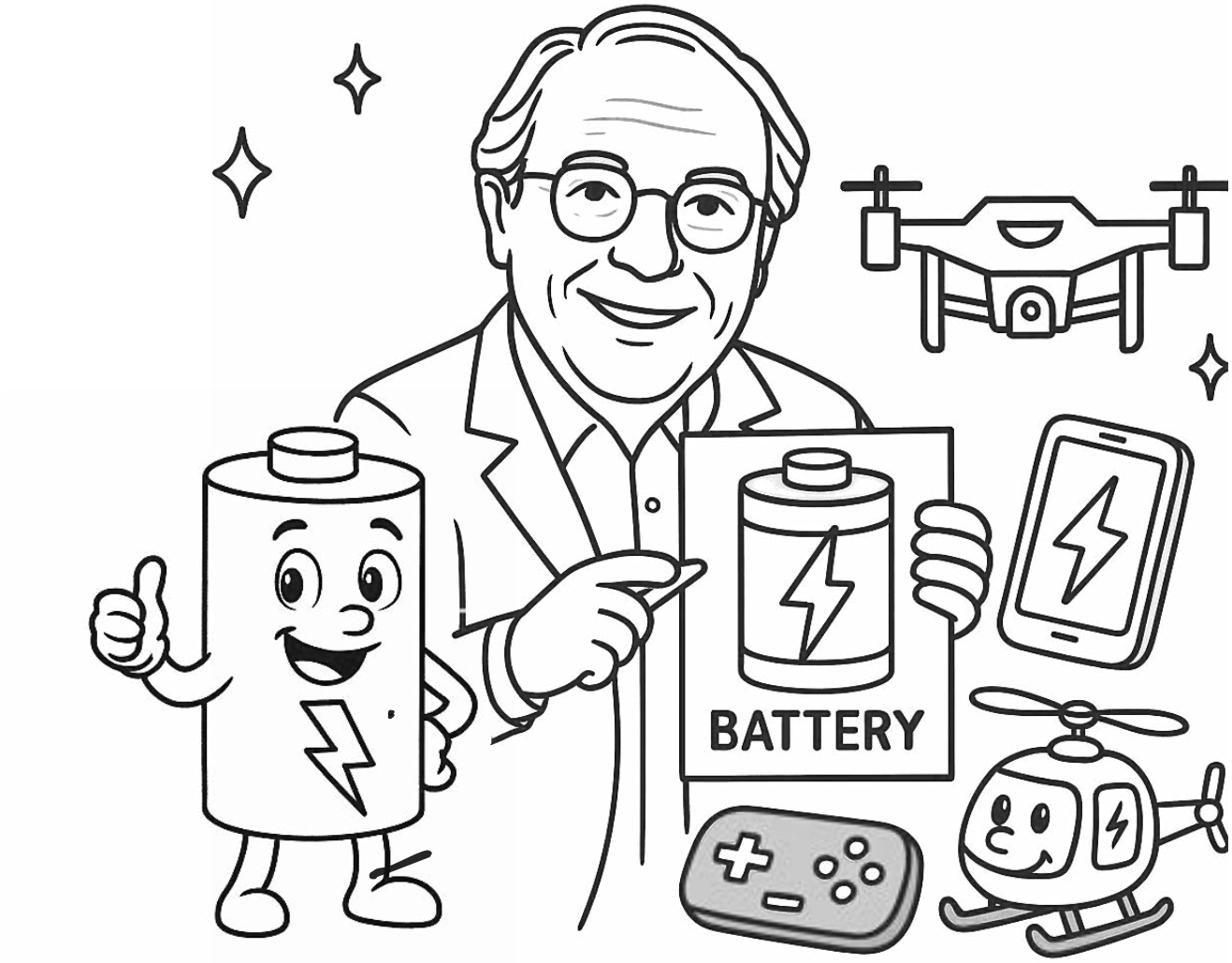
First, let's meet a Battery Hero
Dr. M. Stanley Whittingham!

Dr. Whittingham is a brilliant scientist who helped create the lithium-ion battery! Thanks to his big discovery, we can power our phones, laptops, cars—even space tools—without danger or explosions! Dr. Whittingham pioneered the safe use of lithium to store energy at room temperature, a breakthrough that earned him the Nobel Prize in Chemistry—one of the highest awards a scientist can get! Today he's a SUNY distinguished professor at Binghamton University.



Maybe someday you can be a battery scientist too!

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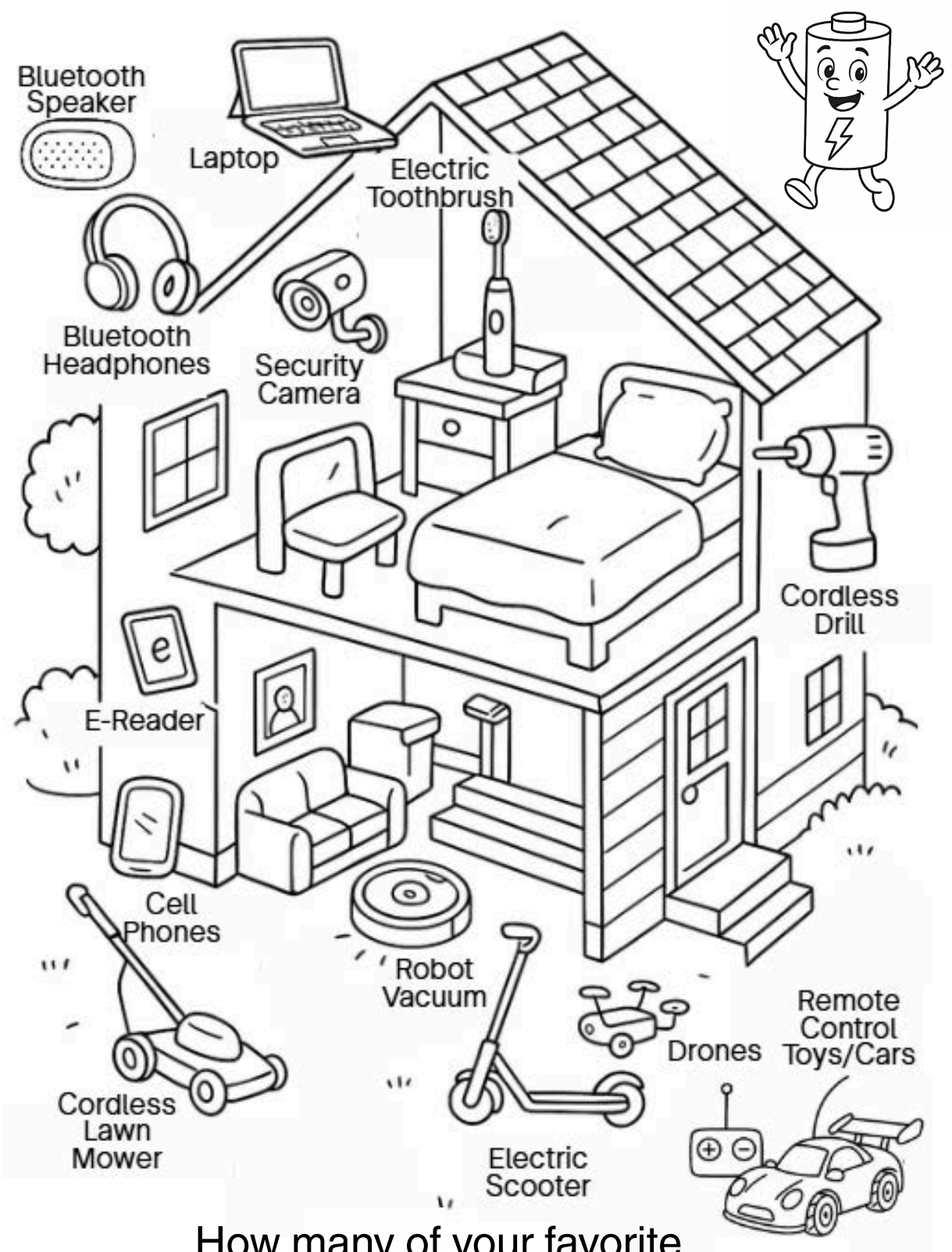
We have so many batteries in our homes!



How many of your favorite gadgets run on batteries?

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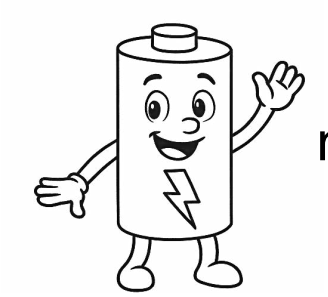

Electric cars don’t need gas—they run on powerful batteries!

They're quiet, clean, and super smart.
Buzz says, “Vroom with no fumes!”

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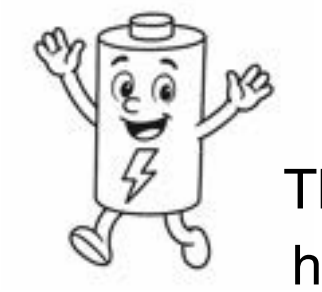
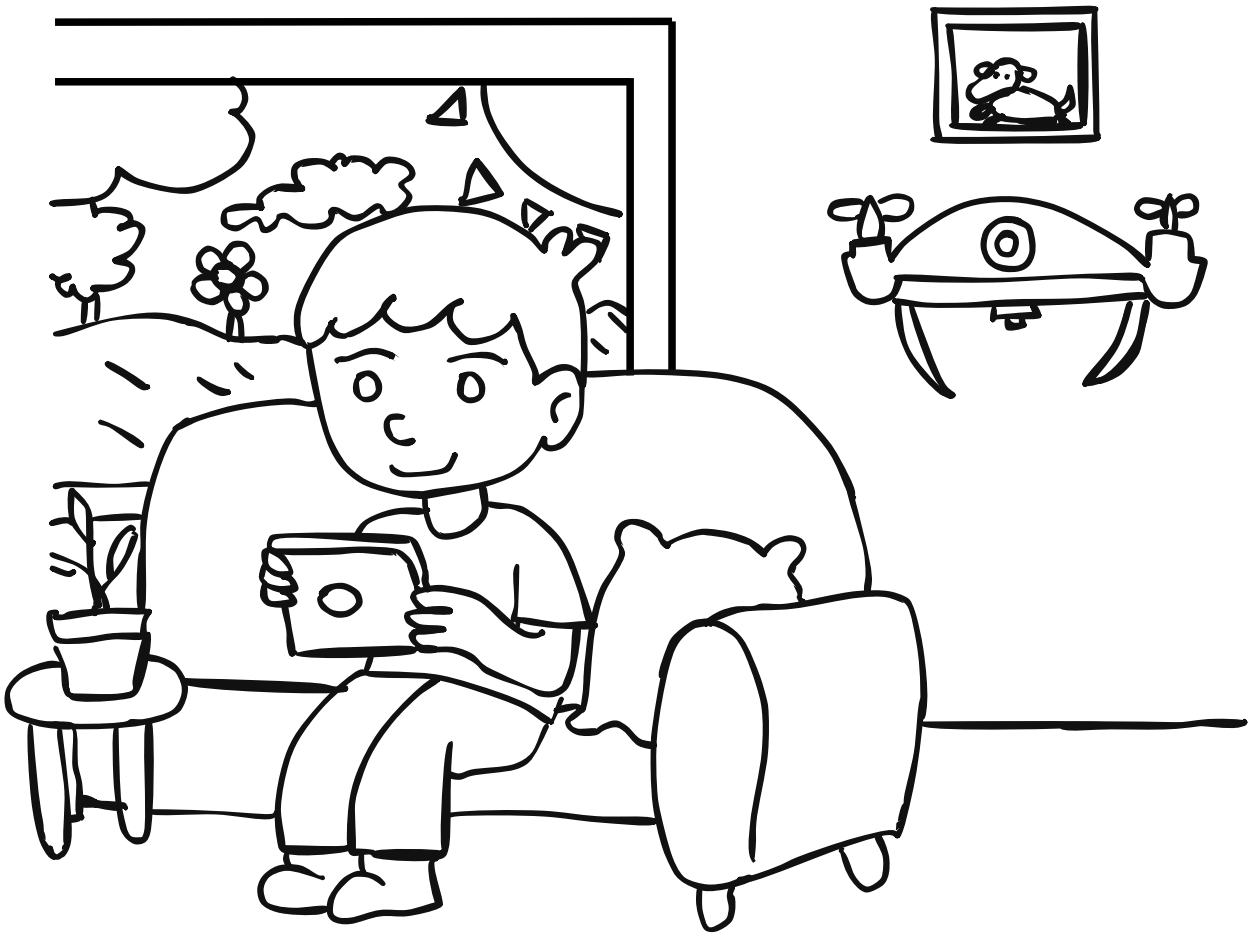
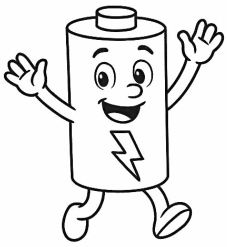


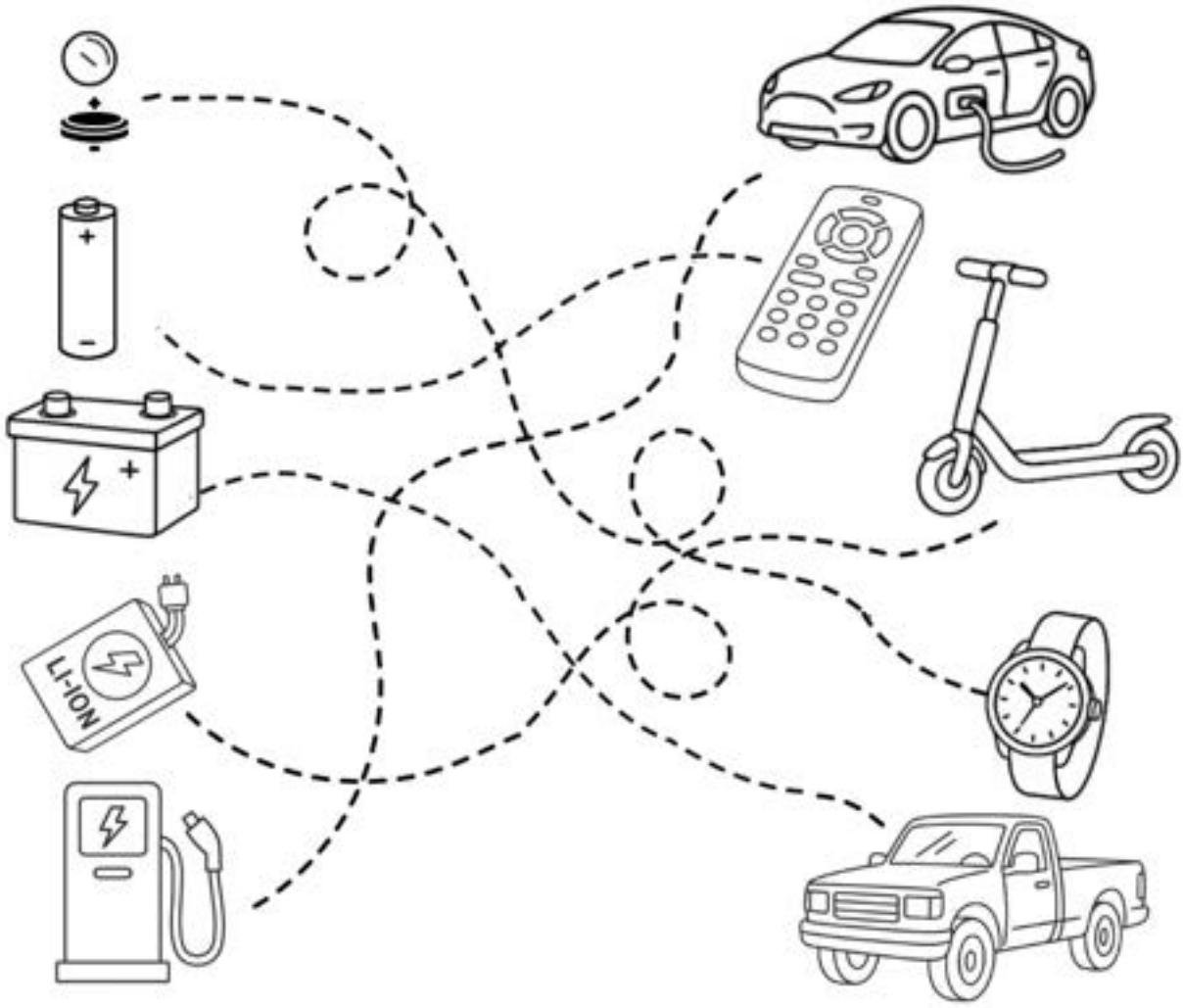
Zooooom!
This hover drone is flying
high thanks to its battery.



From the skies to the ground,
batteries make fun things fly!



Different types of batteries are used to power different things. Can you trace the lines?



Did you know all batteries can be recycled so that the metals in them can become something new and powerful again?

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Batteries are in more
places than you think!

Scooters zip around town, and lawn
mowers clean up grass—
no gas needed!

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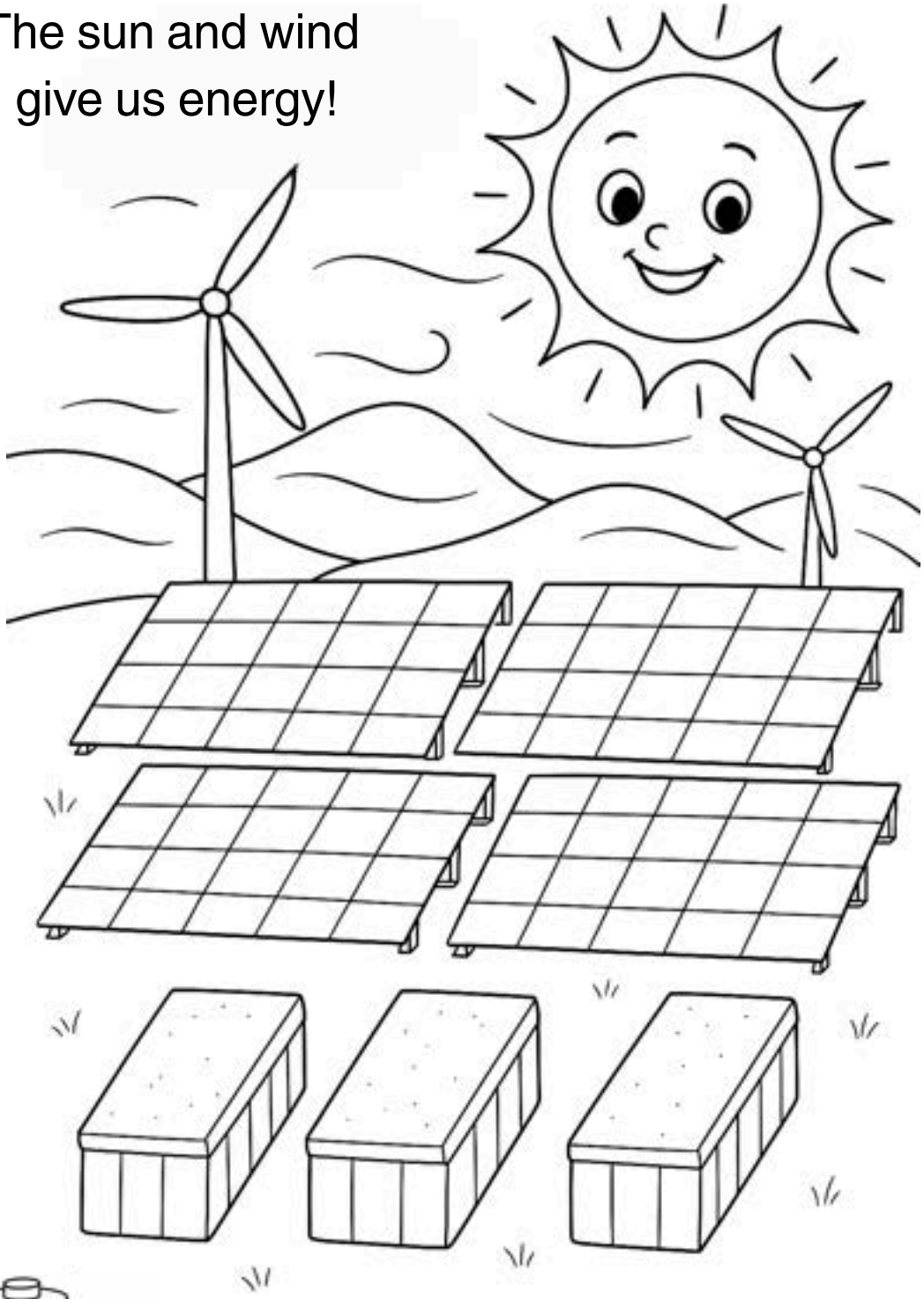
The sun and wind give us energy!



Solar panels and windmills collect it, and batteries save it for later—like charging up a sunshine lunchbox.

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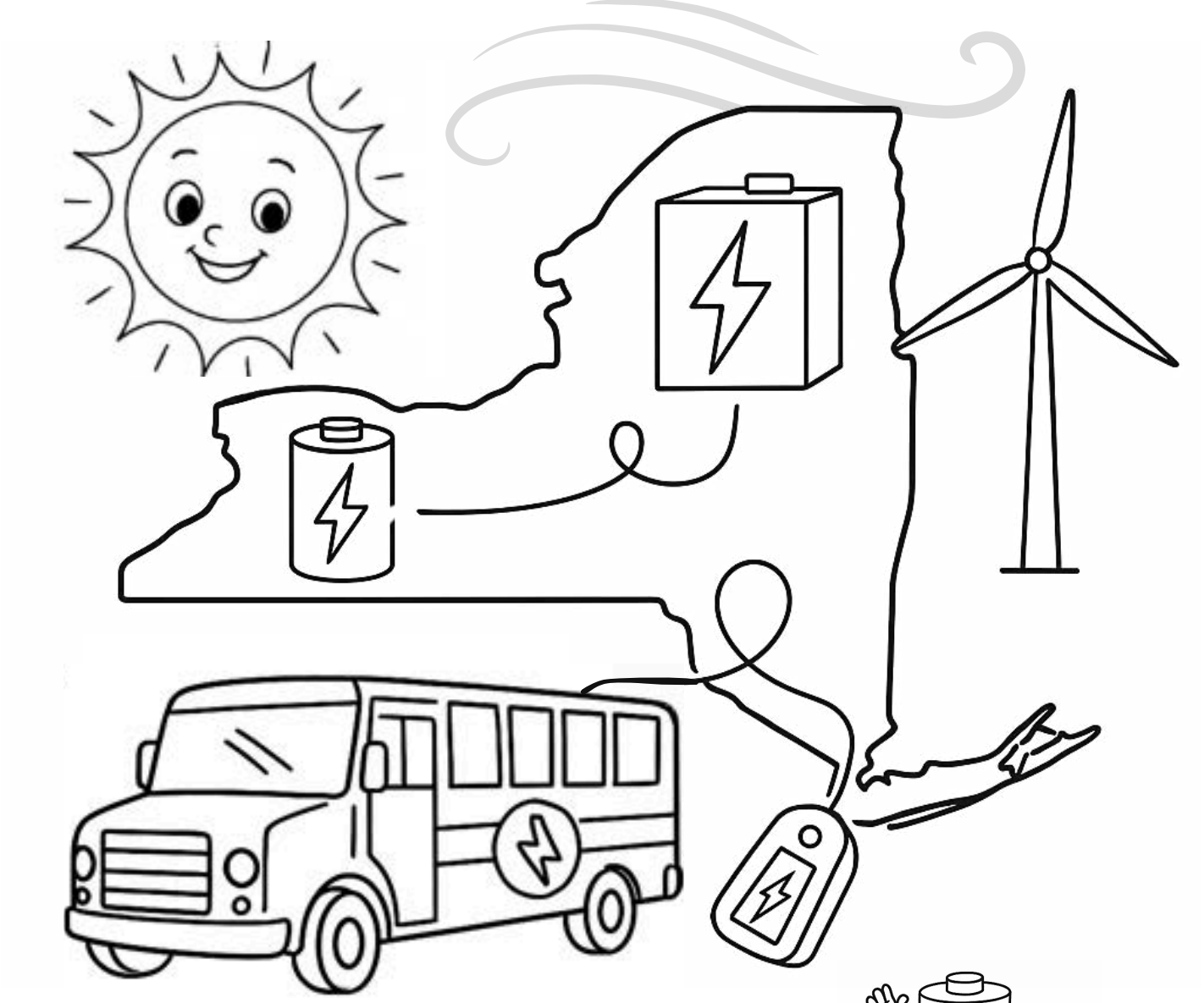
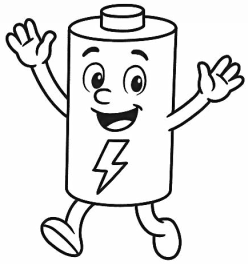
Batteries help store energy
all over New York State.



They keep the lights on—
even when the sun sets
or the wind slows down!



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New Types of Jobs

The clean energy future is creating new kinds of jobs, and Upstate New York is helping lead the way.

Whether you're into science, building things with your hands, teaching others, or solving big challenges, there's a place for you in a planet-protecting career.

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In the lab, scientists test
new battery ideas!

They make batteries that
last longer, charge faster,
and are safer for our world.

You can be a battery scientist too!

Build, explore, and imagine—your ideas can help power the future.

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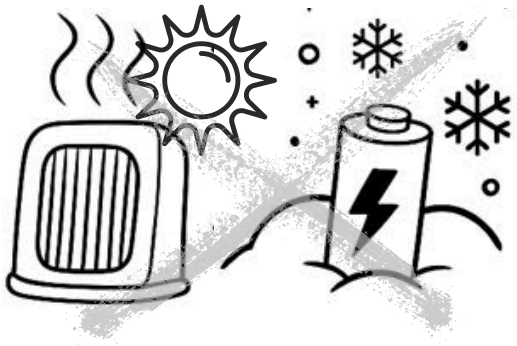
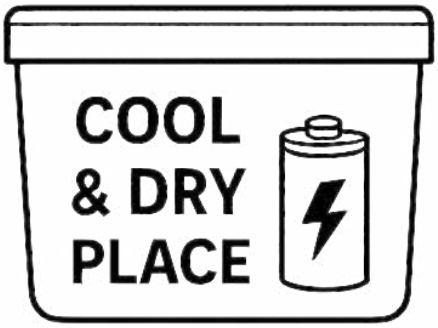
Not Too Hot, Not Too Cold!

Did you know batteries don't like being too hot or too cold?





Keep them safe—never leave them in the hot sun, near heaters, or outside in the snow.

If you're not sure what to do, ask a grown-up! And never, <u>ever</u> put a battery in your mouth!

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Old batteries don’t belong in the trash.

All batteries can be recycled. Give batteries a second chance to shine—recycle them!

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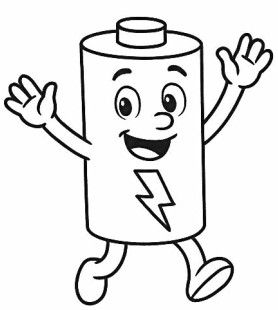
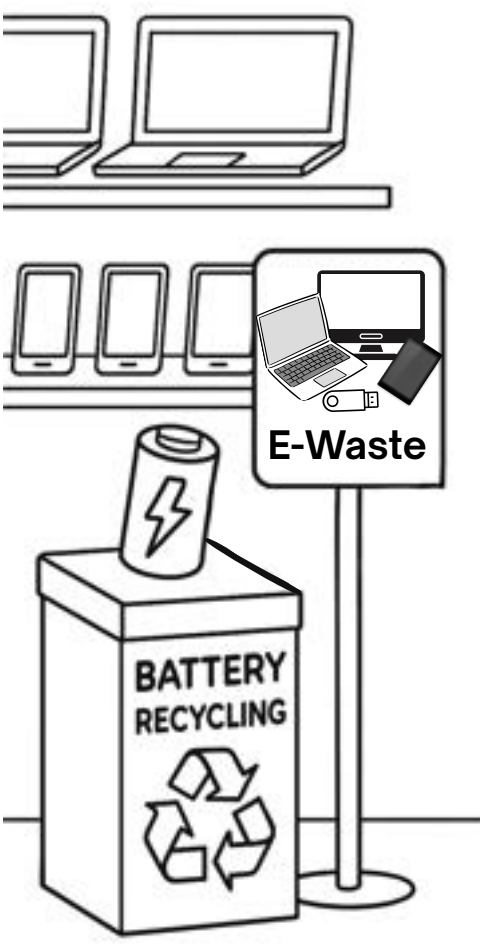
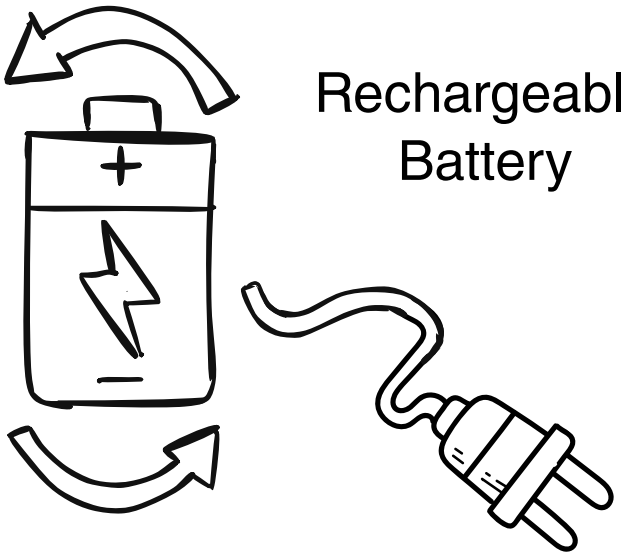
Recharge or Replace?

Some batteries are single-use—once they're out of power, they need to be replaced. Others are rechargeable—you can plug them in and use them again and again!





Single-use Battery



Rechargeable Battery

You can recycle batteries and electronics where you buy them! This keeps them out of landfills and recovers valuable materials like lithium and cobalt!

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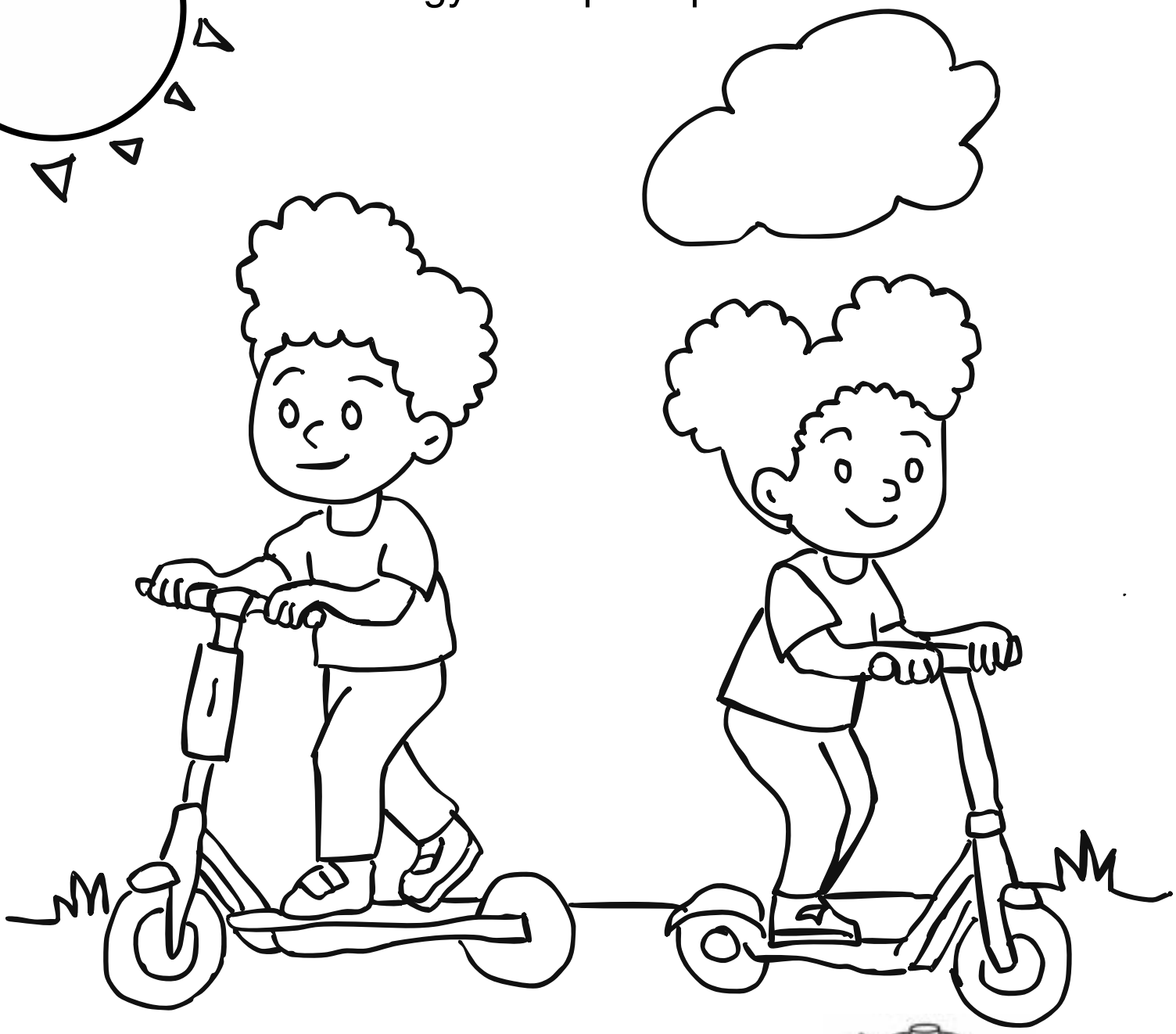
Together, we can use clean energy to help our planet.



Thanks for coloring with Buzz—let's keep our world bright and charged!

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Powering the Future—Together!

The battery ecosystem in Upstate New York is growing fast. Right here in our own backyard, Upstate New York is becoming America's Battery Capital.

Through the NSF Energy Storage Engine, we're bringing together top scientists, local startups, skilled workers, educators, and community leaders to create the next generation of energy storage — cleaner, safer, and made in the USA.

This coloring book was created to help young learners and families explore how batteries work, why they matter, and how they power our everyday lives.

Learn more at: upstatenyengine.org

Special Thanks To:

Binghamton University
Dr. Meera Sampath, CEO, Upstate NY Energy Storage Engine
Dr. Myra Henry, Director of Regional Engagement
Dr. Maggie Cousin, Program Administrator
Keira McGrat, Binghamton Art Club
Alice Leonardo, Binghamton Art Club

Buzz's Big Battery Facts! Did You Know?

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1. The very first battery was made over 200 years ago by a scientist named Alessandro Volta—he stacked metal discs with salty cloth between them!

2. You can make a battery out of a potato! Just add some wires and a metal coin, and you can power a tiny clock. Science snacks, anyone?

3. Batteries help astronauts explore space! Rovers on Mars and satellites in orbit stay powered thanks to solar-charged batteries.

4. Recycling one old battery can save enough energy to power a lightbulb for a whole month!

5. Your brain and heart send signals using electricity—your body is kind of like a battery!

6. Some batteries can be recharged hundreds of times. That saves money and helps the planet!

7. Electric cars can drive over 300 miles on a single charge. That's like driving all the way across New York State without stopping for gas!

8. Batteries can store sunshine. Solar panels collect energy from the sun, and batteries keep it safe for rainy days.

9. Big battery farms can power whole towns! These giant energy banks help keep homes running —even when the grid is down.

10. You could be a battery inventor! If you like to build, solve puzzles, or save the planet, the world of batteries needs YOU!

Learn More
upstatenyengine.org