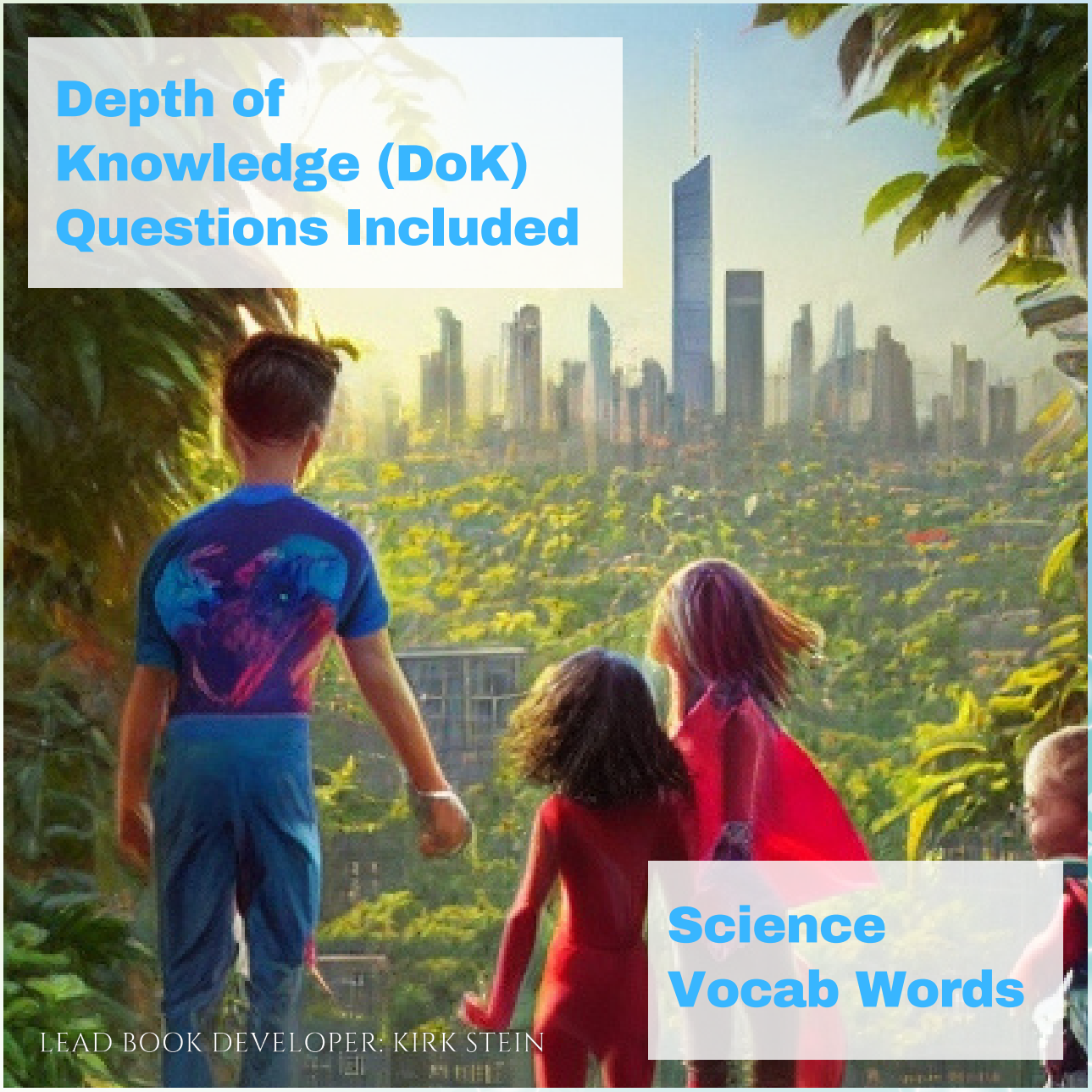
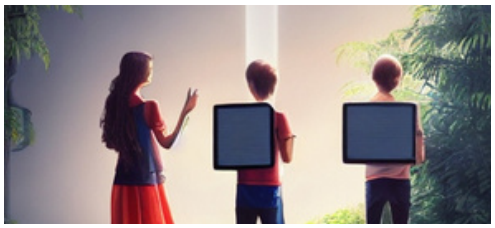
STEM ED TODAY SCIENCE STANDARDS-BASED STORY

THE SUN SQUAD: SOLAR-POWERED SOLUTIONS FOR A TOWN IN NEED



4-PS4-2. Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.

TABLE OF CONTENTS



The Disaster Strikes

Once upon a time, in a small town called Sunville, things were looking grim. A massive storm had hit the town, knocking out power and causing chaos. Houses were flooded, trees were down, and the town was in a state of emergency.

That's when four friends, Alex, Mia, Jack, and Zoe, got together to try and help. They knew they had to do something to make a difference, and fast!

DoK: Recall

Have you ever heard of solar power before reading this book? What do you know about it?

How do you think solar power can help communities in need?

The Idea

As they walked through the town, Alex, Mia, Jack, and Zoe noticed that some of the buildings still had electricity. They took a closer look and saw that these buildings had something special on their roofs - solar panels!

Alex, who loved science, explained to the others how the solar panels worked. "When the sun's rays, called photons, hit the solar panel, they cause a special material inside to release electrons. These electrons then flow through wires and create electricity."

Mia, who was always looking for ways to help others, had an idea. "What if we used this electricity to power machines that could help people in the town?" she said.

Comprehension

How do solar panels work? Can you explain it in your own words?

The Idea

The group got to work right away, researching new ideas while using their knowledge of science and engineering to create solar-powered machines. They built pumps to help get water out of flooded houses, lights to keep people safe in the dark, and chargers to help people stay connected with their loved ones.

It wasn't easy, but with hard work and determination, they were able to make their solar-powered machines a reality. And as they watched their machines come to life, they knew they were making a real difference in the town of Sunville.

Comprehension

Why do you think it's important to use renewable energy sources like solar power?

The Twist

Just when things seemed to be getting better, the Sun Squad faced a problem. The power company, who had been slow to respond to the disaster, was not happy about the Sun Squad's solar-powered machines. They claimed they were unsafe and tried to shut them down.

The Sun Squad knew they couldn't give up, but they also knew they needed to prove that their machines were safe. They decided to contact the National Renewable Energy Laboratory (NREL), a government organization that approves of solar panel construction, to get emergency approval for their solar-powered machines.

The Sun Squad explained to NREL how they had designed their machines with safety in mind, and how they were only being used to help the people in the town. NREL was impressed with the Sun Squad's dedication to helping others and granted them emergency approval to use their solar-powered machines.

Application
What was the twist in the story that surprised you? Did you see it coming?

The Twist

With NREL's approval, the Sun Squad was able to continue their work, providing much-needed power to the town. And as more and more people saw the benefits of solar energy, they began to realize that it was a safe and reliable solution to their energy needs.

In the end, the Sun Squad not only helped the town of Sunville, but they also helped to change people's minds about solar energy. And as they looked back on their hard work and dedication, they knew that they had made a real difference in the world.

Application

How does this story inspire you to think about the ways you can use renewable energy sources in your own life?

The Conclusion

The town of Sunville was grateful for the Sun Squad's hard work and dedication. They were able to help so many people and make a real difference in their community. The Sun Squad even inspired other towns to start using solar energy to help with their own disasters.

As for the four friends, they were proud of what they had accomplished. They had learned that with hard work and determination, they could make a difference in the world. And who knows, maybe they'll even become famous scientists one day, helping to change the world with their solar-powered inventions!

The end.

Analysis

Can you think of other ways that solar power could benefit communities, both in the short term and the long term?

GLOSSARY

VOCABULARY WORDS

ELECTRICITY
Vibrations are when things shake back and forth very quickly. For example, when you shake a toy rattle, it makes a sound because of the vibrations.

SOLAR PANELS
Sound is something we can hear with our ears. For example, when you clap your hands, it makes a sound.

PHOTONS
Pitch is a way we describe how high or low a sound is. Imagine a bird chirping and then imagine a lion roaring. The bird's chirp is high pitched, like a squeaky toy, while the lion's roar is low pitched, like a big, deep rumble.

ELECTRONS
Investigate means to look for clues or answers. When you investigate, you try to find out more information about something. For example, if you see footprints outside and want to know who made them, you can investigate by looking for more clues.

NATIONAL RENEWABLE ENERGY LABORATORY (NREL)
The National Renewable Energy Laboratory (NREL) is a place where scientists and engineers work to find new ways to create energy from sources that won't run out, like the sun, wind, and water. They do research to help make renewable energy sources like solar and wind power more efficient and cost-effective.

CREDITS

Developed by Kirk Stein, STEM Ed Today creator and editor. Certified in STEM Education from the National Institute for STEM Education.

The following materials utilized the National Institute for STEM Education NCST approach and were intended to align with the content covered in the National Certification for STEM Teachers.

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