Lesson 4.3

Cool People in Hot Places
Lesson Overview

Students apply what they have learned about sunlight warming different surfaces to explain the temperature patterns on the Carver and Woodland playgrounds. The class participates in a new Think and Walk activity to compare the relative temperatures of pale and dark surfaces. Included in this activity is the third Critical Juncture Assessment of the unit, which provides an opportunity to assess students’ understanding of the relationship between warming and different colored surfaces. Then, the teacher introduces a new Explanation Language Frame and students construct oral and written explanations about why different surfaces warm differently when exposed to the light for the same amount of time. The teacher leads a shared reading of Cool People in Hot Places and students make and check predictions about how people stay cool in hot weather. The purpose of this lesson is for students to solidify their understanding of the effect of a surface's color on how quickly it warms.

Anchor Phenomenon: Students at Carver Elementary School are too cold during morning recess, while students at Woodland Elementary School are too hot during afternoon recess.

Students learn:

- Different surfaces warm differently under the same light conditions.
- People use various strategies to stay cool when Earth's surface gets hot.
Reading: Cool People in Hot Places

The class reads *Cool People in Hot Places*. Students make and check predictions about how people stay cool in hot weather.

Instructional Guide

1. Introduce the book *Cool People in Hot Places*. Display the front cover and invite students to share what they notice.

   There are some places on Earth where sunlight makes the surface get very hot, similar to the playground surface at Woodland in the afternoon. When Earth’s surface gets very hot, the weather feels very hot to people who live there.

   Today we will read about different ways that people who live in these places stay cool when the weather is very hot.

2. Have students make predictions about cooling strategies.

   Remember, one way that readers learn from a book is to make a prediction. When you make a prediction, you use what you already know to decide what you think might happen.

   Now that we know some surfaces get warmer than other surfaces when sunlight shines on them, what do you predict that people in different places on Earth will do to keep surfaces cooler, so they can stay cool?

   Have pairs discuss their predictions, then invite several students to share with the class. Encourage students to provide rationale to support their ideas.

3. Read aloud to page 5, and then ask students to make predictions.

   Turn to the person next to you and tell them the answer to this question: What do you predict the people who live in this place do to stay cool?
Have a few students share their predictions with the class. Encourage students to provide a rationale to support their ideas.

4. Read aloud page 6 to check predictions. Ask students whether their predictions match what you read on the page. Call on a few students to share.

   - Continue reading aloud to the end of page 9, and ask students to make predictions.
   - Think. What do you predict the people who live in this place do to stay cool?
   - Now turn to the person next to you and tell them what you predicted.
   - Have pairs discuss their predictions, then invite several students to share with the class. Encourage students to provide rationale to support their ideas.
   - Read aloud page 10 to check predictions. Discuss whether the predictions the students made matched what was read on the page.

   - Continue reading aloud to the end of page 13, and ask students to make predictions.
   - Think. What do you predict the people who live in this place do to stay cool?
   - Now turn to the person next to you and tell them what you predicted.
   - Have pairs discuss their predictions, then invite several students to share with the class. Encourage students to provide rationale to support their ideas.
   - Read aloud page 14 to check predictions. Discuss whether the predictions students made matched what was read on the page.

7. Continue reading to the end of the book. Reread the final question on page 19 aloud.

   What do you do to stay cool?

   Invite students to share their responses with the class.

8. Summarize the ideas students have learned about warming of dark and pale surfaces, and direct them in a paired self-assessment.
We have figured out new ideas about why one surface can get warmer than another. We have learned that:

- surfaces can be dark (closer to black) or surfaces can be pale (closer to white);
- dark surfaces get warmer than pale surfaces when light shines on them; and
- scientists study the world and make models to test just one thing at a time, like the color of a surface.

We have also seen that people from many different backgrounds are scientists and engineers. What is one idea that you know now that you did not know before?

Have students share with their partners one thing they have learned. Have partners listen attentively. Then have students trade roles. Have a few students share ideas with the class.

9. Conclude the lesson. Let students know that in the next lesson, they will think about the kinds of changes that could be made to the school playgrounds to help the students be more comfortable during recess.

Embedded Formative Assessment

On-the-Fly Assessment 12: Students’ Use of Making Predictions

Look for: As students are sharing what they predict the people who live in different places do to stay cool, listen for and make note of individual students or partners who are attending to clues in the pictures to help make their predictions. For example, a student might say something such as, “I notice most of the buildings in the picture on page 9 are lighter in color (pale). I think the people who live here paint their houses white, or use light-colored stones to build their homes.”

Now what? If students are not attending to pictures and the words read aloud to make and support their predictions, you may wish to restructure the way pairs are sharing predictions. First, invite pairs to share what they predict. Then, ask pairs what they see or read in the book that leads them to predict that. Breaking the task of making predictions into two parts may help support students who still need practice making predictions. Continue to support students in this way with the remainder of the book, and discuss examples as necessary.

Teacher Support

Background

About the Book: Cool People in Hot Places

Cool People in Hot Places takes students to seven locations around the world where people use different techniques to deal with a particular type of severe weather—very high temperatures. The book is a Shared Reading that uses a repetitive structure to introduce students to various methods of blocking sunlight, increasing airflow, and using pale colors to prevent surface temperatures from getting too high. These examples help reinforce several essential unit
concepts: sunlight warms surfaces, different surfaces warm at different rates, weather can become severe, and people can take measures to protect themselves from severe weather. This book helps support students' firsthand investigations by showing them real-world examples that relate to the problem they are trying to solve.
Reading: Cool People in Hot Places

The class reads *Cool People in Hot Places*. Students make and check predictions about how people stay cool in hot weather.

**Instructional Guide**

1. **Introduce the book *Cool People in Hot Places***. Display the front cover and invite students to share what they notice.

   Hay algunos lugares en la Tierra donde la luz del sol hace que la superficie se ponga muy caliente, similar a la superficie del patio de juegos en la escuela Woodland en la tarde. Cuando la superficie de la Tierra se pone muy caliente, el clima se siente muy caliente para la gente que vive ahí.

   Hoy leeremos acerca de diferentes maneras en que la gente que vive en esos lugares se mantiene fresca cuando el clima es muy caliente.

2. **Have students make predictions about cooling strategies**.

   Recuerden, una manera en la que los lectores aprenden de un libro es hacer una predicción. Cuando hacen una predicción, usan lo que ya saben para decidir lo que piensan que podría pasar.

   Ahora que sabemos que algunas superficies se calientan más que otras superficies cuando las alumbran la luz del sol, ¿qué predicen que hará la gente en diferentes lugares en la Tierra para mantener las superficies más frescas, de modo que ellas puedan mantenerse frescas?

   Have pairs discuss their predictions, then invite several students to share with the class. Encourage students to provide rationale to support their ideas.

3. **Read aloud to page 5, and then ask students to make predictions**.

   Acérquense a la persona junto a ustedes y dígale la respuesta a esta pregunta: ¿Qué predicen que hace la gente que vive en este lugar para mantenerse fresca?
Have a few students share their predictions with the class. Encourage students to provide a rationale to support their ideas.

4. **Read aloud page 6 to check predictions.** Ask students whether their predictions match what you read on the page. Call on a few students to share.

5. **On-the-Fly Assessment: Students make predictions after reading page 9.**
   - Continue reading aloud to the end of page 9, and ask students to make predictions.

   ¿Piensen. ¿Qué predicen que hace la gente que vive en este lugar para mantenerse fresca?

   Ahora acérquense a la persona junto a ustedes y díganle lo que predijeron.

   - Have pairs discuss their predictions, then invite several students to share with the class. Encourage students to provide rationale to support their ideas.
   - Read aloud page 10 to check predictions. Discuss whether the predictions the students made matched what was read on the page.

6. **On-the-Fly Assessment: Students make predictions after reading page 13.**
   - Continue reading aloud to the end of page 13, and ask students to make predictions.

   ¿Piensen: ¿Qué predicen que hace la gente que vive en este lugar para mantenerse fresca?

   Ahora acérquense a la persona junto a ustedes y díganle lo que predijeron.

   - Have pairs discuss their predictions, then invite several students to share with the class. Encourage students to provide rationale to support their ideas.
   - Read aloud page 14 to check predictions. Discuss whether the predictions students made matched what was read on the page.

7. **Continue reading to the end of the book.** Reread the final question on page 19 aloud.

   ¿Ustedes qué hacen para mantenerse frescos?

   Invite students to share their responses with the class.

8. **Summarize the ideas students have learned about warming of dark and pale surfaces, and direct them in a paired self-assessment.**
Have students share with their partners one thing they have learned. Have partners listen attentively. Then have students trade roles. Have a few students share ideas with the class.

9. Conclude the lesson. Let students know that in the next lesson, they will think about the kinds of changes that could be made to the school playgrounds to help the students be more comfortable during recess.

Embedded Formative Assessment

On-the-Fly Assessment 12: Students’ Use of Making Predictions

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