My NASA Data - Mini Lesson/Activity

Analyzing Surface Temperature Differences

Grade Band

- 6-8

Time

- 15 minutes

Overview

Students observe the surface temperatures of a variety of surface types found in a suburban environment.

Student Directions



Direct sunlight can heat surfaces well above air temperature
Credit: NASA Earth Observatory photographed by Robert Simmon
https://mynasadata.larc.nasa.gov/sites/default/files/inline-images/air_surface_temperature_text%20%281%29.jpg

Steps:

1. Observe the image above and answer the following questions. Check with your instructor on how to submit answers.
2. What time of year do you predict this to be? Explain your evidence.
3. What is the temperature of the air?
4. How do the temperatures of the grass measured in sunlight differ from grass in the shade?
5. What is the temperature difference between sunlit concrete and shaded concrete? What does this difference in temperature tell you about how surfaces are heated?
6. Based on what you have seen in this image, which type of area do you think is warmer, urban areas (cities and towns) or rural areas (countryside)? Why?

Source:

1. Where Is the Hottest Place on Earth? (2012, April 5). NASA Earth Observatory. Retrieved May 11, 2022, from https://earthobservatory.nasa.gov/features/HottestSpot/page2.php

Teacher Note

Teachers, these mini lessons/student activities are perfect "warm up" tasks that can be used as a hook, bell ringer, exit slip, etc. They take less than a class period to complete. Learn more on the "My NASA Data What are Mini Lessons?" page.

Teachers who are interested in receiving the answer key, please complete the Teacher Key Request and Verification Form. We verify that requestors are teachers prior to sending access to the answer keys as we've had many students try to pass as teachers to gain access.

NGSS Three Dimensional Learning

NGSS Disciplinary Core Ideas

- ESS2A: Earth Materials and Systems
- ESS3A: Natural Resources

Crosscutting Concepts

- Cause and Effect

Science and Engineering Practices

- Analyzing and Interpreting Data

Document Resources

- Analyzing Surface Temperature Differences Image