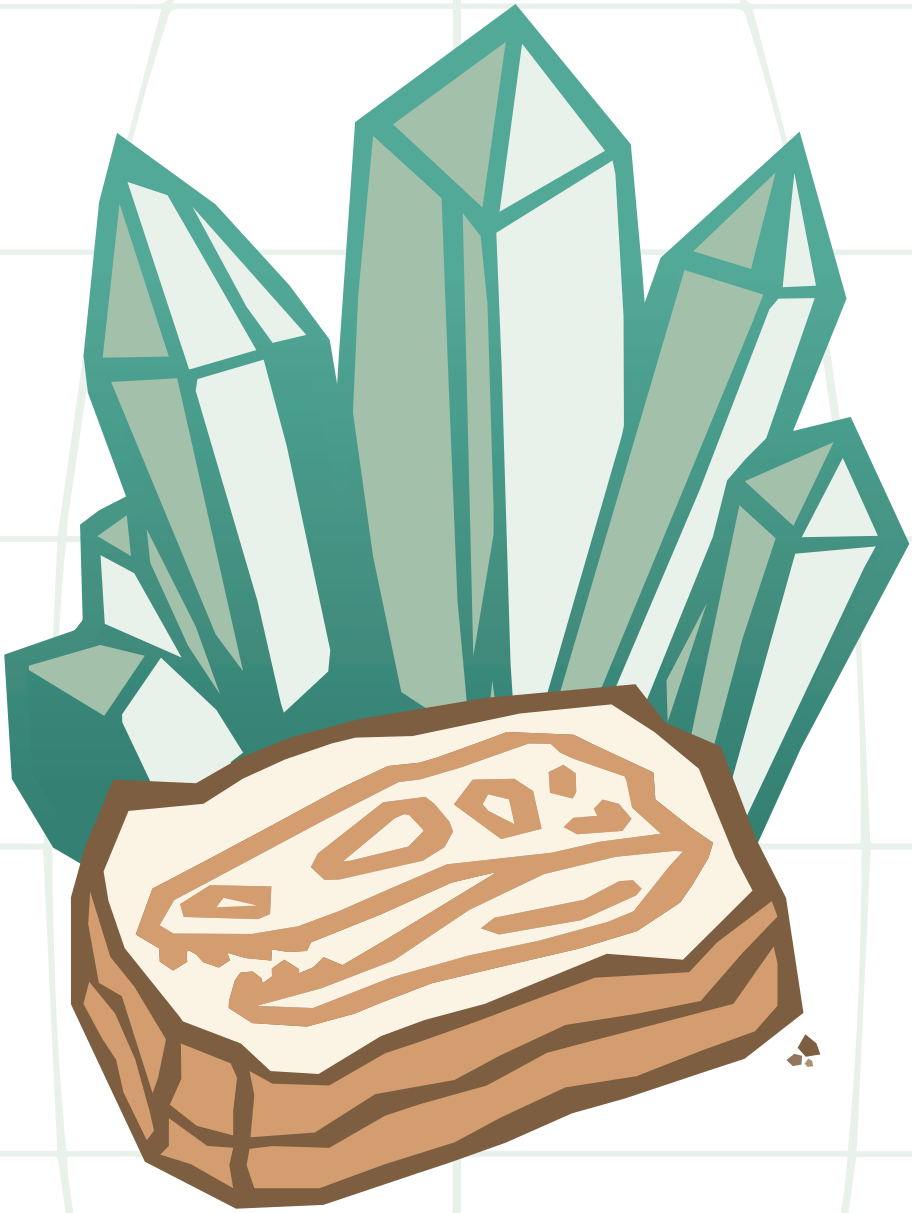

EARTH SCIENCE EXPLORED

LAB & ACTIVITY GUIDE

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with Onalee Sturgeon

Earth Science Explored: Student Guidebook

Journey Homeschool Academy

GET READY TO... EXPLORE THE EARTH

While not everyone loves science, most people, when thinking back on their years in school, would tell you their favorite, most memorable part of science class was the labs—the hands-on learning. That's what this guide is designed to help you with!

This lab guide was created to accompany the Earth Science Explored course. This lab guide will provide you with detailed written instructions for each lab, pages where you can complete your sketches, and space for any notes you need to take.

Throughout this school year, you'll have the opportunity to investigate the planet we live on—everything from triangulating earthquakes to identifying minerals to reading a weather map. Are you excited to explore the earth?

See you inside the course!

Trisha Gilkerson

LESSON 23

LAND & SEA BREEZE EXPLORATION

In today's lab, we are going to test how quickly land and water both heat and cool when they are exposed to the sun's energy.

Supplies

- 2 plastic cups
- Soil
- Books that stack sturdily
- Lamp with 200-watt incandescent light bulb
- 2 thermometers
- Water
- Timer or stopwatch

Instructions

1. Fill one of your plastic cups about ⅔ full with soil, and place a thermometer in the soil.
2. Fill one of your plastic cups about ⅔ full with cool tap water, and place a thermometer in the water.
3. Take the temperatures of the soil and water after the thermometers have had time to adjust to the temperatures of both. Record these temperatures in the 0 minutes row.
4. Stack books under a lamp with a 200-watt light bulb so both of the plastic cups are about 3-4 inches from the lamp. Make sure that the cups are at an equal distance from the lightbulb and in equal lighting.
5. Set a timer for two minutes, and start it.
6. When the timer goes off, take the temperature of both cups and record the temperatures in the data table under the columns "Soil lamp on" and "Water lamp on."
7. Repeat steps 5 and 6 four more times, recording your data in the table.
8. Turn off the lamp and take it away from the cups.
9. Set a timer for two minutes, and start it.

10. When the timer goes off, take the temperatures for both the soil and water and record the temperatures in the data table under columns "Soil lamp off" and "Water lamp off."

11. Repeat steps 9 and 10 four more times, recording your data in the table.

Time	Soil lamp on	Soil lamp off	Water lamp on	Water lamp off
0 minutes				
2 minutes				
4 minutes				
6 minutes				
8 minutes				
10 minutes				

Questions

1. Which heated faster, the soil or water?_____

2. Which cooled faster, the soil or water?_____

3. What was the difference in temperature for the soil and water after they had warmed up for 10 minutes? _____

   _____

4. What was the difference in temperatures for the soil and water after they had cooled for 10 minutes? _____

   _____

5. Using your findings from this lab, identify the high/low-pressure areas when the light is on, and what kind of air movement you would expect to see if this were a coastal area.

   _____

   _____

6. Using your findings from this lab, identify the high/low pressure areas when the light is off and what kind of air movement you would expect to see if this were a coastal area.

   _____

   _____