# Earth Science Evaluation

Teacher Section

**Overview:** Kids will demonstrate how well they understand important key concepts from this section.

**Suggested Time:** 45-60 minutes

**Objectives:** Students will be tested on the key concepts:

1. Many phenomena on the Earth's surface are affected by the transfer of energy through radiation and convection currents.
2. The sun is the major source of energy for phenomena on the Earth's surface, powering winds, ocean currents, and the water cycle.
3. Solar energy reaches Earth through radiation, mostly in the form of visible light.
4. Heat from Earth's interior reaches the surface primarily through convection.
5. Convection currents distribute heat in the atmosphere and oceans.
6. Differences in pressure, heat, air movement, and humidity result in changes of weather.
7. The complex patterns of the changes and the movement of water in the atmosphere, determined by winds, landforms, and ocean temperatures and currents, are major determinants of local weather patterns.
8. Because these patterns are so complex, weather can only be predicted probabilistically.
9. The ocean exerts a major influence on weather and climate by absorbing energy from the sun, releasing it over time, and globally redistributing it through ocean currents.

Students will also demonstrate these principles:

1. Collecting and interpreting data from an experiment
2. Making valid observations based on their actions in lab
3. Energy is not created or destroyed, but can change to different forms.

**Materials (one set for entire class)**

- Different colors of paper (red, yellow, black, white…)
- Water bottle filled with really warm water
- Water bottle filled with really cold water
- Ice Cubes
- Index cards
- Scissors
- Tape
- Dime
- Brass fastener or tack
- Paper towel
- Food dye (only have one color out)
- 2 identical thermometers
- Flashlight

**Lab Preparation**

1. Print out copies of the student worksheets, lab practical, and quiz.
2. Have a tub of the materials in front of you at your desk. Kids will come up when called and demonstrate their knowledge using these materials.

**Lesson**

The students are taking two tests today: the quiz and the lab practical. The quiz takes about 20 minutes, and you'll find the answer key to make it easy to grade.

# Earth Science Grade 6 Evaluation

Student Worksheet

**Overview:** Today you're going to take two different tests: the quiz and the lab practical. You're going to take the written quiz first, and the lab practical at the end of this lab. The lab practical isn't a paper test – it's where you get to show your teacher that you know how to do something.

**Lab Test & Homework**

1. Your teacher will call you up so you can share how much you understand about energy and how it works. Since science is so much more than just reading a book or circling the right answer, this is an important part of the test to find out what you really understand.
2. While you are waiting for your turn to show your teacher how much of this stuff you already know, you get to get started on your homework assignment. The assignment is due next week, and half the credit is for creativity and the other half is for content, so really let your imagination fly as you work through it. Choose one:
    a. Write a short story or skit about energy from the perspective of the sun, wind, or water. You'll read this aloud to your class.
    b. Make a poster that teaches the main concepts of energy. This can be about solar energy, wind energy, the water cycle, or heat transfer. When you're finished, you'll use it to teach to a class in the younger grades and demonstrate each of the principles that you've learned.
    c. Write and perform a poem or song about energy. This will be performed for your class.