

Investigation Six – Celestial Model

Standard I Students will understand that the shape of Earth and the moon are spherical and that Earth rotates on its axis to produce the appearance of the sun and moon moving through the sky.
Objective 2 Describe the movement of Earth and the moon and the apparent movement of other bodies through the sky.
Intended Learning Outcomes <ol style="list-style-type: none">1. Use science process and thinking skills2. Manifest scientific concepts and principles3. Understand science concepts and principles4. Communicate effectively using science language and reasoning

**Standard
I**

**Objective
2**

Background Information

The Earth rotates on its axis at a rate of one full turn per day. This motion is what makes day and night. The daily rotation also causes observers (people) on Earth to see a changing star field as they look at the sky. It's not that the sky is moving, but that Earth moves relative to the sky.

Pre-Assessment/Invitation to Learn

1. What would you see if you were standing on the globe looking up into the night sky?
2. Write rotation and axis on the board. Review with the students the fact that earth is constantly rotating or spinning on its axis. Earth makes one full turn every day.

Instructional Procedure

1. Students answer the top question on page 9 in their moon journal. Why do we see different star patterns during the night in the night sky? Discuss their responses.
2. Show students the Celestial Model. Turn the wire in the model and have students watch as the globe turns. Remind the students that the Earth rotates in one direction only.
3. Ask, "In what direction should we rotate our Celestial globe"? (from left to right)
4. Ask, "As the globe rotates, does the sky move"? (No)
5. Ask, "Then why do you think we see the sky change during the night"? (Students may realize that because they are moving, the fixed sky appears to be moving.)

6. Have students write the correct answer on page 8 in their moon books about why we see different star patterns at night. (The Earth rotates underneath us. This makes it look like the sky is turning, when really it stays still and we turn.)

Curriculum Extensions

Language Arts –

- Study different star patterns. (*Standard VII, Objective 3*)

Art:

- Draw star patterns on paper. (*Standard I, Objective 1*)

Assessment Suggestions

- Response Questions
 1. At night what do the stars seem to be doing?
 2. What is really happening?
 3. Why do the stars disappear when the sun is in the sky?
 4. Are there still stars in the daytime sky?
 5. Why do the stars reappear at night?
- Check for accuracy on page 8 of their journal.

Homework & Family Connections

- Encourage students to imagine themselves standing on the model Earth globe tonight as they observe the stars with their family. Rather than imagining the stars moving past them, have students imagine themselves moving past the stars.
- Students explain to their families how the Earth is moving not the sky.
- Read books about star patterns.