

Grade level: 3rd grade

The Sun and Earth's Seasons

GOALS

Content Area: Science

Common Curriculum Goal:

The Dynamic Earth: Understand changes occurring within the lithosphere, hydrosphere and atmosphere of the Earth.

Science Standard/Benchmark: SC.03.ES.02 Identify daily and seasonal weather changes.

Language Arts Standards: EL.03.RE.12 Understand, learn, and use new vocabulary that is introduced and taught directly through orally-read stories and informational text as well as student-read stories and informational text.

ESOL Goal (Function): Expressing and Supporting Opinions.

OBJECTIVES

Science objective 3: After learning about Earth's tilted axis and rotation around the sun, students will be able to correctly answer two of three questions about the Earth's seasons.

Language Arts Objective 7: After reading about seasons and answering guided questions, students will be able to match 7 out of ten vocabulary words with their definition.

Objectives (Forms):

B & EI: Respond to questions with yes/no answer or simple sentence.

I: compound sentences with "I think Earth has seasons because _____."

PRIOR KNOWLEDGE

- Students should know or have been introduced to the vocabulary *Rotation, revolution, axis, equator, and hemisphere.*

MATERIALS

PROCEDURE

Anticipatory set

- Read the book "When the Root Children Wake Up" by Audrey Wood (about change of seasons)

- “In this story, the root children called in the seasons. But the truth is that the sun is responsible for the four seasons.”
- Re-define the vocabulary word *Rotation* and *axis*
- **Demonstrate** with 2 volunteers – use guided questioning to correct any misconceptions
- **Choral reading** (Peregoy & Boyle, 2008) of the text book pg. 198 (only the heading “what is a year?”)
- **Review** “rotate in place” and “revolve RESPONSIBLY & CAREFULLY around your table”
- Students chant the months (volunteer to point out each month) as I revolve once around a “sun” one time.
- “In one year we have 4 seasons. Tell your neighbor what the four seasons are.”
- Write the characteristics of each season on the board.

Teaching

- Use focus group time to teach **Jig-saw** (Peregoy & Boyle, 2008) **expert groups** about the season for which they will be “experts”.
- Reassemble in to home base groups.
- With **guided questioning** and **in-context**, teach the vocabulary: Revolution, hemisphere, and equator. Write these on the **Word Wall** (Peregoy & Boyle, 2008). (Students expected to add them to their journal before the day is done.)
- Explain the **science model** (not to scale – not the right sizes. We know this because if we look at the chart on the wall, the sun is very big compared to earth.) Ask students to work in table groups to place the “earth” models so the sun’s energy can cause the seasons.

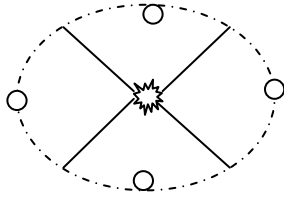
Guided practice

- **Experts “teach”** their table mates.
- **Table groups** now assemble their models in what they think best represents the way the Earth gets heat energy from the sun.
- Clearly not everyone will be able to transfer what they learned to a model so the teacher must demonstrate and teach this concept. (Use what you observe of the first models as a formative assessment.)
- Have students correct their models if they were not totally accurate.



Independent practice

- In science journals, students should fill in the **scaffolded sun cycle**. In each section depict or write the appropriate season as the model shows.

**Closure**

- “Today we learned that the seasons are due to the tilt of earth’s axis and how the sun’s energy reaches earth. Tomorrow we will do an experiment to learn more about the sun’s energy and how it warms the planets.”

DIFFERENTIATION

- Realia and manipulatives.
- Further differentiation is **highlighted**.

ASSESSMENT

Informal: Observations of how students use the model and journal entry.

Formal: Objective 3: After learning about Earth’s tilted axis and rotation around the sun, students will be able to correctly answer two of three questions about the Earth’s seasons.

Objective 7: After reading about seasons and answering guided questions, students will be able to match 7 out of ten vocabulary words with their definition.

Targeted Language Skills:

Reading: Students will read the information about their assigned season.

Writing: students will write a prediction about what is responsible for earth’s seasons.

Listening: Students will listen to each other during the “experts” sharing time.

Speaking: Students will speak to their table groups about the seasons and how to construct the model.