

Understanding Winter: The Reasons Behind the Seasons

In this lesson, students will discover how the tilting of the Earth causes seasons to change.

Grades: 1-5	Subject: Science
Essential Question(s)	How do the movements of the Earth and the position of the Sun create the different seasons we experience throughout the year?
Focus Standard(s)	<p>1-ESS1-2. Make observations at different times of year to relate the amount of daylight to the time of year.</p> <p>ESS1.B: Earth and the Solar System Seasonal patterns of sunrise and sunset can be observed, described, and predicted.</p> <p>ESS1.B: Earth and the Solar System The orbits of Earth around the sun and of the moon around Earth, together with the rotation of Earth about an axis between its North and South poles, cause observable patterns. These include day and night; daily changes in the length and direction of shadows; and different positions of the sun, moon, and stars at different times of the day, month, and year.</p>
Learning Objective(s)	Students will be able to understand how the Earth's tilt contributes to the changing seasons in the Northern Hemisphere.
Materials/Resources	Have a Ball in Winter! Space Unit: A Year Viewed from Space – SEPUP
Vocabulary	Hemisphere: half of the world; winter solstice: instant when the top half of Earth is tilted farthest away from the Sun
Anticipatory Set	Ask students what they already know about winter and the day it begins.
Guided Instruction	<ul style="list-style-type: none"> • Read the article aloud or have students read silently. • Pause after reading specific sections (e.g., Earth's tilt, winter solstice, celebrations) to discuss key points and clarify any vocabulary. • Visit this site to demonstrate how the Earth's tilt and rotation affect the seasons. Change the month to demonstrate the changing tilt and rotation. Discuss how the Northern Hemisphere experiences winter while the Southern Hemisphere experiences summer due to the Earth's tilt.
Independent Activity	Students can complete the accompanying worksheet by following the step-by-step directions.
Closure/Assessment	Review key points about the winter solstice and the Earth's tilt. Ask students to share one thing they learned from the lesson.
Differentiation	Adjust lexile levels as needed; use accessibility tools and Read-to-Me feature as needed; print copies of article

Name: _____

Directions: Follow the steps below to complete the activity.

Step 1: Draw a horizontal line across the middle of the globe.

Step 2: Label the northern and southern hemispheres.

Step 3: Place a star on top of the hemisphere where winter begins on December 21st.

Step 4: Write a sentence underneath the globe explaining how Earth's tilt affects the seasons.



Answer Key

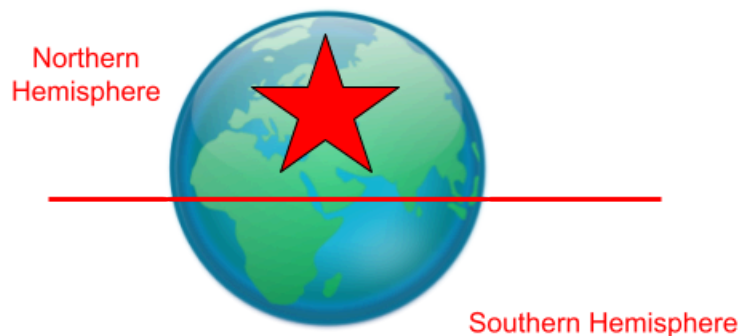
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Suggested Response

During winter, the Northern Hemisphere tilts away from the sun resulting in lower temperatures. During summer, the Northern Hemisphere tilts toward the sun leading to warmer temperatures.