

## Some Common Misconceptions about Seasons

### Some or even many students mistakenly believe:

- That it is winter because it is cold or because of snow, or that it is summer because it is hot (rather than it is cold because it is winter).
- That we experience seasons because of the Earth's changing distance from the Sun (closer in the summer, farther in the winter), instead of understanding that Earth's orbit around the Sun is almost a perfect circle.
- That the Sun rises exactly in the east and sets exactly in the west every day (rather than rising in the southeast in winter and northeast in summer, and setting in the southwest in winter and northwest in summer).
- That seasons change because Earth's tilt itself changes (rather than the direction of the axis always remaining pointing towards the North Star as we orbit the Sun)..
- That the Earth is the center of the solar system (or that the planets, Sun and Moon revolve around the Earth), instead of the Sun as the center of the solar system.
- That the amount of daylight increases each day of summer (rather than being greatest at the beginning of summer; the timing of the seasons is affected by seasonal lag because of the amount of time it takes for the oceans –and land—to warm up.)

An excellent article, "Learning about Seasons: A Guide for Teachers and Curriculum Developers" is available online at

[http://aer.aas.org/resource/1/aerscz/v10/i1/p010103\\_s1](http://aer.aas.org/resource/1/aerscz/v10/i1/p010103_s1)

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