

Movement of Earth in Space

Astronomy

Lesson 8

Ancient astronomers studied the movements of the Sun and Moon as they appeared to travel across the sky. It seemed to them as though the Earth was standing still and the sun and moon were moving. Actually, the Sun and moon seem to move across the sky each day because of the Earth's rotation on its axis. Earth also moves around the sun. Earth moves through the solar system in two ways: rotation and revolution.

Rotation

The imaginary line that passes through earth's center and North and South poles is Earth's axis. The spinning of Earth on its axis is called a rotation. Earth's rotation causes day and night. As Earth rotates eastward, the sun appears to move westward across the sky. It is day on the side of the Earth facing the sun. As the Earth continues to turn to the east, the sun appears to set in the west. Sunlight can't reach the side of the Earth facing away from the sun, so it is night there. It takes about 24 hours for the Earth to rotate once on its axis.

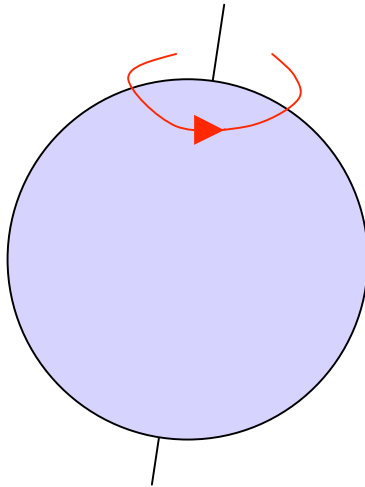


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Revolution

A revolution is the movement of one object around another. The Earth completes a full revolution around the sun once a year. The earth follows a path, or orbit, as it revolves around the sun. The Earth's orbit is not quite circular. Do you remember what shape it is?

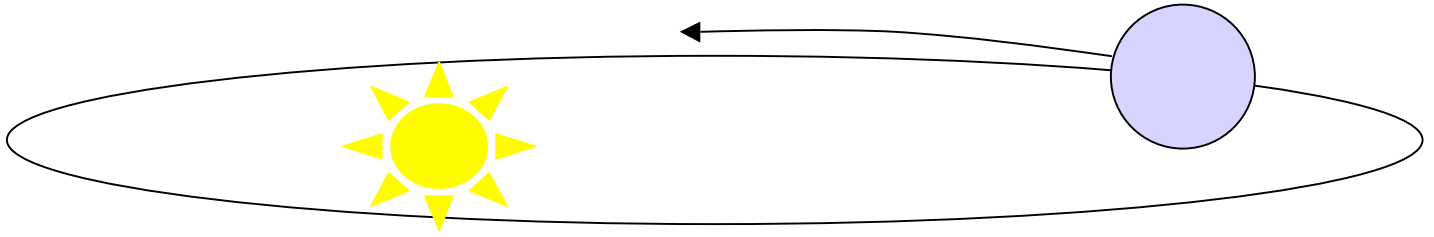


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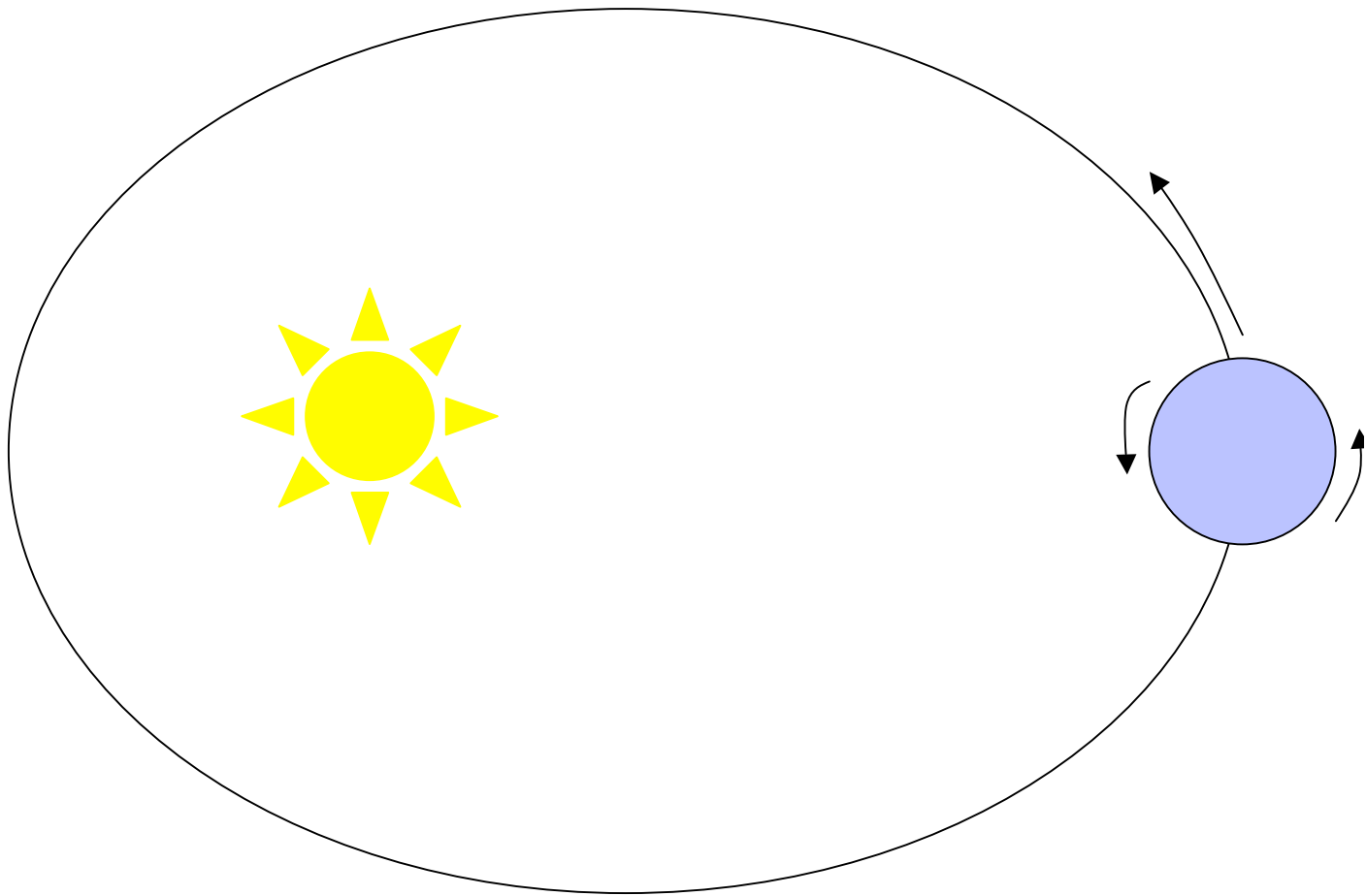


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The Seasons

Most places outside of the tropics and the poles have four distinct seasons. What causes these seasons, why is it generally warmer near the equator, and why are there big temperature differences from place to place?

[Have students make some guesses/brainstorm some hypotheses together. This is a great introduction to their seasons lab]