Additional Resources

Lunar and Planetary Institute *Daylight Hours.*

http://www.lpi.usra.edu/education/workshops/phasesSeasons/DaylightHours.pdf

Videos

Path of Sun at the Winter Solstice in Fairbanks, Alaska

https://www.youtube.com/watch?v=MXxRcXHI_tI

Path of Sun at the North Pole on the Summer Solstice

https://www.youtube.com/watch?v=ZZcafg-meJA

What causes a shadow? https://www.youtube.com/watch?v=bI6k7rLFVfs

Websites

US Naval Observatory Daylight Calculator

http://aa.usno.navy.mil/data/docs/Dur_OneYear.php

http://scijinks.jpl.nasa.gov/review/solstice/seasons-earth-orbit_large.jpg

Teaching Through Trade Book Connections

Royce, C. A. (2004). Celestial studies. *Science and Children 42*(1). 18-20.

Wiley, D. A. (2004). A season to inquire. *Science and Children 42*(3). 16-18.

For Teacher Background and Development:

Nock, G. (2007). How long is your day? *Science Scope.*

http://static.nsta.org/files/ss0707_46.pdf

(Access with NSTA Membership)

Additional Texts

Anno, M. (1985). *Anno's sundial*. Philomel: London.

An explanation of a sundial is given as well as directions for creating their own sundial to collect information about the position of the sun in the sky.

Anno, M. (1985). *The Earth is a sundial.* The Bodley Head: London.

Examines how the earth acts as a sundial as it revolves around the Sun.

Branley, F. M. (1985). *Sunshine makes the seasons*. HarperCollins Publishers, New York, NY.

An explanation as to how the sun's position in space and amount of sunshine in an area on the Earth helps to describe the reason for the seasons.

Branley, F. M. (2002). *The sun, our nearest star.* HarperCollins Publishers, New York, NY.

Information about where the sun is located in comparison to the earth, as well as, how the sun's energy is used on the earth is explained.

Gibbons, G. (1995). *The reasons for the seasons*. Holiday House: New York, NY.

Information on how the Earth's position in its orbit around the sun is the reason for the seasons.

Harrison, D. L. (1986) *Wake up, sun!* Random House: New York, NY.

Barnyard animals spend all night looking for the sun only to arrive at a false reason for why the sun comes up in the morning. Good book to discuss misconceptions.

Rustard, M. E. H. (2016). *Does the sun sleep?: Noticing sun, moon and star patterns.* Millbrook Press: Minneapolis, MN,

Curious students explore the patterns that are observed when viewing the sun, the moon and the stars.