

Reasons for Seasons Workshop\*

MAPS 2014

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In assembling this workshop, I wanted to offer activities for working with a variety of learning styles. Karrie Berglund of Digitalis Education Solutions shared an excellent resource from the Institute for Learning Styles Research. Check their web site at <http://www.learningstyles.org/index.html>  
A list is also appended near the end of this document.

The NGSS (next generation science standards) for Earth's Place in the Universe show:

Students who demonstrate an understanding can

MS-ESS1-1 Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons. (Clarification Statement: Examples of models can be physical, graphical, or conceptual.)

Each participant in the workshop received a folder of information. Included were

A copy of that NGSS statement

A photocopy of pages from NSTA Press' Uncovering Student Ideas in Astronomy: 45 NEW Formative Assessment Probes (ISBN 978-1-936137-38-1) including probes 14 - Changing Constellations and 15 – Why Is It Warmer In Summer?

A list of different learning styles

A printout of an excellent NSTA blogpost, Alignment of Curriculum Resources in NGSS by Ted Willard

A list of "Reasons for Seasons" web resources and

A copy of Geoff Holt's Workshop: Teaching Seasons in the Planetarium

Two children's books were also shared:

Arctic Lights/Arctic Nights describes the environment on the 21<sup>st</sup> of each month for a year, beginning with the June solstice. Animal life, hours of daylight, and average high and low temperatures allow students to graph daylight and temperature through the seasons. Publisher is Walker and Co. Press, ISBN 978-0-8027-9636-3.

Somewhere in the World Right Now travels through time zones, describing what's happening "right now." From Dragonfly Books in New York, the ISBN is 978-0-679-88549-8

The PowerPoint presentation shows participants in the workshop working with models of Earth, using globes and pipecleaners (probably called "chenille stems" these days) to model Earth with its poles at solstice and equinox points along its orbit. Sound generators measured "sunlight" at different latitudes and seasons.

\*This presentation is adapted from one given by Geoff Holt at the 2013 GLPA conference. His use of the sound-generating devices and his written lesson plan are shared with his permission and my thanks. Planetarians are a generous bunch.

