Science Planning

**Unit 1: Structure and Motion Within the Solar System (6 weeks)**

**Week 5 Big Idea: Seasons occur due to the orbit of earth around the sun and the tilt of earth’s axis.**

Week 5 – 9/30 to 10/3

10/1 - YWBAT obtain information, analyze and interpret data and construct explanation

Success is: writing an explanation that the tilt is responsible for the difference

Phenomena: the season are opposite

* Students will read article to gather information about why the hemispheres experience opposite seasons.
  + [https://newsela.com/read/lib-nasa-cause-seasons/id/27776 2](https://newsela.com/read/lib-nasa-cause-seasons/id/27776%202)
* After reading and annotating, students construct an explanation and model to show why the seasons are opposite.
* Explanations should explain that the tilt is responsible for the difference. Good explanations explain this further by showing how the hemispheres receive different amounts of light based on their positions in the orbit around the sun.

10/2 - YWBAT explore the cause of seasons with a model

Success is: create a model based on what they’ve learned about seasons and the tilt of the earth.

Phenomena:The tilt of the Earth and the Earth’s orbit around the sun causes seasons.

* Students review why the seasons are opposite in the N and S hemispheres
* Give each pair of students a mini globe on a skewer and have them stand in a circle around a lamp at the center of the room
* Ask them to show one earth day and one earth year
  + What's missing? The TILT! Pick a point in the room to be Polaris. Tell students that earth's northern axis is tilted toward the north star all year
  + If time allows, show a time lapse of this:<https://www.youtube.com/watch?v=vVTLDtaQSL8>
* Students then model the earth's position in each season, as well as rotate the earth in each to see the change in daylight
* Review direct vs. indirect sunlight and have them point out places on their globes that are receiving each type of light
* Students transfer the model into their journals, labeling the seasons on them
* Write a statement about the tilt's effects: changes in daylight and changes in how concentrated the light is. These cause the seasons

10/3 - Consolidate and Review

* Brainpop videos:
  + 1. Seasons <https://www.brainpop.com/science/weather/seasons/>
  + 2. Solstice and Equinox <https://www.brainpop.com/science/weather/solsticeandequinox/>
* Assign Assessment