

## Why do we have seasons?

**Introduction:** Go to <http://missmorrisegeography.weebly.com> and complete the following with a partner. You may only have one computer per pair. For one half of the class a student will research and then you will switch.

### **The Task**

Draw a poster which explains how the tilt of the Earth and its revolution around the Sun causes seasons. This will be drawn on the paper provided and needs to be colored.

Label the 4 positions of Earth at specific times of the year. There will be four pictures of the earth rotating around the sun in total.

- 1) Label each of the four globe depictions with whether it is a Solstice or Equinox and the date it occurs. \_\_\_\_\_/2
- 2) Label which season is shown for the northern hemisphere in each globe depiction. \_\_\_\_\_/5
- 3) Sun is in the center of the poster \_\_\_\_\_/1
- 4) Tropic of Cancer, Tropic of Capricorn, and Equator have been labeled in each depiction of the globe. \_\_\_\_\_/5
- 5) Labeled the South Pole and North Pole in each depiction \_\_\_\_\_/5
- 6) Arrows depicting the sun's rays hitting the earth at different time of the year. The arrows must be labeled direct or indirect in each of the four depictions. \_\_\_\_\_/5
- 7) Arrows showing the direction the earth is moving around the sun. \_\_\_\_\_/2
- 8) Neat and colored (land and oceans) \_\_\_\_\_/ 5
- 9) Answer on back of poster: Analyze and explain what would happen if any one of the variables (angle, energy, tilt, and revolution) changed? How would that affect the seasons? \_\_\_\_\_/5

**Total: \_\_\_\_\_/35pts Make sure to check the rubric.**

**Below are the websites you need to use to complete this task.**

## The Process: Use the sites below to help you in this task.

1. Axis Tilt (these sites will show you example of the earth's tilt at certain times of the year.)

<http://www.enchantedlearning.com/subjects/astronomy/planets/earth/Seasons.shtml>

<http://www.bobthealien.co.uk/earthyear.htm>

<http://www.suntrek.org/earth-beyond/spinning-orbiting-earth/what-causes-seasons/watch-tilt.shtml>

2. *Revolution around the Sun* (these sites will show you example of the earth's revolution around the Sun at certain times of the year.)

<http://www.physicalgeography.net/fundamentals/6h.html>

<http://www.physicalgeography.net/fundamentals/6hrevolution.html>

[http://www.classzone.com/books/earth\\_science/terc/content/visualizations/es0408/es0408page01.cfm?chapter\\_no=04](http://www.classzone.com/books/earth_science/terc/content/visualizations/es0408/es0408page01.cfm?chapter_no=04)

<http://www.astro.uiuc.edu/projects/data/Seasons/seasons.html>

3. *Angle of sunlight* (these sites will show you example of how solar energy hits the earth at certain times of the year.)

[http://www.uwsp.edu/geo/faculty/ritter/animation/atmosphere/earth\\_revolution.html](http://www.uwsp.edu/geo/faculty/ritter/animation/atmosphere/earth_revolution.html)

<http://www.spod.gsfc.nasa.gov/stargaze/Sunangle.htm>

[http://sunshine.chpc.utah.edu/labs/sunangle/sunangle.html?ASPIRE\\_Session=94b70d025bc12d9baa604078a4b68aee](http://sunshine.chpc.utah.edu/labs/sunangle/sunangle.html?ASPIRE_Session=94b70d025bc12d9baa604078a4b68aee)

<http://www.uwm.edu/~kahl/CoVis/Seasons/>

4. *Direct / indirect energy* (these sites will show you examples of the different way solar energy hits the earth)

<http://www.astronomy.org/programs/seasons/>