**Why Do We Have Seasons?**

**Textbook pages 414 - 415**

1. Go to the following website: <http://www.pbslearningmedia.org/resource/npls13.sci.ess.seasons/why-seasons/>
   1. click on the picture where it says “Launch”. A separate window with the simulation will pop up.
2. Fill out the following table using information from the simulation. Click on the varying months to see what occurs at different latitudes at different times of year.

**Table 1: Sun’s Angle and Season at Different Latitudes in December**

|  |  |  |  |
| --- | --- | --- | --- |
| Place | Latitude | Sun’s Angle (shallow or direct) | Season |
| New York | 41 N | Shallow angle | Winter |
| Miami | 26 N | Shallow angle | Winter |
| Singapore | 1 N | Direct | NO SEASONS - same sunlight all year round |
| Melbourne | 38S | Direct | Summer |

**Table 2: Sun’s Angle and Season at Different Latitudes in June**

|  |  |  |  |
| --- | --- | --- | --- |
| Place | Latitude | Sun’s Angle | Season |
| New York | 41 N | Direct | Summer |
| Miami | 26 N | Direct | Summer |
| Singapore | 1 N | Direct | NO SEASONS - same sunlight all year round |
| Melbourne | 38S | Shallow | Winter |

**Complete the following questions using full sentences, including as much detail as you can**

4) What do you notice about the different hemispheres and their seasons?

* They are the opposite, when it is summer in the Northern Hemisphere it is winter in the Southern Hemisphere

5) What do you notice about the sun’s angle and the temperature?

* When the sun’s angle is direct or close to 90 degrees it is summer and therefore warmer. Solar energy is more concentrated.
* A shallow angle leads to cooler temperatures usually seen in winter

6) Why would a city near the equator not experience seasons?

* The sun’s angle is the same all year round and their receive the same amount of sunlight all year round

7) What would happen if Earth’s axis was 0 degrees instead of 23.5 degrees?

* We would not experience seasons.
* Locations would receive the same amount of solar energy all year round.
* Same temperature and amount of daylight all year round for varying locations.