***Weather Conditions and Climate in Relation to Annual Changes in Earth-Sun Relationships***

**Earth-Sun Relationship**

The Earth-Sun relationship is responsible for annual changes in the seasons. The earth is tilted at an angle of 23.5°. As the earth revolves around the sun not all areas of the globe receive the same amount of sunlight because of this tilt.  **The polar areas** receive the least amount of direct sunlight making these regions colder than other places on the globe. **The equator** receives the most direct sunlight causing this area of the globe to be the warmest.

Sunlight hits directly over the equator on the **Equinox**. **The Tropic of Cancer and the Tropic of Capricorn** mark the farthest northern and southern points where the sun’s rays hit Earth directly.  The **summer solstice** occurs in the **Northern Hemisphere** when the sun’s rays hit directly above the **Tropic of Cancer**, this is the longest day of the year in the northern hemisphere. The **winter solstice** in the northern hemisphere is the shortest day of the year and happens when the sun’s rays shine directly over the **Tropic of Capricorn**.

In the **Southern Hemisphere** the most direct rays of the sun hit in November, December, and January, causing these to be the warmest months. The coldest months are May, June and July when the sun’s light is less direct. The opposite is true for the northern hemisphere when the most direct sunlight is in the months of May, June and July and the least direct sunlight is in the months of November, December and January.

