



Seasons e-Lab

Pre – e-Lab Vocabulary ANSWER KEY

School Latitude _____ School Longitude _____

Hint: Find your school coordinates in a web search.

Bring to e-Lab. You'll need it!

DEFINE. Provide sketches and dates for clarity.

1. **Spring (Vernal) Equinox** – When hours of day = hours of night. March 21 in Northern Hemisphere; Sept. 21 in Southern Hemisphere; Sun's rays are most perpendicular to the Equator on the Spring Equinox.
2. **Fall (Autumn) Equinox** – When hours of day = hours of night, Sept. 21 in Northern Hemisphere, March 21 in Southern Hemisphere; Sun's rays are most perpendicular to Equator on the Fall Equinox.
3. **Summer Solstice** – June 21 – longest day of year in the Northern Hemisphere when the Sun's rays are most perpendicular to the Tropic of Cancer; Dec. 21 in the Southern Hemisphere; Sun's rays are most perpendicular to the Tropic of Capricorn.
4. **Winter Solstice** – Dec 21 – shortest day of year in the Northern Hemisphere when Sun's rays are most perpendicular to the Tropic of Capricorn; June 21 in Southern Hemisphere; Sun's rays are most perpendicular to the Tropic of Cancer.
5. **Rotation** – Referring to Earth, which takes 24 hours to make one rotation around its own axis.
6. **Revolution** – Referring to Earth's orbit around the Sun through the **ecliptic**. One revolution of the Earth around the Sun takes 365 days or one year.
7. **Earth's Axis** – Reference line for navigation, etc. The axis runs through the center of the Earth, between the North and South Poles.
8. **Ecliptic** – The plane of the Earth's orbit around the Sun.
9. **Latitude** – Assigned *horizontal* circles banding the Earth, used to reference location. The central "belt" is the Equator. All other circles are degrees north or south of the Equator, ending at the poles. These circles are also known as "parallels." Latitude ranges from 0° to 90° , beginning with 0° at the Equator and ending with either 90° N or 90° S at the poles.
10. **Longitude** – Assigned *vertical* circles banding the Earth, used to reference location. These circles are called *Great Circles* as they go all the way around the Earth, intersecting at the North and South Poles. Longitude ranges from 0° to 180° , beginning with 0° at the **Prime Meridian** and ending with either the 180° E or the 180° W half circle running through the Pacific Ocean (International Date Line).



11. **Prime Meridian** – 0° **longitude**, which is exactly a half circle assigned to extend from the North to South Pole, running through Greenwich, England. (The other half of this Great Circle is 180° E or W longitude half circle in the Pacific Ocean – the International Date Line. The International Date Line jags to keeps certain countries in the same time zone.)
12. **Equator** – 0° N or S **latitude**. The central circle of latitude dividing the Earth in half – into northern and Southern Hemispheres.
13. **Tropic of Cancer** – 23.5° N **latitude**; Northern limit of Sun's most perpendicular rays on first day of Summer in the Northern Hemisphere.
14. **Tropic of Capricorn** – 23.5° S **latitude**; Southern limit of Sun's most perpendicular rays on the first day of Winter in the Northern Hemisphere.
15. **Arctic Circle** – 66.5° N **latitude**; Upper limit of Sun's rays in Northern Hemisphere winter.
16. **Antarctic Circle** – 66.5° S **latitude**; Lower limit of Sun's rays in Southern Hemisphere winter.

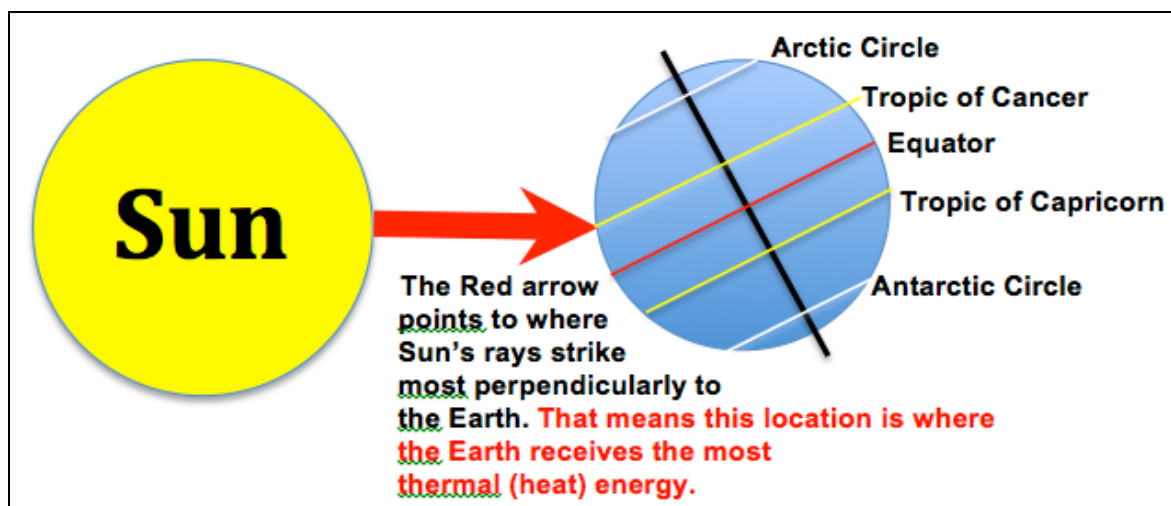


Image showing where the Sun's ray are most perpendicular to the Earth on June 21, the first day of Summer in the Northern Hemisphere (the first day of Winter in the Southern Hemisphere).

17. **Parallels** – Lines or circles of **latitude**; run parallel to – and north or south of – Equator.
18. **Tropical Zone (Tropics)** – Areas of the Earth between 23.5° N and 23.5° S **latitude**, between the Tropics of Cancer and Capricorn – known for warm weather. Tropical weather includes rainy seasons especially in the spring and summer and dry seasons in fall and winter.
19. **Temperate Zone** – Areas of the Earth between 23.5° and 66.5° N **latitude** and between 23.5° and 66.5° S latitude. (Temperate means the opposite of extreme.)
20. **Rainy Season** – Seasons with large amounts of rainfall - often daily, especially Spring and Summer in the Tropics, located between 23.5° N and 23.5° S latitude.



Sample Definitions

Perpendicular: At a 90 degree angle. In a right triangle, two sides are perpendicular to each other, since the angle between them is 90° .

Tangent: Noun: A line that touches a circle in only one place, and is perpendicular to a radius of the circle.
Adjective: Tangential. A tangent is tangential to its circle.

See the cute sim/applet at Math Warehouse to experience tangents!

<http://www.mathwarehouse.com/geometry/circle/tangent-to-circle.php>

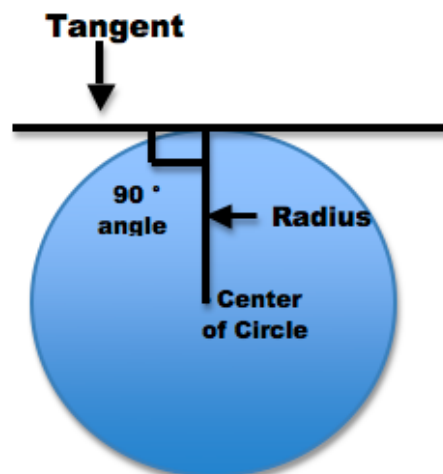


Image showing a tangent line perpendicular to the radius of a circle.