Rabindranath World School
W-10/3120, DLF Phase III, Gurgaon (HR).

CHAPTER 3

MOTIONS OF THE EARTH

NOTES:

FLOW LEARNING

SUMMER SOLISTICE – 21ST JUNE

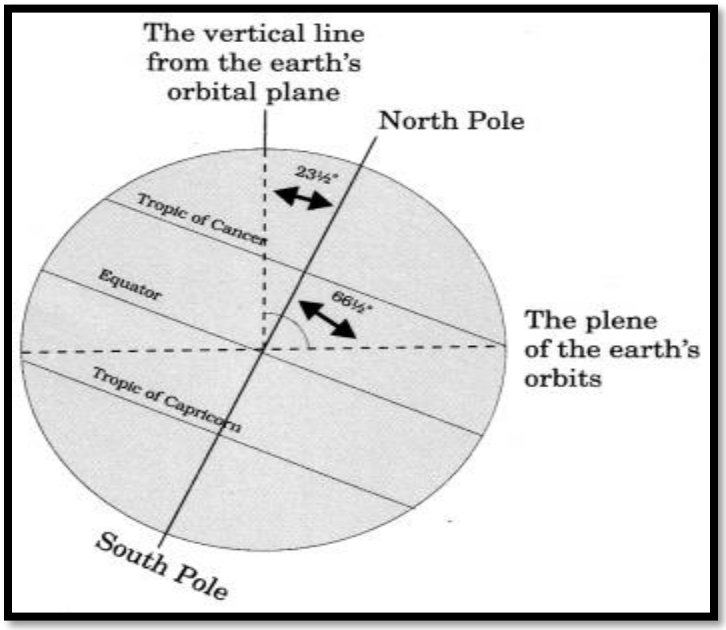
WINTER SOLISTICE – 22ND DECEMBER

EQUINOX – 23 SEPTEMBER AND 21ST MARCH

MOTIONS OF THE EARTH

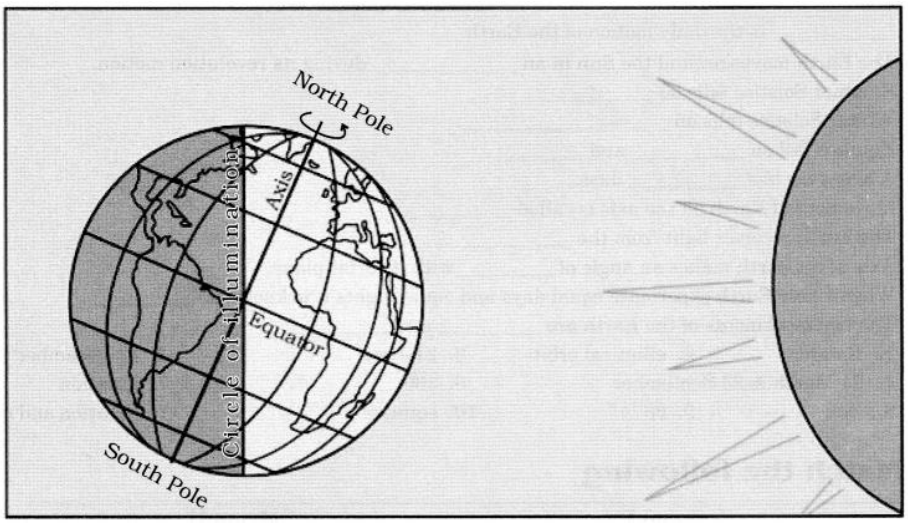
THE AXIS OF THE EARTH

The axis of the earth is an imaginary line that makes an angle of 66½° with its orbital plane.



CIRCLE OF ILLUMINATION

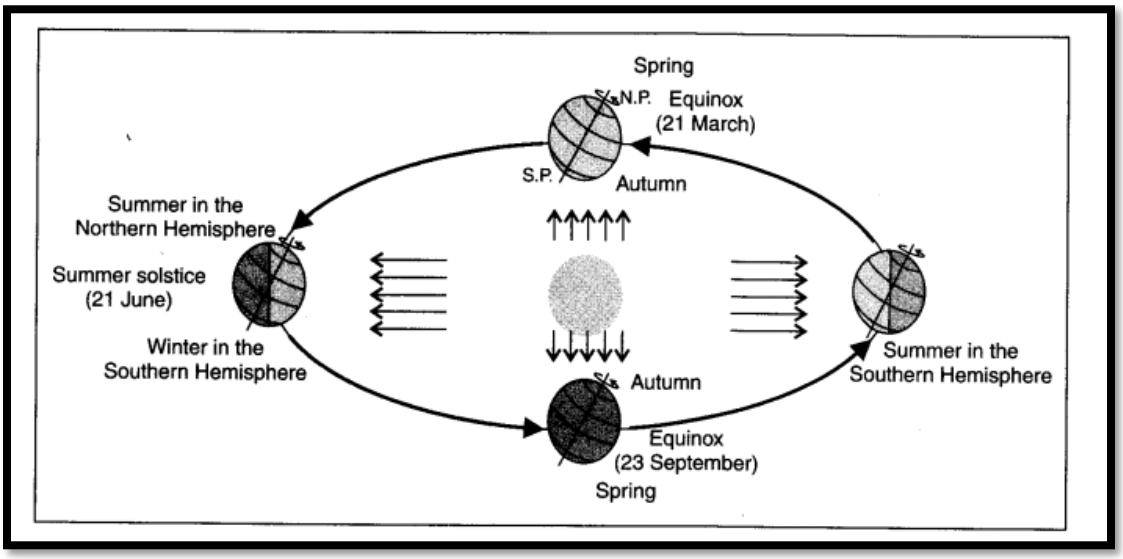
- The circle of illumination is the circle that divides the day from night on the globe.
- It takes 365¼ days (one year) for the earth to revolve around the sun.
- Six hours saved every year are added to make one day (24 hours) over a span of four years. This surplus day is added to the month of February. Thus every fourth year we have leap year with 366 days.
- Earth goes around the sun in an elliptical orbit. Note that throughout its orbit, the earth is inclined in the same direction.



SEASONS

- A year is usually divided into summer, winter, spring and autumn seasons.
- Seasons change due to the change in the position of the earth around the sun.
- Summer Solstice: The longest day and the shortest night. It occurs on 21st June in the northern hemisphere.

On 21st June, the Northern Hemisphere is tilted towards the sun. The rays of the sun fall directly on the Tropic of Cancer. Therefore, these areas experience more heat. The areas near the poles receive less heat as the rays of the sun are slanting. The North Pole is inclined towards the sun and the places beyond the Arctic Circle experience continuous daylight for about 6 months.



WINTER SOLSTICE

- The nights are longer than the days. It occurs On 22nd December.

On 22nd December, the Tropic of Capricorn receives direct rays of the sun as the South Pole tilts towards it. As the sun's rays fall vertically at the Tropic of Capricorn (23½° S), a larger portion of the Southern Hemisphere gets light.

EQUINOX

- The whole earth experiences equal days and equal nights. It occurs on 21st March and September 23rd.

On 21st March and September 23rd, direct rays of the sun fall on the equator. At this position, neither of the poles is tilted towards the sun.