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Geography Chapter 3 Motion of the Earth

Rotation

- Rotation is the movement of the Earth, on its axis.
- The axis of the Earth, which is an imaginary line, makes an angle of $66\frac{1}{2}^{\circ}$ with its orbital plane.
- The portion facing the Sun experiences day, while the other half away from the Sun experiences night.
- The circle that divides the day from night on the globe is called the circle of illumination.
- The Earth takes about 24 hrs to complete one rotation around its axis, it is known as earthday.

Revolution

- The movement of the Earth around the Sun in a fixed path or orbit is called revolution.
- Earth takes 365 $\frac{1}{4}$ days to revolve around the Sun.
- Every fourth year, February is of 29 days instead of 28 days. Such a year with 366 days is called a leap year.
- Earth is going around the Sun in an elliptical-orbit.
- Seasons change due to change in the position of the Earth around the Sun.
- Summer solstice is the position of the Earth when the Northern Hemisphere has the longest day and the shortest night. It occurs on 21st June.
- In the Southern Hemisphere, it is winter season at this time. The days are short and the nights are long.
- Winter Solstice is the position of the earth when Southern Hemisphere has long days and shorter nights. In the Northern Hemisphere, the days are short and the nights are long. It occurs on 22nd December.
- On 21st March and September 23rd, direct rays of the sun fall on the equator and the whole earth experiences equal days and equal nights. This is called an equinox.

The earth has two types of motions—rotation and revolution.

Rotation is the movement of the earth on its axis. In revolution the earth moves around the sun in a fixed path or orbit.

The axis of the earth is an imaginary line.

The earth receives light from the sun. As the shape of the earth is spherical, only half of it gets light from the sun at a time. The other half remains dark. In this way day and night are caused.

The earth completes one rotation around its axis in about 24 hours. This rotation is the daily motion of the earth.

The earth takes 365 1/4 days or one year to complete one revolution around the sun.

There are four seasons in a year—summer, winter, spring and autumn. Seasons change due to the change in the position of the earth around the sun.

The rays of sun fall directly on the Tropic of Cancer. Hence, these areas are not hot.

- The areas near the poles receive less heat as the rays of the sun are slanting.

In the Northern Hemisphere the longest day and the shortest night occur on 21st June. In the Southern Hemisphere the shortest day and the longest night occur on this day. This position of the earth is known as the summer solstice.

When there is summer in the Northern Hemisphere, Southern Hemisphere enjoys winter season and vice-versa.

In the Northern Hemisphere the shortest day and the longest night occur on 22nd December. In the Southern Hemisphere the longest day and the shortest night occur on this day. This position of the earth is known as the winter solstice.

On 21st March and September 23rd the whole earth experiences equal days and equal nights. This phenomenon is known as equinox.

On 23rd September, it is autumn in the Northern Hemisphere and spring in the Southern Hemisphere.

On 21st March, it is spring in the Northern Hemisphere and autumn in the Southern Hemisphere.

Days and nights occur due to rotation while changes in seasons occur due to revolution.

Rotation: The movement of the earth on its axis is known as rotation.

Revolution: The movement of the earth around the sun in a fixed path or orbit is known as revolution.

Orbital plane: The plane formed by the orbit is known as the orbital plane.

Circle of illumination: The circle that divides the day from night on the globe is called the circle of illumination.

Leap year: The year in which February is of 29 days instead of 28 days is called a leap year.

Summer solstice: In the Northern Hemisphere the longest day and the shortest night occur on 21st June. In the Southern Hemisphere, the shortest day and the longest night occur on this day. This position of the earth is called summer solstice.

Winter solstice: In the Northern Hemisphere the shortest day and the longest night occur on 22nd December. In the Southern Hemisphere, the longest day and the shortest night occur on this day. This position of the earth is called winter solstice.

Equinox: On 21st March and September 23rd the entire earth experiences equal days and equal nights. This is known as the equinox