Class 6 Geography Chapter 3 Notes: Motions of the Earth

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1. Earth's Motions

- The Earth has two types of motions: Rotation and Revolution.

1.1 Rotation

- Rotation is the movement of the Earth on its axis.
- It takes about 24 hours for the Earth to complete one rotation. This period is known as the 'Earthday'.
- If the Earth did not rotate, one half would always be in sunlight and warmth, while the other half would remain in darkness and cold, making life impossible.

1.2 Revolution

- The movement of the Earth around the Sun in a fixed path or orbit is known as Revolution.
- The Earth takes 365¼ days to revolve around the Sun. For convenience, we consider a year to be 365 days, ignoring the extra six hours.
- These saved six hours add up to 24 hours over a span of four years, creating an additional day in February, making it a leap year with 366 days.

2. Earth's Axis and Orbital Plane

- The Earth's axis, an imaginary line, makes an angle of 66½° with its orbital plane.
- The plane formed by the orbit is known as the 'orbital plane'.

3. Circle of Illumination

- Only half of the Earth gets light from the Sun at any one time due to its spherical shape.
- The portion facing the Sun experiences day, while the other half experiences night.
- The circle dividing day and night is called the 'circle of illumination'.

4. Elliptical Orbit of Earth

- The Earth revolves around the Sun in an elliptical orbit, and is always inclined in the same direction throughout its orbit.

5. Seasons on Earth

- The Earth's position around the Sun changes, resulting in different seasons: Summer, Winter, Spring, and Autumn.

5.1 Summer Solstice

- On 21st June, the Northern Hemisphere is tilted towards the Sun, resulting in more heat and longer days. This is known as the Summer Solstice.
- At this time, it is Winter in the Southern Hemisphere, with longer nights and less heat.

5.2 Winter Solstice

- On 22nd December, the Southern Hemisphere gets more light as the South Pole tilts towards the Sun. This results in the Winter Solstice.
- During this time, it is Summer in the Northern Hemisphere.

5.3 Equinox

- On 21st March and 23rd September, neither of the poles is tilted towards the Sun, resulting in equal day and night, known as an Equinox.
- On 23rd September, it's Autumn in the Northern Hemisphere and Spring in the Southern Hemisphere.

- On 21st March, it's Spring in the Northern Hemisphere and Autumn in the Southern Hemisphere.

6. Poles and Day-Night Duration

- Places beyond the Arctic Circle experience continuous daylight for about six months, and continuous night for about six months due to the tilt of the Earth.

7. Leap Year

- A leap year, which occurs every four years, consists of 366 days with February having 29 days.

8. Christmas Celebration in Australia

- Christmas is celebrated during the Summer season in Australia, unlike many other parts of the world.

Remember, the rotation of the Earth results in day and night, while its revolution causes the change in seasons.

Important Terms

1. **Rotation**: Rotation refers to the spinning of the Earth on its axis, which takes approximately 24 hours to complete and results in day and night.
2. **Revolution**: Revolution is the movement of the Earth in a fixed path or orbit around the Sun, taking 365¼ days to complete, which results in the changing of seasons.
3. **Axis**: The axis is an imaginary line passing through the North and South poles around which the Earth rotates.
4. **Orbital Plane**: The orbital plane is the flat, imaginary surface on which an orbit lies—in this context, the plane on which Earth orbits the Sun.
5. **Circle of Illumination**: The circle of illumination is the dividing line between the day and night hemispheres of the Earth.
6. **Leap Year**: A leap year is a year, occurring every four years, which has 366 days including 29 days in February due to the accumulation of extra hours from each year.
7. **Elliptical Orbit**: An elliptical orbit refers to the oval-shaped path that the Earth takes as it revolves around the Sun.

8. **Summer Solstice**: The summer solstice is the day when the Sun's rays fall directly on the Tropic of Cancer or Capricorn, resulting in the longest day of the year.
9. **Winter Solstice**: The winter solstice is the day when the Sun's rays fall farthest from the equator, resulting in the shortest day of the year.
10. **Equinox**: An equinox occurs when the Sun's rays fall directly on the equator, resulting in equal length of day and night.
11. **Arctic Circle**: The Arctic Circle is the latitude 66°34′N, beyond which areas can experience continuous daylight or darkness for about six months.
12. **Tropic of Cancer**: The Tropic of Cancer is the latitude 23°26′N, which is the most northerly circle of latitude on Earth at which the Sun can be directly overhead.
13. **Tropic of Capricorn**: The Tropic of Capricorn is the latitude 23°26′S, which is the most southerly circle of latitude on Earth at which the Sun can be directly overhead.
14. **Northern Hemisphere**: The Northern Hemisphere is the half of Earth that is north of the equator.
15. **Southern Hemisphere**: The Southern Hemisphere is the half of Earth that is south of the equator.

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