GEOGRAPHY
Social Science

NCERT Exercises
Class – 6th

MOTIONS OF THE EARTH

Textbook Exercises

Q.1. Answer the following questions briefly:

1. What is the angle of inclination of the earth's axis with its orbital plane?

Ans. The titling of earth on its axis by 23V2 is known as the inclinations of the earth's axis.

2. Define rotation and revolution.

Ans. The earth moves on its axis in 24 hours. This movement of the earth is called rotation. It causes days and nights.

The earth also makes a complete circle round the sun in $365\frac{1}{4}$ days. This movement of the earth is called revolution. It is responsible for the change in season.

Rotation	Revolution
(i) The continuous spinning of earth on its own axis is called rotation.	(i) The movement of earth round the sun is called revolution.
(ii) It takes twenty-four hours to earth to complete one rotation on its axis.	(ii) Earth takes $365\frac{1}{4}$ days to make a complete round of the sun while rotating along its axis.
(iii) The rotation of earth causes day and night.	(iii) It causes cycle of the seasons.

3. What is a leap year?

Ans. Earth moves around the sun. Earth takes 365 days and 6 hours to make a complete round of the earth. We take 365 days in a year and ignore 6 hours. But these six hours make a day in four years. Hence one day is added every fourth year. So the every fourth year is called a leap year because it has 366 days. Its effect is that, the month of February becomes the month of 29 days once in four years.

4. Differentiate between the summer and winter solstice.

Ans. On 21st June the North Pole is inclined towards the sun while the South Pole is away from it. The sun's rays will fall vertically on the tropic of cancer. Hence the greater part of the northern hemisphere will receive more sunlight and the days will be long and nights shorter. This part of the earth will receive more heat and hence will have summer season. This position is called summer solstices. The sun's rays will be slanting in the southern hemisphere and therefore will be having winter season.

After 3 months again i.e., on 22nd December, the southern hemisphere comes in front of the sun while the northern hemisphere is away from it. The vertical rays of the sun are now falling vertically on places at $23\frac{1}{4}°$ south of the equator. That is on the topic of capricom. During this period the northern hemisphere remains in the grip of cold while the southern hemisphere experiences summer season. The days are longer and the nights are shorter in the southern hemisphere. This period is called as winter solstices.

5. What is an equinox?

Ans. When the whole earth experiences equal days and equal nights, this is called an equinox. Generally it occurs on 21st March and 23rd September.

6. Why does the southern hemisphere experience winter and summer solstices in different times than that of the northern hemisphere?

Ans. As the revolution continues, gradually the southern hemisphere comes closer to the sun and the northern hemisphere moves away from it. Daylights hours increase in southern hemisphere. On 22nd December, the sun is directly over the 23°30' S latitude or tropic of capricom. This is summer solstice for the southern hemisphere. On this day the Northern Hemisphere experiences shortest day and it is called winter solstice in the northern hemisphere.

7. Why do the poles experience about six months day and six months night?

Ans. When the rays of the sun fall directly on the Tropic of Cancer (21st June), the areas near the South Pole receive less heat. The North Pole is inclined towards the sun and places beyond the Arctic Circle experience continuous daylight. At this time, the Southern Hemisphere has the opposite season. The nights are long and areas beyond Antarctic Circle get continuous night.
The reverse will happen on 22nd December.

Q.2. Tick the correct answers:

(a) The movement of the earth around the sun is known as
(i) Rotation (ii) Revolution (iii) Inclination

(b) Direct rays of the sun fall on the equator on
(i) 21 March (ii) 21 June (iii) 22 December

(c) Christmas is celebrated in summer in
(i) Japan (ii) India (iii) Australia

(d) Cycle of the seasons is caused due to
(i) Rotation (ii) Revolution (iii) Gravitation

Ans. (a) (ii);
(b) (i);
(c) (iii);
(d) (i).

Q.3. Fill in the blanks:

(a) A leap year has ..... number of days.
(b) The daily motion of the earth is .....
(c) The earth travels around the sun in ..... orbit.
(d) The sun's rays fall vertically on the Tropic of..... on 21st June.
(e) Days are shorter during ..... season.

Ans. (a) 366
(b) rotation
(c) elliptical
(d) cancer
(e) winter.

THINGS TO DO

1. Make a drawing to show the inclination of the earth.

Ans.

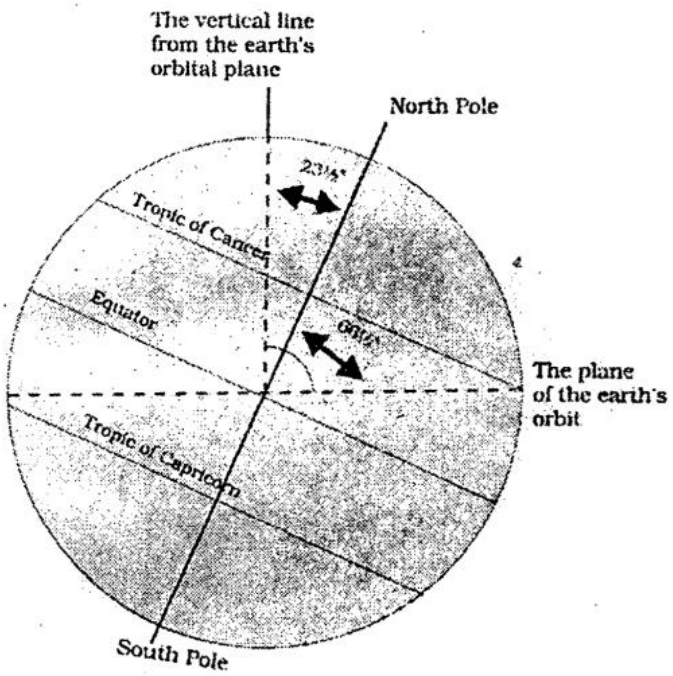

Fig. Inclination of the Earth's axis and the orbital plane.

Q.2. Record the timings of sunrise and sunset at your place taking help from your local newspaper on the 21st of each month and answer the following:

(a) In which month are the days shortest?

(b) In which months are the days and nights nearly equal?

Ans. Do with the help of your parents.