Teacher’s Companion

Lesson Plans • Activities • Map Work • Worksheets
Test Papers • Answers

Consulting Editor
MONA LAKHANPAL
Principal, Maxfort School
Pitampura, New Delhi
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LESSON PLAN

You could run the CD to access these resources and incorporate them in your lesson plans.

3D Animation
Animated activities
Answer key
Aptive Learn
Concept map
Dictionary
eBook
Infographic
Interactive map
Quiz
Slideshow
Test generator
Worksheets

LESSON OBJECTIVES

The students
- recognize how our planet looks like and relate to its various representations in the form of globe and maps.
- can understand and recall the meanings of terms such as continent, ocean, globe, map, atlas, scale, symbols, key.
- can distinguish the difference between globe and map.
- can enlist the limitations of globe and map.
- can understand and explain the different types of maps.
- learn to read maps using the four tools – directions, scale, colours, symbols and key.

TEACHING AIDS

a model or picture of the solar system, a globe, a world map (political), a political map of India

IN THE CLASS

- The teacher may introduce the lesson with a model or picture of the solar system and start the GET SET! The teacher shall ask the students to recall the names of all the planets in the order of distance from Sun and get them to do the GET SET!
- The teacher may then point at Earth – our planet. The teacher should mention how the Earth is a unique planet.

GLOBE
- The teacher will show the globe to the class and tell the following points on it.
Globe is a model to study the Earth.

- It represents correct shape, size and location of continents and oceans, etc.
- Though accurate it is difficult to carry and cannot be used to represent details of a place or only a part of the Earth.
- Only one half of the Earth can be seen at a time on a globe.
- With the use of the globe the teacher shall show the shape of the Earth as a sphere.
- The teacher should point out the continents, oceans and especially India on the globe.

--- ACTIVITIES ---

A. Have a class discussion on the topic—what if the Earth was flat?
B. Ask the students how the Earth and the globe are alike and how they are different, to explain the relationship between the actual Earth and the model of the Earth.

MAPS

- The teacher will show the world map and tell the following points.
  - A map is a representation of the Earth or a part of it on a flat surface.
  - It can represent a part of the Earth with more details.
  - The whole Earth can be seen at a time.
  - A collection of maps is called an atlas.
  - Since the Earth is spherical, a map cannot accurately represent the Earth.

--- ACTIVITIES ---

C. Use a paper to cover the globe showing how a map cannot accurately represent the Earth.
D. The activity under CHECKPOINT can be done in the classroom.
E. With the aid of a world map (political) show the representation of the Earth on a flat surface.
   - Exercise E of DO AND LEARN can be done in the classroom with the aid of the map.
- There are different types of maps used to represent different aspects – physical maps, political maps, climatic maps and so on. The teacher will explain these maps.

--- ACTIVITY ---

F. Ask students what all kinds of maps they can imagine. Accept all possible answers.

READING MAPS

- The teacher will explain to the class the basic features required to read maps: direction, scale, symbols and colours.

DIRECTIONS

- The teacher will tell the class the following about the directions.
  - Maps follow a system of directions. There are four major directions and four intermediate directions.
  - The top of the map is always North marked by an arrow or ‘N’. The bottom of the map is South, right of the map is East and the left of the map is West.
  - The four intermediate directions are: North-East, North-West, South-East and South-West.

--- ACTIVITIES ---

G. Exercise H of DO AND LEARN can be done in the classroom.
H. Get the class to play a game. Ensure that students have an understanding of all the eight directions. Give commands like ‘turn East’, ‘take a step to the South-West’, ‘hop three steps
to the North’ and so on. Those who turn in the wrong direction are out of the game, and the one who remains till the end can be the winner.

SCALE
  ✦ The teacher will explain to the class what a scale is and how it is used.
  ✦ Every map uses a scale to represent the actual distance or size by a smaller unit. This ratio between the distance on the ground and on the map is called the scale of the map.

---------- ACTIVITY ----------
I. Exercise F from DO AND LEARN can be done in the classroom at this point.

SYMBOLS
  ✦ The teacher will show some symbols that are used on a map and explain why they are used.

COLOURS.
  ✦ The teacher will take a physical map and show to the class how different colours are used to show different physical features.

---------- ACTIVITY ----------
J. Exercise G from DO AND LEARN may be done in the classroom.

KEY
  ✦ At the end the teacher will explain what a key is.
  ✦ She/He will say that a key helps us understand the various symbols and colour schemes used in the map.

---------- ACTIVITIES ----------
K. Exercises A and B from READ AND ANSWER shall be done in the class.
L. Exercises C and D from the READ AND ANSWER section shall be given as homework to the students.

MORE TO LEARN
  ✦ Maps also help us find our way to places. The teacher can draw a map on the blackboard which shows the way from her/his home to the market or to the school. Ask the students to then draw a map of the school using all the tools – directions, scale, colour, symbols and key, which would help a visitor find her/his way around the school. Students can give their own symbols and colours to refer to buildings, classrooms, etc.
  ✦ Study the map of your state and identify the capital, your city/town/district, an important river, a physical feature like hills or a desert.
  ✦ Ask the students if they have seen anyone use the GPS to find directions and distance while travelling. Explain how interactive maps work. Ask them to observe the use of interactive maps when they travel next.
WORKSHEET 1

A  Tick (✓) the correct answers.

1. Africa is
   a. an ocean. ☑ b. a country. ☑ c. a river. ☑ d. a continent. ☑

2. Which of these is an ocean?
   a. Bay of Bengal ☑ b. the Brahmaputra ☑ c. Pacific ☑
   d. South America ☑

3. What does the Latin word *mappo* mean?
   a. paper ☑ b. napkin ☑ c. globe ☑ d. planet ☑

4. The Earth is shaped like
   a. a sphere. ☑ b. an egg. ☑ c. a rectangle. ☑
   d. a triangle. ☑

5. A map which gives information on climate and rainfall of a region is called a
   a. political map. ☑ b. physical map. ☑
   c. population map. ☑ d. climatic map. ☑

B  What am I?

1. I represent a part of the Earth on a flat surface. ☑
2. I am used to find directions. ☑
3. I lie between the South and the East directions. ☑
4. On a map I am shown by thick dashes and dots. ☑
5. I help people understand the colour scheme and symbols on a map. ☑

C  Complete the following sentences.

1. Our Earth is a unique planet because

2. A map is more convenient to use than a globe because

3. We can easily find other directions on a map if

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**WORKSHEET 2**

**A** Read the clues. Write the missing letters and solve this word puzzle.

**ACROSS**

4. the second-smallest continent
   - U E

5. the smallest ocean
   - R C E N A

6. name of the largest continent
   - A I U E R

7. the largest ocean
   - A

**DOWN**

1. the smallest continent
   - A

2. the ocean that separates Europe from North America
   - F C A E N

3. the ocean named after a country
   - A

6. the second-largest continent in the world
   - A

**B** Match the columns.

1. Ferdinand Magellan
   - a Portuguese explorer

2. Gerardus Mercator
   - a Flemish map-maker

3. highlands
   - intermediate direction

4. political maps
   - a book of maps

5. atlas
   - countries and capitals

6. North-East
   - shades of brown
ANSWERS
MAIN COURSEBOOK

GET SET!
1. Mercury, Mars
2. Uranus, Neptune

CHECKPOINT
1. oceans.
2. spherical
3. model

READ AND ANSWER
A. 1. b
   2. d
   3. a
   4. c
   5. b
B. 1. F
   2. F
   3. T
   4. T
C. 1. Ferdinand Magellan first sailed around the world and proved that the Earth is round. Pictures taken from space have also proved that the Earth is like a sphere.
   2. A globe shows the distribution of land and water on the surface of the Earth. The correct shape, size and location of continents and oceans on the Earth can also be seen on a globe.
   3. Maps are drawn on flat surfaces. We can show continents, countries, cities and neighbourhoods on a map. Maps cannot be used to show the spherical Earth because curved surfaces cannot be shown accurately on a flat surface. That is why a map is less accurate than a globe.
   4. The four features which help us to read a map are directions, scale, symbols and colours.
D. The Earth looks blue from space due to the presence of water bodies.

DO AND LEARN
E. 1. India, China
   2. Kenya, Cameroon
   3. Germany, Sweden
   4. Chile, Argentina
   (Accept these or any other relevant response.)
F. 1. 2750 km
   2. 750 km
   3. 1000 km
H. 1. West
   2. South
   3. North

WORKSHEET 1
A. 1. d
   2. c
   3. b
   4. a
   5. d
B. 1. map
   2. compass
   3. South-East
   4. land boundary
   5. key
C. 1. Our Earth is a unique planet because it is the only planet in our solar system that has water and air.
   2. A map is more convenient than a globe because it is easy to carry. We can also show continents, countries, cities and neighbourhoods fairly accurately on a map.
   3. We can easily find other directions on a map if we know the North direction.
WORKSHEET 2

A.

1. A
2. A
3. I
4. EUROPE
5. ARCTIC OCEAN
6. ASIA
7. PACIFIC OCEAN

L
S
T
A
T
N
I
F
R
I
A
A
A

B. 1. c 2. e 3. b 4. b 5. a 6. d
LESSON PLAN

You could run the CD to access these resources and incorporate them in your lesson plans.

**2D Animation**  **Dictionary**  **Test generator**
**Animated activities**  **eBook**  **Worksheets**
**Answer key**  **Lesson plan**
**Aptive Learn**  **Quiz**
**Concept map**  **Slideshow**

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### LESSON OBJECTIVES

The students
- can relate to the idea of imaginary lines drawn on the Earth to locate places.
- can understand ‘parallels’, their important features and how they are numbered.
- can identify the seven important parallels and their location in the Northern and Southern Hemispheres.
- can understand ‘meridians’, their important features and how they are numbered.
- can compare and distinguish between the parallels and the meridians.
- can comprehend the meaning of grid and its use in locating places.
- can define terms such as axis, parallels, meridians, Equator, North Pole and South Pole, hemispheres, Prime Meridian.

### TEACHING AIDS

an atlas, a world map, a globe, coloured ribbons or wool

### IN THE CLASS

- The teacher will ask the class to look at the world map and describe where is India without pointing at it or using the words ‘there’ or ‘here’, etc. The activity should help the students to describe locations using terms like ‘north of’, ‘south of’, ‘east of’ and ‘west of’. After the activity the teacher shall explain that in order to locate places we need some fixed points. For this we draw imaginary lines called parallels and meridians.
The teacher should ask the students to bring their atlases on the day they study this chapter. With the help of the globe the class will do the Get Set! The teacher may also use a wall world map to help students to do the Get SET!

The teacher should explain to the students that these lines are imaginary and are drawn on maps and globes to help locate places.

The teacher shall use the globe to show the shape of the Earth. She/He will also show the axis.

The teacher will explain the axis by drawing on the blackboard.

A. The teacher shall with the help of a globe show the axis and explain that the axis can only be seen in a globe and not on a map.

PARALLELS

The teacher will tell the following points on parallels.

- Set of imaginary circles that run across the Earth from east to west, called lines of latitude.
- An imaginary line is drawn midway between the North Pole and the South Pole. It is called the Equator.
- The Equator divides the Earth into the Northern and Southern hemispheres.
- The teacher will write the important features of the parallels on the board.

B. The teacher should ask the students to answer Exercise D. Equator is the longest parallel and passes through the Earth where the Earth is the widest. Illustrate this and the important features of the parallels with the help of the globe and the blackboard.

NUMBERING OF THE PARALLELS

The teacher will explain how to number the parallels.

- Equator is the starting point and is numbered 0°. Other parallels are numbered from 0° to 90°.
- Besides the number the parallels also have N or S marked to identify their location as North (N) of Equator or South (S) of it.
- 90° N is the North Pole and 90° S is the South Pole.
- There are 90 parallels in the Northern Hemisphere and 90 in the Southern Hemisphere.
- There are thus 181 parallels including the Equator.
- There are four important parallels besides the Equator and the two poles. They are the Tropic of Cancer (23½° N), the Tropic of Capricorn (23½° S), the Arctic Circle (66½° N) and the Antarctic Circle (66½° S).
- The teacher will explain these points using the globe and the blackboard.

C. The teacher shall take up the CHECKPOINT activity in the class.

D. After that the teacher shall take up Exercises E and G from DO AND LEARN as classwork.

MERIDIANs

The teacher will tell the following points on meridians.

- These are imaginary lines that run from north to south (from the North Pole to the South Pole).
Also called lines of longitude
The teacher will explain the features of the meridians in the class. She/He will also use the blackboard to explain why the distance between two meridians is the widest at the Equator.

NUMBERING THE MERIDIANS
> The teacher will explain the points on the blackboard.
> As the Equator is the starting point for the parallels, in the same way meridians also have a starting point.
> In 1884, Greenwich a place near London was fixed as the starting point for measuring the meridians. The meridian passing through Greenwich is numbered 0° and is called the Prime Meridian.
> Longitudes are measured east or west of the Prime Meridian.
> Longitudes are also drawn at an interval of one degree.
> There are 180 longitudes east of the Prime Meridian and 180 longitudes to the west.
> The 180° E and the 180° W longitudes are the same one. There are thus 360 longitudes.

LOCATING PLACES
> To locate a place one must know its longitude and latitude. The point at which the two intersect or cross is the location of the place. The teacher can draw on the blackboard and demonstrate how to use a grid to locate places.

ACTIVITIES
E. Exercise A from READ AND ANSWER shall be done in the class. Exercises B and C from the same section shall be given as homework.
F. The teacher may get the class to stand in a circle and give a visual representation of the parallels and the meridians with coloured ribbons or wool.
G. The teacher will ask the students to do Exercise F as classwork. After that she/he will ask the class to give reasons why some places are cold and some places are warm.
H. Exercise H may be taken up as a game.

MORE TO LEARN
> Ask the students to form groups of four or five. Each group shall take a chart paper and draw a big circle on it. They shall then paste the paper on a thermocol sheet. With coloured ribbons or wool and pins mark Equator, Prime Meridian, Tropic of Cancer, Tropic of Capricorn, Arctic Circle, Antarctic Circle, North Pole, South Pole.
> Play a game in the class about locating places with coordinates. The teacher can come up with some coordinates and ask the class to look it up on a map (of World or India or Asia, etc.) and tell the name of the city located at that point.
A Fill in the blanks.
1. The ________________ divides the Earth into two equal parts.
2. The imaginary lines running from north to south are called ________________ or lines of ________________
3. Parallels and meridians cross each other at ________________ angles.
4. Distances in the ________________ direction are measured by meridians.
5. The meridian that passes through Greenwich is called the ________________
6. A ________________ is a network formed by parallels and meridians.

B Match the columns.
1. Tropic of Cancer a. 181 in number
2. Arctic Circle b. 0° latitude
3. Antarctic Circle c. 90° S
4. Meridians d. 66½° N
5. Parallels e. 23½°
6. Equator f. 360 in number
7. North Pole g. 0° longitude
8. South Pole h. 90° N
9. Prime Meridian i. 66½° N

C Define the following.
1. Axis ____________________________________________
                                           ____________________________________________
                                           ____________________________________________
                                           ____________________________________________
2. Northern Hemisphere ____________________________________________
                                           ____________________________________________
                                           ____________________________________________
                                           ____________________________________________
3. Prime Meridian ____________________________________________
                                           ____________________________________________
                                           ____________________________________________
                                           ____________________________________________
4. Grid ____________________________________________
                                           ____________________________________________
                                           ____________________________________________
A Mark and label the following.

B Complete the following paragraph.

This is the method that is to be followed while numbering parallels. We start from the _________________ and mark it as _________________ The other parallels are marked from _________________ to _________________ The parallels in the _________________ Hemisphere are marked _________________ or _________________ The parallels in the _________________ are marked S or South. The North Pole is written as _________________ The _________________ is written as 90° S. Parallels are drawn at intervals of _________________

Hence, there are _________________ parallels in the _________________ and 90 _________________ in the _________________ In all there are _________________ parallels which includes the _________________ as well.
ANSWERS
MAIN COURSEBOOK

GET SET!
1. EQUATOR
2. TROPIC of CANCER
3. ARCTIC CIRCLE
4. TROPIC of CAPRICORN
5. ANTARCTIC CIRCLE
6. PRIME MERIDIAN

CHECKPOINT
1. T
2. F
3. F
4. T

READ AND ANSWER
A. 1. c    2. d    3. a    4. b    5. c
C. 1. A parallel is an imaginary line drawn on the surface of a globe. It runs from east to west.
   • All parallels are complete circles except for the North Pole and the South Pole, which are points.
   • The length of the parallels decreases as one moves away from the Equator and towards the poles.
   • All parallels are located at an equal distance from each other.
   • Parallels neither touch nor cross one another.
   (Accept any three of these.)
2. We start from the Equator and mark it as 0°.
   The other parallels are marked from 0° to 90°. Apart from their value, the parallels are also marked N (North) or S (South) according to their location. The North Pole and the South Pole are written as 90° N and 90° S respectively.
3. Imaginary lines on a globe, running from north to south, are called meridians.
   These lines are drawn from pole to pole.
   • All meridians are of the same length.
   • The maximum distance between any two meridians is at the Equator.
   • The distance between any two meridians decreases as we move away from the Equator towards the poles.
   • Meridians cut the parallels at right angles (90°).
   • Meridians are used to measure distances in the east-west direction.
   (Accept any three of these.)
4. To locate a place, we must know the values of its parallel or latitude and its meridian or longitude. The point at which the parallel and the meridian cross each other is the location of that place.
D. The Earth is shaped like a sphere. Refer Fig. 2.2. The Arctic Circle which is near the North Pole is smaller in size than the Equator. Thus, the length of the parallels decreases as one moves from the Poles to the Equator.

DO AND LEARN
E. Equator – Kenya, Ecuador  
   Tropic of Capricorn – Paraguay, Australia
   Tropic of Cancer – Mexico, Saudi Arabia  
   Arctic Circle – Canada, Russia
F. 1. Vostok Station will be colder as it lies on a higher latitude
   2. Melbourne – same as 1
   3. Both places should have the same climate as they are on the same latitude (unless there
      are other factors – Refer lesson 5). The teacher can come back and discuss this question
      after she/he has taught lesson 5.

G. Gujarat, Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand, West Bengal, Tripura
   and Mizoram

WORKSHEET 1

A. 1. Equator                    2. meridians, longitude.
     3. right                    4. east-west
     5. Prime Meridian           6. grid

B. 1. e                         2. i
    3. d                         4. f
    5. a                         6. b
    7. h                         8. c

C. 1. Axis is an imaginary line drawn through the centre of the Earth.
     2. The part of the Earth which lies to the north of the Equator is called the Northern
        Hemisphere.
     3. The meridian that passes through Greenwich is marked 0° and is called the
        Prime Meridian.
     4. The parallels and the meridians form a network of lines on the globe. This is called
        the grid.

WORKSHEET 2

A. 1.

B. This is the method that is to be followed while numbering parallels. We start from the
   Equator and mark it as 0°. The other parallels are marked from 0° to 90°. The parallels
   in the Northern Hemisphere are marked N or North. The parallels in the Southern
   Hemisphere are marked S or South. The North Pole is written as 90°N. The South Pole
   is written as 90°S. Parallels are drawn at intervals of one degree. Hence, there are
   90 parallels in the Northern Hemisphere and 90 parallels in the Southern Hemisphere.
   In all there are 181 parallels which includes the Equator as well.
Movements of the Earth

LESSON PLAN

You could run the CD to access these resources and incorporate them in your lesson plans.

- 2D Animation
- Animated activities
- Answer key
- Aptive Learn
- Concept map
- Dictionary
- eBook
- Lesson plan
- Quiz
- Test generator
- Toys from Trash
- Worksheets
- eBook
- Lesson plan
- Quiz
- Test generator
- Toys from Trash
- Worksheets

LESSON OBJECTIVES

The students can:
- learn about the movements of the Earth.
- understand that the Earth is tilted and rotates on its axis.
- understand and define terms such as rotation, revolution, orbit and leap year.
- relate the rotation of the Earth to the formation of day and night.
- learn about the revolution of the Earth around the Sun.
- relate the revolution of the Earth with changes in seasons.

TEACHING AIDS

- a spinning top
- a globe
- a torchlight
- a picture or model of the solar system
- a model of the Earth's revolution

IN THE CLASS

- The teacher may conduct the GET SET! as a quiz.

ACTIVITY

- Have a class discussion on: What if the Earth was stationary?
  - The discussion should raise questions such as
    - How then would there be day and night on our planet?
    - How would the seasons change?
    - What would the temperature and climate be like on the planet then?
The teacher shall conclude the discussion with the Earth not being stationary but having two kinds of movements.

It will be mentioned in the class that Nicolaus Copernicus was first to say that the Earth rotates on its axis and also revolves around the Sun.

With a spinning top the teacher may show how the Earth rotates on its axis.

The teacher will use a globe to show how the Earth is tilted on its axis and how it rotates.

**ROTATION**

The teacher will explain the movement rotation.

- The movement of the Earth on its axis.
- One rotation takes 24 hours which is equal to one day.
- The Earth rotates from west to east. Thus, it seems that the Sun rises in the east and sets in the west.

**ACTIVITY**

B. With the torch and the globe the teacher will show the rotation of the Earth. Point out the west to east movement and how due to that we see the Sun rise in the east and set in the west.

**DAY AND NIGHT**

Now, the teacher will explain the formation of day and night.

- While rotating on its axis only half of the Earth faces the Sun and receives light at a time while the other half faces away from the Sun and has darkness.

**ACTIVITIES**

C. The activity mentioned in the chapter on page 21 shall be done in the class with the torch and the globe. The teacher may then ask the class to observe and tell:

If it is day in Australia will it be day or night in the following: – USA, India, Japan, Germany, Egypt, Brazil, Canada, Greenland and Russia.

D. The teacher will ask the students to do Exercise F of DO AND LEARN as homework.

E. The teacher shall help the class recall the points covered through the CHECKPOINT.

**REVOLUTION**

The teacher will show the model of Earth’s revolution. Then she/he will tell the following points to the class.

- The Earth revolves around the Sun. It is called revolution.
- The Earth rotates and revolves at the same time.
- The Earth has a fixed path on which it revolves. It is called orbit and is oval in shape.
- One revolution takes about 365 days which is equal to one year.

The teacher can also explain leap year and say that the Earth takes 365¼ days. But, a year has only 365 days. The one-fourth part is added after every four years. Thus a whole day to added to the fourth year and that year has 366 days. It is called a leap year.

**ACTIVITIES**

F. The teacher shall illustrate both the movements of the Earth with the globe and the torch.

G. The teacher will show the video on the revolution of the Earth by visiting the weblink given under G.
H. The teacher may ask the class if they know to which month the extra day of the leap year is added. Tell the students that it is added to February which has 28 days in a year and has 29 days in a leap year. Ask the class ‘If anyone is born on 29 February, how often will she/he get to celebrate her/his birthday.’ Ask the class to find out if they know anyone who is born on 29 February.

I. The Sun is the centre of the solar system and the eight planets revolve around it.
The teacher can then get the class to do Exercise E of DO AND LEARN with the help of a picture or model of the solar system.

SEASONS
✦ The teacher will explain the changing of seasons with the help of Fig. 3.3 and the model on Earth’s revolution.
✦ The movement of the Earth around the Sun causes the different seasons – Winter, Spring, Summer and Autumn.
✦ The teacher will explain what happens at Position 1.
✦ The teacher will explain what happens at Position 3.
✦ At the end she/he will explain Positions 2 and 4 and the seasons that both the hemispheres experience.
✦ She/He will also say that the Northern Hemisphere and the Southern Hemisphere do not experience spring and autumn together. When there is spring in the Northern Hemisphere it is autumn in the Southern Hemisphere and vice-versa.
✦ The teacher may give example of Canada and Australia as having opposite seasons.

ACTIVITIES

J. The teacher may then take up Exercises D and H to help the class understand the variation in seasons between the Northern and the Southern Hemispheres.

K. The teacher shall ask the students to do Exercises A and B from READ AND ANSWER as classwork, and assign Exercise C as homework.

MORE TO LEARN
✦ Ask the students to collect a story about ‘Day and Night’.
✦ Many festivals mark the beginning or the end of a season. Find out about four such festivals.
A  Draw the diagram showing the Earth’s rotation.

B  Answer these questions.

1. Who first said that the Earth moves around the Sun?

2. Why are days and nights caused?

3. How does the spherical shape of the Earth help in day and night formation?

4. What is orbit? What is its shape?
A Label the diagram.

B Answer these questions.

1. What are the differences between Position 1 and Position 3?

2. What are the differences between Position 2 and Position 4?

3. How is revolution different from rotation?
ANSWERS

MAIN COURSEBOOK

GET SET!
1. 60
2. 60
3. 3600
4. 24
5. 30/31
6. 12
7. 365
8. 366

CHECKPOINT
2. Rotation
3. 24 hours or one day
4. night

READ AND ANSWER

A. 1. c 2. a 3. b 4. a
B. 1. Earth 2. east 3. rotation 4. oval 5. spring
C. 1. The movement of the Earth on its axis is called rotation.
   The Earth takes about 24 hours or one day to rotate once on its axis.
2. The rotation of the Earth causes days and nights. Due to its spherical shape, only half of the Earth receives light from the Sun at a particular time. This half has ‘day’. The other half, which is turned away from the Sun is in darkness and has ‘night’.
3. The movement of the Earth around the Sun is called revolution.
   The Earth takes 365 days or one year to complete one revolution.

The revolution of the Earth causes four seasons – summer, autumn, winter and spring.
When the Earth is at Position 2, the North Pole is tilted towards the Sun. The Northern Hemisphere gets more sunlight. Therefore, it is summer in this hemisphere. The days are longer than the nights. During this time the South Pole is tilted away from the Sun. The Southern Hemisphere gets less sunlight. Therefore, it is winter in this hemisphere. When the Earth is at Position 4, the South Pole is tilted towards the Sun. The Southern Hemisphere gets more sunlight. Therefore, it has summer. During this time the North Pole is tilted away from the Sun. The Northern Hemisphere gets less sunlight. Therefore, it is winter in this hemisphere.
At Positions 1 and 3, the Sun’s rays fall directly on the Equator. As a result, the length of days and nights is the same throughout the world. It is neither very hot nor very cold in both the hemispheres. The Northern Hemisphere has spring when the Earth is in
Position 1 and autumn in Position 3. The Southern Hemisphere has autumn when it is in Position 1 and spring in Position 3.

D. The people of Australia celebrate Christmas in the summer season. This is because Australia is in the Southern Hemisphere, and the Southern Hemisphere experiences summer in the month of December.

DO AND LEARN
E. 1. Earth  
   2. Jupiter  
   3. Mercury  
   4. Saturn  
   5. Mars  
   6. Neptune  
   7. Venus  
   8. Uranus

WORKSHEET 1

A.

B. 1. Nicolaus Copernicus first said that the Earth moves around the Sun.  
    2. Rotation of the Earth causes days and nights.  
    3. The Earth is spherical in shape, so only half of the Earth receives light from the Sun at a particular time. This half has day. The other half, which is away from the Sun, is in darkness and has night.  
    4. The fixed path along which the Earth revolves around the Sun is called orbit. The orbit is oval in shape.

WORKSHEET 2

A. Refer to page 22 of the Main Coursebook.
B. 1. In Position 1, Northern Hemisphere has spring and Southern Hemisphere has autumn. In Position 3, Northern Hemisphere has autumn and Southern Hemisphere has spring.  
   2. In Position 2, Northern Hemisphere is tilted towards the Sun and has summer. The Southern Hemisphere is away from the Sun and has winter. In Position 4, the Southern Hemisphere is tilted towards the Sun and has summer. Now the Northern Hemisphere is away from the Sun and has winter.  
   3. The movement of the Earth around the Sun on its orbit is called revolution. This causes changes in seasons. The movement of the Earth on its axis is called rotation. This causes days and nights.
LESSON PLAN

You could run the CD to access these resources and incorporate them in your lesson plans.

- 2D Animation
- Animated activities
- Answer key
- Aptive Learn
- Augmented reality experience
- Concept map
- Dictionary
- eBook
- Game
- Infographic
- Lesson plan
- Quiz
- Slideshow
- Test generator
- Video
- Worksheets

LESSON OBJECTIVES

The students
✦ can understand the various types of landforms.
✦ can define major landforms such as mountains, plateaus, plains, deserts and rivers with prominent examples from across the world.
✦ can identify and memorize the important features of all the major landforms.
✦ recall and list the importance of mountains, plateaus, plains and deserts.
✦ can define canyon, mouth, rapids, meander, peaks, tableland, leeward side and delta.

TEACHING AIDS

a globe, pictures of mountains – the Alps, the Himalayas, the Aravallis, the Appalachians, pictures of plateaus and canyons, pictures of plains, deserts and rivers.

IN THE CLASS

✦ The teacher shall carry out the GET SET! as a quiz in the class.
✦ The teacher shall show the class a globe and ask what they can see on it. Then the teacher may point out that the Earth is 71 per cent water and 29 per cent land. The teacher shall ask the class that after seeing the map and the globe what can they say about the surface of the Earth. Is it flat or smooth throughout?
✦ The teacher shall tell the class that the Earth has many landforms. Some part of the Earth’s surface is raised and some part is plain.
✦ The major landforms are mountains, plateaus, plains, deserts and rivers.
MOUNTAINS

- The teacher shall tell the class that landforms are 900 meters above the mean sea level. The teacher shall explain that mean sea level means the surface of an ocean or sea from which height or elevation is measured.
- She/He will tell the following points to the class.
  - Mountains occupy 20 per cent of the total land area of the Earth.
  - Mountains are of different heights and shapes.
  - Have steep slopes and the highest point is called a peak or summit.
  - Peaks may be conical or rounded in shape.

__________ ACTIVITY __________

A. Ask the students which is the highest peak on the Earth. Then show them a picture of Mount Everest and tell that this mountain is the highest in the world.
  - The height and shape of mountains depends on their age. The younger mountains have higher and conical peaks whereas the older mountains have lower and rounded peaks.
  - The teacher shall show pictures of the Alps and the Himalayas which are young mountains and the Aravallis and the Appalachians which are old mountains and show the difference in the shape of the peaks.
  - Several mountains join together and form a chain or a range.
  - Mountains often have a series of parallel ranges that run across hundreds of kilometers.
  - Mountains are very important as they are the source of many rivers.

__________ ACTIVITY __________

B. Name some rivers that originate from mountains.

- The teacher shall tell the class the importance of the mountains.

__________ ACTIVITY __________

C. The teacher shall ask the class to Exercise D of READ AND ANSWER.

PLATEAUS

- Now, the teacher will tell the class about the landform, plateaus.
  - Plateaus are highlands with flat tops.
  - Plateaus also have steep slopes. They rise abruptly from the surrounding area.

__________ ACTIVITY __________

D. The teacher shall take three books and place two books standing or vertical and the third book horizontally on the two books to show the shape of a plateau as a table and point out how it rises abruptly from its surrounding area.
  - Some plateaus are very large and extend over hundreds of kilometers.
  - Plateaus are usually in dry regions and on the leeward side of the mountains.
  - Plateaus are high and mostly experience cold climate.
  - Many plateaus have deep valley with steep sides made of rocks. They are called canyons

- The teacher will tell the class the importance of the plateaus.
E. The teacher shall show pictures of the Grand Canyon.

F. The Exercise E of DO AND LEARN shall then be taken up in the class. The teacher shall ask the class to take out physical maps of the different continents. The teacher shall help the class recall what colours are used to represent mountains, plateaus, plains and rivers. (This has been taught already in chapter 1.) Then she/he can help the class find out the plateaus in the maps.

PLAINS
+ The teacher will tell the class about plains and their importance.
  - Plains are flat, low lying areas formed by sand and silt deposition.
  - The depositions make soil very fertile which is suitable for agriculture.
  - Most ancient civilizations flourished in the plains. Now, most big cities and towns are located in the plains.
  - It is easier to construct roads, railway tracks, airports and industries in the plains. Thus, the plains are better connected.

DESERTS
+ These points will be discussed by the teacher in the class.
  - Deserts are areas with very little rainfall and very dry climate.
  - These regions experience very hot days and cold nights.
  - They have scanty or no vegetation due to very little rainfall.
  - Hills of sand called sand dunes are found in deserts. They keep moving or shifting as the wind carries the loose sand with it.
  - Interestingly most deserts are located on the western side of continents and on the leeward side of mountains.
  - Prominent deserts across the world are the Sahara desert and the Kalahari desert (Africa), The Great Sandy desert and the Great Victoria desert (Australia), the Thar desert and the Arabian desert (Asia), the Atacama desert and the Patagonian desert (South America). The teacher can show the deserts on a world map.

RIVERS
+ The teacher will explain to the class the three courses of a river.
• Natural channels that carry rainwater or water from melted ice or snow from mountains to plains, lakes and seas.
• These channels start as streams of water and join together and become a river.
• River passes through three stages in its course.
• The Upper (young) course – where the river originates. The river flows very fast here and cuts channels in the mountains while making its way. This creates waterfalls, canyons and rapids.
• The Middle course – the river comes down from the mountains and flows through the plains. The speed of the river decreases and the river becomes wider. It starts creating loops called meanders.
• The Lower (old) course – the river becomes slow and joins a bigger water body like a sea. It deposits all the silt and sand it had been carrying near the mouth (the place where a river joins a lake or a sea) that forms a triangular-shaped land called delta.

__________ ACTIVITIES __________
K. The largest delta is formed by the Ganga and the Brahmaputra rivers before they join the Bay of Bengal. The teacher will ask the students to find out the name of the delta.
L. Ask the class to name some famous rivers from the different continents.
M. The teacher may take up Exercises A and B from the READ AND ANSWER section in the class.
N. The teacher shall also discuss Exercise G from DO AND LEARN in the class.
O. Exercise C from READ AND ANSWER shall be given as homework.
P. The teacher shall divide the class into five groups and ask them to carry out the project given in Exercise F of DO AND LEARN as homework.
Q. The teacher shall also ask the students to individually write four points on which landform would they like to go to for a vacation and the reasons for their respective choices.
WORKSHEET 1

A Write T for True or F for False. Rewrite the incorrect sentences.
1. 71 per cent of the Earth’s surface is covered by water and 29 per cent by land. _____

2. A number of streams join together to form a range. _____

3. Plateaus are mostly found on the leeward side of the mountains. _____

4. Most ancient civilizations flourished on mountains. _____

5. Hot deserts have dense vegetation and heavy rainfall. _____

6. In the upper course, the river cuts a deep and narrow channel in the mountains. _____

7. Man-made channels start as streams and join together to form rivers. _____

B Name the following.
1. A mountain range in South America
2. An old mountain range in India
3. The highest plateau in the world
4. The continent in which the highest plateau lies
5. A plateau in North America

C Define the following.
1. Tableland
2. Lowlands
3. Mouth of a river
4. Delta
A  Tick (√) the correct answers.

1. This landform rises more than 900 metres above the mean sea level.
   a. plateau  
   b. hill  
   c. dune  
   d. mountain  

2. The difference in height and shape of mountains is due to their
   a. area.  
   b. slopes.  
   c. age.  
   d. peaks.  

3. Plateaus have cold climate because of
   a. high altitude.  
   b. high latitude.  
   c. nearness to sea.  
   d. heavy rains.  

4. ______________________ are more thickly populated than mountains and plateaus.
   a. Rivers  
   b. Deserts  
   c. Plains  
   d. Cities  

5. Most deserts are found on the ______________________ side of continents and on the
   ______________________ side of mountains.
   a. eastern, northern  
   b. northern, southern  
   c. western, windward  
   d. western, leeward  

6. The valley widens when a river leaves the mountain and enters the
   a. sea.  
   b. plateau.  
   c. plains.  
   d. canyons.  

B  Look at the picture. Answer the questions.

1. What does the picture show?

2. In which course is this feature formed? Give an example of this feature.
ANSWERS
MAIN COURSEBOOK

GET SET!

2. plateau 3. desert 4. mountains 5. island 6. plains

CHECKPOINT

1. mountain 2. plateau 3. plain

READ AND ANSWER

A. 1. d 2. c 3. b 4. c 5. a
B. 1. e 2. d 3. a 4. c 5. b

C. 1. Mountains are very useful to us. They act as a barrier against cold and hot winds. Rivers originating from mountains provide water for irrigation. The slopes of mountains have rich pasture lands and valuable forests. Some mountains are rich in minerals.

2. Plateaus have grasslands on which cattle and sheep are reared. Some plateaus are rich in mineral deposits.

3. Plains have fertile soil and are suitable for agriculture. Big cities and towns are located on plains. Roads, railways, aerodromes and canals can be easily constructed in the plains. So, plains are thickly populated.

4. Desert regions have very hot days and cold nights. The region experiences frequent dust storms. Sand dunes or hills of sand are very common in deserts. Deserts have very little vegetation due to less rainfall.

5. The river deposits the silt it carries near the mouth, forming a triangular-shaped land called delta.

D. Jammu & Kashmir is a thinly populated state because it is located in the mountains. Mountains have an unsuitable climate and shortage of flat land. Further, there is difficulty in transportation as well.

DO AND LEARN

5. Antarctica – Antarctic Plateau 6. Africa – Ahaggar Plateau

(Accept these or any other relevant response.)
MY PAGE (FOR LESSONS 1 – 4)

A.

WORKSHEET 1

A. 1. T
2. F – A number of mountains join together to form a range.
3. T
4. F – Most ancient civilizations flourished in the plains.
5. F – Hot deserts have little vegetation and less rainfall.
6. T
7. F – Natural channels start as streams and join together to form rivers.

B. 1. Andes
2. Aravalli range
3. Tibetan Plateau
4. Asia
5. Colorado Plateau (Accept these or any other relevant response.)

C. 1. A tableland is also called a plateau. It is a highland with a flat top. It rises abruptly from the surrounding land and therefore has steep slopes.
2. Plains are also called lowlands. These are flat, low-lying land surface.
3. The place where a river joins a sea or lake is called its mouth.
4. A delta is a triangular-shaped land, formed when the river deposits silt at its mouth.

WORKSHEET 2

A. 1. d
2. c
3. a
4. c
5. d
6. c

B. 1. The picture shows a river forming meanders.
2. This feature is formed in the middle stage or the mature stage of the river. Here, the speed of the water decreases and the river develops loops called meanders. River Ganga forms meanders between Allahabad and Varanasi.