

## Class-5 S.ST W4

### LESSON 3 – VARIED CLIMATE

**This chapter contains all about –**

1. The difference between weather and climate.
2. The factors behind climate variations.
3. The heat zones of the world.

#### **WEATHER**

Weather is the condition of the atmosphere at a particular place and time. It keeps on changing.

**FOR EXAMPLE**, in the morning the weather may be cool , at noon it may be very hot and in the evening it may become pleasant.

#### **CLIMATE**

Climate is also weather. The average weather conditions over a long period of time, of a region, is termed as the **climate** of that region. A new **season** starts with the change in climate.

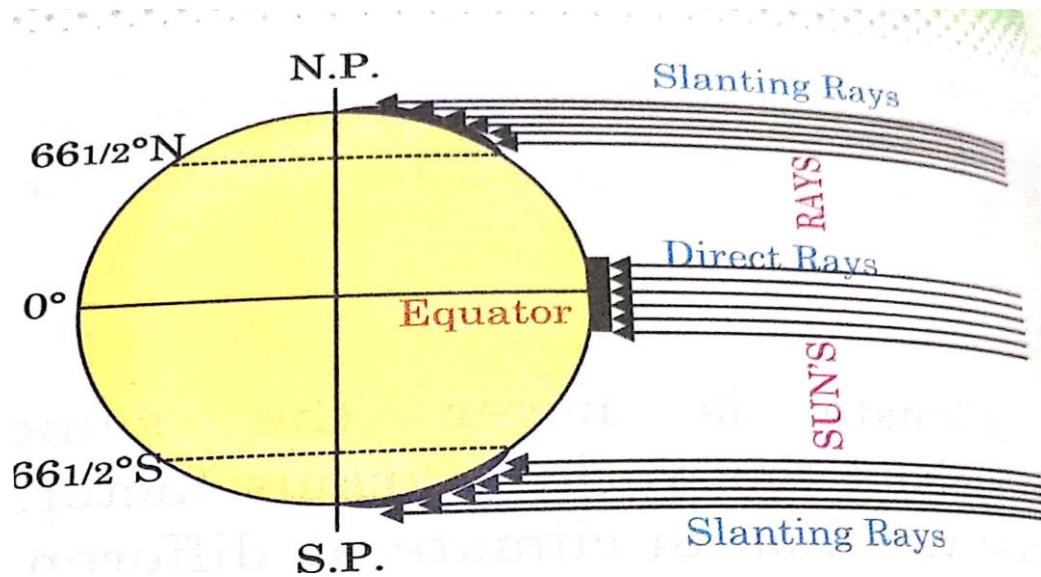
**FOR EXAMPLE**, with the start of rains, there is a change in climate. This change brings an end to the summer season, and the rainy season starts.

#### **FACTORS BEHIND CLIMATE VARIATION**

The climate of a place is affected by several factors such as distance from the equator , height above sea level , distance from the sea , direction of winds , humidity and rains.

##### **1. DISTANCE FROM THE EQUATOR**

In the figure , we see that the sunrays are falling directly near the Equator. At places away from the Equator, sunrays are falling in a slanted way. The direct sunrays fall on a small area near the Equator. So, this small area receives more heat from the suns and has a higher temperature. That is why it remains hot throughout the year.



As we move away from the Equator, the sunrays become slanted. Therefore, the sunrays or the heat of the sun is spread over a large area away from the sun. It results in lower temperature of this area, so they are cooler.

## 2. HEIGHT ABOVE SEA LEVEL

The height of a place above sea level also affects its climate. The higher the place is above sea level, the cooler it will be. Therefore, temperature on top of the mountains is lower than the temperature at sea level. Two places may be situated at the same distance from the equator and they may also be receiving the same amount of heat energy from the sun. But the place which has more height above sea level will be cooler as compared to the place which has less height above sea level.

## 3. DISTANCE FROM THE SEA

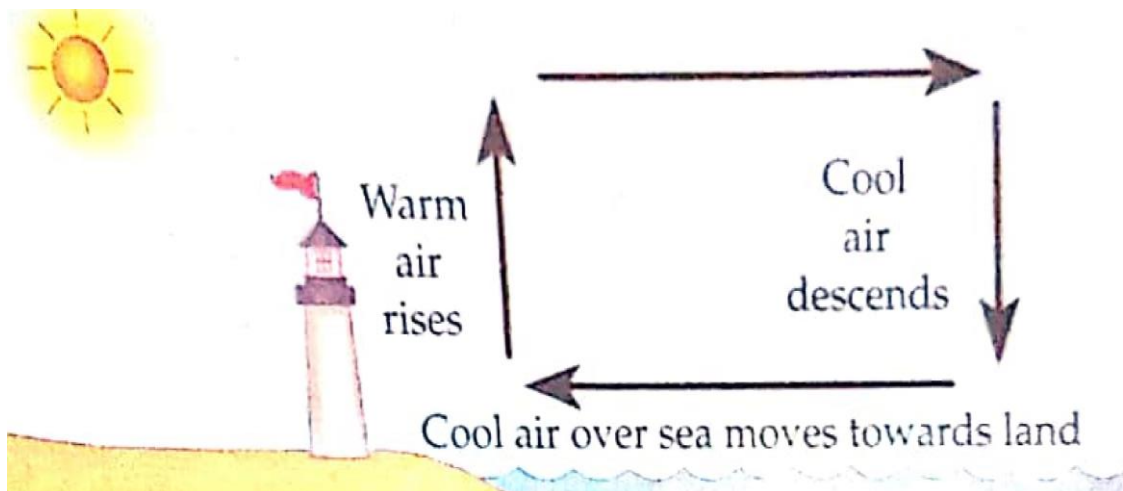
The climate of a place is also affected by its distance from the sea places which are situated far away from the sea are hot in summers and cold in winters. Coastal areas have moderate climate throughout the year. A moderate climate is neither too hot nor too cold. For example: Mumbai is situated near the sea coast, its climate is moderate. But Lucknow, being away from the sea, experiences extreme summers and winters.

## 4. DIRECTION OF WINDS

The direction from which winds blow also affect the climate of a place. Winds coming from the sea carry water vapour and bring rain. Winds coming from hot areas increase the temperature of a place. Similarly, winds coming from cold areas decrease the temperature of a place.

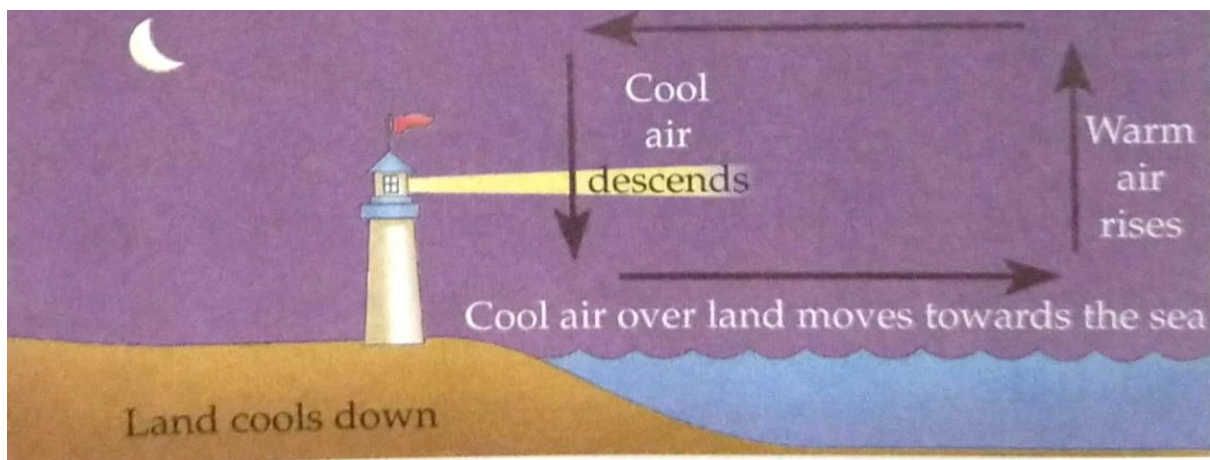
The direction of local winds is determined by the daily temperature variations as shown in the figure.

## SEA BREEZE



During the day, the land heats up faster and this causes the air above it to warm up. The warm air then rises up and makes way for the cool air from the sea to blow towards the land. This is called sea breeze.

## LAND BREEZE



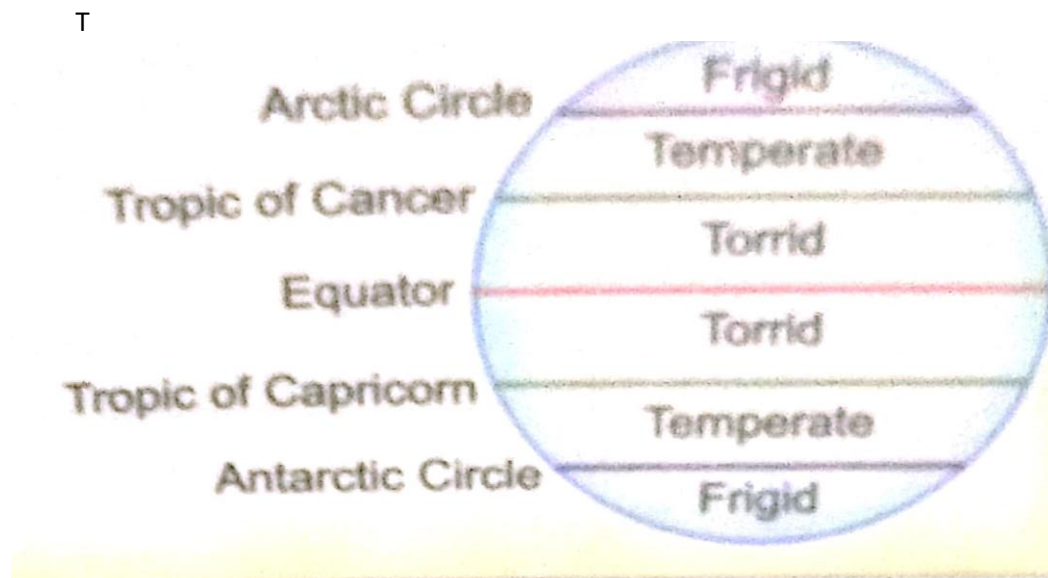
At night, the sea remains warm. The air above the sea warms up and makes way for the cool breeze from the land to blow towards the sea. This is called land breeze.

### 5. HUMIDITY AND RAINS

The moisture or water vapour present in the air is known as humidity. Humidity also affects the climate of a place as it causes rainfall. In cold places, humidity causes snowfall instead of rainfall. The climate in the deserts is extremely hot because they receive little or no rainfall. This is because the winds which blow over the desert regions are dry and have no moisture. Humidity and rainfall greatly affect the climate of a region.

## HEAT ZONES OF THE WORLD

The Earth is divided into three heat zones depending on the different amount of heat energy received by different regions.



### 1. TORRID ZONE

The area between the Tropic of Cancer and the Tropic of Capricorn is known as the Torrid Zone. It is the hottest of all the three zones as it receives direct rays of the sun throughout the year. The Torrid Zone is also called the **Hot Tropical Zone**.

### 2. FRIGID ZONE

The area around the poles is known as the Frigid Zone. In the Northern Hemisphere, the Frigid Zone extends from the North Pole to the Arctic Circle. In the Southern Hemisphere, it extends from the South Pole to the Antarctic Circle. This zone is very cold.

### 3. TEMPERATE ZONE

The area between the Torrid and Frigid Zones in both the hemispheres is called the Temperate Zone. It is neither very hot nor very cold.

## LET'S RECALL

1. The condition of the atmosphere at a particular time and place is called weather.
2. Climate is the average weather conditions of a particular place over a long period of time.
3. Winds coming from the sea carry water vapour and bring rain.
4. The world is divided into three Heat Zones.

## BOOK EXERCISES (to be done in book)

### A. Fill in the blanks.

1. Weather changes over a short period of time.
2. A moderate climate is neither too hot nor too cold.
3. Winds coming from hot areas raise the temperature of the places where they blow in.
4. Land breeze is also called evening breeze.
5. The areas around the sea coast are more humid than those located away from the sea.

### B. Write true or false.

1. Climate is also weather. True
2. A new season does not start with the change in climate. False
3. Weather and climate are not controlled by the sun. False
4. Climate is very hot in the frigid zone. False
5. The higher the place above sea level, the cooler it will be. True

### C. Choose the correct option.

1. Which of the following factors does not affect the climate of a place?  
(a) Distance from the Equator (b) Altitude (c) Type of soil  
Ans- (C)
2. What type of climate does Mumbai have?  
(a) Moderate (b) Extremely hot (c) Extremely cold  
Ans- (a)
3. The wind blowing from the sea to the land is called  
(a) Sea breeze (b) Land breeze (c) Evening breeze  
Ans- (a)
4. Rain occurs when the humidity of the air  
(a) Rises to a high level (b) falls to a low level (c) does not change at all  
Ans- (a)

### D. MATCH THE COLUMN .

- |                     |                                 |
|---------------------|---------------------------------|
| 1. Poles            | a. Low temperature (3)          |
| 2. Temperate zone   | b. Wetter than inland areas (4) |
| 3. Top of mountains | c. Moderate climate (2)         |
| 4. Coastal areas    | d. Slanted sunrays (1)          |

### E. ANSWER THE FOLLOWING QUESTIONS (TO BE DONE IN NOTEBOOK)

#### Q1. Define climate.

Ans. Climate is the same type of weather or atmospheric conditions that prevail at a place for a long time.

**Q2. Write in short about the factors which affect the climate of a place.**

Ans. The factors responsible for climate variation are: distance from the equator, height above sea level, distance from the sea, direction of winds, humidity and rains.

**Q3. How does the altitude of a place affect its climate?**

Ans. The height (altitude) of a place above sea level also influences its climate. The higher the place is above sea level, the cooler it will be. This happens because temperature decreases as the height increases above sea level.

**Q4. Why does the area near the Equator remain hot throughout the year?**

Ans. The vertical or direct sunrays fall or concentrate on a small area near the Equator. So, this small area receives more heat from the sun and has a higher temperature. That is why it remains hot throughout the year.

**Q5. Describe the location and climate of the heat zones of the Earth.**

Ans. The Earth is divided into three heat zones depending on the varying amount of heat energy received by different regions. The three heat zones are-

- (a) **TORRID ZONE**- the area lying between the Tropic of Cancer and the Tropic of Capricorn is called the Torrid Zone. It is the hottest part of the Earth because sunrays fall vertically or direct on this area. The Torrid Zone is called the Hot Tropical Zone.
- (b) **FRIGID ZONE** – two regions near the two poles of the Earth are called the Frigid Zone. These two regions are:
  - (i) The area between the Arctic Circle and the North Pole in the Northern Hemisphere.
  - (ii) The area between the Antarctic Circle and the South Pole in the Southern Hemisphere.
  - (iii) In the Frigid Zone, climate is very cold.
- (c) **TEMPERATE ZONE**-The area lying between the Torrid and Frigid Zones in both the hemispheres is called the Temperate Zone. It is neither very hot nor very cold.

**Q6. What is the difference between sea breeze and land breeze?**

Ans-SEA BREEZE- When the air over the land is warmer than the air over the sea (or a water body), the wind blows from the sea to the land. This wind is called sea breeze. As this often occurs in the morning, sea breeze is also called morning breeze.

LAND BREEZE- When the air over the land is cooler than the air over the sea, the wind will blow from the land to the sea. This wind is called land breeze. As this usually occurs in the evening, therefore land breeze is also called evening breeze.

**NOTE:**

DRAW, LABEL AND COLOUR THE FOLLOWING DIAGRAMS IN YOUR NOTE BOOK.

1. HEAT ZONES OF THE EARTH
2. THE FLOW OF SEA AND LAND BREEZE

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