

# Winds, Storms And Cyclones

## 9

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### INTRODUCTION

Nature has provided the way of life on the earth. Clean water to drink, air to breathe, healthy food to eat and many other things. These are our fundamental needs. On the other hand there are many destruction caused by nature from time to time.

Landslide, flood, earthquake, cyclone, drought, storm etc. are the destruction of many forms. Air moves from the region where the air pressure is high to the region where the pressure is low. The greater, the difference in pressure the faster the air moves. In nature there are several situations, where warm air rises at a place. The air pressure at that place is lowered. The cold air from the surrounding areas rushes in to fill its place. This sets up convection in air and causes a storm.

### CYCLONES

Cyclone is developed when low pressure area is created with higher pressure all around. It consists of an intense whirl in the atmosphere with very strong cyclones which are associated with strong winds, tidal waves, heavy rains etc.



Cyclone

### **Cyclone is a form of storm**

The centre of a cyclone is a calm area. It is called the eye of the storm. A large cyclone is a valiantly rotating mass of air in the atmosphere, 10 to 16 km high. The diameter of the eyes varies from 10 to 30 km. It is a region free of clouds and has light winds. Around this calm and clear eye there is a cloud region of about 140 km in size. In this region, velocity of the wind often exceeds 100 km/hr. It moves steadily over the ocean surface but after reaching the coastal areas, it becomes weak due to friction with land and shortage of moisture. The formation of a cyclone is a very complex process.

Cyclones are very destructive strong winds which push water towards the shore even if the storm is hundreds of kilometre away. These are the primary indications of an approaching cyclone. The water waves produced by the wind are so powerful that a person cannot overcome them.

The low pressure in the eye lifts water surface in the center. The rising water may be as high as 4-13 meters. It appears like a water wall moving towards the shore. As a result, the sea water enters the low lying coastal areas. Causing severe loss of life and property. It also reduces the fertility of soil. The tropical cycles are accompanied by heavy rains and are often disastrous.

Due to cyclone trees get uprooted, houses collapse, communication lines get disrupted leading to heavy loss of life and money and property.

A cyclones may have different name in different parts of the world. It is also called a hurricane.

## Precautions against Cyclones

- We should be careful about the warnings of cyclones issued by the meteorological department through T.V., radio newspapers.
- Avoid driving on roads having standing water as water may have damaged the roads.
- Do not drink water that could be contaminated. Always store drinking water for emergency.
- Keep the emergency phone numbers of services like police, fire brigade, medical centres etc.

## THUNDER STORMS

Thunderstorms are developed in hot, humid tropical areas like in India very frequently the rising temperature produces strong winds. These winds carry water droplets upwards. After some time these droplets freeze and fall down again. The swift movement of the falling water droplets along with the rising air create lightening and sound. During thunderstorms, we should not shelter under an isolated tree. We should not sit near a window, metal sheds because they are not safe, Don't go outside the house.



Thunderstorm

## PRECAUTION AGAINST FLOODS

There is very heavy rainfall in some place therefore water over flows beyond its normal course. When a river overflow its bank and water spreads in the surrounding land, this situation is called flood. The danger to life and property due to floods is called flood hazard. The maximum amount of water that a river can hold is known as the river's channel capacity. There are many reasons of flood. Some of them are given ahead :

- Heavy rainfall and deforestation.
- Blocking of river channel by landslides.
- Strong tides and storms in the sea.
- Change in the course of a river.
- Less discharging capacity of the channel.
- Lack of canal and mismanagement of rain water.

## Do You Know ?

As a hurricane forms, the pressure falls in the centre and is called the 'eye of the storm'. It could be 16 to 32 km across. Although there are strong winds around the 'eye', within it everything is calm. Hurricanes can be huge. Some can be 800 km across!



Flood scene

## Precautions against Floods

- We should not avoid flood forecasting.
- Keep a first aid kit and some medicines for snake bites and diarrhoea.
- Keep dry food, salt etc.
- Keep a radio, torch, matchbox, candles etc.
- Water proof bags for keeping medicines and food items.
- Turn off power and disconnect electrical appliances.

## EARTHQUAKE

Sudden movements below the earth's crust cause vibrations or shaking of a part of the earth's surface. Such movements and shaking of the earth's crust is called an earthquake. There are



various reasons of earthquake such as shifting of plates of mountains, convection current inside the earth etc. An earthquake can cause serious damage to life and property.



Earthquake

## Precautions against Earthquake

- Build the houses according to proper measurements of earthquake.
- Hide under the strong objects like table etc.
- Don't stand near the wall.
- At the time of earthquake, come to the open area.

### Know the Keywords :

Wind : A movement of air in the atmosphere.

Storm : A severe atmosphere disturbance accompanied by very strong high speed wind.

Cyclone : Strong circulatory winds in the tropical region.

### Point to Remember

- Cyclone consists of an intense whirl in the atmosphere with very strong cyclones which are associated with strong winds tidal waves, heavy rains etc.
- Thunderstorms are developed in hot, humid tropical areas like in India very frequently the rising temperature produces strong winds.
- Earthquake means sudden movements below the earth's crust cause vibrations or shaking of a part of the earth's surface.

## EXERCISE TIME

### A. Answer the following questions :

1. What are natural destructions ?
2. What is thunder storm ? How is it generated ?
3. Write about the eye of a cyclone.

4. What is a cyclone ? Write its any two effects.
5. What is flood and what are the causes of it ?
6. What is earthquake ? Write all precautions against it.
7. What precautions should be taken in the cyclone affected areas ?

**B. Fill in the blanks :**

1. The center of the cyclone is called the \_\_\_\_\_ of the storm.
2. The diameter of the eye varies from 10 to \_\_\_\_\_ km.
3. The height of the water due to cyclone is \_\_\_\_\_ metre.
4. Heavy rainfall results in \_\_\_\_\_.
5. Sudden movements below the earth's crust is called \_\_\_\_\_.

**C. Tick (✓) the correct option :**

1. Flood can not be caused due to :  
(i) afforestation  (ii) change in the course of river   
(iii) strong tides  (iv) blocking of river channel by land slides
2. Shaking of the earth's crust causes :  
(i) floods  (ii) cyclones   
(iii) drought  (iv) earthquakes
3. During thunder storm, we should shelter :  
(i) under a tree  (ii) inside a bus or car   
(iii) in a pucca house  (iv) under a metal shed
4. Cyclones are not associated with one of the following :  
(i) heavy rains  (ii) tidal waves  (iii) strong winds



Creative Work

- Take an interview of those people who have seen the tornado or cyclone.