# NCERT Class 7 Science Chapter 8 Winds, Storms and Cyclones Summary and Notes Pdf

Chapter 8 of the CBSE Class 7 Science Notes: Winds, Storms, and Cyclones Class 7 Science Notes for Quick Revision is available as a free pdf download. Chapter 8 of the NCERT Science Notes for Class 7 on Winds, Storms, and Cyclones is provided here. A crucial chapter in class 7 is chapter 8. On the final exam, students must respond to several questions connected to this chapter. In addition, this chapter teaches pupils essential skills applicable in the real world. Because of this, we have produced class 7 notes on winds, storms, and cyclones.

## NCERT Class 7 Science Chapter 8 Winds, Storms and Cyclones Introduction

Our planet, the earth, is surrounded by air. The term "atmosphere" refers to the air layer surrounding the world. We call the air in motion wind. The sun's heat creates it, or you might say that the wind is created by the uneven heating of various parts of the planet.

## NCERT Class 7 Science Chapter 8 Winds, Storms and Cyclones Summary

The wind is the term for the moving air. All objects experience pressure from the air. Air pressure is what causes this. Reduced air pressure is present in combination with increased wind speed.

Air flows from an area of higher pressure to one of lower pressure. The air travels more quickly when the pressure difference is more significant. Heat causes air to expand and occupy more space. As a result, it becomes lighter. Thus, warmer air is lighter than cold air. That is what causes the smoke to rise. When heated air rises, the air pressure decreases, causing cooler air to travel toward that location.

Because of the earth's unequal heating, wind currents are created. Fast winds accompany reduced pressure. The sun's heat is concentrated in areas closer to the equator. These areas experience warm air. The colder air from the area in the 0–30 degree latitude band on each side of the equator flows in as the warm air rises. The air is cooler near the poles than in latitudes of around 60 degrees. The cold wind from the arctic regions rushes in to replace the warm air that rises to the surface at these latitudes. The poles to the warmer latitudes are connected to create a wind circulation system.

Because land and water heat up differently in the summer, the land closer to the equator heats up more quickly and typically has a greater temperature than the seas' water. As a result, the wind blows from the land toward the ocean throughout the winter. The ocean-derived wind brings rain. It takes place during the water cycle. It rains because the monsoon winds deliver moisture. In the summer, winds originate from the coasts and go inland. They are referred to as

monsoon winds. Various conditions can occasionally lead to natural disasters like cyclones and thunderstorms. They endanger the lives of people, animals, and plants.

## NCERT Class 7 Science Chapter 8 Winds, Storms and Cyclones Notes

### Air pressure

We feel pressure from the air surrounding us. The following activity demonstrates this:
Water heated over a flame is placed into a tin container. The lid is put on as soon as the water boils and maintained submerged in cold water. Unfortunately, the can's form appears to be distorting, as well.

**Inference:** The air inside the container decreases when cold water is poured over the steam condenses. The can is compressed by outside air and gets distorted as a result. This demonstrates that air applies pressure.

**Wind Currents**
**Wind**
The wind is the air's inherent tendency to travel in one direction due to a current.

**Winds and the change in pressure**
Air pressure drops when the wind speed increases.
From a high-pressure area to a low-pressure area, air moves.

**Warm air and cool air**
Air expands and rises when heated. It grows lighter because it expands, taking up more room. Cool air is heavier than warm air. Smoke always rises as a result.
The air pressure decreases as warm air rises. Then the surrounding chilly air rushes in to take its place.

**Wind Currents**
Wind current is a horizontal air movement that occasionally moves with significant force from high pressure to low pressure regions.

**Wind currents resulting from unequal land and water heating**
Water loses and absorbs heat more slowly than land does. In the summer, winds blow from the cooler oceans towards the hotter land. These winds move moisture, which results in monsoons. This wind's flow is reversed during the winter, moving from the land to the sea.

**Rain**
Rain occurs as moisture-carrying winds from the oceans and seas move toward land. After a certain point, the moisture in the clouds becomes saturated and begins to pour down as rain, which we refer to as monsoons.

**Cyclones and storms**
Uneven heating in between the equator and the poles causes wind currents.
The areas closest to the equator are the ones that experience the most heat from the sun, and warm air rises. Air from latitudes 0-300 comes in from the north and south to replace it.
Similar to how air at the poles is significantly colder than air in latitudes 600, which is often milder. The chilly air from the poles rushes inside to take its place as this warmer air rises. As a result, the earth's surface heats up unevenly, which causes wind currents to move from the poles to warmer latitudes.

**Thunderstorms**
In scorching and humid places like India, thunderstorms form. The high temperatures create powerful upward currents, carrying water vapor to great heights where it condenses and descends once more. They are accompanied by lightning and powerful winds as a result of the extreme pressure changes.

**Conversion of a thunderstorm into a cyclone**
Heat is released when water turns from vapor to rain in the atmosphere during a thunderstorm. This heats the surrounding air and lowers pressure.
Air rushes in quickly towards the storm's center as a result. Large low-pressure systems are generated during this cycle, and intense, high-speed winds whirl around them. A cyclone is forming in this situation.

**Cyclone Structure**
A quiet region known as the eye lies at the center of a cyclone. Its diameter ranges from 10 to 30 kilometers.
A 150 km2 area of clouds surrounds the eye. Additionally, winds here may gust up to 250 km/h.

As the wind flows away from the eye, its speed progressively diminishes.

**Various Cyclone Types**
Different regions of the world have different names for cyclones. For example, in the American continent, they are referred to as hurricanes, and in Japan, typhoons.

**Tornado**
Within a cyclone, a tornado develops. It appears like a revolving funnel that collects dirt, dust, and other particles at the bottom and expels them at the top.
It can travel up to 300 km/hr and has a diameter of one meter to one kilometer.

**Effect of Coriolis**
The Coriolis effect is the force created by the earth's rotation that seeks to direct winds to the left or right.

### Safety precautions and the role of cutting-edge technology

**How to respond if lightning follows a storm**
Don't hide out behind single trees.
If you're in a forest, find a tiny tree to hide beneath.
Never lay on the ground.
Avoid attempting to hide behind an umbrella.
Do not sit next to metal sheds or uncovered garages.
If in water, immediately exit and enter a structure.
A safe location to hide is inside of a vehicle or a bus.

**Tornado safety precautions**
forecasting and warning system for cyclones.
Rapid warning systems for authorities, fishers, and residents of danger zones.
Building of hurricane shelters and immediate evacuation plans.
Stay away from downed electrical wires.
Collaboration with rescue crews and other parties.

## NCERT Class 7 Science Chapter 8 Winds, Storms and Cyclones Conclusion

A cyclone is a type of natural disaster brought on by variations in atmospheric pressure. A cyclone is a windstorm that rotates erratically. Cyclones may be harmful. Thunderstorms are where cyclones start. Thunderstorms are frequent in tropical areas like India, but relatively few of them develop into cyclones. A storm is an atmospheric disturbance that typically includes wind in addition to rain, snow, hail, sleet, thunder, and lightning, or a significant amount of snow, rain, or hail. The wind blows between 64 and 72 miles per hour.

**FAQ :**
Q1. What are the many storm types?
Answer.
1. Hailstorms.
2. Winter storms
3. Hurricanes
4. ice storms
5. Lightning
6. Thunderstorms
7. Tornadoes
8. Tropical storms.

Q2. What are a cyclone's effects?

Answer. Tornadoes, torrential rain, powerful winds, significant storm surges close to landfall, and tropical cyclones are all consequences.

Q3. What exactly is a tornado?
Answer. a column of air touching the ground and rapidly whirling; typically associated with the base of a thunderstorm.