

CLASS 8

SCIENCE

NCERT SOLUTIONS

NCERT Solutions for Class 8 Science Chapter 6: Pressure, Winds, Storms and Cyclones – Free PDF Download

Chapter 6 — Pressure, Winds, Storms and Cyclones — covers pressure as force spread over area, how liquids exert pressure in all directions and it increases with depth, how differences in air pressure create wind, how thunderstorms and lightning form, and how storms intensify into cyclones over warm ocean water. ...

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Chapter 6 — Pressure, Winds, Storms and Cyclones — covers pressure as force spread over area, how liquids exert pressure in all directions and it increases with depth, how differences in air pressure create wind, how thunderstorms and lightning form, and how storms intensify into cyclones over warm ocean water. This chapter has 6 in-text questions plus a full 13-question end-of-chapter exercise ('Keep the Curiosity Alive'). Below are complete, verified answers, sourced directly from the official NCERT PDF and cross-checked against independent sources. These Class 8 Science Chapter 6 solutions are also useful as quick revision notes before exams.

NCERT Solutions for Class 8 Science Chapter 6: Pressure, Winds, Storms and Cyclones

In-Text Questions (6 Questions)

1. Why do fallen leaves rise in the air, or trees bend, when a strong wind blows?

The moving air exerts a force (wind pressure) on the leaves and trees; strong enough wind pressure lifts light leaves off the ground and bends flexible tree branches.

2. Can the shape or size of a bag's straps make a difference in comfort, even if both bags are equally heavy?

Yes — a narrow strap spreads the bag's weight over a small area of the shoulder, producing high pressure and discomfort, while a broad strap spreads the same weight over a larger area, producing lower pressure and more comfort.

3. (a) Why are overhead tanks kept at a height? (b) On the 2nd floor of a 3-storey building with the tank on top, would you or a friend on the 1st floor get a stronger stream of water?

(a) A greater height means a taller water column, and liquid pressure increases with the height of the column — this pushes water out of taps with more force. (b) The friend on the 1st floor has a taller water column above their tap than you do on the 2nd floor, so **the 1st-floor friend gets the more powerful stream.**

4. Why does water spurt out like a fountain from a leaking joint or hole in a water pipe?

Water inside the pipe is under high pressure (from the height of the supply tank) and pushes outward in all directions; a hole gives this pressurised water a narrow opening to escape through, so it shoots out forcefully like a fountain.

5. What happens when an inflated balloon is left with its mouth open?

The air trapped inside is at higher pressure than the air outside, so it rushes out through the open mouth from the high-pressure region to the low-pressure region until the balloon deflates.

6. Does the difference in air pressure have anything to do with the formation of wind?

Yes — wind is simply air moving from a region of higher pressure to a region of lower pressure; without a pressure difference, there would be no wind.

Keep the Curiosity Alive — End-of-Chapter Exercise (13 Questions)

1. Choose the correct option: (i) After pouring stops, water level in connected vessels P, Q, R will be... (ii) Rubber sucker M on a smooth surface and N on a rough surface... (iii) To get more water pressure at the ground floor, one should... (iv) For two vessels A, B with water to the same level but different base areas, comparing pressure P and force F at the base...

(i) **Equal in all three vessels** (liquid finds its own level). (ii) **M sticks, N does not** (a smooth surface allows a proper airtight seal). (iii) **Increase the height H** at which the tank is placed. (iv) **$P_A = P_B$, $F_A < F_B$**

(pressure depends only on height, but force also depends on the base area).

2. True or False: (i) Air flows from higher to lower pressure (ii) Liquids exert pressure only at the bottom of a container (iii) The weather is stormy at the eye of a cyclone (iv) During a thunderstorm it's safer to be in a car.

(i) **True.** (ii) **False** — liquids exert pressure in all directions, including sideways on the container's walls. (iii) **False** — the eye of a cyclone is calm; the stormiest winds circle around it. (iv) **True** — a car's metal body acts as a shield that conducts a lightning strike safely to the ground around the occupants.

3. A boy lies horizontally in one figure and stands vertically in another, on loose sand. In which does he sink more, and why?

He sinks more **standing vertically**. His weight (force) is the same in both cases, but standing puts it on the small area of his feet, giving much higher pressure than lying down, which spreads the same weight over his whole body's contact area.

4. An elephant weighing 20000 N stands on 4 feet, each covering 0.25 m². Find the pressure it exerts on the ground.

Total area = $4 \times 0.25 = 1 \text{ m}^2$. Pressure = Force $\div$ Area = $20000 \text{ N} \div 1 \text{ m}^2 = 20000 \text{ Pa}$.

5. Boat A (base 7 m²) carries 5 people; Boat B (base 3.5 m²) carries 3 people. Each person weighs 700 N. Which boat's base feels more pressure, and by how much?

Boat A: $(5 \times 700) \div 7 = 3500 \div 7 = 500 \text{ Pa}$. Boat B: $(3 \times 700) \div 3.5 = 2100 \div 3.5 = 600 \text{ Pa}$. **Boat B experiences more pressure, by 100 Pa.**

6. Would lightning occur if air and clouds were good conductors of electricity?

No — lightning results from a sudden discharge after electric charge builds up in clouds because air is a poor conductor (an insulator). If air and clouds conducted electricity well, charge would simply leak away continuously instead of building up, so no sudden discharge (lightning) would occur.

7. Two identical balloons A and B are connected to a bottle that's then filled with water to a certain height. Will both bulge, and equally?

Yes, both bulge, and equally — since the balloons connect to the bottle at the same height, the water pressure reaching each is the same, and being identically elastic, they expand by the same amount.

8. Explain how a storm becomes a cyclone.

Over warm ocean water, moist warm air rises rapidly and cools, so its water vapour condenses into raindrops, releasing more heat that warms the air further and drives it up even faster. This creates an intense low-pressure zone that pulls in surrounding air, which also starts rising. Earth's rotation makes this converging air spin, and the cycle repeats and intensifies, producing a large, organised, spinning system of cloud, wind and rain — a **cyclone**.

9. Trees along a coast bend on a summer afternoon. Which side, A or B, is land?

On a summer afternoon a sea breeze blows from sea to land (land heats faster, air over it rises, creating low pressure that pulls in cooler sea air). Since the trees bend in the direction the wind blows, the side the wind blows *toward* is land — **side A**.

10. Describe an activity showing air flows from high to low pressure.

Connect two identical uninflated balloons with a straw, one end tied into each balloon's neck; inflate only one balloon and seal it around the straw. Air will flow through the straw from the inflated (high-pressure) balloon into the uninflated (low-pressure) one until both balloons reach nearly the same size, showing that air moves from higher to lower pressure.

11. What is a thunderstorm, and how does it form?

In hot, humid regions, warm moist air near the ground rises, creating a low-pressure area that draws in cooler surrounding air, which also heats and rises — a continuous updraft. As this air rises and cools, its water vapour condenses into droplets that form clouds and eventually merge into raindrops (or ice). Strong up-and-down air currents inside these tall clouds cause ice particles and water droplets to collide and separate electric charge (ice becomes positive and collects near the cloud top; water droplets become negative and collect lower down). When the charge difference between the cloud base and the ground (or between cloud regions) becomes large enough, air's insulating property breaks down and a sudden electric discharge — lightning — occurs, rapidly heating the air to produce the sound of thunder. Strong wind, rain and this lightning/thunder together make a **thunderstorm**.

12. Explain the process that causes lightning.

Inside a storm cloud, rising and falling air currents make ice particles and water droplets collide repeatedly, transferring charge: lighter ice particles carrying positive charge get carried to the upper part of the cloud, while heavier water droplets carrying negative charge settle in the lower part. This charge separation makes the cloud base strongly negative, inducing a positive charge on the ground below. Air normally insulates these charges from meeting, but once the charge build-up is large enough, the air breaks down and a sudden, massive flow of charge — **lightning** — jumps between the cloud and the ground (or between clouds), releasing a bright flash and, from the resulting rapid heating and expansion of air, the sound of thunder.

13. Explain why holes are made in banners and hoardings.

A solid banner blocks moving air completely, so wind builds up high pressure on the side facing the wind and low pressure behind it; this large pressure difference creates a strong net force that can tear the banner or rip it from its supports. Holes let wind pass straight through, equalising the pressure on both sides and greatly reducing this net force, so the banner survives high winds intact.

Why This Chapter Matters

Pressure and its role in fluid behaviour underlies everyday engineering (why dams are thicker at the base, why tall water tanks work) and explains large-scale weather phenomena — sea breezes, thunderstorms and cyclones — that directly affect safety and daily life across India, especially during the monsoon and cyclone seasons.

Class 8 Science Chapter 6 – Notes and Extra Questions

Along with these NCERT Solutions, students can also use the [Class 8 Science Chapter 6 Extra Questions](#) and [Class 8 Science Chapter 6 Revision Notes](#) for quick revision and extra practice.