

motion
force
gravitation

NCERT

जिन्हे कोई मौका नहीं देता मेहनत उन्हें भी मौका देती हैं!

Sound
↓
wave (तरंग)
↓
pressure ↑

आज का

Topic ↗

Pressure X , Heat & Temp

indirect - Concept





Pressure

GAS
PRESSURE

GAS
PRESSURE

bar
00xkPa
psi



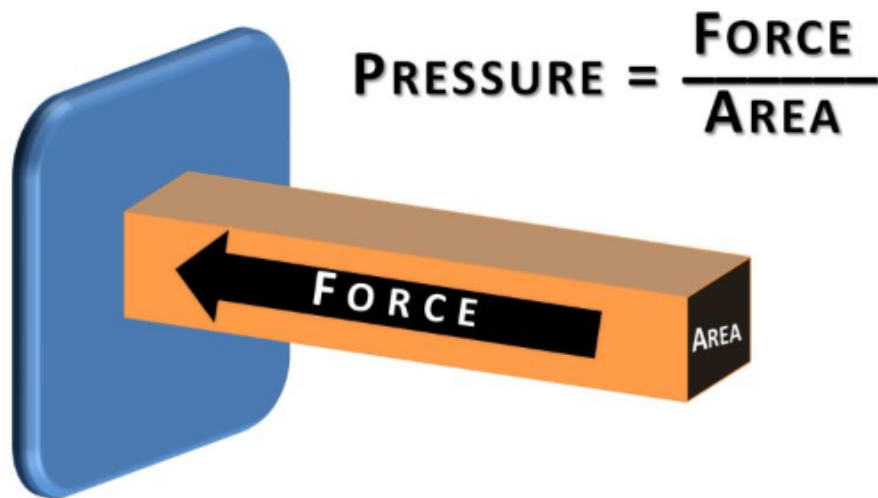
दाब (Pressure)

- किसी सतह की प्रति इकाई क्षेत्रफल पर लगने वाले बल को “दाब (Pressure)” कहते हैं।

Pressure is defined as **the force acting per unit area of a surface.**

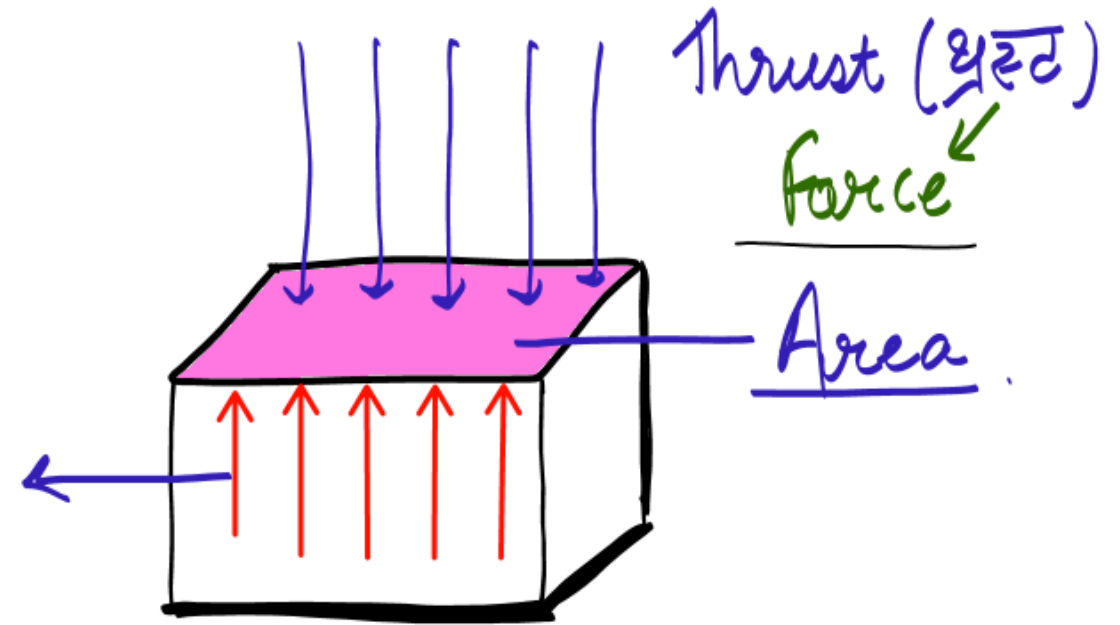
$$P = \frac{\text{force (int)}}{\text{Area}}$$

(cgs)



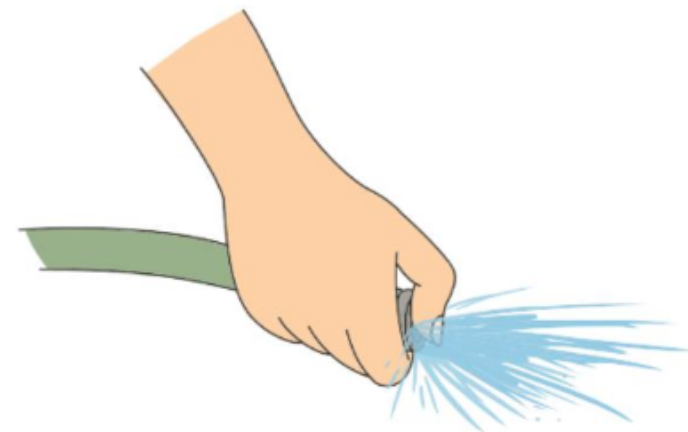
$$\text{PRESSURE} = \frac{\text{FORCE}}{\text{AREA}}$$

Pressure
(internal)

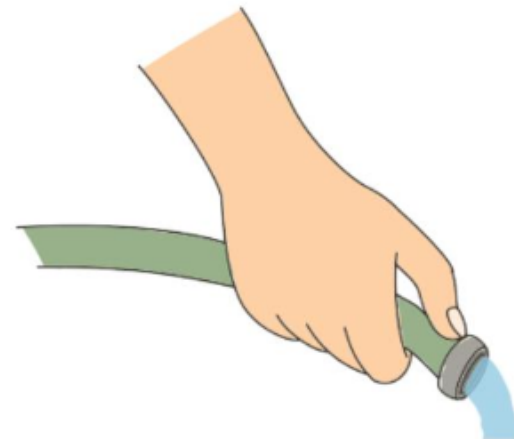


Action = - Reaction

High pressure



Low pressure



**दाब (Pressure) Units**

$$\text{Pressure} = \frac{\text{Force (बल)}}{\text{Area (क्षेत्रफल)}}$$

"दाब"

SI. unit

$$P_{\text{(Scalar)}} = \frac{\text{Newton}}{\text{m}^2} = \frac{\text{N}}{\text{m}^2} = \text{Pascal (Pa)}$$

दिशा ×

$$\text{C.G.S} \rightarrow \text{N} \rightarrow \text{dyne} \quad P = \frac{\text{dyne}}{\text{cm}^2}$$

$$\text{m}^2 \rightarrow (\text{cm})^2$$

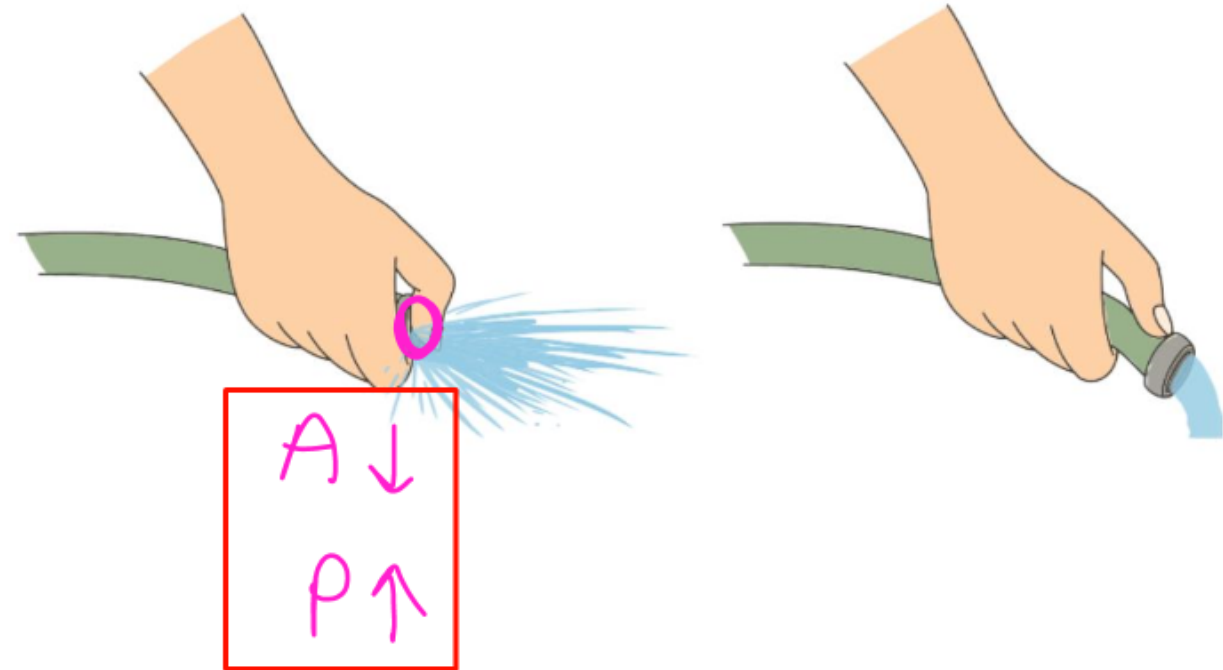
$$\text{Dimension} = P = \frac{F}{A} = \frac{MLT^{-2}}{L^2} = ML^{-1}T^{-2}$$

$$P = \frac{f}{A}$$

$$P \propto \frac{1}{A}$$

High pressure

Low pressure





Heel's



$A \downarrow, P \uparrow \rightarrow \text{Break}$



Pressure

clear

कल खत्म

— Next topic

— wave

— Sound

Biology $\rightarrow$ 1 Dec

6pm (शाम)



$A \uparrow$
 $P \downarrow$

1 Dec - 2 classes

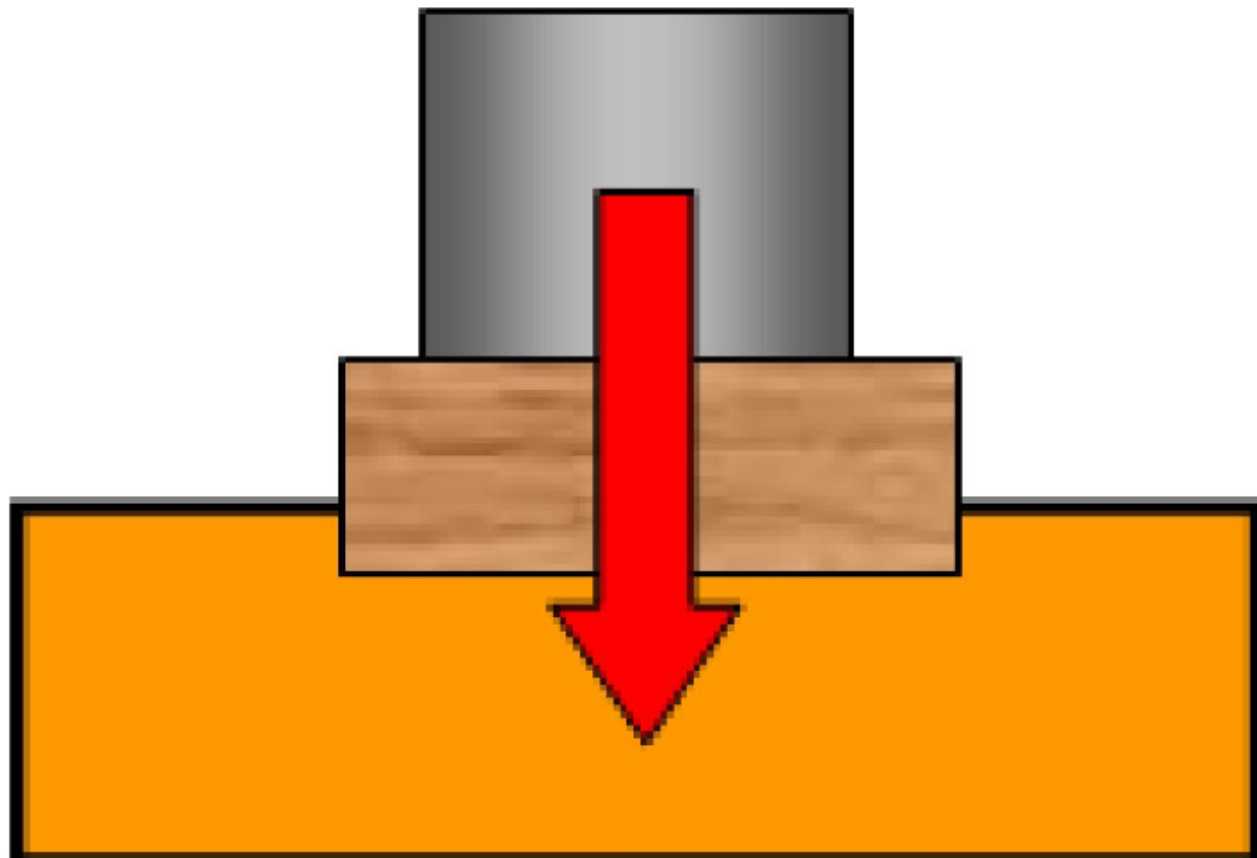
6pm - Biology

10Am - physics

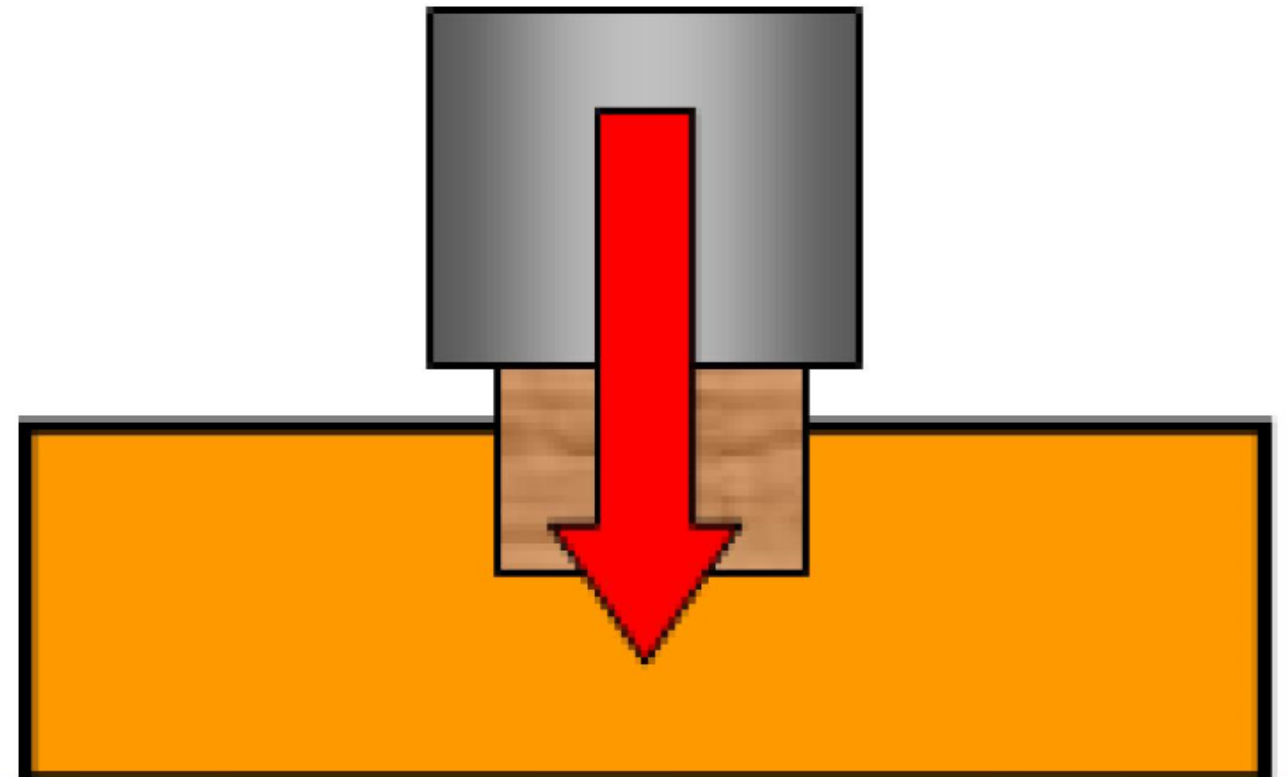




Low pressure



High pressure





$A \downarrow$
 $p \uparrow$



$A \uparrow$
 $p \downarrow$



PRESSURE AND TEMPERATURE RELATION

Volume
आयतन - Fixed
स्थिर

$$P \propto T$$

Clear

Volume
आयतन - Variable
बदलता

$$P \propto \frac{1}{T}$$

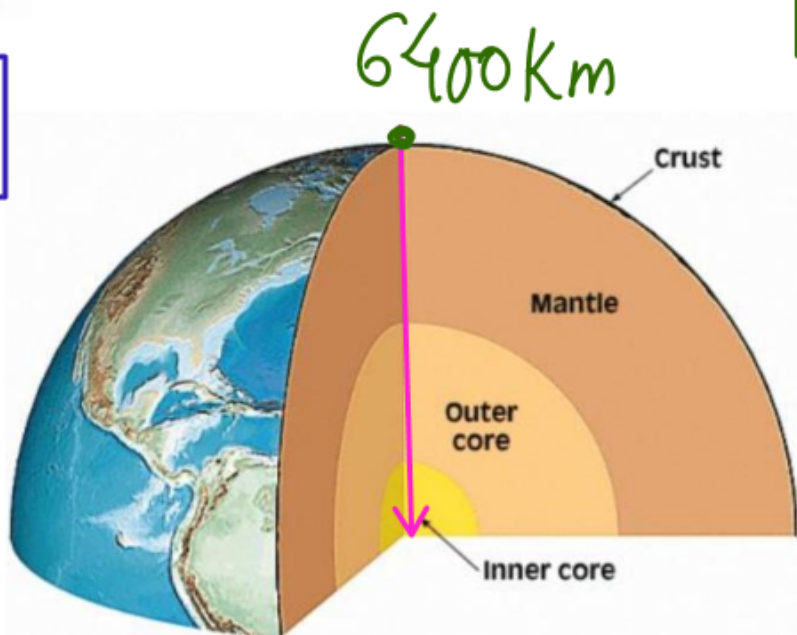
Cooker



$$T \uparrow \propto P \uparrow$$

पृथ्वी: Earth - नीचे

$$T \uparrow \propto P \uparrow$$



Volume - fix

• Fluid (तरल)

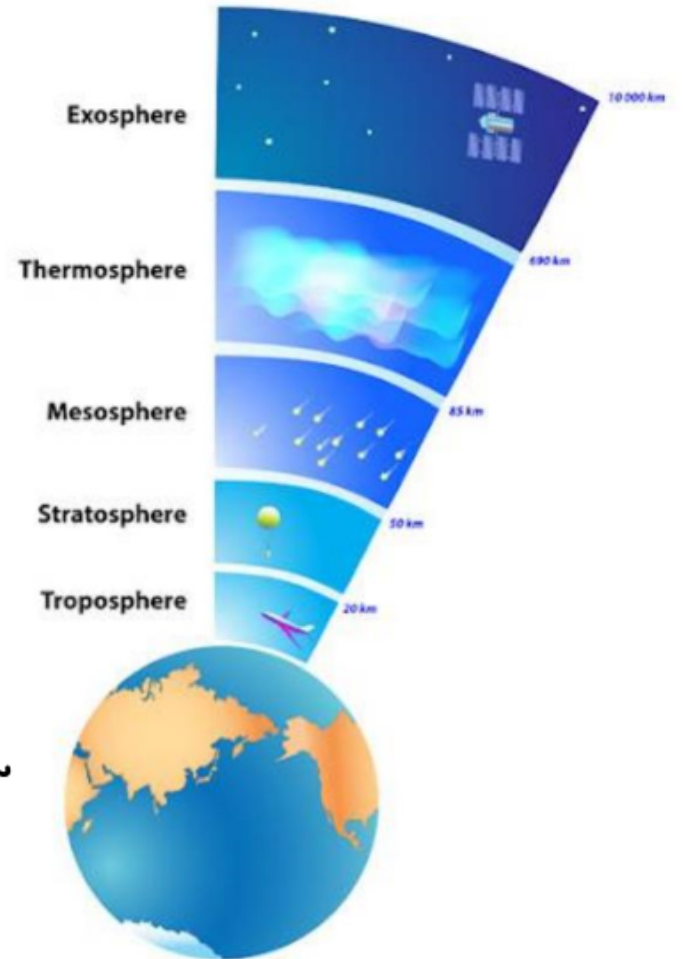
वहने क्षमता

• Liquid

• air

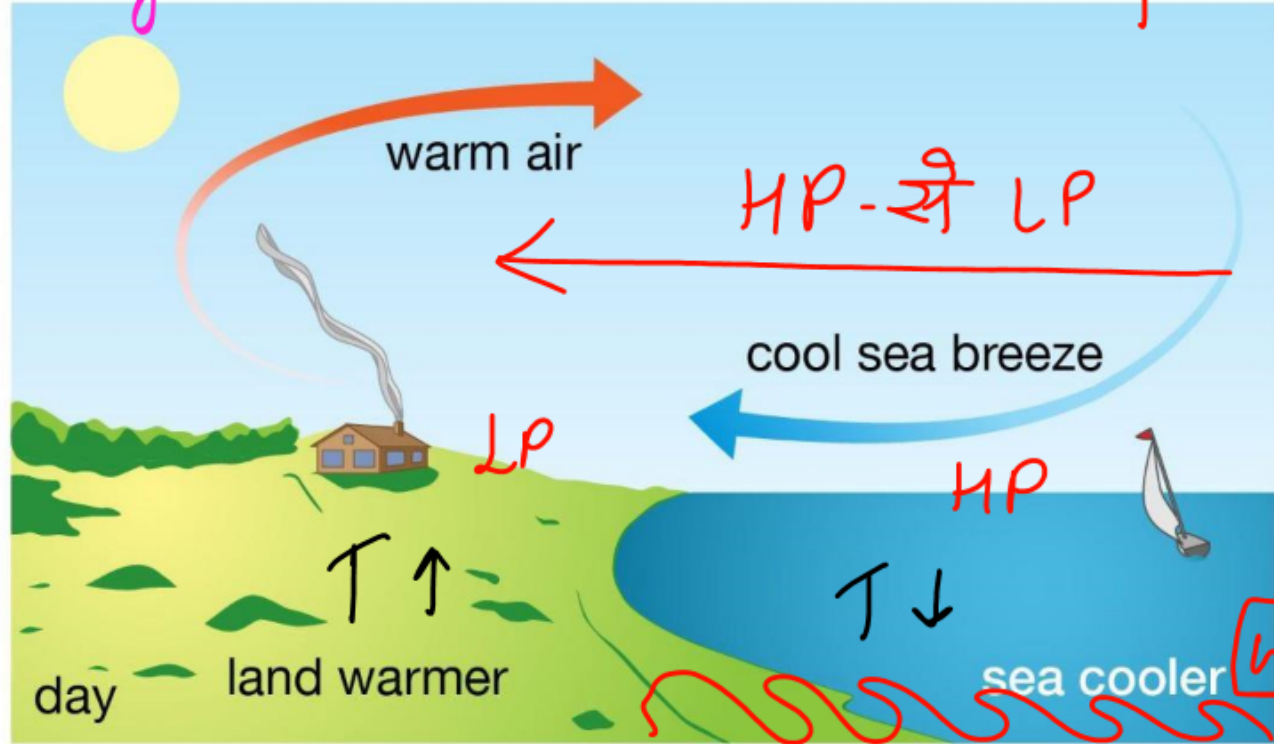
• Earth Pressure zone

• पानी गर्म





Day



Concept समझ.

गर्म - Warm

density कम

घनत्व — $\rho = \frac{m}{V}$

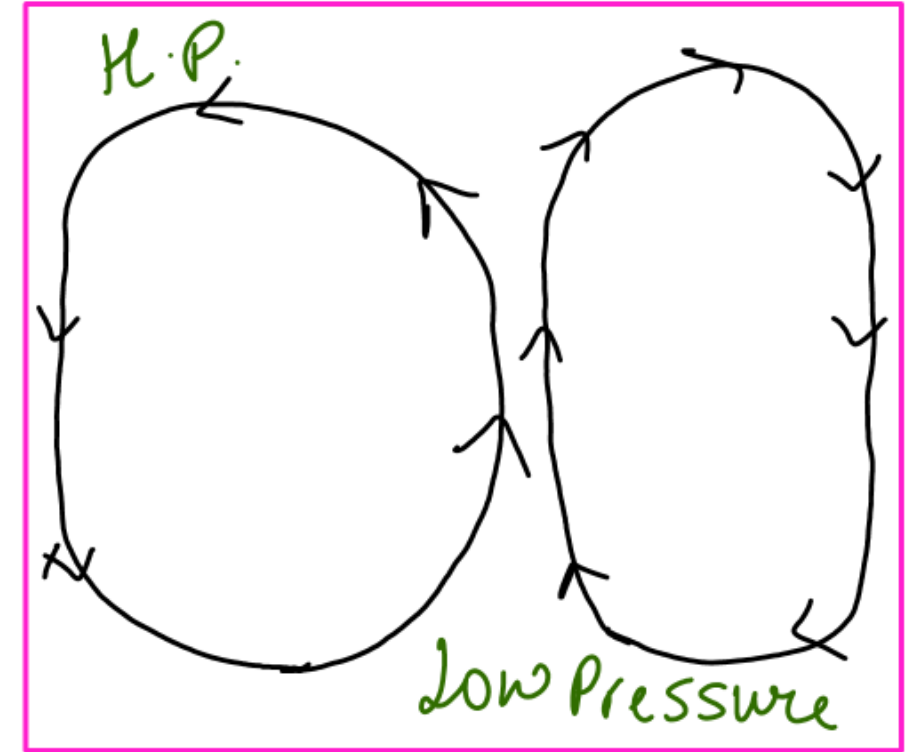
हल्की (lighter)

ऊपर (upper)

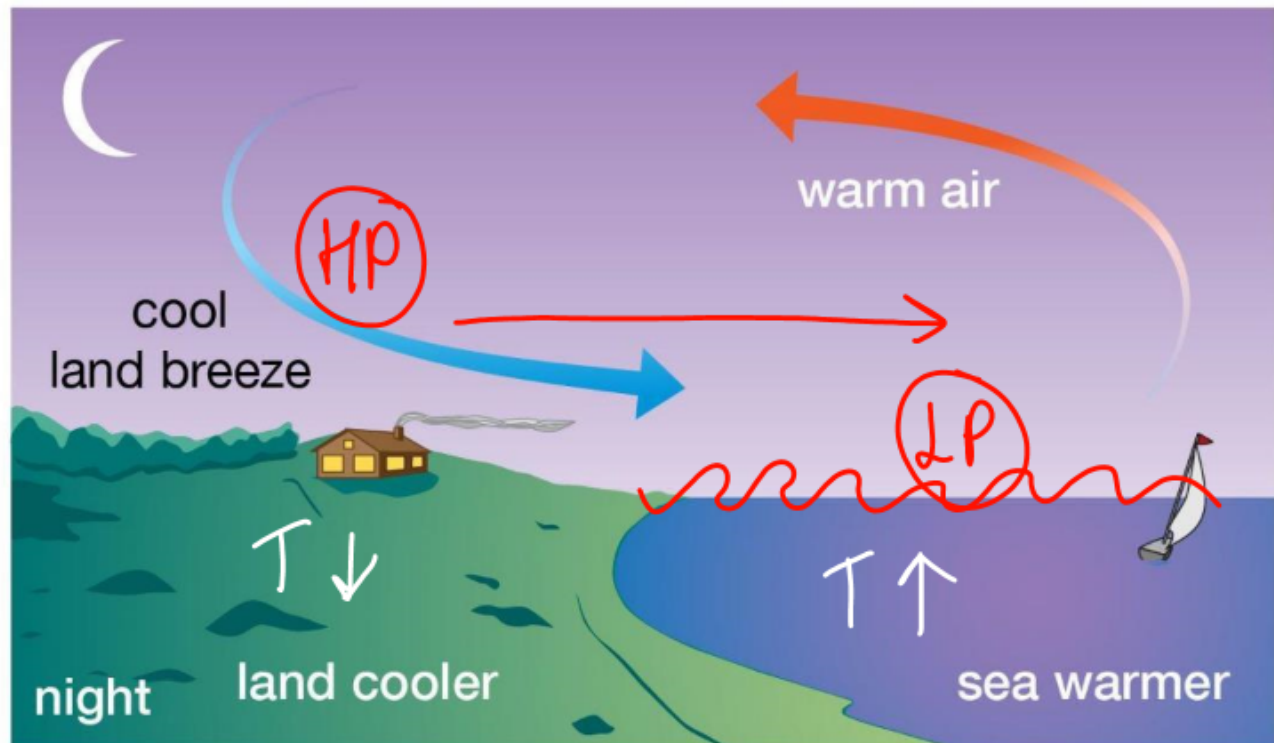
Temp ↓

air

H.P.



Temp ↑



Wave

High $T \uparrow \rightarrow$ Low Pressure (निम्न दाब)

Low $T \downarrow \rightarrow$ High Pressure (उच्च दाब)

वायुमंडलीय दाब वायुमंडलीय दाब (Atmospheric pressure)

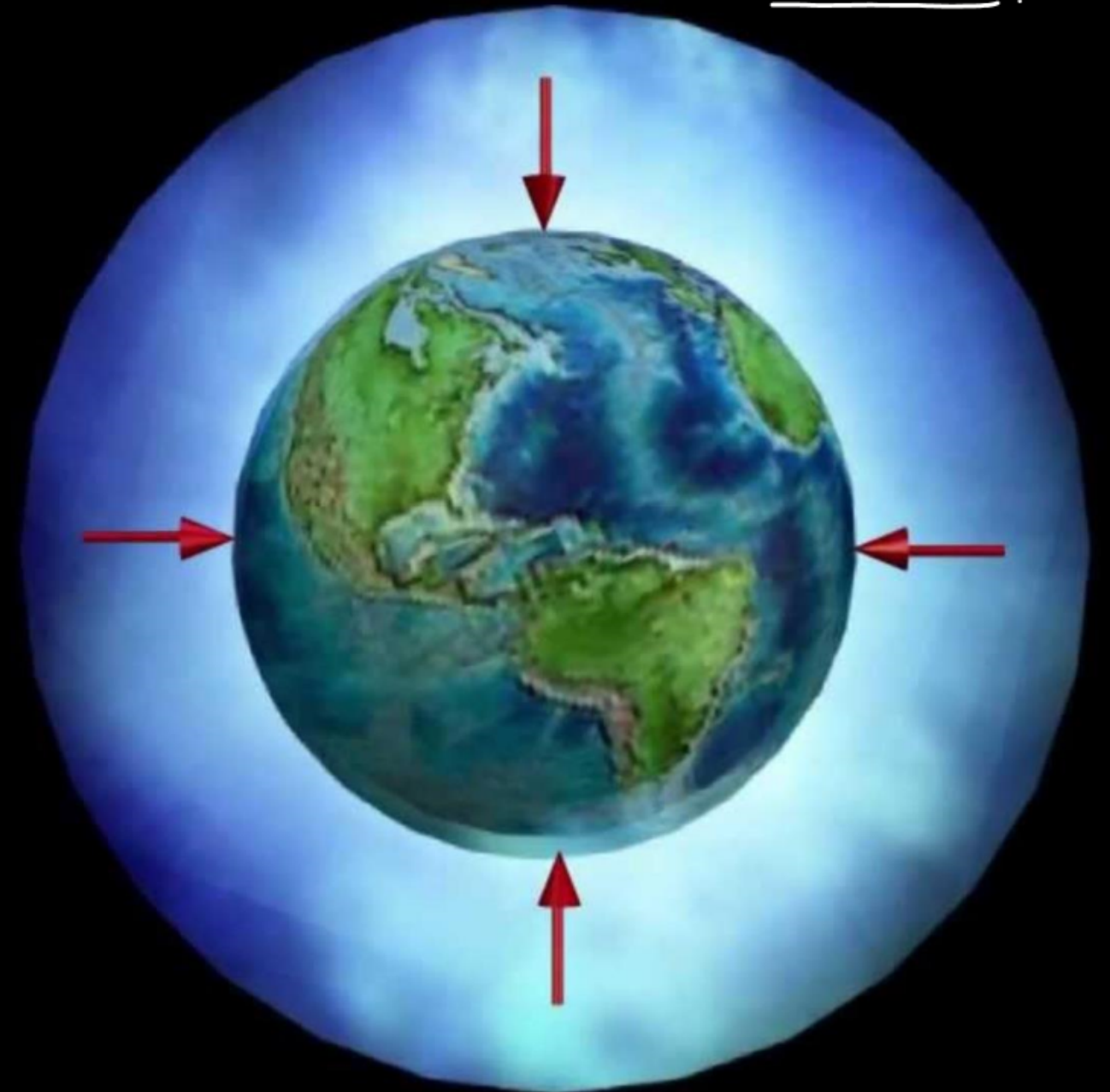
- पृथ्वी के चारों ओर फैले वायुमंडल द्वारा किसी सतह पर प्रति इकाई क्षेत्रफल पर लगाया गया बल “वायुमंडलीय दाब” कहलाता है।

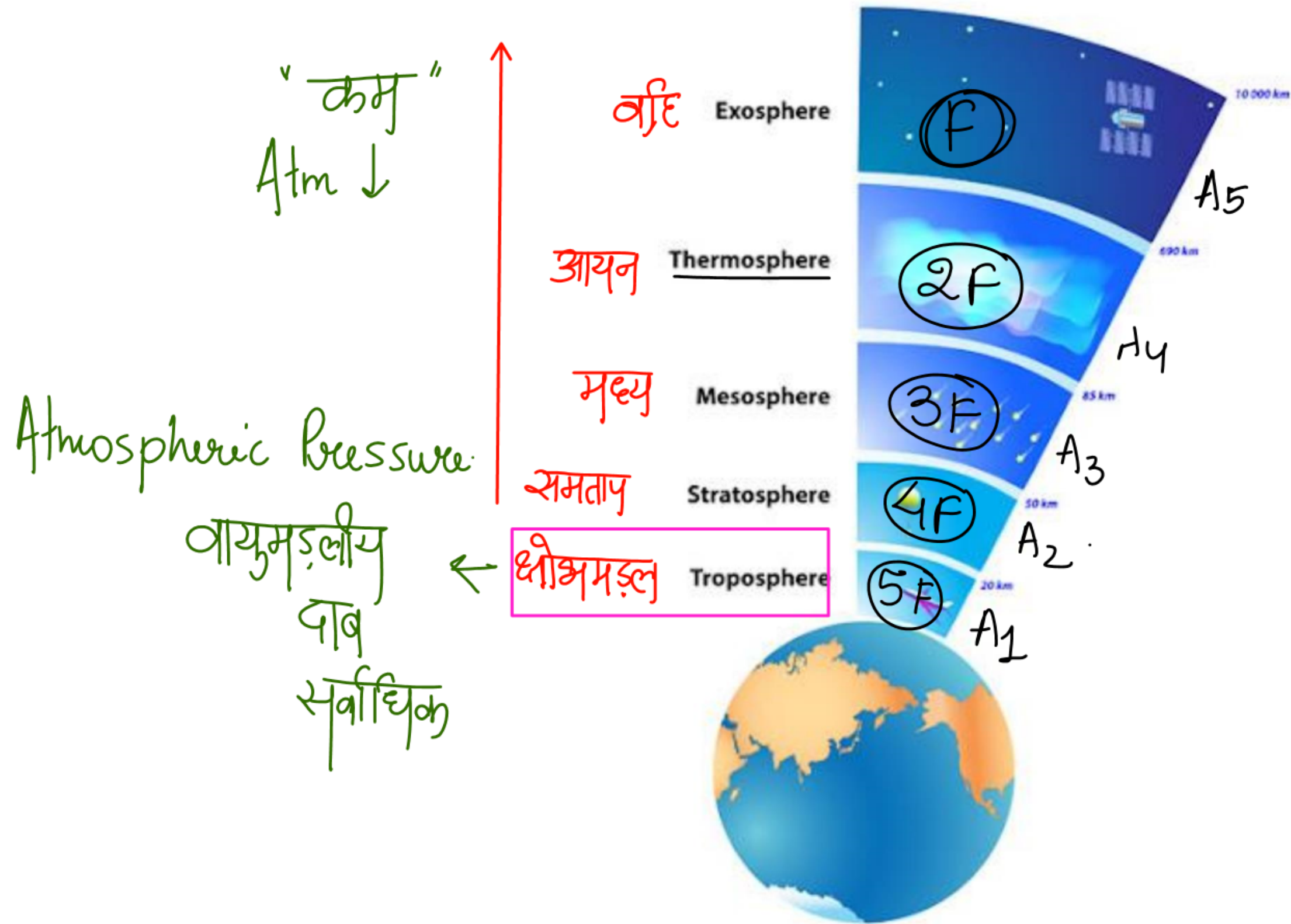
Atmospheric pressure is **the force exerted per unit area by the air (atmosphere) surrounding the Earth.**

Atmosphere | वायुमंडल

- gravitation बल
- पलायन वेग उच्च - escape velocity

$$P = \frac{F}{A} \text{ inward}$$





Small Area = A_1
कम क्षेत्रफल

सर्वाधिक बल
Max-force = A_1

$$\text{Pressure} = \frac{f}{A} \quad \frac{A_1}{A_1}$$

Pressure - A_1 = Troposphere

**वायुमंडलीय दाब वायुमंडलीय दाब (Atmospheric pressure)**

- वायुमंडलीय दाब की पहली बार गणना वॉन यूरिक (Von Guericke) ने की थी।

$$1 \text{ सेमी पारा दाब} = 1.33 \times 10^3 \text{ पास्कल}$$

$$1 \text{ पास्कल} = 1 \text{ न्यूटन/मी}^2$$

$$1 \text{ बार} = 10^5 \text{ न्यूटन/मी}^2$$

$$1 \text{ मिलीबार} = 10^2 \text{ पास्कल}$$

$$1 \text{ टौर} = 1 \text{ मिली पारा दाब}$$

$$= 133.8 \text{ पास्कल} \quad 1 \text{ mb} = 10^{-3} \times 10^5 \text{ p}$$

$$= 10^2 \text{ Pascal}$$

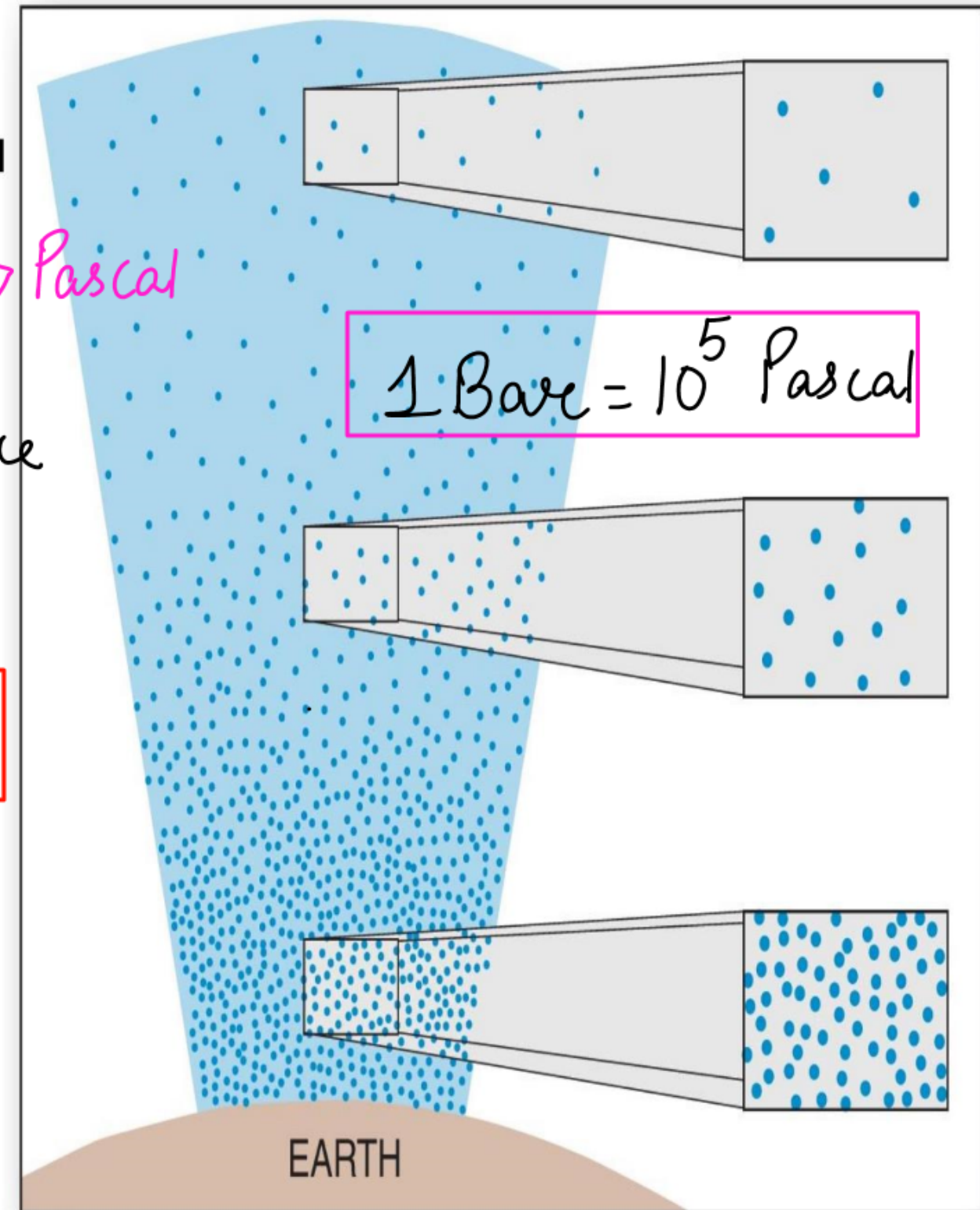
$$\text{milli} = 10^{-3}$$

$$1 \text{ Bar} = 10^5 \frac{\text{N}}{\text{m}^2} \text{ Pascal}$$

Atmospheric Pressure

— सर्वाधिक — सतह

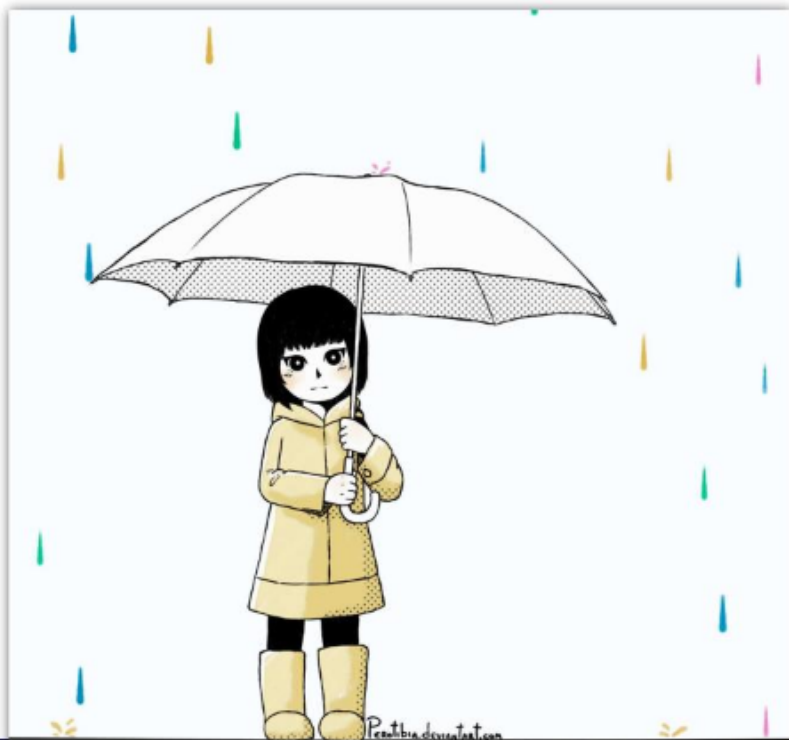
Height ↑, P ↓ कम





वायुमंडलीय दाब वायुमंडलीय दाब (Atmospheric pressure)

- वायुमंडलीय दाब को **बैरोमीटर** से मापा जाता है. इसकी सहायता से मौसम संबंधी पूर्वानुमान भी लगाया जा सकता है.
- बैरोमीटर का पाठ्यांक **जब एकाएक नीचे गिरता है**, तो **आंधी आने** की संभावना होती है.
- बैरोमीटर का पाठ्यांक **जब धीरे-धीरे नीचे गिरता है**, तो **वर्षा होने** की संभावना होती है.
- बैरोमीटर का पाठ्यांक **जब धीरे-धीरे नीचे-ऊपर चढ़ता है**, तो **दिन साफ होने** की संभावना होती है.





Class 9 Science

OLD NCERT

Chapter 1	MATTER IN OUR SURROUNDINGS
Chapter 2	IS MATTER AROUND US PURE?
Chapter 3	ATOMS AND MOLECULES
Chapter 4	STRUCTURE OF THE ATOM
Chapter 5	THE FUNDAMENTAL UNIT OF LIFE
Chapter 6	TISSUES
Chapter 7	DIVERSITY IN LIVING ORGANISMS
Chapter 8	MOTION
Chapter 9	FORCE AND LAWS OF MOTION
Chapter 10	GRAVITATION
Chapter 11	WORK AND ENERGY
Chapter 12	SOUND
Chapter 13	WHY DO WE FALL ILL?
Chapter 14	NATURAL RESOURCES
Chapter 15	IMPROVEMENT IN FOOD RESOURCES

NEW NCERT

Chapter 1	MATTER IN OUR SURROUNDINGS
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OLD NCERT

Class 10 Science

NEW NCERT

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THANKS FOR WATCHING