

Force and Pressure

Chapter 3: Force and Pressure · Topic 1

Key Concept

Pressure is calculated as $\text{Force} \div \text{Area}$, meaning the same force spread over a smaller area creates more pressure.

This explains why a sharp knife cuts easily (small area, high pressure) while a blunt one doesn't (larger area, lower pressure).

Atmospheric pressure is the force exerted by air on objects, decreasing as altitude increases (thinner air at higher elevations).

Understanding force and pressure helps explain everyday phenomena, like why snowshoes prevent sinking or why straws work for drinking.

Quick Revision Notes

- $\text{Pressure} = \text{Force} \div \text{Area}$.
- Same force over smaller area means more pressure.
- Sharp knives have small area, high pressure.
- Blunt knives have larger area, lower pressure.
- Atmospheric pressure is air's force on objects.
- It decreases with altitude.
- Snowshoes spread weight over larger area.
- This explains many everyday phenomena.

Practice Questions

- 1 Calculate pressure given force and area.
- 2 Discuss why snowshoes work using pressure concepts.
- 3 Explain why a sharp knife cuts more easily than a blunt one.
- 4 Research how atmospheric pressure changes with altitude.
- 5 Discuss another example of pressure in daily life.
- 6 Explain the relationship between force, area and pressure.