

Force and Pressure

Chapter 3: Force and Pressure · Topic 1

Key Concept

Balanced forces result in no change in an object's motion, while unbalanced forces cause acceleration, changing speed or direction.

Friction is a force that opposes motion between surfaces in contact, and it can be useful (walking) or a hindrance (machine wear).

Pressure equals force divided by area ($P=F/A$), explaining why sharp objects like needles exert more pressure than blunt ones with the same force.

Atmospheric pressure, caused by the weight of air, affects various phenomena, including weather patterns and how our bodies function.

Quick Revision Notes

- Balanced forces: no motion change.
- Unbalanced forces: cause acceleration.
- Friction: opposes motion between surfaces.
- It can be useful or a hindrance.
- Pressure = Force ÷ Area ($P=F/A$).
- Sharp objects exert more pressure (small area).
- Atmospheric pressure: weight of air.
- It affects weather, body function.

Practice Questions

- 1 Give an example of balanced and unbalanced forces.
- 2 Discuss a useful and harmful example of friction.
- 3 Calculate pressure given force and area.
- 4 Discuss why a knife cuts better than a spoon.
- 5 Discuss how atmospheric pressure affects weather.
- 6 Explain force and pressure in your own words.