

# Formation of Shadows

Chapter 11: Light: Shadows and Reflections · Topic 1

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## Key Concept

When a light source is close to an object, the shadow appears larger and more spread out; when the light source is far away or directly overhead, the shadow appears shorter and more compact — this is why our shadows are long in the early morning and evening (when the Sun is low) but very short at noon (when the Sun is high overhead). Transparent objects, like clear glass, let light pass through and cast little to no shadow, while translucent objects, like frosted glass, cast a partial, blurry shadow.

## Quick Revision Notes

- A shadow forms when an opaque object blocks light travelling in a straight line.
- Shadow size/shape depends on the position and distance of the light source and object.
- Shadows are longer when the light source is low (morning/evening) and shorter when high (noon).
- Transparent objects cast little/no shadow; translucent objects cast a partial, blurry shadow.

## Practice Questions

- 1 Observe and record how your shadow's length changes at different times of day.
- 2 Explain why shadows are shorter at noon than in the morning.
- 3 Compare the shadow cast by a transparent object versus an opaque object.