Light and Shadows

Why do shadows happen and change?



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Think, pair, share

When do you see your shadow outside?





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LIGHT IS SUPER FAST

8 mins

time for sunlight to reach Earth

Light travels in straight lines all the way to us.





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How a shadow is made

Light leaves a light source → Opaque object blocks the light → Blocked light leaves a dark shape → Shadow shows on surface behind



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What could this be?

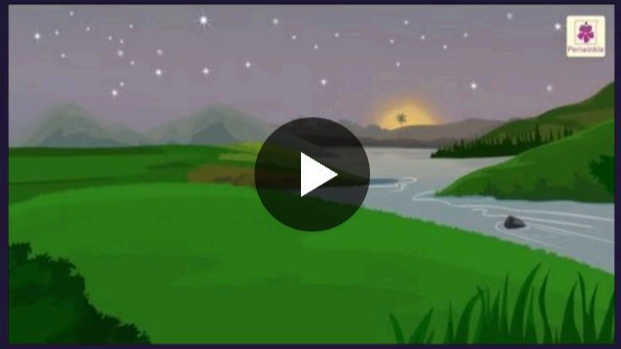
Long in the morning, short at midday, long again later. It follows you but is not you. What is it?





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Watch: How shadows are made



▶ 0:00 – 4:14

- Spot what blocks the light
- Listen for the word opaque



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What blocks light?

- Opaque means no light can pass through.
- Opaque toys block torch light and make shadows.
- Clear glass lets light through, so almost no shadow.



Photo: Richard Schneider from Los Angeles · CC BY 2.0 · Wikimedia Commons



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Watch: Why shadows change size



▶ 0:00 – 4:56

- See what happens when light moves
- Check when the shadow looks big



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Your task

Make shadows grow and shrink with a torch.

1. Shine a torch at a toy in front of white paper.
2. Move torch near, then far. Measure shadow in cm.
3. Record: which made a big shadow?

15 min

In pairs



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The shadow pattern

1. Close light = big shadow: the light spreads out more.
2. Far light = small shadow: the light spreads out less.
3. Shadow sits behind the toy, away from light.





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Best shadow theatre?

Where is best for our puppet show?

A. Dark corner with torches

B. By the window with sunlight

C. Outside at midday

Vote with your hands, then explain why.



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Exit ticket

1

One thing I learnt about shadows is...

2

Near light makes a shadow...

3

One question I still have...



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