

Y6 Shadows

KS2 Y6 Science · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

Explain why a shadow forms.

Step 1 · Light travels in straight lines

It can't bend round an object

Step 2 · An opaque object blocks the light

No light reaches the area behind it

Step 3 · That dark area on the surface is the shadow

Light reaches everywhere around it

Answer: A shadow forms where an opaque object blocks light. Because light travels in straight lines, it can't bend round into the space behind.

Check: Mention 'straight lines' and 'blocks light'. Those are the key ideas examiners look for.

2. Now try one with the steps

Why does a shadow have the same shape object?

Step 1 · Light rays travel straight past the edges of the object

Step 2 · So the outline of the dark area matches

Answer:

3. Practice

Have a go at each one. There is space underneath to work it out.

1. What is a shadow?

2. Why do shadows form?

3. What shape is the shadow of a circular plate held face-on to a torch?

4. What word describes a material that lets no light through?

5. What word describes a material that lets some light through?

6. Does clear glass make a dark shadow?

7. What happens to a shadow when the object moves closer to the light source?

8. At what time of day is your shadow shortest?

9. Torch to object 20 cm: shadow 50 cm. Torch to object 40 cm: what is the shadow height in cm?

10. Why does a shadow not show the colour of the object?

11. A card has a star-shaped hole cut in it. What will its shadow look like?

12. Why does your shadow change length during the day?

13. Name one variable to keep the same when testing how distance affects shadow size.

14. Why are shadows from a big light, like a large window, often blurry at the edges?

4. Before you hand it in

Thinking a shadow is a 'reflection' or something the object gives off.

Say: the object blocks the light.

Thinking the shadow shows details, like a face or the colour of a jumper.

A shadow has the same OUTLINE shape object.

Thinking moving the object closer to the light makes the shadow smaller.

Closer to the light: bigger shadow. Further away: smaller.

Saying shadows are short at midday because the Sun is 'closer'.

It's because the Sun is HIGHER in the sky.