

Colour and the Visible Spectrum

KS3 Physics · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

Why does a banana look yellow in sunlight?

Step 1 · Sunlight

Sunlight is white light — a mixture of all the colours.

Step 2 · The banana

Its skin reflects mainly yellow light (red and green) and absorbs the rest.

Step 3 · We see

Only the reflected light enters our eyes, so it looks yellow.

Answer: It reflects yellow light and absorbs the other colours

Check: We see the colour that is reflected, not the colours absorbed.

2. Now try one with the steps

White light passes through a red filter. What comes out?

Step 1 · A filter

Step 2 · So

Answer:

3. Practice

Show your working. The marks tell you how much is expected.

1. List the colours of the visible spectrum in order. [1]

2. What is white light? [1]

3. Why does a red object look red in white light? [1]

4. Why does a black object look black? [1]

5. Why does a white object look white? [1]

6. What does a blue filter do to white light? [1]

7. Which colour of visible light has the highest frequency? [1]

8. A white shirt is lit with red light. What colour does it look? [1]

9. A green leaf is lit with red light. What colour does it look? [1]

10. White light passes through a red filter and lands on a blue object. What colour does the object look? [2]

11. White light passes through a red filter, then a green filter. What comes out? [2]

12. Light from a blue filter falls on white paper. What colour does the paper look? [1]

13. Explain why light-coloured clothes keep you cooler in strong sunshine than dark clothes. [2]

14. A stage costume is red with blue spots. Describe how it looks under blue light. [2]

4. Before you hand it in

"A red filter turns light red."

A red filter lets only red through and absorbs the rest.

"A red object absorbs red light."

It reflects red and absorbs all other colours.

"In red light a green object looks green."

It absorbs the red, reflects nothing, and looks black.