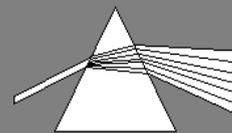


Colour 6 - Coloured Objects



Coloured Objects

A yellow bag looks yellow under normal white light, but under other conditions it may look red, green or even black. The colour an object appears depends upon the colour of the light illuminating it. This worksheet explores how colours appear under normal white light.

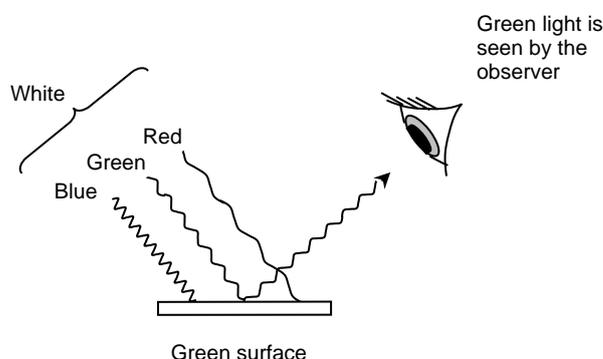
Task 1

We can consider white light to be made up of the three primary colours, red, green and blue. If white light is shining on a yellow bag:

- Which two primary colours must be bouncing off the bag into our eyes?
- Which primary colour is being absorbed?

Why Do Objects Appear The Colour They Do?

Diagram 1



Task 2

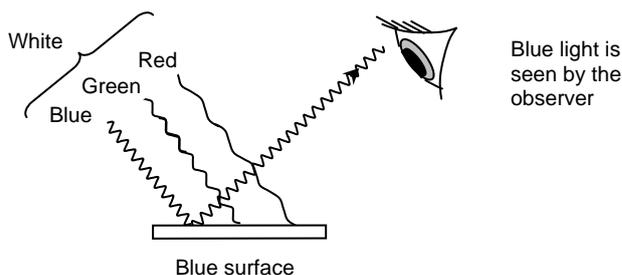
Complete the sentences below by filling in the gaps:

In diagram 1, red, green and _____ light (making up white light) are incident upon the object. The object has a green surface, so it reflects the _____ component, but absorbs the _____ and _____ components. The observer sees the object as the colour _____.

Task 3

Use the diagram below to help explain why a blue surface appears blue in white light.

Diagram 2

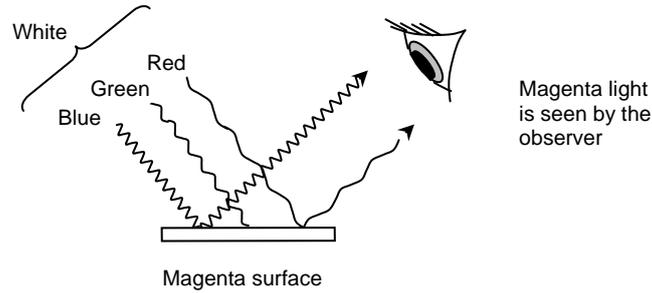


Coloured Objects (*continued*)

Task 4

Complete the sentences describing how a magenta object looks magenta under white light

Diagram 3

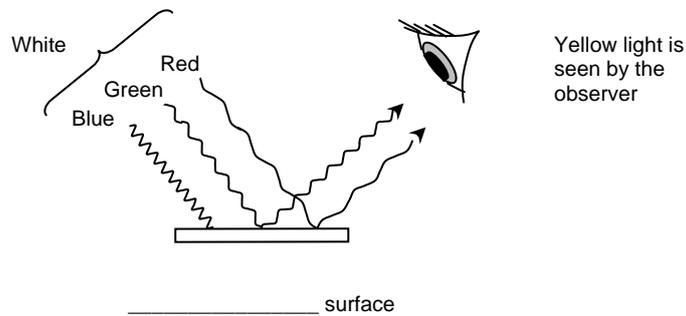


In diagram 3, white light (made up of _____, _____ and _____ components) is incident upon the object. The object has a _____ surface, so it reflects the _____ and _____ components, but absorbs the _____ component. The observer sees the colour _____.

Task 5

Use the diagram below to explain why a yellow surface appears yellow in white light.

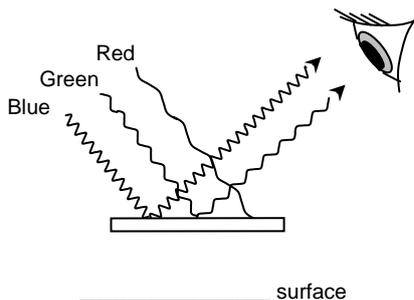
Diagram 4



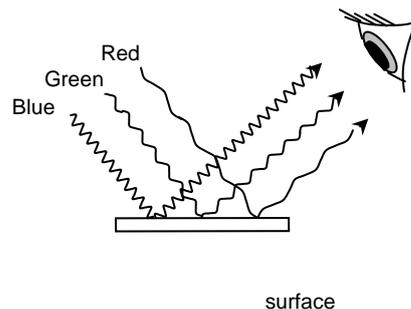
Task 6

Suggest what colour the surfaces below are.

a.



b.



Coloured Objects – Answers

Task 1

- a. Red and green
- b. Blue

Task 2

In diagram 1, red, green and blue light (making up white light) are incident upon the object. The object has a green surface, so it reflects the green component, but absorbs the red and blue components. The observer sees the object as the colour green.

Task 3

Red, green and blue light (making up white light) are incident upon the object. The object has a blue surface, so it reflects the blue component, but absorbs the red and green components. The observer sees the object as the colour blue.

Task 4

In diagram 3, white light (made up of red, green and blue components) is incident upon the object. The object has a magenta surface, so it reflects the red and blue components, but absorbs the green component. The observer sees the colour magenta.

Task 5

White light (made up of red, green and blue components) is incident upon the object. The object has a yellow surface, so it reflects the red and green components, but absorbs the blue component. The observer sees the colour yellow.

Task 6

- a. Cyan surface
- b. White surface