

PART A: Coloured Light.

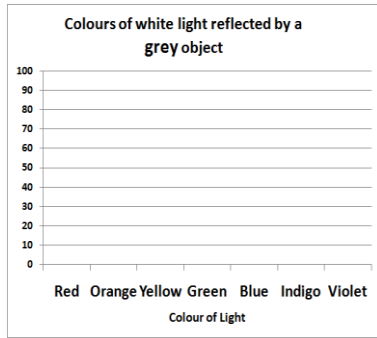
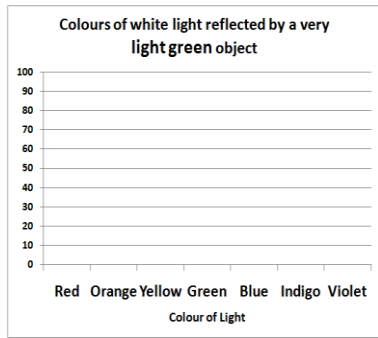
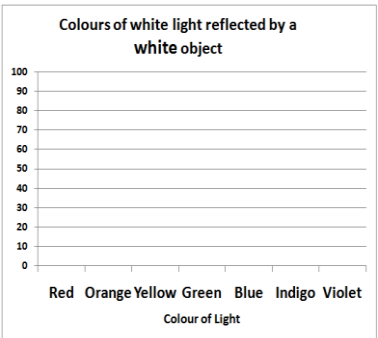
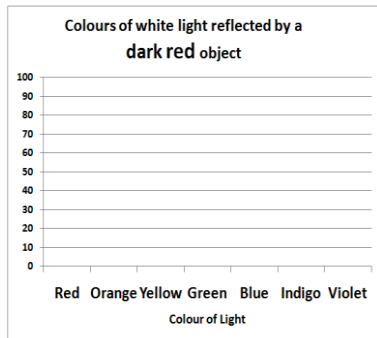
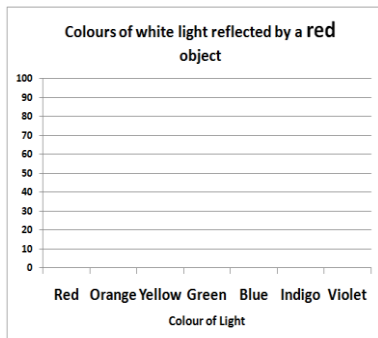
- White sunlight is made of a mixture of the colours _____, _____, _____, _____, _____, _____, _____, and _____.
- Why does a green object appear green?

- Why does a white object appear white?

- Why does a black object appear black?

- Why do cricketers, who traditionally play in summer, wear white-coloured clothing?

- Fill in the following graphs.



- Describe what a green filter does.

- Why does a green piece of paper appear black when red light is shining onto it?

PART B: Mixing Coloured Light

- The three **primary colours of light** are _____, _____, and _____.
- Red light + Green light (of equal strength) = _____ light.
- Red light + less intense Green light = _____ light.
- Blue light and Green light = _____ light.
- Red light and Blue light = _____ light.
- Red light + Green light + Blue light = _____ light.

15. How does an LCD TV screen produce white?

16. How does an LCD TV screen produce yellow?

PART C: Mixing Paints and Inks

17. The three traditional **primary colours of paint** are _____, _____, and _____.

18. Explain why mixing red and yellow paint produce orange paint.

19. What are the four “process” colours?

20. Why are the process colours used in printing instead of red, yellow and blue?

PART D: Coloured Light and Vision

21. Moving magnetism produces _____. Moving electricity produces _____. A fast-moving electron can produce an e_____ -f_____ wave, which then produces a m_____ -f_____ wave, which then produces an e_____ -f_____ wave and so on.

22. How fast do these “electromagnetic” waves travel? _____

The Visible-Light Spectrum	
Colour	Approximate Wavelength range in nanometres (nm) (1 nanometre = 1 billionth of a metre)
red	750 – 610
orange	610 - 590
yellow	590 - 570
green	570 - 500
blue and indigo	500 - 450
violet	450 - 400

23. Light is an electromagnetic wave. What range of wavelengths are perceived as red light and what range of wavelengths are perceived as green light?

24. What are cone cells and why do we have three types?

25. What are rod cells? What is their disadvantage and what is their advantage over cone cells?

26. A person with red-green colour blindness is looking at a rainbow. How do they perceive it?

27. Birds, humans, primates (gorillas, orang-utans, monkeys etc), marsupials, and reptiles are trichromats. Most mammals, including rabbits, cats, dogs, sheep, and cows are dichromats. What is a trichromat and what is dichromat?
