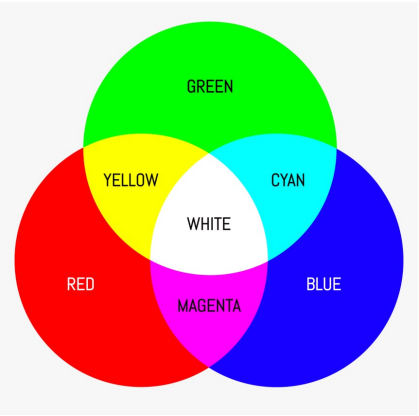
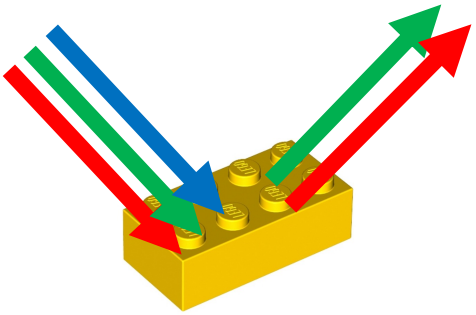
Exploring Colours



All the colours you see around you are made up from just three primary colours: red, green and blue.
Depending on the different proportions of each primary colour that your eyes detect, the colour that your eyes see will be affected. For example, if your eyes only detect equal proportions of blue and red but no green, then you will see magenta.

A white object reflects equal amounts of red, blue and green light. The pigments in objects reflect and absorb different colours of light. If you look at a yellow LEGO brick, the brick is reflecting green and red light but absorbing the blue light that hits it. Therefore, your eye only receives the green and red light which combines to give you a yellow object.



Go ahead and build your own SPIKE Prime Colour Detector. Then you can use it to investigate all the different coloured objects around you. Here's how to do it:

1. Follow the building instructions to create the SPIKE Prime Colour Detector.
2. Load the program onto the SPIKE Prime Hub.
3. Start the program by pressing the circular button and then wait for the button to turn green.
4. Place a coloured object of your choice under the colour sensor.
5. Now press the right arrow. The display will give you a value for red, green and blue.
6. The values tell you the proportion of each colour it has detected. The higher the number, the more of that particular colour it has detected.
7. Repeat the steps above choosing different objects of different colours. Can you predict which of the primary colours make up other colours?

Exploring Questions…

- How could you modify the program to give you names for the different secondary colours?
- What do you notice if you place a black object in the colour sensor? What does this tell you about the amount of light a black object reflects?
- Would you get the same results if the ambient light in the room was a coloured light rather than white light?