

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

## WHAT'S IN A COLOR? HOMEWORK EXERCISES

Answer all of the questions listed below.

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- Fill in the appropriate additive or subtractive color of light:
  - Red + blue = \_\_\_\_\_
  - Green + blue = \_\_\_\_\_
  - White - red = \_\_\_\_\_
  - Cyan - green = \_\_\_\_\_
  - White - blue = \_\_\_\_\_
  - Yellow + blue = \_\_\_\_\_
  - White - green - magenta = \_\_\_\_\_
  - Green + blue = white - \_\_\_\_\_
- Which has a higher frequency, red light or blue light?
- Which has a longer wavelength, cyan or magenta?
- When red light shines on a red rose, why do the leaves become warmer than the petals?
- When green light shines on a red rose, why do the petals look black?
- If the pigment in your t-shirt absorbs cyan light, what color does your t-shirt appear?
- If the pigment in your t-shirt absorbs green light, what color does your t-shirt appear?
- What color does red cloth appear when illuminated by
  - sunlight?
  - red light from a neon sign?
  - cyan light?
- Why does a white piece of paper appear white in white light, red in red light, blue in blue light, and so on for every color?
- A spotlight that has a white-hot filament is coated so that it won't transmit yellow light. What color is the emerging beam of light?