

Painting With CMYK

Overview:

It's your time to order uniforms for the school's football teams. There is one difficulty: the company which you will order from prefers to receive the order in terms of the three primary colors of paints which will be applied to different parts of the uniform. In this activity, you will experiment with the effect of different paint colors on the appearance of the various parts of a football team uniform.

Getting Started:

Open an Internet browser and navigate to the Painting With CMYK activity found in the Shockwave Studios section of the web site.

Directions:

Cyan, magenta, and yellow are the three primary colors of paint; Each paint color will absorb a single primary color of light. Investigate the result of adding (or mixing) these primary paint colors together by experimenting with the on-screen interface.

Finally, circle the primary paint colors which must be imparted to the following team uniforms in order to create the indicated color appearance:

Team #1: Chicago Titans

Uniform Part	Desired Color Appearance	Required Paint Colors
Helmet	Blue	C M Y
Skin	Magenta	C M Y
Shirt	Yellow	C M Y
Pants	Blue	C M Y
Socks	White	C M Y
Shoes	Black	C M Y

Team #2: Washington Knights

Uniform Part	Desired Color Appearance	Required Paint Colors
Helmet	Red	C M Y
Skin	Black	C M Y
Shirt	Blue	C M Y
Pants	White	C M Y
Socks	Red	C M Y
Shoes	Yellow	C M Y

Sound and Music

Team #3: St. Louis Fliers

Uniform Part	Desired Color Appearance	Required Paint Colors		
Helmet	Green	C	M	Y
Skin	Yellow	C	M	Y
Shirt	Green	C	M	Y
Pants	Yellow	C	M	Y
Socks	White	C	M	Y
Shoes	Black	C	M	Y

Follow-Up Questions:

- Tell the result of mixing the following primary color of paints in equal amounts:
 Cyan + Magenta ----> _____ Cyan + Yellow ----> _____
 Magenta + Yellow ----> _____ Cyan + Magenta + Yellow ----> _____
- What primary paint colors must be imparted to an object to give it the appearance of white?
- What primary paint colors must be imparted to an object to give it the appearance of black?
- A primary paint color serves to selectively absorb a specific primary color of light. Whatever light is not absorbed is reflected by that paint. Use your understanding of color addition and subtraction to indicate which primary colors of light are absorbed by each primary paint.
 Cyan paint absorbs the primary light color _____.
 Magenta paint absorbs the primary light color _____.
 Yellow paint absorbs the primary light color _____.
- Complete the color equations shown below and indicate the primary paint color(s) in the object.
 - $R + G + B \text{ light} - \text{_____ light} = R + G \text{ light} = \text{_____ appearance}$; there is _____ paint in the object.
 - $R + G + B \text{ light} - \text{_____ light} = R \text{ light} = \text{_____ appearance}$; there is _____ paint in the object.
 - $R + G + B \text{ light} - \text{_____ light} = G + B \text{ light} = \text{_____ appearance}$; there is _____ paint in the object.
 - $R + G + B \text{ light} - \text{_____ light} = \text{_____ light} = \text{Magenta appearance}$; there is _____ paint in the object.
 - $R + G + B \text{ light} - \text{_____ light} = \text{_____ light} = \text{Black appearance}$; there is _____ paint in the object.
 - $R + G + B \text{ light} - \text{_____ light} = G \text{ light} = \text{_____ appearance}$; there is _____ paint in the object.