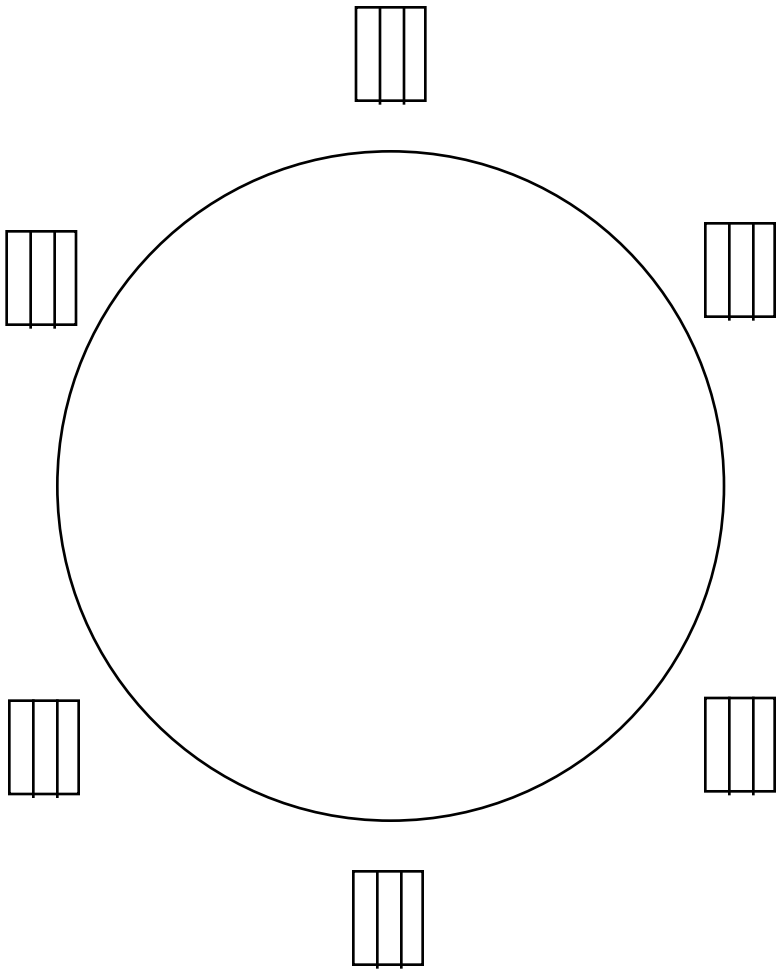
Name_____

Yellow

Period: _____Date_____



Reproduce the color wheel found on Mr. Bunning's website, linked to ch 16.2 notes.
In each small color box, indicate the colors (wavelengths) of light necessary to produce each color.
as shown. Note: A 'full' color box will produce white light.

In your color wheel, all colors 180° across from each other must be complimentary colors

List the Primary colors: _____ _____ _____

List the Secondary colors: _____ _____ _____

List all complimentary color combinations:

List all combinations of two colors which, when mixed, produce secondary colors:

weblink: http://www.smjuhsd.k12.ca.us/~wbunning/fiznotes/chapter16/newcolor/colorwheel.html

Red, green and blue are the ***primary colors of light***. All other colors can be produced by mixing two or more of these colors in varying amounts and intensities. Remember: COLOR is a mental ***perception***, based upon stimulation by light of particular wavelengths or frequencies. If there is no brain, there is no color, only light waves. What color do you think your blood is, while it is still inside your body where no light falls upon it?

Red + blue +green (in equal amounts) = white.

Colors opposite (180 degrees) each other are ***complimentary***. When combined, they produce white. Note the RGB color boxes. Color combinations that produce a full RGB box are complimentary.

Cyan, yellow and magenta are the secondary colors of light. Any secondary color mixed with it's compliment produces white light. Note that our brain has the tendency to percieve an average of the wavelengths striking our eye. When equal amounts of both red and green enter our eye, the brain percieves yellow. The eye is more sensitive to reds and greens, and less sensitive to blues. This is why darker blue colors are more difficult for us to differentiate than darker shades of red. Something entirely different happens with our perception of violet. Violet color can be produced by mixing red and blue in the right proportions, but our brain still perceives violet at the shorter wavelength end of the spectrum when no red light at all is present.

In the RGB boxes, the colored bands are the colors which, when present in equal amounts, produce the labeled color while the "blank" bands are the light colors absorbed by an object that reflects the labeled color. For example: cyan is produced when equal amounts of blue and green are mixed, but a cyan object absrobs red. Also, a red transparent filter absorbs the "blank" band colors green and blue, permitting only red wavelengths to pass.

TRENDS APPARENT WITH THIS MODEL

Mixing colors of light additively.

- In this wheel model, any two successive primary colors of light, when mixed additively and equally, produce the secondary color which lies between them.
- Any two successive secondary colors, when mixed additively and equally, produce white. Any two colors that are 180 degrees opposite each other, when mixed additively, will produce white.
- Mixing all three primary or secondary colors equally produces white.

Mathematical representations of color addition:

Red + Green	= Yellow	Green + Blue	= Cyan
Red + Blue	= Magenta	Red + Green + Blue	= White

Red + Cyan	= Red + Green + Blue	= White
Green + Magenta	= Green + Red + Blue	= White
Blue + Yellow	= Blue + Red + Green	= White