

<http://simbucket.com/colorfilters/>

## Part I -Dark Filters

1. Primary Colors: Put the following filters in front of the lasers and record how much light passes through:

	Red Light	Green Light	Blue Light
Dark Red	100%	0%	0%
Dark Green			
Dark Blue			

## 2. Using Filters to Produce Secondary Colors

a. Put the following filters in front of the lasers and record how much light passes through:

	Red Light	Green Light	Blue Light
Dark Magenta			
Dark Cyan			
Dark Yellow			

b. It is possible to create each primary color (R, G, or B) using two secondary color filters. Fill in the blanks below:

Dark Red Filter = \_\_\_\_\_ Filter + \_\_\_\_\_ Filter

Dark Green Filter = \_\_\_\_\_ Filter + \_\_\_\_\_ Filter

Dark Blue Filter = \_\_\_\_\_ Filter + \_\_\_\_\_ Filter

3. Based on your data above, what does a red filter do? What does a magenta filter do?

*A red filter blocks all \_\_\_\_\_ light and \_\_\_\_\_ light.*

*A magenta filter \_\_\_\_\_.*

## Part II - Light Filters

4. Dark vs Light: Put the following filters in front of the lasers and record how much light passes through:

	Red Light	Green Light	Blue Light
Dark Red	100%	0%	0%
Light Red			
Dark Magenta			
Light Magenta			

5. Based on your data above, what does a dark filter do? What does a light filter do?

*A dark filter blocks \_\_\_\_\_% of the wrong-colored light.*

*A light filter blocks \_\_\_\_\_% of the wrong-colored light.*

## Part III - Tinting Sunglasses

Sometimes it is helpful to have tinted sunglasses: “amber” (yellow) tints help improve contrast outdoors, while red and magenta tints make everything appear warm and happy. Use your knowledge of filters to create the following tints.

	Filter #1	Filter #2	Filter #3
Red: 50% Green: 50% Blue: 50%	<i>Light gray</i>	-	-
Red: 50% Green: 0% Blue: 50%			
Red: 0% Green: 0% Blue: 50%			
Red: 50% Green: 50% Blue: 25%			
Red: 25% Green: 50% Blue: 12.5%			
Dark Brown (you decide what looks right!)			