## Color and Light



We can say that color is basically a matter of light. Without light there's no color. So, how does it work and how can we see colors? First, white light contains all the visible spectrum colors. It means that these colors together, with the same intensities, make the white. The light from the sun, for example, is a white light. We can see that it's made from all the colors in the rainbow, when the sunlight is decomposed.

- The white light from the sun reaches the object.
- All the colors are absorbed, except the red.
- The red is the color that we see.


## Color and Light



## Subtractive Color

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## Subtractive Color: mixes pigments



Wednesday, June 22, 2011
All the colors mixed together make black; this is the process you use when you mix paint, or when you print out a picture.

## Subtractive Color: mixes pigments



# Cyan, Magenta, Yellow, blacK 

## Additive Color: mixes light

 display color on any device that uses a light source, like TV, computer screen, phone screen, etc. Your monitor, for example, creates color by emitting light through red, green, and blue phosphors.

## Additive Color: mixes light



All the colors together make white; absence of color makes black. This is the process used to display color on any device that uses a light source, like TV, computer screen, phone screen, etc.

## Additive Color: mixes light



## Red, Green, Blue

All the colors together make white; absence of color makes black. This is the process used to display color on any device that uses a light source, like TV, computer screen, phone screen, etc.

## RGB Color Encoding



Wednesday, June 22,2011 belor is 3 bytes. A byte can be represented by a 2 -digit hex number.

## RGB Color Encoding



## $(180,39,189)$

Wednesday, June 22,2011
Each color is 3 bytes. A byte can be represented by a 2 -digit hex number.

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## RGB Color Encoding

Color Picker (Foreground Color)


$$
\begin{gathered}
(180,39,189) \\
\text { b4 } 27 \text { bd }
\end{gathered}
$$

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## RGB Color Encoding



## b427bd

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## Image Size


$6 \times 10$
60 pixels

