

# Red, green and blue color mixing



Center for Biodiversity and Conservation

**Biodiversity Informatics Facility**

The mission of the Biodiversity Informatics Facility is to be a leader in the development, application, and promotion of rigorous biodiversity informatics methods and tools to provide new insights in conservation, ecology, and evolution.

The Biodiversity Informatics Facility applies information technologies to collect, organize and analyze biological and environmental data from expeditions, remote sensing, natural history collections, modeling and databases. Through research that applies cutting-edge spatial analysis technologies, we aim to discover new insights and develop new methods in ecology, evolution and conservation biology. Through training initiatives and the development and distribution of software and scripts, we aim to strengthen the capacity of students, educators, researchers, conservation practitioners, and the broader public to study and better understand biodiversity.

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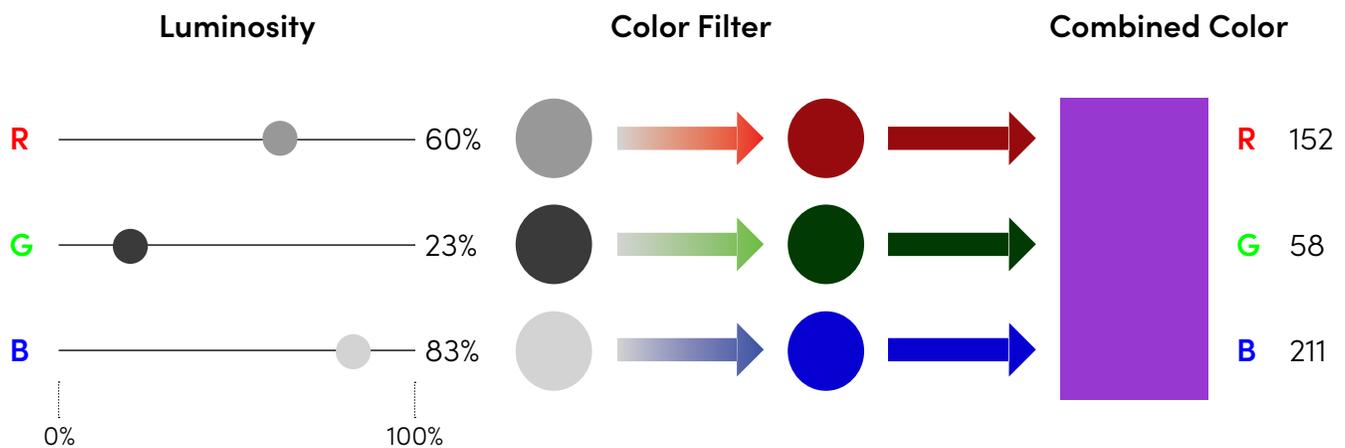
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Center for Biodiversity and Conservation  
American Museum of Natural History  
Central Park West at 79th street  
New York, New York, 10024 USA

Computer monitors use the three primary colors of light; red, green, and blue, to create the images we see. Each color of light is referred to as a channel. Different colors are produced by combining the light transmitted through these three (red, green and blue) channels. By varying the intensity of light for each channel we can control the color that is produced.

Below is a screenshot of how the process works. On the left we see three horizontal lines with a gray circle to their right. These gray circles indicate the intensity of red ("R"), green ("G"), and blue light ("B"). The intensity of light for each channel is then projected through a color filter producing a light through dark shade of red, green and blue. These three colors are then combined, and the resulting color is displayed in the large square on the right. The numbers to the right of the square represent the numeric value for each of the channels. The numeric range for these values in most computers is from 0 – 255 where "0" represents black (no light) and "255" represents very bright light.



To experiment with color mixing you can use almost any graphics software, or you can try with the color mixer at the Computer Science Field Guide website: (<https://csfieldguide.org.nz/en/interactives/rgb-mixer/>). If you move the red slider to a value of 152, the green slider to 58 and the blue to 211 you will see the result is a shade of purple, just like the figure above.