

Name _____ Date _____

The Universe in Living Color

Objective

Students will experiment with color filters and be guided towards deriving the process by which HST converts B&W images into color pictures.

Materials

- set of three color filters (red, green and blue), co-packaged with this Guide
- copies of the student worksheet, providing simulated black and white views of a hypothetical planet, as if taken through red, green and blue filters
- black, red, green and blue paper or other test objects or material (matching their color as closely as possible to that of provided colored filters)
- markers and crayons of colors chosen to match the filters

Procedure

1. In this Activity, you and your Data Analysis Team are going to create a color image of a planet, beginning with just three black and white images as clues to its "real" appearance. It's a fancy piece of detective work. Your teacher will distribute color filters to your Team and ask you to examine samples of paper which are white, black, red, green and blue through the filters. Fill in the boxes in the Chart below with the color that each of these objects appears when seen through each of the different filters.
2. Study the diagram below. Each shows light from objects of a different color passing through different-colored filters. Apply what you learned from your "eyes-on" experiment, and fill in the blank space with the color which you think passes through the filter. This is the color the object will appear if it's seen through that filter. If you think that no color would pass through, write "none." This means the object would look black through that filter.
3. Below are three black and white images of a hypothetical planet. Each simulated image appears as if it was taken through the different color filter noted under the image. Examine these images carefully and applying the rules you generated, figure out the real colors of the planet's features. Using colored pens or markers, create a color drawing of the planet in the blank circle below.

Data and Observations

Sample	Red	Green	Blue
White			
Black			
Red			
Green			
Blue			



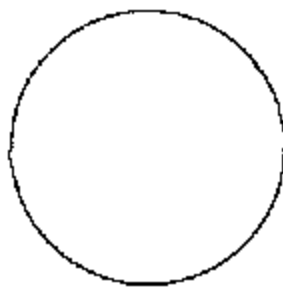
Red Filter



Green Filter



Blue Filter



Your planet to color

