

Norwood Science Center

Human Body Grade 2

Background Information:

After-image is the term one uses to describe what is seen after one stares at an image or picture for a length of time. This occurs after a portion of the retina becomes fatigued by a continued fixed stimuli. If one stares at a black image, the after-image will appear white. If the image is colored, the after-image will take on the complementary color. For example, the image of a red apple when "stared at" will produce an after-image of green. Some traditional colors and their complements are listed below:

IMAGE	AFTER-IMAGE
black	white
red	green
blue	orange
yellow	purple
green	red

TITLE: THE EYES AND AFTERIMAGES

PURPOSE: Identify the eye as the organ that sees light.
Investigate the occurrence of after-images.

MATERIALS: Inside My Eye worksheet
Crayons (black, green and orange)
After-image worksheet

PROCEDURE:

Part One: The Eye

01. Distribute diagram of the eye.
02. Identify the parts of the eye. Have the students label the parts with words on the worksheet "Inside My Eye."

03. Discuss the proper care of your eyes. Dirt and stress can cause eye infections. Remind the students not to rub their eyes with dirty hands. Looking at bright lights or the sun can permanently damage the eye.

Part Two: After-Image

04. Distribute crayons and After-image worksheet.
05. Students should color the flag; the stripes should be alternating black and green, the stars black on an orange field.
06. Instruct students to stare at the flag for about one minute. Then have them quickly remove the picture of the flag while still staring down at the white paper. The after-image of the flag will appear on the white paper as red, white and blue, the complementary colors of black, green and orange. If students are unsuccessful, have them try several times.
07. Stare at a large red dot, look at white paper and see green. Stare at a large green dot, look at white paper and see red. Stare at a large violet dot, look at white paper and see yellow. Stare at a large blue dot, look at white paper and see orange. In each case, the after-image is the complementary color of the dot's color.

CONCLUSION:

01. Ask students why does the pupil of the eye expand when it is dark or the eye is covered? (The pupil expands to let in more light)
02. Asks students why does the eye see different colors when you look away after staring at certain colors? (We see an after-image. The after-image has the same shape as the original image but different colors. This color vision effect is called successive contrast.)

SOURCE:

01. Primarily Physics. AIMS Education Foundation, 1990.