

THE
NEW

Color-aid[®]



GRAY SET

The Color-aid Gray Set consists of 19 colors which form the GRAY Section of the Color-aid system of 314 colors.* The ink coating is matt finish and water resistant. Sheet size measures 9 by 12 inches (22.9 by 30.5 cm).

The Color-aid Gray Scale in full starts with BLACK (1), followed by 17 Grays (GRAY 1.5 to GRAY 9.5) in steps from dark to light, ending with WHITE (10).

The Basic Gray Scale comprises the 10 whole-number steps (BLACK, GRAY 2 – GRAY 9, WHITE).

For a 9-step gray scale, remove GRAY 2 and GRAY 3 from the Basic Gray Scale and replace with GRAY 2.5. (Other configurations possible.)

Use either the 10-step or 9-step gray scale for planning your compositions, then “fine-tune” them with the remaining grays. For realistic effects, work mainly with the grays (GRAY 1.5 to GRAY 9.5) and use BLACK and WHITE sparingly in small areas, if at all. Verify this by studying black-and-white photographs or reproductions.

For an abbreviated gray scale, select BLACK, GRAY 3, GRAY 5, GRAY 8 and WHITE. This 5-step scale divides the gray scale into five distinct lightness (value) regions. Use this 5-step gray scale as a starting point when judging the light/dark distribution in a scene or composition. Any of these five steps may then be substituted or varied using the remaining gray steps.

Middle Gray: Color Perception versus Paint Mixing

Experiment:

1. Place Color-aid BLACK and WHITE some distance apart on a white background.
2. Find the middle gray by trying different Color-aid grays placed between black and white. Middle gray will seem to be “suspended” between black and white; it would not “gravitate” or “pull” toward black or white.

Note: Middle gray as a physical sample is not a fixed color as it will depend on its surrounding color field (background). Middle gray, determined perceptually, will seem to consist of 50% blackness and 50% whiteness. However, mixing equal parts black and white paints will most likely NOT produce a middle gray because paints follow the laws of physics, which are separate and different from color perception laws but does have inexact correlations here and there with the former.

3. Mix equal parts black and white paints and compare the resultant gray with the perceptual middle gray found in step 2. (Note: Paint mixture results may vary due to tinting strength variations and other factors.)

It is important to know the differences between color perception and the principles concerning paint mixing in learning about color in art & design. The full range of colors in the new Color-aid 314 color system can be used to further explore these differences on a broader scale.

Black and white are perceptual “primaries” because they do not appear as mixtures. Grays are perceivable as combinations of blackness and whiteness and thus could be referred to as perceptual “secondaries.”

Experiment: To perceive gray as a visual mixture of black and white, lay out small swatches of the complete Color-aid GRAY Scale so that each swatch is touching the next. Now gaze back and forth slowly over all the steps from black to white to black, etc. Since the awareness of color perception phenomena is not necessarily instant, you may need to repeat the experiment.

Black, white and gray are often referred to as achromatic colors; that is, colors without the chromatic component which carries the hue and saturation (chroma) information. Colors with a hue are referred to as chromatic colors (all the colors in the Color-aid 314 color system, except the GRAY Section).

For a simple demonstration of achromatic colors, select Color-aid BLACK, WHITE and a distinct gray like GRAY 6 or GRAY 6.5. When gray approaches black, it loses its distinct character. Newspaper “black,” for example, may be as light as Color-aid GRAY 2 or even lighter.

Experiment: Cut out black samples from a newspaper and compare them with Color-aid Black. Is newspaper black really black or is it a gray?

Experiment: Find solid blacks in a glossy magazine and compare them with Color-aid BLACK. Because Color-aid BLACK is matt finish, it may seem less black than a glossy black. If newspaper “black” is in fact black, then Color-aid BLACK is definitely black since it is darker than the former. How gray can you go and still call it black?

Percentage Reflectance Table for the 10-step Color-aid Gray Scale (percentages are approximate)

BLACK	= 3%	GRAY 6	= 32%
GRAY 2	= 8%	GRAY 7	= 40%
GRAY 3	= 13%	GRAY 8	= 58%
GRAY 4	= 18% †	GRAY 9	= 72%
GRAY 5	= 26%	WHITE	= 89%

Use this table to determine the reflectance of any color in the Color-aid 314 color system.

† Color-aid GRAY 4, with a reflectance of 18%, can be used as the photographers’ Gray Card.

* For an overview of the Color-aid 314 color system, see our Color Chart.