Colors Change Appearance

Crayola Supplies
- Colored Pencils
- Washable Markers

Other Supplies
- white paper

Suggested Curriculum

<table>
<thead>
<tr>
<th></th>
<th>ECE</th>
<th>Grades 1 - 3</th>
<th>Grades 4 - 6</th>
<th>Grades 7 - 12</th>
<th>Special Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Arts</td>
<td>●</td>
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<td>Math</td>
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<td>Visual Arts</td>
<td>●</td>
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Why
Research visual perception and experiment with different backgrounds to see how color perception changes.

Benefits
- Students experiment with changes in color perception by altering conditions around a color block.
- Students record their color observations, recognize patterns in their observations, and summarize their findings.
- Students state a problem about the natural world of color in the form of a question, then search for answers using a variety of resources.

Directions
1. Experiment with saturated color. Take a red or green Crayola® Classic Colors Washable Marker and completely color a square or triangle on white paper. Stare at the colored shape for one full minute. Now look at a plain white piece of paper. What did you see? Record your observations with Crayola® Colored Pencils.

2. Try this experiment with shapes in other colors. Keep a record of your observations.

3. Based on these experiments, what do you wonder about how your eyes perceive color and shape? Form a question about your experience. Use books, magazines, and computers to find answers about how the eye works. Investigate why you saw a complementary color (color directly opposite on a color wheel, such as yellow and violet) on the blank white paper.
4. Now experiment with surround color. Draw three 1-inch squares spaced a few inches apart, and completely color them using the same blue marker. Around each small square, draw a larger square. Color one of these larger squares red, one yellow, and one green. How does the color blue appear to change depending on what color surrounds it? Record your observations. Repeat this experiment using other colors, keeping a record of what you notice.

5. Form a new question about color to investigate. Find out why the central color looks different to your eye when surrounded by other colors.

**Adaptations**

- Older students work together to create pull-tab exhibits explaining this riddles of vision. Draw illustrations on the front of folded white paper with directions to look at the drawing and then at a blank wall or paper. Glue two sides of the folded paper closed, then insert a longer piece of paper into the pocket so a tab sticks out. Write the question "How did that happen?" on the tab with the answer inside. Share with younger students.
- Find out more about color. Are there colors the human eye does not see? What colors do different animals see? How does light affect color perception?
- Explore color relationships on a color wheel. Find out about triads, split complementary colors, tetrads, harmony, diads, and other color relationships and harmonies.

**Safety Guidelines**

Safety guidelines recommend this art project is suitable for children age 4 years and older. Close adult supervision is required to ensure children’s safety.

**Related Resources**

**Books:**

- How Do Our Eyes See? by Carol Ballard
- Sight (Explore Your Senses) by Laurence P. Pringle
- The Cheshire Cat and Other Eye-Popping Experiments on How We See the World by Paul Doherty
- Visual Intelligence: How We Create What We See by Donald D. Hoffman

**Videos:**

- National Geographic's The Incredible Human Machine

**Software:**

- Human Body Explorer Deluxe Our Body The Human 3D