

INTRODUCTION TO COLOR
The Foundation of Art and Design

Introduction to Color: The Foundation of Art and Design

Overview

This series of lessons was designed to meet the needs of gifted children for extension beyond the standard curriculum with the greatest ease of use for the educator. The lessons may be given to the students for individual self-guided work, or they may be taught in a classroom or a home-school setting. This particular lesson plan is primarily effective in a classroom setting. Assessment strategies and rubrics are included. The lessons were developed by Lisa Van Gemert, M.Ed.T., the Mensa Foundation's Gifted Children Specialist.

Introduction

Color and color theory form the foundation of art as well as design. Gifted children are often tuned in to the aesthetic nature of things at an early age and can appreciate the nuances of color, as well as the way colors are blended, tinted and shaded.

GUIDING QUESTIONS

What is color? How do we represent and create color?

LEARNING OBJECTIVES

After completing this project, students will be able to:

- Identify color terms using the academic vocabulary of the discipline
- Recognize the use of primary and secondary colors
- Evaluate the use of color in fine art painting
- Create a reverse color scheme of a painting
- Design an "eye spy" activity for a painting, focused on the use of color
- Conduct independent research on color and analyze that research



Lesson 1: Introduction to color



Look at this picture. What colors do you see?

List the three colors you think are most easily visible in this painting.

1. _____
2. _____
3. _____

Sunflowers (1887),
by Van Gogh



How about this one? What colors do you see here?

List the three colors you think the artist used most in this painting.

1. _____
2. _____
3. _____

Jardin à Sainte-Adresse
(1866-67), by Monet

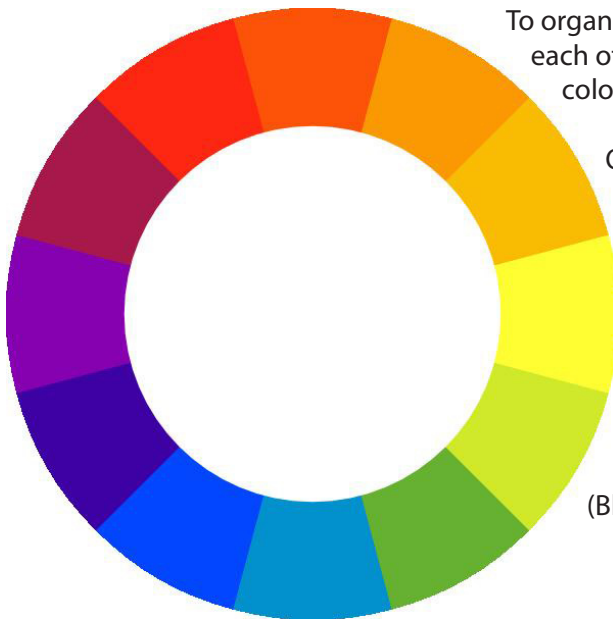


3 things to know about COLOR:

- Color is a way that we describe an object based on the way that it reflects or emits light.
- Your eye can see different colors because a part of your eye called the retina is sensitive to different wavelengths of light.
- Humans are what is called "trichromats," meaning our retinas have three different kinds of cells that can receive color. Those cells are called cones.

What is your favorite color?

What do you think the most common favorite color in the world is? (See the bottom of the page to find the answer.)



To organize colors and show their relationship to each other, we use a color wheel. This shows the colors and how they are related to each other.

On a traditional color wheel, three colors are called primary colors. From these three colors, all of the colors on the color wheel can be made.

The three primary colors on the traditional color wheel are red, yellow and blue. Can you find the primary colors on this color wheel?

(Blue is the most popular color in the world.)



Lesson 2: The language of color

Like many disciplines, color has its own vocabulary. Watch the video at bit.ly/colorwheelvideo for an introduction to the language of color. Next, take this pre-assessment to see how much you already know about color's words.

Color Vocabulary Pre-Assessment

The chart that shows the relationship of different colors to each other is called the

(1) _____ . Instead of the word "color," one could also use the three-letter word (2) _____ .

The three colors from which all other colors are made are called (3) _____ colors, and they are

(4) _____ , _____ , and _____ . Colors that are created by mixing equal parts of the colors

above are called (5) _____ colors, and they are (6) _____ , _____ ,

and _____ . Colors that are created from equal parts of each of the two kinds of colors above

are called intermediate or (7) _____ colors. When describing these colors, place the (8)

_____ color first.

Colors that are next to each other on the color wheel are called (9) _____ . Colors that are oppo-

site to each other on the color wheel are called (10) _____ . When these colors are placed next to each

other, they make each other seem (11) _____ . When mixed equally, they create muddy tones

like black, gray, and brown.

If you add white to a color, that is called a (12) _____ . If you add black to a color, that is called

(13) _____ .

If something only uses one color, it is called (14) _____ .

If something uses more than one color, it is called (15) _____ .

If something is completely lacking in color, it is called (16) _____ .

The colors on the green/blue/violet side of the color wheel are called (17) _____ .

The colors on the red/orange/yellow side of the color wheel are called (18) _____ .

When completed, check your answers. If you got at least 14 of the 18 correct, move on to Lesson 3 below. If

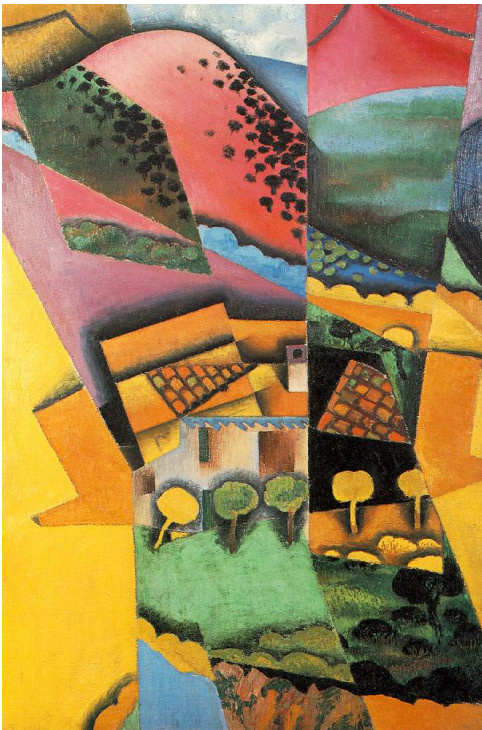
you didn't, read more about it at colormatters.com/color-and-design/basic-color-theory before you move on.



Lesson 3: Finding the colors

In the pictures below, you will find examples of many of the colors on the color wheel. Answer the questions that go with each picture.

This painting, called *Landscape at Ceret*, was painted by the Spanish artist Juan Gris.



In the painting, place checkmarks on six places where you see the three primary colors.

Place a checkmark on two places where you see two primary colors next to each other.

Place a checkmark on two places you see a primary color adjacent to a secondary color.

Circle a place you see a shade of blue.

Circle a place you see a tint of green.

This painting, *Le Rifain assis*, was painted by the French artist Henri Matisse.



This painting has a very narrow color palette. List the colors you see in the painting and identify them as primary (p) or secondary (s) or neither (n). The number of lines does not mean you should find that particular number of colors.

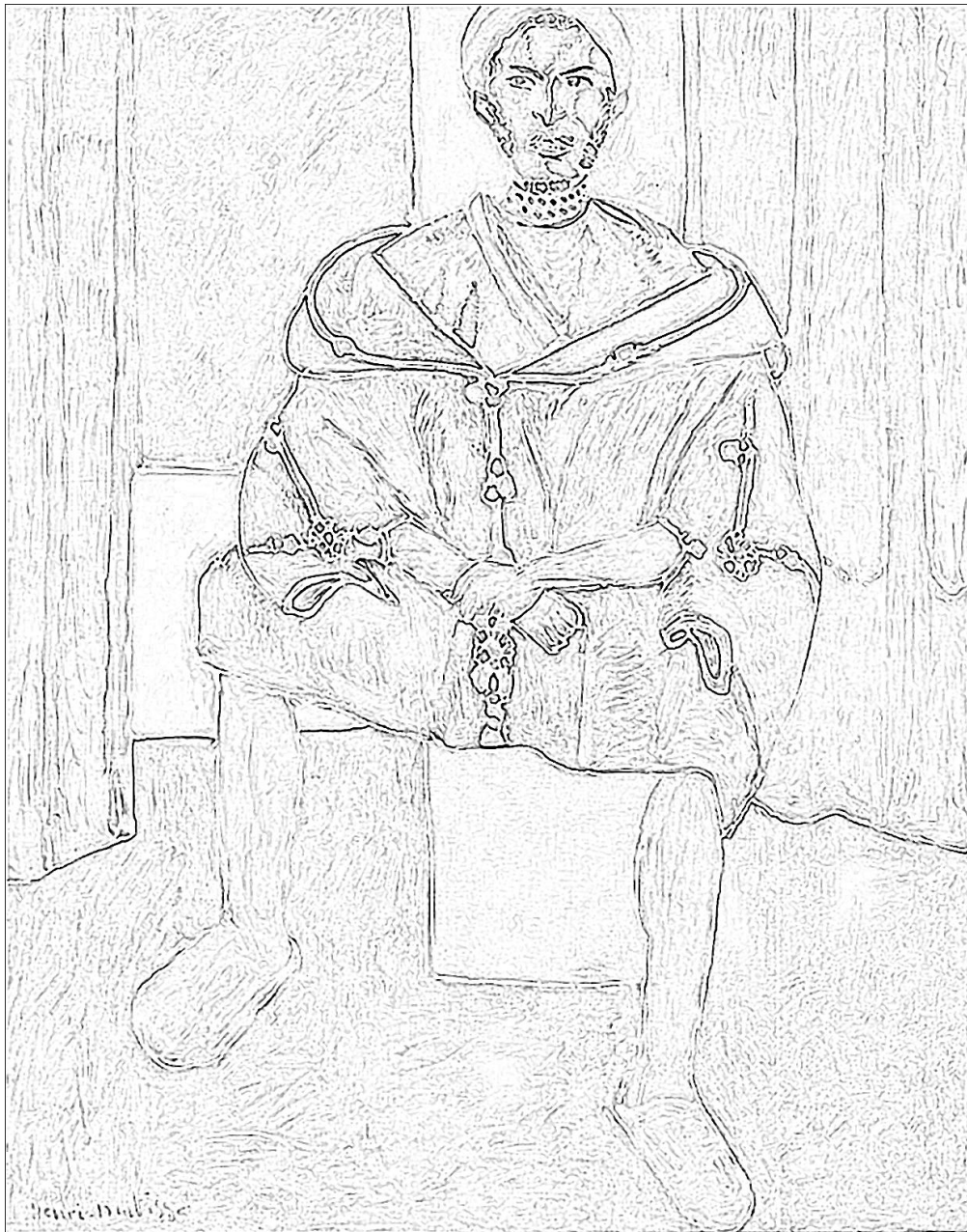
On the next page, you will find this same painting in black and white. Using colored pencils, crayons, or fine tip markers, color in the painting. Instead of reproducing the colors the way you see them in

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the painting on the previous page, select a complementary color (remember that those are opposite each other on the color wheel). For example, where you see green, color a corresponding shade or tint of red, and where you see blue, color in orange. Use the tool at bit.ly/comp-color to find the complementary color – just spin the wheel until you see the color you are looking for, and its complement will be on the other side.

What did you notice in doing this exercise about how the feeling of the painting changed? Is the painting happier? More sad? Darker? Lighter?





In this painting by Johannes Vermeer called *Girl with a Pearl Earring*, the color palette is very limited, yet in an entirely different way from the Matisse painting shown before.

Originally, the dark background had a green glaze over it, but this is no longer visible. Imagine what the color green would have looked like next to the colors you can see now. Where do you think it would have made more difference, in the skin or the clothing?

Art historians have found that Vermeer used 11 pigment colors in this painting:

- white lead
- yellow ochre
- vermilion (a red with an orange undertone)
- red madder
- red ochre
- brown ochre (raw umber)
- charcoal black
- bone black
- ultramarine (lapis lazuli)
- indigo (deep, clear blue)
- weld (yellow)



This painting shows how complex color can become.

Painters do not simply load their brushes with a color and add it to the canvas; they mix the colors on a palette first. Additionally, some of the colors Vermeer used are no longer visible. This can make it hard to detect the colors in the painting, but you may be able to see some of them. Knowing these things, what colors from the pigments listed above do you think you can find? It may help to look at the close view of the painting here: bit.ly/girl-pearl.

Although the painting looks simple, upon close examination, it is a complex blend of colors. Create an “eye spy” activity for the painting, using this rubric. You may look at bit.ly/festeyespy for an idea (look at the poem at the bottom for an example of a rhyming, poetic form).

	Exemplar (4-5 pts)	Expected (2-3 pts)	Emerging (0-1 pts)
Number of Items	10 or more things to find.	6 - 9 items to find	Fewer than 6 items to find
Format	Used rhyme or other pattern to create the clues.	Used correct spelling and grammar.	Spelling and/or grammar errors present.
Color	Incorporated at least five of the pigments in the eye spy and used appropriate color terms.	Incorporated fewer than five of the pigments and/or did not use appropriate color terms.	Incorporated fewer than three of the pigments and did not use appropriate color terms.

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Lesson 4: Color research

Conduct a small research study on people’s favorite colors. With help from your teacher or parents, identify four people you can interview. You will ask the questions below, and one more that you create (add that to the last, blank line).

Good research etiquette is that you will not interrupt, not share your own opinion to agree or disagree with the responses, and thank the person sincerely for his/her time.

Question	Interview 1	Interview 2	Interview 3	Interview 4
What is your favorite color?				
Was that always your favorite color?				
What is your least favorite color?				
Estimate how many different color names you know.				

Analyze your data.

Did any patterns emerge of favorite or least favorite colors?

Were the favorite colors of the people you interviewed stable or had they changed?

Add up the total number of the estimated color names and divide by four to find the average number of colors your interviewees think they can name.

How many of the favorite colors were primary colors?

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How did your findings compare with what we know about the most popular color in the world?

How many were secondary colors?

What in your findings surprised you?

What did you discover in the responses to the question you created?

Let this rubric guide you.

	Exemplar (4-5 pts)	Expected (2-3 pts)	Emerging (0-1 pts)
Created question	Created question aligns very well with other questions, is easy to understand and is well-drafted.	Created question is reasonable and fits well with research study.	Created question aligns somewhat well with study. It may be slightly confusing or have other weaknesses.
Research quality	The research is fully complete using appropriate research etiquette. The selection of interviewees allowed for a broad range of responses.	The research is fully complete using appropriate research etiquette.	The research is incomplete in some way and/or proper research etiquette was not allowed.
Research analysis	Analysis is full, complete and thoughtful. It demonstrates reflection and insightful analysis.	Analysis is complete. Most answers are thoughtful.	Analysis is incomplete or lacking in thoughtfulness.



Assessment

Lesson 1:

- Sunflower picture: Reasonable responses include blue, yellow, green, brown, and beige.
- Oceanscape: Reasonable responses include any combination of red, blue, white, or green.

Lesson 2: Color Vocabulary Pre-Assessment Key:

- | | |
|---|-------------------|
| 1. color wheel | 10. complementary |
| 2. hue | 11. brighter |
| 3. primary | 12. tint |
| 4. red, yellow, blue (no order necessary) | 13. shade |
| 5. secondary | 14. monochromatic |
| 6. green, orange, violet (no order necessary) | 15. polychromatic |
| 7. tertiary | 16. achromatic |
| 8. primary | 17. cool |
| 9. analogous | 18. warm |

Lesson 3: The initial activities in this lesson are subjective, to a great extent. If you desire to assess, look for full and reasonable responses. The rubric for the Eye Spy activity is included in the section.

Lesson 4: The rubric for the independent research is included in the section.



Extension

Read It!

Young Readers:

- *The Color Kittens* by Margaret Wise Brown
- *Celebrity Cat: With Paintings from Art Galleries Around the World* by Meredith Hooper
- *Mouse Paint* by Ellen Stoll Walsh
- *Museum Trip* by Barbara Lehman
- *Color Dance* by Ann Jonas
- *White Rabbit's Color Book* by Alan Baker

Older Readers:

- *Color Theory: An Essential Guide to Color* by Patti Mollica
- *Pantone: The Twentieth Century in Color* by Leatrice Eiseman

Surf It!

- Practice mixing colors on your computer at bbc.co.uk/cbbc/games/colour-factory-game
- Make a rainbow of color with milk at bit.ly/milk-rainbow
- Test your color vision at colorvisiontesting.com/ishihara.htm
- Read about the history of the color wheel at bit.ly/color-history
- Read about people who see differently at wonderopolis.org/wonder/do-you-see-what-i-see
- Learn more about Vermeer and *Girl with a Pearl Earring* at:
 - ▶ essentialvermeer.com
 - ▶ bit.ly/girl-pearl
 - ▶ girl-with-a-pearl-earring.info