

COLORS, COLORS EVERYWHERE

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Lesson Summary for Kindergarten

In this lesson, students mix red, yellow, and blue frosting together to produce secondary colors. They discuss the color wheel and spread the “paint” icing on “canvas” (graham crackers) to enjoy for a snack.

Featured Fiction Book: Walsh, E.S.; *Mouse Paint*; Harcourt Brace Jovanovich: San Diego, 1989. (ISBN: 0-15-256025-4) While the cat is sleeping, three white mice discover jars of red, yellow, and blue paint. They explore the paint using their feet as brushes to discover what happens when they walk through the colors.

Part 1: Building Bridges

At attendance or at a group meeting, ask each student his or her favorite color. Write these down and at the next meeting time give each student a square paper of that color to put on a class graph. When each student has put his or her paper up on the corresponding color on the graph, count how many of each color there are, which color has the most, the least, and colors that have the same number.

Getting Ready to Read

Ask students if they have ever mixed paint, juice, or soda together. Ask them what happened.

Show students the cover of *Mouse Paint* and ask which colors are shown and which colors the mice might discover.

Read the book *Mouse Paint*. Discuss the colors in the book. Ask students what object they think of when they think of a certain color. Also, say the name of something and ask what color it usually is.

Bridging to the Science Activity

Using color paddles on the overhead projector, combine primary colors to produce secondary colors. Explain that the light reflects the colors we see. Another way to mix colors is using food coloring. The light is still reflecting the colors but we can eat the colors now!

Part 2: Science Activity

Students learn that all colors are made from mixing red, blue, and yellow paints (primary colors of paint) together.

Key Science Topics:

- properties of color
- mixing color and light

Key Process Skills:

- sorting
- predicting
- observing

Ohio Proficiency Learning Outcomes for Science:

Fourth Grade

- I-1 Sort objects and pictures by color.
- I-5 Predict what happens when colors are mixed. Students predict what will happen when light hits a prism and predict what happens when color paddles are held up to the light together.
- I-6 Carry out a simple experiment of mixing colored icing, paints, and color paddles.
- I-8 Observe different shades of colors obtained by students at their table.
- I-9 Demonstrate safe use of materials by staying seated when using craft sticks as knives, disposing of all left-over food when finished. Students keep paint and Play-Doh[®] out of their mouths.

Materials for Part A: Cookie Paint

Note: Materials used for this part must be food safe because students are allowed to eat some of them.

- canned icing
- food coloring
- graham crackers
- paper plates
- craft sticks
- napkins

Materials for Part B: Color Wheels (Science Extension)

- blank color wheels with six sections
- red, yellow, and blue liquid watercolor paint
- paintbrushes
- rinse water
- paper towels

Materials for Part C: Color Taste (New Dimension)

Note: Materials used for this part must be food safe because students are allowed to eat some of them.

- JELL-O[®] JIGGLERS[®] in each color: red, orange, yellow, green, blue, and purple
- bandanas

Materials for Part D: Colored Light (Science Extension)

This is taken from: Taylor, Barbara; *Over the Rainbow!: the Science of Color and Light (Step into Science)*; Random House: New York, 1992. (ISBN: 067-982-0418)

- three flashlights
- pieces of red, blue, and green cellophane tape
- overhead screen

Safety and Disposal

All materials are non-toxic. No special disposal procedures are required.

Getting Ready

For Part A of the procedure have red, blue, and yellow food coloring already mixed into canned frosting and placed on paper plates with spaces in between scoops of icing.

For Part B, have papers with six segmented circles drawn on them available ahead of time. Have palettes with red, yellow and blue liquid watercolor paint with paintbrushes ready. Small groups may share rinse-water containers.

For Part C, have JELL-O JIGGLERS ready, already cut into enough squares for entire class. Have bandanas available before beginning the activity.

For Part D, have red, green, and blue cellophane already taped over working flashlights.

Procedure: Part A

Review the concept of light reflecting the color we see. Hold up each color paddle and shine a flashlight through it individually and then through the combinations of red/yellow, red/blue, and blue/yellow. Tell the students they are going to mix colors another way—by mixing pigments. Not only will they be able to see these colors but eat them as well!

Pass out the paper plates with colored icing. The class may either experiment with mixing colors on their own or have the teacher lead the class by choosing designated colors and mixing them as a group.

As the students mix the colors, walk around asking: what is happening to their icing, what colors are they making, what happens when they mix more than two colors, can they make their favorite color?

Pass out the graham crackers to the students so they can spread the icing on the cracker and eat. When finished, dispose of plates, craft sticks, napkins, and any left-over icing by putting them in the trash can.

Procedure: Part B (Science Extension)

Review which colors the students started with and which colors were made by mixing the colored icing. Next, say that they are going to mix colors again using regular paint like the mice used in *Mouse Paint*.

Pass out blank color wheels, palettes, brushes, paint, and water. Guide the group through the steps of placing red, blue, and yellow paints, leaving an empty segment between each color for mixing.

Have students mix red and yellow in the space between red and yellow. Mix blue and red in the space between blue and red. Mix blue and yellow in the space between blue and yellow.

Procedure: Part C (New Dimension)

Ask the students if they think of a certain food when they see a certain color. For example: “What do you think of when you see purple?” Also, ask what color reminds them of a food: “What color do you think of when I say the word apple?”

Tell them you have some colors you want them to taste. This is done best by the blind taste test method, but some students may be uncomfortable with this procedure. If this is the case, have them close their eyes.

This activity works best in small groups, so it should be repeated for as many groups as there are in the class. With the students' eyes closed, have them sample the first JELL-O square. Ask them what flavor it is and what color they think it is. Write these responses on a sheet.

At the end of the session see how many students could tell which colors and flavors each JELL-O JIGGLER was.

Procedure: Part D (Science Extension)

Ask the students what the primary colors of paint are. Have a student helper turn off the lights. Introduce the primary colors of light by showing them the green, blue, and red flashlights, shining them on the overhead screen.

Shine the red and green lights onto the screen. Where the colors meet on the screen, they should see yellow light.

Try mixing blue and green light and blue and red light. What colors do they make?

Now try mixing all three colors. What happens this time?

Further Science Extensions

Students place fish cut out of newsprint onto newspaper—how many fish are there? They look for pictures of camouflaged animals in magazines for Camouflage Collage. Science activities to be on science shelf for center and choice time are:

- prisms
- flashlights with cellophane over beam
- colorations (liquid watercolor paint and coffee filters with pipettes)
- watercolors
- color paddles
- Play-Doh in primary colors

Science Explanation

The primary colors of pigment are red, yellow, and blue. These colors combine in varied amounts to make up all other colors and when mixed all together, theoretically, produce black. Usually it's more of a brown color. Light reflects the color red of a red apple and absorbs all other colors, so red is what we see.

The primary colors of light are blue, green, and red. From these all colors of the rainbow are made. When red, green, and blue are mixed white is made. Our eyes see the color of the object because that color (for instance a green leaf) is reflected and all the other colors are absorbed.

Part 3: Lesson Extensions

Art Activity

Students mix red, yellow, and blue Play-Doh to make secondary colors. Students mix red, yellow, and blue food coloring in mounds of clear gelatin to discover how colors blend. They drop liquid watercolor paint into water using varying amounts to get different shades of secondary colors.

Citizenship Activity

Have students study habitats of mice and cats. Using magazine pictures, have them make a poster of animals that make appropriate pets. They should then make a poster of animals best left in the wild.

Language Arts Activity

Students make a *Mouse Paint* book using their fingers as mice feet to make prints through primary colors. After reading *Mouse Paint*, students draw their favorite pictures from the storybook into their journals. They use an interactive chart for *Mouse Paint*.

Ohio Proficiency Learning Outcomes for Reading and Writing:

Fourth Grade

- R-I-4 Students draw a picture in their journals in response to having *Mouse Paint* read to them.
- R-IV-17 Students tell reasons why they did or did not like the book *Mouse Paint*.
- W-I-1 Students focus on colors, mice, and cats when drawing pictures in their journals.

Mathematics Activity

Students do various activities that involve patterns and sorting.

Ohio Proficiency Learning Outcomes for Mathematics:

Fourth Grade

- I-2 Replicate and create patterns.
 - VI-21 Compile graph using each student's favorite color.
 - VII-22 Use graph to show which colors had the most votes, least votes, same as votes.
1. Patterns: students replicate a given pattern using unifix cubes, colored paper, teddy bear counters, chips, links, and people.
 2. Students continue a pattern using above manipulatives.
 3. Sorting: students sort pictures according to attribute of color and make color collages.
 4. Color Concentration game.
 5. Color match board game.

Part 4: For Further Study

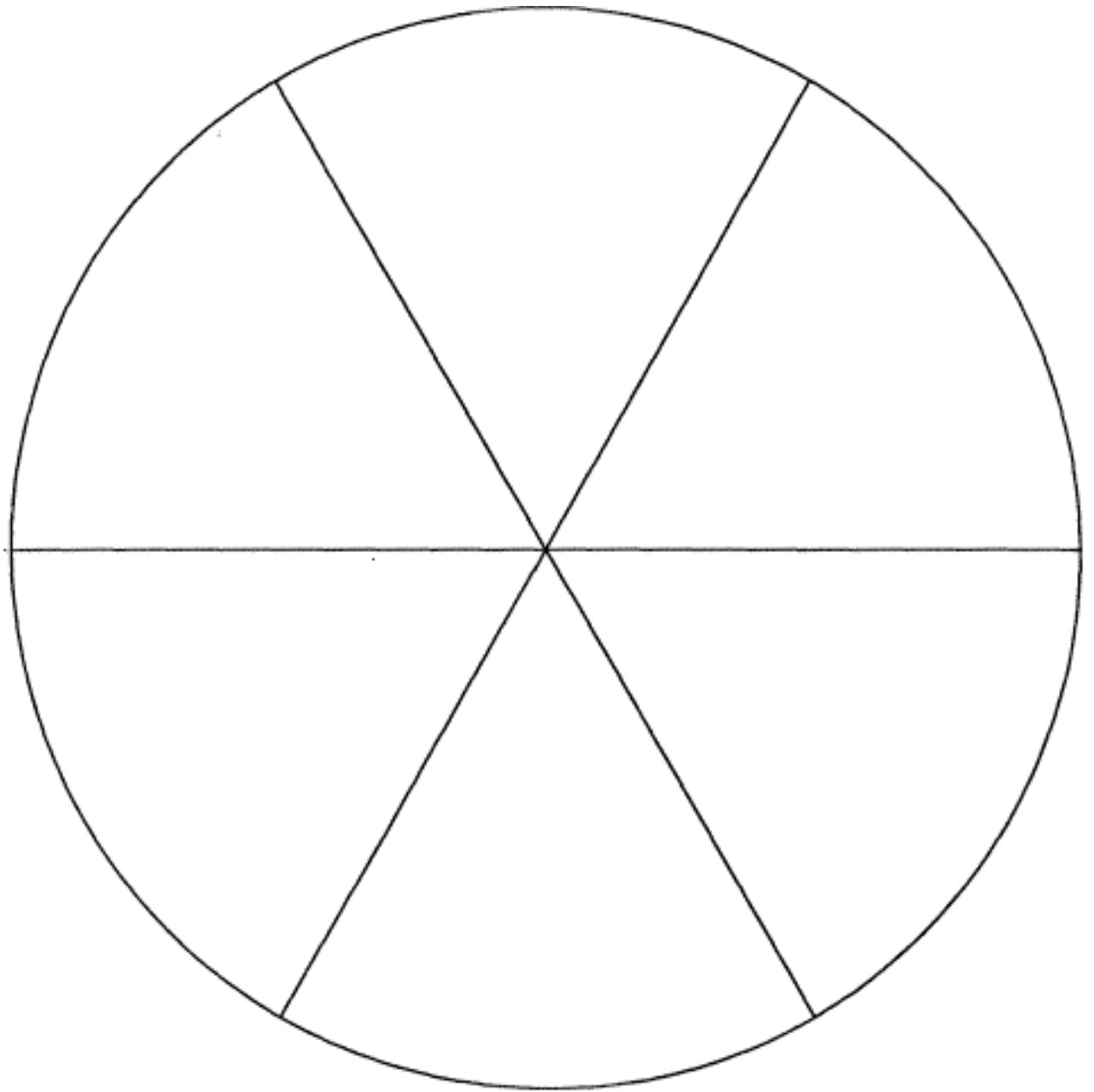
White Rabbit's Color Book by Alan Baker
The Color Wizard by Barbara Brenner
The Mixed Up Chameleon by Eric Carle
A Rainbow of My Own by Don Freeman
Picasso the Green Tree Frog by Amanda Graham
Rabbit and Chicken Play with Colors by Landa Norbert
A Color of His Own by Leo Lionni
Little Blue and Little Yellow by Leo Lionni
Danger Colors by Oxford Scientific Films
Hide and Seek by Oxford Scientific Films
How the Animals Got Their Colors by Michael Rosen
The Adventures of the Three Colors by Annette Tison

I Went Walking by Sue Williams
A Million Chameleons by James Young

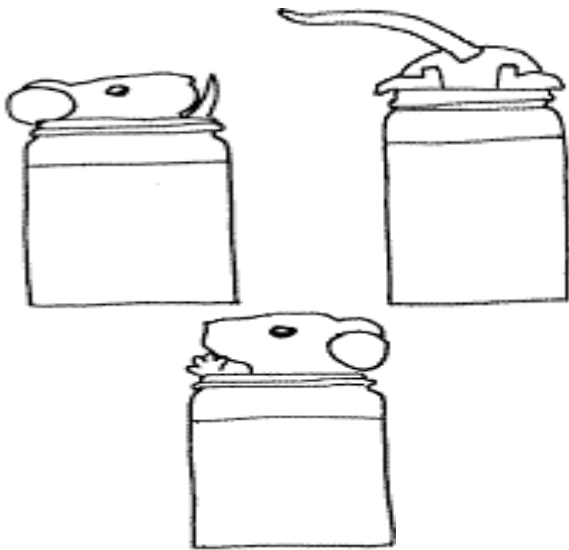
References

Taylor, Barbara. *Over the Rainbow!: The Science of Color and Light*; Random House: New York, 1992.

Williams, John. *Projects With Color and Light*; Gareth Stevens Publishing: Milwaukee, WI, 1990.



Mouse Paint



By _____



Red and blue make

_____.



Blue and yellow make

_____.

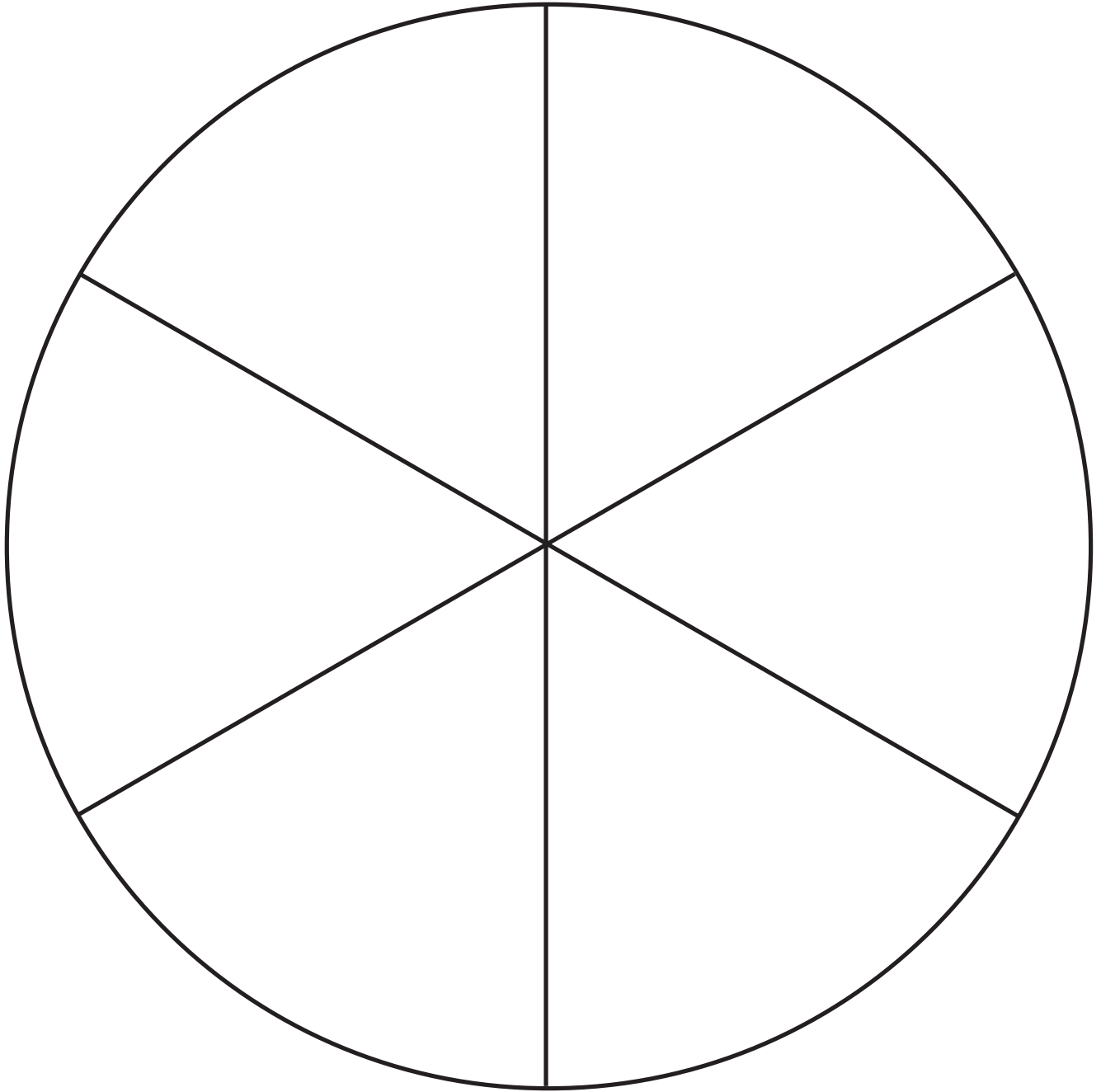


Red and yellow make

_____.

Name _____ Date _____

1. Make a color wheel.



2. The primary colors are _____, _____, and _____.

3. The _____ colors are green, violet, and orange.

4. Draw a picture of a pencil.

5. Draw a picture of a pencil under water.

6. Describe the differences.

7. If an animal needs to hide against a tree trunk, which of the following would be the best camouflage?

- a) polka dots
- b) light and dark strips
- c) bright colors

8. Name some people who might use color mixing in their jobs.

9. Describe your favorite camouflaged animal.
