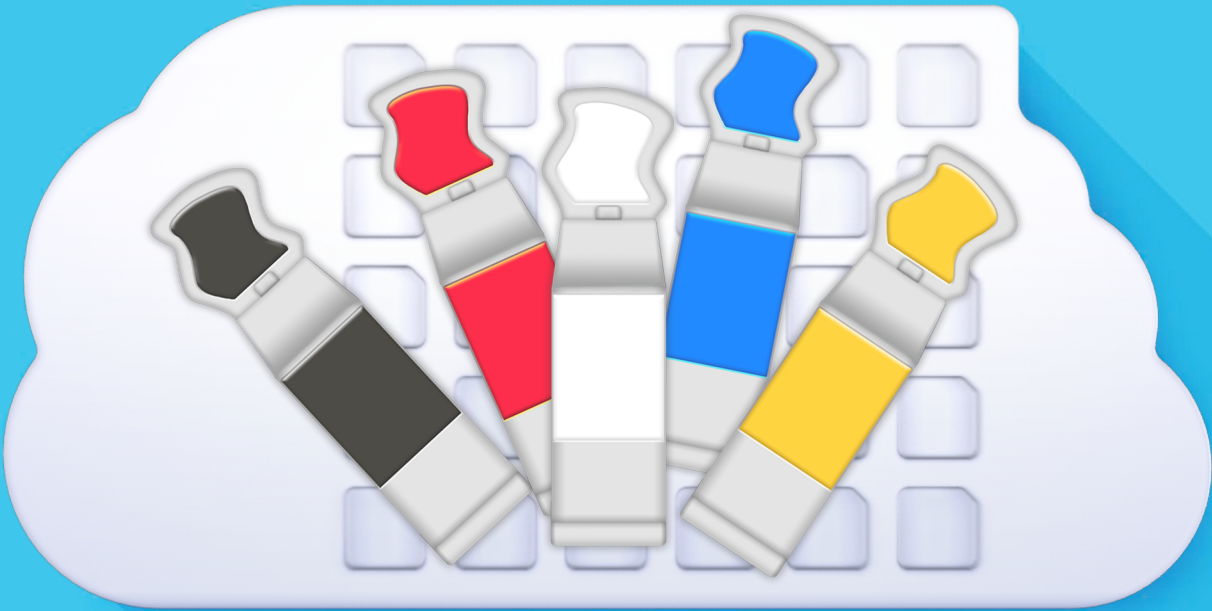




SWATCH OUT!

Curriculum



GRADES
K-2

Introduction



Match Colors, Get Combos

Use the Play Tray included in the Puzzlets Starter Pack with brand new Puzzlets Paint tiles, shown below. Match enemy colors then draw around them to swatch them out! Mix up to three colors at a time to change the color of Pizza Swigglesworth, a chameleon with a weird name.

All 80 levels require changing colors many times and reinforce 22 color names by showing them on the screen. Players will have to master moving Pizza around quickly if they want to get the crown on each level. Big bad Polython awaits at the end of each world.

Topics Covered

- ✓ Primary Colors
- ✓ Secondary Colors
- ✓ Tints (White)
- ✓ Shades (Black)
- ✓ Warm Colors
- ✓ Cool Colors

App Icon



Black Paint



Blue Paint



Red Paint



White Paint



Yellow Paint



Game World Breakdown



Each World Focuses on One Topic

The 12 worlds of Swatch Out! each focus on a different aspect of Color Theory. This makes it easy to designate a specific lesson. Note that worlds are unlocked in sequence, for example, World 3 is unlocked after all levels in World 2 have been cleared.

TOPICS BY WORLD

World 1	3 Primary Colors
Worlds 2-4	3 Secondary Colors
Worlds 5-10	6 Tints & Shades of Primary & Secondary Colors
Worlds 11-12	Warm & Cool Colors



World 1
Primary colors, basic
gameplay tutorials



World 4
Secondary color:
green, how to make
green



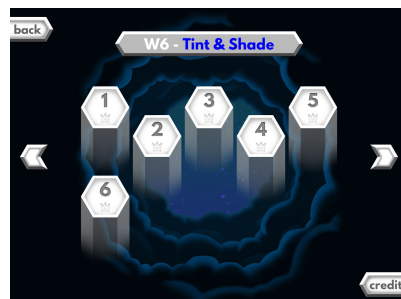
World 2
Secondary color:
orange, how to make
orange



World 5
Tints and shades of
red, adding black
and white to red



World 3
Secondary color:
purple, how to make
purple



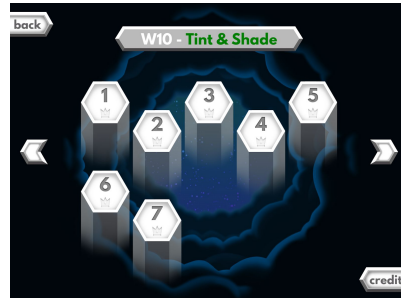
World 6
Tints and shades of
blue, adding black
and white to blue

Game World Breakdown



World 7

Tints and shades of yellow, adding black and white to yellow



World 10

Tints and shades of green, adding black and white to green



World 8

Tints and shades of orange, adding black and white to orange



World 11

Warm colors, including tints and shades of warm colors



World 9

Tints and shades of purple, adding black and white to purple



World 12

Cool colors, including tints and shades of cool colors



Bonus World

A bonus world is unlocked after World 12. It contains all types of enemies from previous worlds and gets zany with the number of enemies on the screen at once. Be careful!

How to Play



Player Goals

Those playing Swatch Out! are ultimately trying to clear all enemies in each level. The secondary goal is to get a shiny star on each level. This is accomplished by avoiding enemies and clearing multiple enemies at once, also known as a combo, to earn regular stars.

PIZZA SWIGGLESWORTH



The hero of the game, Pizza Swigglesworth, is a color-changing chameleon. Pizza will appear gray if no Paint Puzzlets are on the Play Tray. When Pizza is gray, he cannot defeat enemies. Pizza also has infinite health, so he cannot die. If he is hit by an enemy, he will get pushed around and lose regular stars, earned from defeating other enemies.

SHINY STARS



Shiny stars are a badge of knowledge & gameplay skill for individual levels but are not required. Collect stars in each level by defeating enemies. As players defeat enemies in groups, they will earn bonus stars.

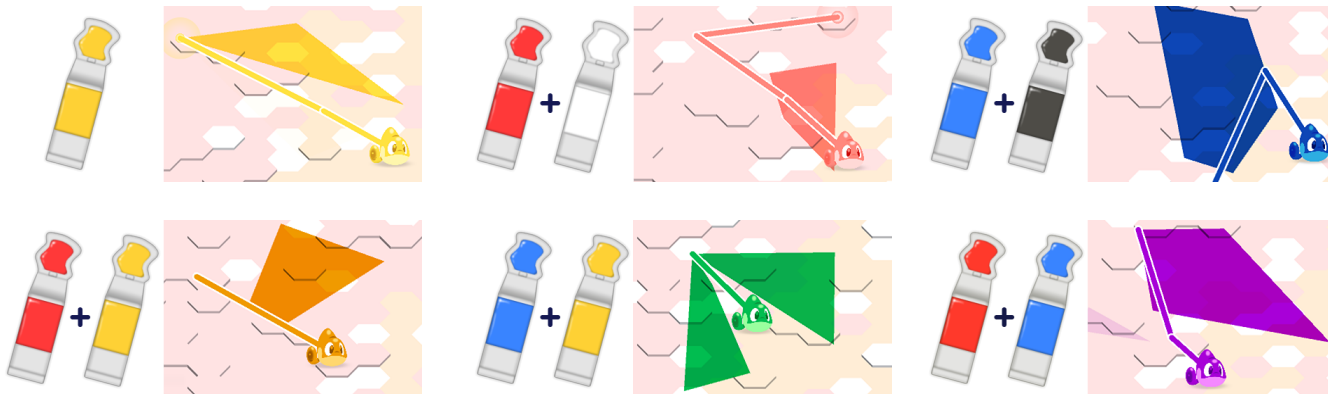
TROPHY (CROWN)



Each level has a different requirement of enemies needed to obtain a trophy, which is always shown in the upper-right of the screen. As players defeat enemies in groups, they will earn bonus stars, making it easier to get the trophy. The most difficult part of obtaining a trophy is at the end of a level because if the player slams into an enemy, they lose a star or two and if no more enemies spawn, they will fall short of the requirement and must replay the level to earn a trophy.

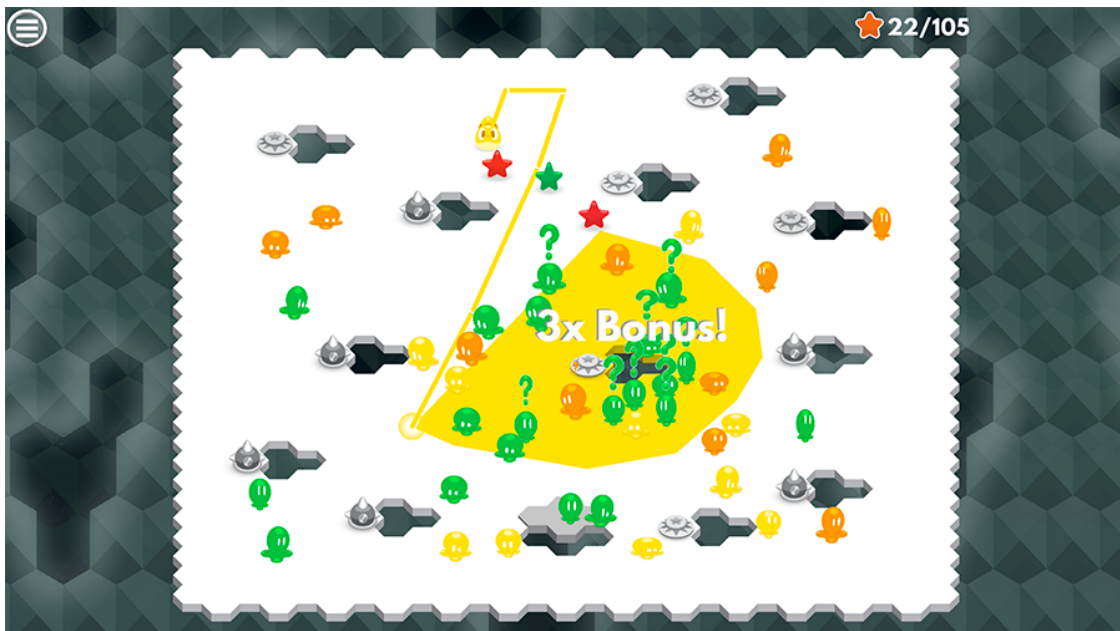
CHANGE THE COLOR OF PIZZA SWIGGLESWORTH

1. First, place one, two, or three Paint Puzzlets down on the Play Tray.
2. The colors are automatically mixed together (i.e. a Blue Paint Puzzlet and Red Paint Puzzlet will change Pizza Swigglesworth to the color purple.)
3. Example colors are below. *Note: not all combinations are shown.*

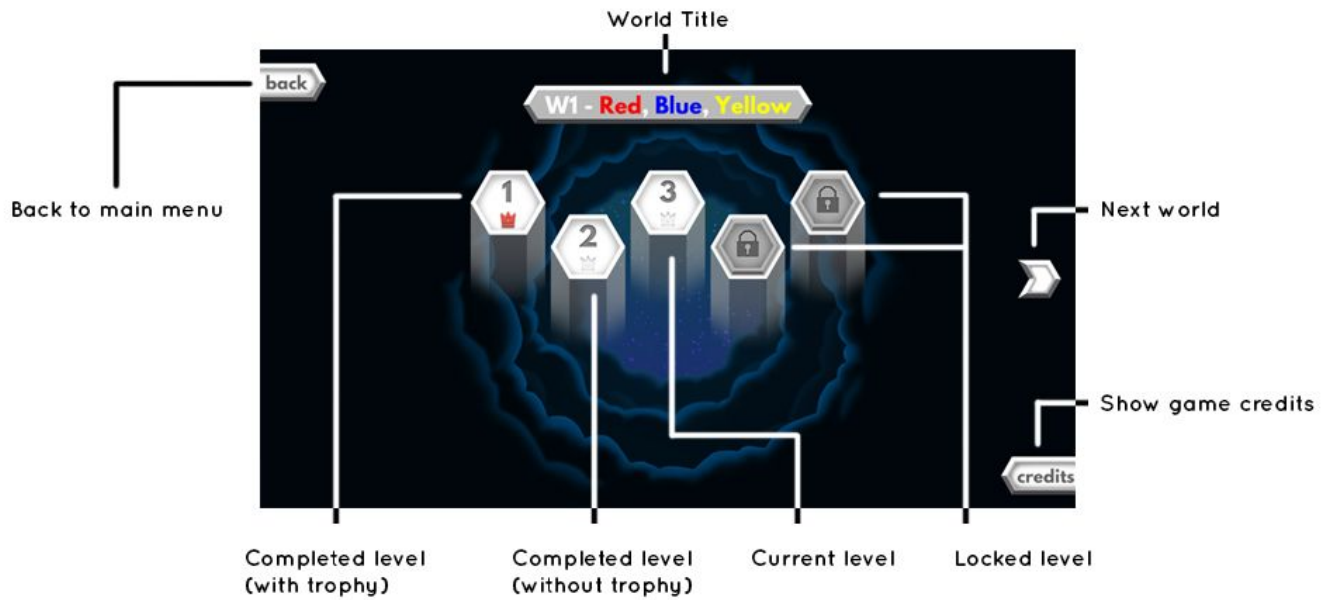


HOW TO STUN & DEFEAT ENEMIES

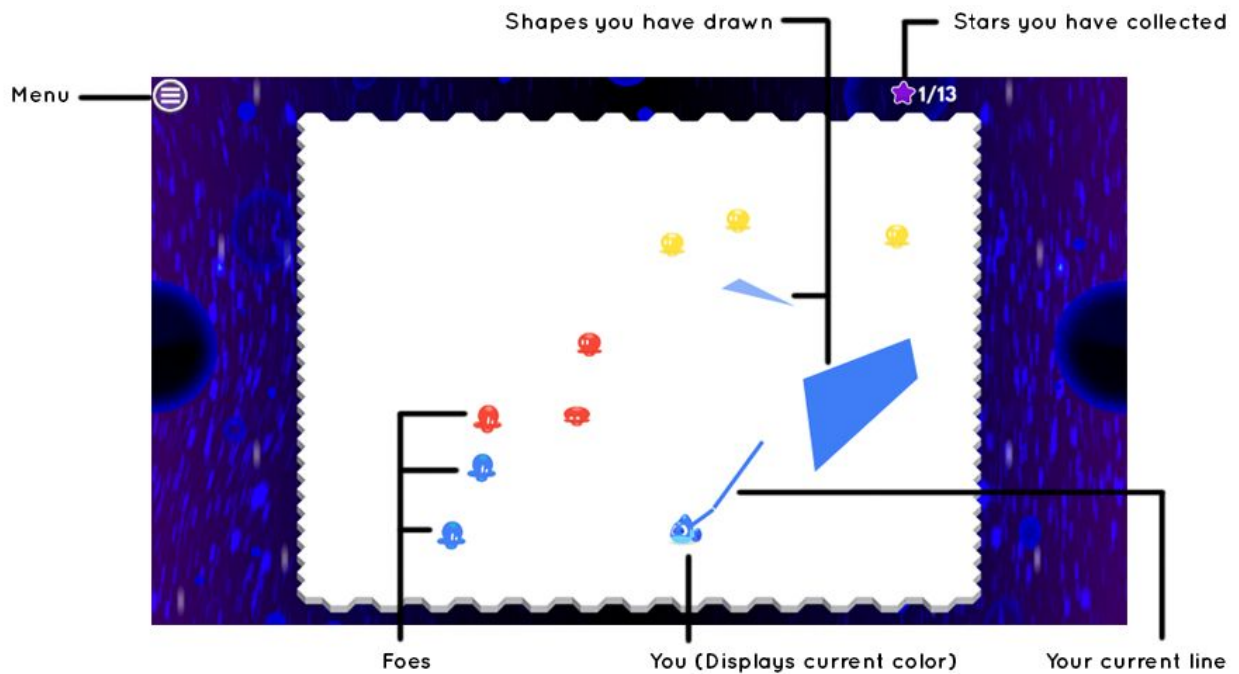
1. **Tap around an enemy** of matching color to defeat it. Pizza will leave a color trail behind when moving to the next location the player has tapped. The area will fill in with paint then fade away over time.
Note: the color trail has a limited length, and if it maxes out in length, it will pull from the beginning of the line. This is to prevent the player from drawing very large shapes.
2. **Confuse enemies:** If Pizza's color does not match the color of the enemy, the enemy will become stunned with a question mark over its head as in the below screenshot.
3. **Special stun move:** Feeling trapped? Tap on Pizza Swigglesworth to create a sonic boom, which pushes nearby enemies away.



WORLD SELECT SCREEN



EXAMPLE LEVEL SCREENSHOT



Curriculum Overview



This curriculum is designed to introduce and build student knowledge and understanding of basic color theory concepts and collaborative skills. Using the paint tube Puzzlets pieces, students will:

1. Identify and use the academic vocabulary of color theory in the visual arts
2. Identify spectral colors by name
3. Group colors: Primary, Secondary, Tints, Shades, Warm, Cool
4. Create colors through “mixing”
5. Breakdown colors into their primary hue components

Lesson Sequence



This curriculum can be completed in four [4] multi week lessons and includes whole group instruction, small group instruction, paired play, and individual work. Lessons are meant to be repeated and will take as long as a student needs to complete a level in paired play.

Lesson #1: Primary Colors

Lesson #2: Secondary Colors

Lesson #3: Tints and Shades

Lesson #4: Warm and Cool Colors

P21 Standards



The standards listed below are standards from the P21 Framework which map to learning opportunities with Swatch Out & Puzzlets.

Sources

http://www.p21.org/storage/documents/docs/P21_Framework_Definitions_New_Logo_2015.pdf

<http://www.p21.org/storage/documents/4csposter.pdf>

Learning & Innovation Skills

Learning and innovation skills increasingly are being recognized as those that separate students who are prepared for a more and more complex life and work environments in the 21st century, and those who are not. A focus on creativity, critical thinking, communication and collaboration is essential to prepare students for the future.

CREATIVITY AND INNOVATION

Think Creatively

- *Use a wide range of idea creation techniques.*
- *Create new and worthwhile ideas (both incremental and radical concepts).*
- *Elaborate, refine, analyze and evaluate their own ideas in order to improve and maximize creative efforts.*

Work Creatively with Others

- *Develop, implement and communicate new ideas to others effectively*
 - *Be open and responsive to new and diverse perspectives; incorporate group input and feedback into the work.*
 - *Demonstrate originality and inventiveness in work and understand the real world limits to adopting new ideas.*
 - *View failure as an opportunity to learn; understand that creativity and innovation is a long-term, cyclical process of small successes and frequent mistakes*
- Implement Innovations** *Act on creative ideas to make a tangible and useful contribution to the field in which the innovation will occur.*

When playing Puzzlets, a child's creativity shines. Whether individually, in pairs or in whole class discussions students can get creative when playing through the levels. Each time a child replays a level they will experience a different variation of a similar problem. This encourages them to gather a deeper understanding of problem solving and eliminates the ability to just memorize the answers. This encourages a struggle and suggests to student that learning is an ongoing process and with every new failure you will learn and grow.



Students can self assess by asking themselves these questions:

1. Were you creative?
2. Did you keep trying even if you struggled with a problem?
3. Were you able to discover a solution to all of the problems that came your way?

CRITICAL THINKING AND PROBLEM SOLVING

Reason Effectively

- *Use various types of reasoning (inductive, deductive, etc.) as appropriate to the situation.*
- *Use Systems Thinking.*
- *Analyze how parts of a whole interact with each other to produce overall outcomes in complex systems Make Judgments and Decisions.*
- *Interpret information and draw conclusions based on the best analysis.*
- *Reflect critically on learning experiences and processes.*

Solve Problems

- *Solve different kinds of non-familiar problems in both conventional and innovative ways.*
- *Identify and ask significant questions that clarify various points of view and lead to better solutions.*

When playing Puzzlets, students will be actively engaged in problem solving and critical thinking through game play. They will use various styles of reasoning to develop their solutions. As the game progresses their thought and critical thinking will be continually challenged.

Students can self assess by asking themselves these questions:

1. Did you think critically today?
2. When you were given a difficult problem did you work hard to try and find the best solution to the problem?
3. When things became difficult did you continue to try your best?

COMMUNICATION AND COLLABORATION

Communicate Clearly

- *Articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts.*
- *Listen effectively to decipher meaning, including knowledge, values, attitudes and intentions.*
- *Use communication for a range of purposes (e.g. to inform, instruct, motivate and persuade.)*

Collaborate with Others

- *Demonstrate ability to work effectively and respectfully with diverse teams.*
- *Exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal.*
- *Assume shared responsibility for collaborative work, and value the individual contributions made by each team member.*



Communication

When Playing Puzzlets in pairs using the driver/passenger technique students will engage in actively communicating and making decisions with their partner.

Students can self assess by asking themselves these questions:

1. Did you communicate well with your partner?
2. Did you share ideas and listen to their's? Did you ask questions?
3. Are you able to communicate what you are doing in the game with adults or other peers?

Collaboration

When Playing Puzzlets in pairs using the driver/passenger technique (above) students will engage in constant collaboration. The Play Tray and iPad are true 50/50 play where each child plays an integral role in getting through the level. If they are unable to work together they will have great difficulty finding success.

Students can self assess by asking themselves these questions:

1. Did you collaborate with your partner?
2. Did you work well together and try each other's ideas. Were you kind? Were you helpful? Did you share?

LEADERSHIP AND RESPONSIBILITY

Guide and Lead Others

- *Use interpersonal and problem-solving skills to influence and guide others toward a goal.*
- *Leverage strengths of others to accomplish a common goal.*

When playing Puzzlets students will constantly be challenged with a more difficult problem to solve. They will have to think critically and use their knowledge and understanding to solve each equation that comes their way. Playing this game will help students to develop these valuable skills that help define a leader.



Source

http://www.iste.org/docs/Standards-Resources/iste-standards_students-2016_one-sheet_final.pdf?sfvrsn=0.23432948779836327



Empowered Learner

- 1. Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.*
 - d. Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.*

COLOR THEORY KNOWLEDGE

While playing Swatch Out!, our youngest students are gaining comfortability navigating through the app and Bluetooth-based play. They are building their knowledge of color theory while further developing their digital fluency.

National Art Standards



Visual Arts/Creating

#VA.CR.1

Process Component

Visual Arts Anchor Standard 1 - Creating

Anchor Standard

Generate and conceptualize artistic ideas and work.

Enduring Understanding

Creativity and innovative thinking are essential life skills that can be developed.

Essential Question

What conditions, attitudes, and behaviors support creativity and innovative thinking? What factors prevent or encourage people to take creative risks? How does collaboration expand the creative process?

Grade K: VA.CR.1.K

Engage in exploration and imaginative play with materials.

Grade 1: VA.CR.1.1

Engage collaboratively in exploration and imaginative play with materials.

Grade 2: VA.CR.1.2

Brainstorm collaboratively multiple approaches to an art or design problem.

Pre-assessment



Name _____

Date _____

	I don't understand.	I can do it with help.	I can do it on my own.	I can help others.
I can name the 3 Primary Colors				
I can name the 3 Secondary Colors				
I know what color is formed when 2 colors mix				
I know how to make a color lighter or darker				
I can name 3 Warm Colors				
I can name 3 Cool Colors				
I can name the spectral colors in order				



Lesson 1 Primary Colors



Lesson Overview

In this lesson students are introduced to the Color Wheel and will work with the teacher to identify the three Primary Colors. They will then play World 1 in Swatch Out! to reinforce these colors.

Lesson Objectives

SKILLS

Students will

- Recognize the color wheel as a tool for understanding the relationships between colors
- Describe the structure/arrangement of the color wheel
- Identify red, blue, yellow as the Primary Colors and correctly color them on their individual color wheel
- Use the Primary Color Puzzlets paint tubes to play World 1, Levels 1-5 in Swatch Out!

AT A GLANCE

Getting Started

- Gather students in whole group for lesson

Whole Group Instruction

- Introduce vocabulary and activity
- Complete Primary Colors on individual color wheels

Paired Play

- Play World 1 with a partner

Wrap Up

- What's the learning?

Assessment

- Self Assessment 1

ADVANCE PREPARATION

1. Make a copy of the Color Wheel handout for each student.
2. Provide primary colors in a medium of your choice or a station for students to choose their medium (crayon, marker, paints, etc.) to complete the Color Wheel handout.
3. Set up the Puzzlets game stations for paired play.
4. Make a copy of Self Assessment 1 for each student.



GETTING STARTED

Introduce students to what they will be working on for this unit.

WHOLE GROUP INSTRUCTION

1. Introduce students to the Color Wheel and guide students to recognizing its use as a tool for understanding color relationships through descriptive statements.
2. Students will read the spectral colors in order as labeled, beginning with red.
3. Introduce students to the vocabulary word “Primary Colors” and have them identify the three primary colors red, yellow, and blue.

Primary Colors - colors that cannot be made by mixing other colors

4. Have students label red, yellow, blue with a “P” for Primary on their Color Wheel. Alternatively, older students can connect the Primary Colors with a solid line recognizing that it creates a triangle.
5. Using the preselected media, students will color red, yellow, and blue on their individual Color Wheel.

PAIRED PLAY

In groups of 2, have students play World 1: Red, Blue, and Yellow in Swatch Out! One student will control Pizza on the iPad and the other will place the paint tubes in the Play Tray using the Driver and Navigator model.

WRAP UP

Review what was learned in Lesson 1 and review the Primary Colors.

ASSESSMENT

Pass out and have the students individually complete Self Assessment 1.

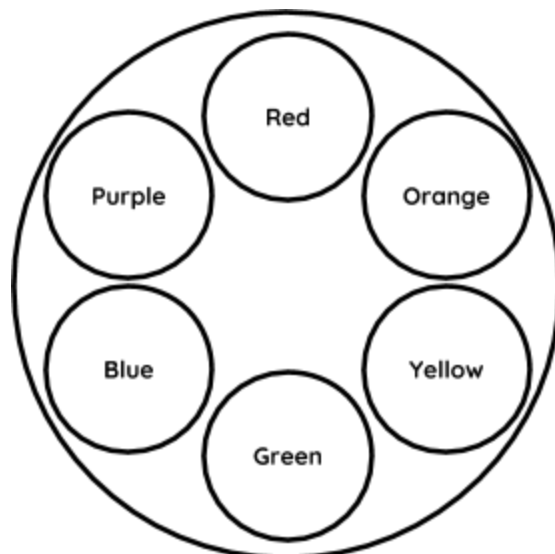
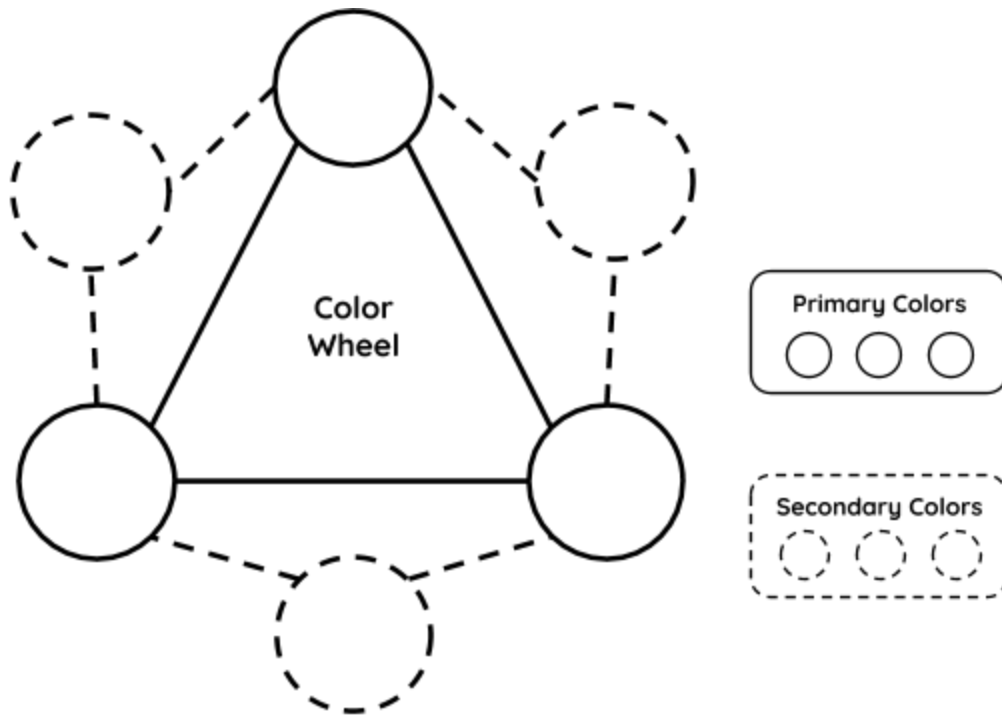




Name _____

Date _____

Color Wheel



Self-assessment



Name _____

Date _____

Lesson 1 Primary Colors

	I don't understand	I can do it with help	I can do it on my own	I can help others
I can name the 3 Primary Colors				
I can name the spectral colors in order				
I can describe how a Color Wheel is arranged and used				
I completed World 1 with a partner				

Lesson 2 Secondary Colors



Lesson Overview

In this lesson students review the Color Wheel and will work with the teacher to identify the three Secondary Colors. They will then play Worlds 2-4 in Swatch Out! to reinforce these colors.

Lesson Objectives

SKILLS

Students will

- Recognize the color wheel as a tool for understanding the relationships between colors
- Describe the structure/arrangement of the color wheel
- Identify orange, purple, and green as the Secondary Colors and correctly color them on their individual color wheel
- Use the Primary Color Puzzlets paint tubes to play Worlds 2-4, all levels in Swatch Out!

AT A GLANCE

Getting Started

- Gather students in whole group for lesson

Whole Group Instruction

- Introduce vocabulary and activity
- Demonstrate mixing Primary Color watercolor paints to create Secondary Colors
- Complete Secondary Colors on individual color wheels using medium of choice

Paired Play

- Play Worlds 2-4 with a partner

Wrap Up

- What's the learning?

Assessment

- Self Assessment 2

ADVANCE PREPARATION

1. Provide spectral colors in a medium of your choice or a station for students to choose their medium (crayon, marker, paints, etc.) to complete the Color Wheel handout.
2. Have six clear cups and partially fill three with water. Then add a Primary Color watercolor paint to each cup. Three of the cups will remain empty for the demonstration.
3. Set up the Puzzlets game stations for paired play.
4. Make a copy of the Color Addition handout for each student.
5. Make a copy of Self Assessment 2 for each student.



GETTING STARTED

Introduce students to what they will be working on for this portion of the unit.

WHOLE GROUP INSTRUCTION

1. Review the Color Wheel and ask students to describe its use as a tool for understanding color relationships and the logic of its arrangement.
2. Students will read the spectral colors in order as labeled, beginning with red.
3. Introduce students to the vocabulary word “Secondary Colors” and have them identify the three Secondary Colors orange, purple, green.

Secondary Colors - colors created by mixing two Primary Colors

4. Students will color the first column of squares along the left edge of their Color Addition handout using the Primary Colors to match the three cups of watercolor paints.
5. Students will color the second and third squares along with the teacher demonstration in step six.
6. Demonstrate mixing Primary Colors to create Secondary Colors using the cups of watercolor paints two at time. Example: pour a small amount of red into an empty cup and an equal amount of yellow into the same cup allowing students to observe the change to orange. Repeat this to create each Secondary Color.
7. Have students label orange, purple, green with an “S” for Secondary on their Color Wheel. Alternatively, older students can connect the Secondary Colors with a broken (dotted) line.
8. Using the preselected media, students will color orange, purple, and green on their individual Color Wheel.

PAIRED PLAY

In groups of 2, have students play World 2: Orange, World 3: Purple, and World 4: Green in Swatch Out! One student will control Pizza on the iPad and the other will place the paint tubes in the Play Tray using the Driver and Navigator model.

WRAP UP

Review what was learned in Lesson 2 and review the Secondary Colors.

ASSESSMENT

Pass out and have the students individually complete Self Assessment 2.

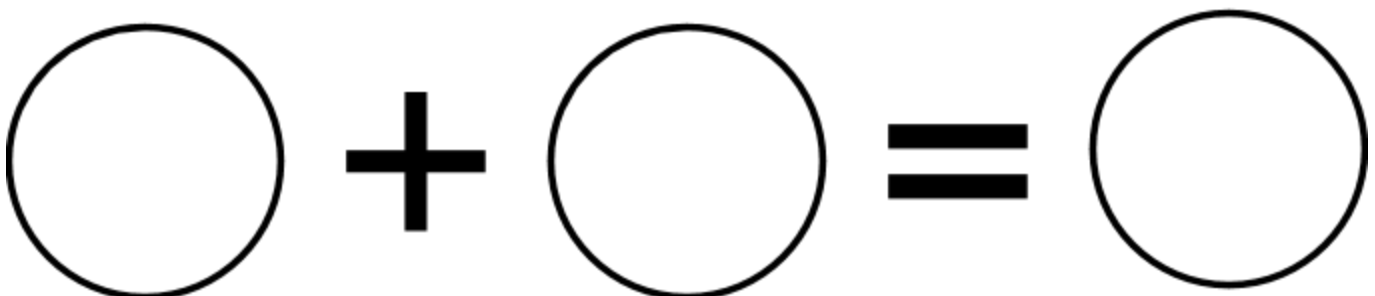
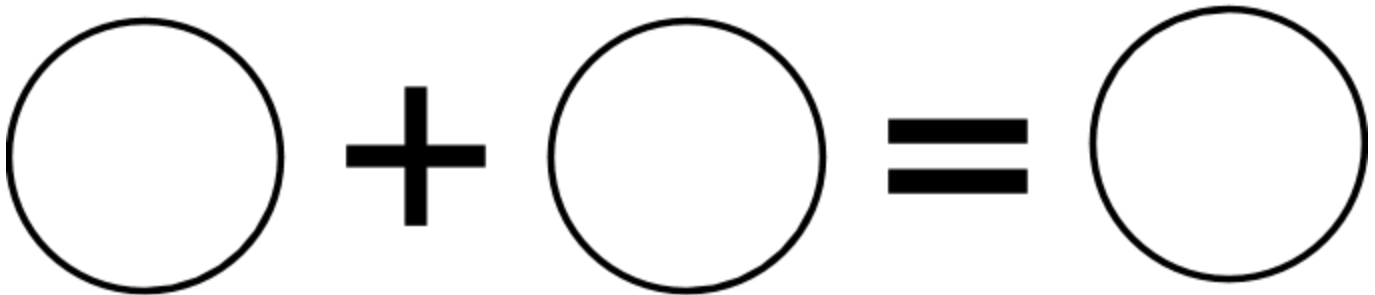
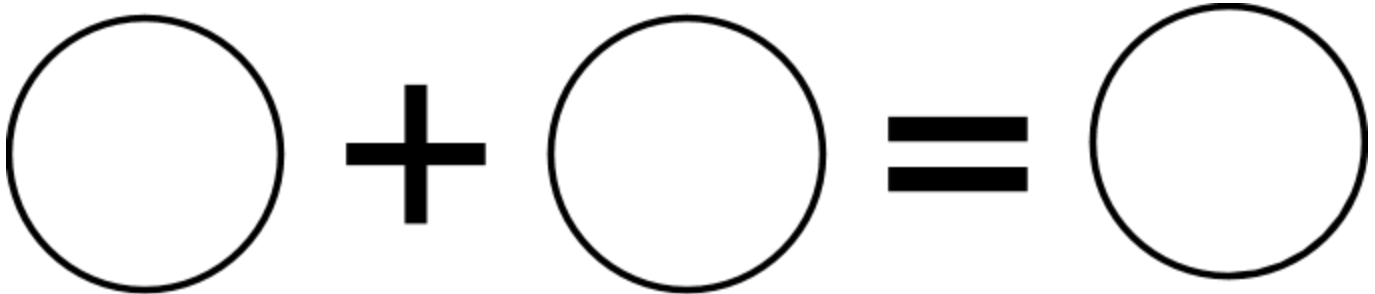




Name _____

Date _____

Color Mixing



Self-assessment



Name _____

Date _____

Lesson 4 Secondary Colors

	I don't understand	I can do it with help	I can do it on my own	I can help others
I can name the 3 Secondary Colors				
I know what color is formed when 2 colors mix				
I can describe how a Color Wheel is arranged and used				
I completed Worlds 2-4 with a partner				

Lesson 3 Tints & Shades



Lesson Overview

In this lesson students will explore color mixing with white to create tints and black to create shades.

Lesson Objectives

SKILLS

Students will

- Successfully mix a color with white to lighten it creating a tint
- Successfully mix black with a color to darken it creating a shade
- Create a value scale using one color and mixing it with black and white
- Complete Worlds 5-10 in Swatch Out!

AT A GLANCE

Getting Started

- Gather students in whole group for lesson

Whole Group Instruction

- Introduce vocabulary and activity
- Demonstrate mixing a color into white paint to lighten it
- Demonstrate mixing black into a color to darken it
- Complete Value Scale handout

Paired Play

- Play Worlds 5-10 with a partner

Wrap Up

- What's the learning?

Assessment

- Self Assessment 3

ADVANCE PREPARATION

1. Provide one spectral color tempera paint cup along with one white and one black and paint brushes. Red, blue or green paint is *strongly recommended* as it will yield the best results and is more forgiving to errors in quantity. Each student can have their own or you can have one paint set up for each group of four students.
2. Set up the Puzzlets game stations for paired play.
3. Make a copy of the Value Scale handout for each student.
4. Make a copy of Self Assessment 3 for each student.

GETTING STARTED

Introduce students to what they will be working on for this portion of the unit.



WHOLE GROUP INSTRUCTION

1. Ask students what they might do to make a color lighter? Darker?
2. Introduce vocabulary words Tint and Shade
Tint- adding white with a color to make it lighter
Shade- adding black with a color to make it darker
3. Introduce the Value Scale and explain its function as a tool to create a range of lights and darks of one color.
4. Students can paint the center box on the value scale with their chosen spectral color.
5. Using the same brush and without rinsing it, have students stir the white paint. What happened? The white should create a very light value of their spectral color. Apply this paint to the end tint box on the Value Scale.
6. Repeat to complete the remaining tint boxes adding a little more of the color to the white each time. Students will produce a complete range of tints on their Value Scale.
7. With CLEAN brushes, have students add a very very small amount of black to their spectral color cup. What happened? The color should have darkened slightly. Apply this paint to the first shade box on the Value Scale (next to your spectral color).
8. Repeat to complete the remaining shade boxes adding a very small amount of black to the color each time. Students will produce a complete range of shades on their Value Scale.
9. Clean tools and allow the Value Scale time to dry completely.

PAIRED PLAY

In groups of 2, have students play Worlds 5 through 10 to complete the Tint and Shade levels in Swatch Out! One student will control Pizza on the iPad and the other will place the paint tubes in the Play Tray using the Driver and Navigator model.

WRAP UP

Review what was learned in Lesson 3 and define Tint, Shade, and Value Scale.

ASSESSMENT

Pass out and have the students individually complete Self Assessment 3.



Handout



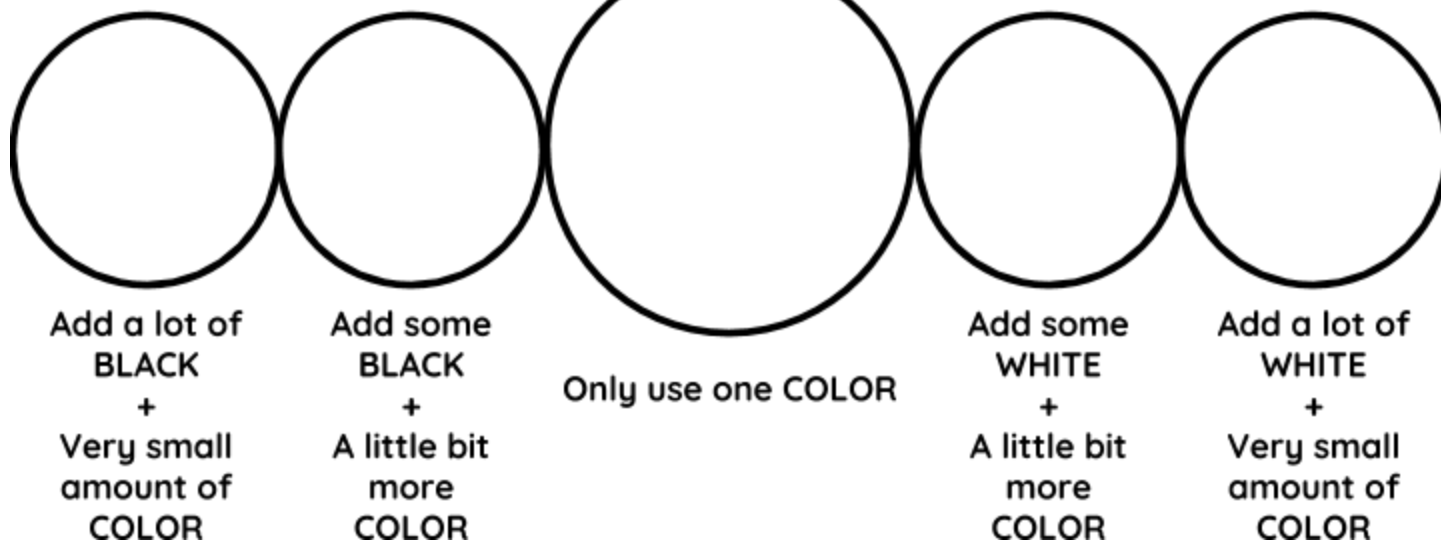
Name _____

Date _____

Value Scale

SHADES

TINTS



Self-assessment



Name _____

Date _____

Lesson 3 Tints & Shades

	I don't understand	I can do it with help	I can do it on my own	I can help others
I know how to make a color lighter				
I know how to make a color darker				
I can define tint and shade				
I completed Worlds 5-10 with a partner				



Lesson 4 Warm & Cool Colors



Lesson Overview

In this lesson students will explore warm and cool color groupings.

Lesson Objectives

SKILLS

Students will

- Successfully identify and group warm and cool colors including tints and shades of the spectral colors
- Complete the Warm and Cool Colors activity handout
- Complete Worlds 11-12 in Swatch Out!

AT A GLANCE

Getting Started

- Arrange students in small groups for activity

Small Group Instruction

- Students will sort drawing materials into warm and cool color groups
- Students will reason their choices for which colors are warm and which are cool
- Students will complete the Warm and Cool Colors activity sheet

Large Group Instruction

- Students will update their individual color wheels with the warm and cool color information

Paired Play

- Play Worlds 11-12 with a partner

Wrap Up

- What's the learning?

Assessment

- Self Assessment 4

ADVANCE PREPARATION

1. Provide students with a pack of crayons, markers or colored pencils as available for each small group.
2. Make a copy of the Warm and Cool Colors activity handout for each student.

GETTING STARTED

Introduce students to what they will be working on for this portion of the unit.



SMALL GROUP INSTRUCTION

1. In groups of 3-5, students are challenged to sort their drawing materials into warm and cool colors. For example, students may have colored pencils sorted to include red, orange, yellow, pink, maroon, red-orange, yellow-orange as a group of warm colors.
2. The teacher will check student groupings. Why was a color included in warm? Why was a color included in cool? Ask students to list some examples from nature that illustrate warm and cool colors (for example fire and sun for warm and ice and water for cool). This step may be completed with the individual groups or addressed with the class as a whole.
3. After students have their colors grouped correctly they can complete the Warm and Cool activity sheet.
4. The teacher will check work for understanding.

LARGE GROUP INSTRUCTION

Students will draw a thick solid line on their individual color wheels to separate the warm and cool color groups. Label the correct sides “warm” and “cool”.

PAIRED PLAY

In groups of 2, have students play Worlds 11 through 12 to complete the Warm and Cool Color levels in Swatch Out! One student will control Pizza on the iPad and the other will place the paint tubes in the Play Tray using the Driver and Navigator model.

WRAP UP

Review what was learned in Lesson 4 and identify Warm and Cool Colors.

ASSESSMENT

Pass out and have the students individually complete Self Assessment 4.



Handout



Name _____

Date _____

Find the Warm & Cool Colors

Supplies Needed: Colored writing tools

Directions: When you see a flame on the sheet use one of your COOL writing tools to ice out the color by drawing a box around it. When you see a ice cube use one of your WARM writing tools to melt the cube by drawing a box around it! Try your best to use as many different warm and cool colors as you can.



Handout



Name _____

Date _____

Write About Your Warm & Cool Colors

I used _____ warm colored tools and _____ cool colored tools today!

The names of the warm colors I used are:

The names of the cool colors I used are:

Self-assessment



Name _____

Date _____

Lesson 4 Warm & Cool Colors

	I don't understand	I can do it with help	I can do it on my own	I can help others
I can name 3 warm colors				
I can name 3 cool colors				
I completed Worlds 11-12 with a partner				

