



UNIT FS 1.2: The Science of Color in Career Pathways

INTRODUCTION

Annotation:

This unit includes lessons on the science of color, the importance of color, color's ability to communicate and evoke emotion, and the basic principles of color theory. Activities include the use of color in business, marketing, and design.

Grade(s):

X	9 th
X	10 th
X	11 th
X	12 th

Time:

5 hours

Author:

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Students with Disabilities:

For students with disabilities, the instructor should refer to the student's IEP to be sure that the accommodations specified are being provided. Instructors should also familiarize themselves with the provisions of Behavior Intervention Plans that may be part of a student's IEP. Frequent consultation with a student's special education instructor will be beneficial in providing appropriate differentiation.

FOCUS STANDARDS

GPS Focus Standards:

<u>CTAE-FS-1</u>	Technical Skills: Learners achieve technical content skills necessary to pursue the full range of careers for all pathways in the program concentration.
<u>ACCT-BVP 1-4</u>	Students will be able to demonstrate proper set-up and use of basic production equipment. h) Demonstrate mastery of aesthetics to include composition, coordination, balance, and color contrast
<u>ACCT-GDP-1</u>	Students will explore color and the variety of methods it can be applied. a) Understand how color impacts the creative strategy of a project.
<u>ACCT-IGD-14</u>	Students will identify the five elements incorporated in basic graphic designs and will understand the application of effective color usage. b) Understand the difference between primary, secondary, and complimentary colors. c) Define CMYK and RGB and understand the difference between them and when to use them.
<u>AG-PSB-10</u>	The student describes environmental effects on plants, demonstrates ways to manage the environment for production and ornamental use of plants, and match plants to given growing conditions. i) Demonstrates the effects of light colors (chromatography) and intensity on plants.
<u>AG-PSB-7</u>	The student evaluates soil characteristics, factors and components that influence plant growth and evaluates land plots and soil types for production capability. k) Classifies soil horizons by color, texture, or structural composition.
<u>BCS-FWD-5</u>	Students will identify and demonstrate appropriate use of graphical elements for web pages. d) Identify and use appropriate color principles. e) Identify cultural connotations to certain colors.
<u>EDU-HGD-9</u>	Students will describe a well organized environment conducive to student learning c) List criteria to consider when choosing child care center furniture and color schemes.
<u>FCS-FID-4</u>	Students will explain the principles and elements of design. b) Identify the different color schemes and how they play a role in the atmosphere you are trying to create. c) Understand the interrelationship of the elements and principles of design. d) Evaluate the psychological impact that elements and principles of design have on an individual.
<u>MKT-FM-4</u>	Students will analyze design, color and textiles. c) Explain the principles of color psychology and symbolism.

GPS Academic Standards:

<u>SAP3</u>	Students will assess the integration and coordination of body functions and their dependence on the endocrine and nervous systems to regulate physiological activities. a. Interpret interactions among hormones, senses, and nerves which make possible the coordination of functions of the body. b. Investigate the physiology of electrochemical impulses and neural integration and trace the pathway of an impulse, relating biochemical changes involved in the conduction of the impulse. c. Describe how the body perceives internal and external stimuli and responds to maintain a stable internal environment, as it relates to biofeedback.
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S8P4**Students will explore the wave nature of sound and electromagnetic radiation.**

- a. Identify the characteristics of electromagnetic and mechanical waves.
- b. Describe how the behavior of light waves is manipulated causing reflection, refraction, diffraction, and absorption.
- c. Explain how the human eye sees objects and colors in terms of wavelengths.
- d. Describe how the behavior of waves is affected by medium (such as air, water, solids).
- e. Relate the properties of sound to everyday experiences.
- f. Diagram the parts of the wave and explain how the parts are affected by changes in amplitude and pitch.

 **UNDERSTANDINGS & GOALS**

Enduring Understandings:

- Color is one of the most powerful elements of design. It is used to communicate and evoke emotions and ideas. Color affects almost every human activity, including purchase decisions. Businesses can benefit from using color effectively and from being informed about the power of color. An understanding of color is important in most career areas, including interior design, horticulture, landscaping, floral design, graphic communications, marketing, fashion marketing, culinary arts, and other businesses of all kinds.

Essential Questions:

- Why is color important?
- What is color and what are the properties of color?
- What effect does color have on people?
- How is color used in business, marketing, and design?
- How can color be applied to your career area?

Knowledge from this Unit:

- Explain the importance of color in business.
- Discuss how color affects behavior and decision-making.
- Explain how color affects our daily lives and routines.
- Define the properties of color and combinations of color.
- Explain how the connotations of color differ across history and culture.
- Describe the use of color in career areas.

Skills from this Unit:

- Select colors for appropriate use in a career area.
- Interpret existing color usage by businesses and organizations.

ASSESSMENTS

Assessment Method Type:

- Pre-test
- Objective assessment - multiple-choice, true- false, etc.
 - Quizzes/Tests
 - Unit test
- Group project
- Individual project
- Self-assessment - May include practice quizzes, games, simulations, checklists, etc.
 - Self-check rubrics
 - Self-check during writing/planning process
 - Journal reflections on concepts, personal experiences and impact on one's life
 - Reflect on evaluations of work from teachers, business partners, and competition judges
 - Academic prompts
 - Practice quizzes/tests
- Subjective assessment/Informal observations
 - Essay tests
 - Observe students working with partners
 - Observe students role playing
- Peer-assessment
 - Peer editing & commentary of products/projects/presentations using rubrics
 - Peer editing and/or critiquing
- Dialogue and Discussion
 - Student/teacher conferences
 - Partner and small group discussions
 - Whole group discussions
 - Interaction with/feedback from community members/speakers and business partners
- Constructed Responses
 - Chart good reading/writing/listening/speaking habits
 - Application of skills to real-life situations/scenarios
- Post-test

Assessment Attachments and / or Directions:

Students will complete review questions and discussion questions found at the end of **Colors and Textures in Nature.doc** and **Intro to Color.doc** as instructed below.

Observe and assess student participation in interest approach activity, teacher-led discussion, and project assignment listed below.

Unit Exam attached: **Color Unit Exam.doc**

Instructional planning:**• LESSON 1: INTRODUCTION TO COLOR (1 HOUR)**

1. Identify the standards. Standards should be posted in the classroom.
2. Review Essential Questions.
 - Why is color important?
 - What is color and what are the properties of color?
 - What effect does color have on people?
 - How is color used in business, marketing, and design?
 - How can color be applied to your career area?
3. Identify and review the unit vocabulary. Terms may be posted on word wall.

Warm Colors	Cool Colors	Hue
Value	Tint	Shade
Tone	Saturation	Subtractive Color Mixing
Additive Color Mixing	Primary Colors	Secondary Colors
Tertiary Colors	RYB Color Model	RGB Color Model
CMYK Color Model	Polychromatic	Monochromatic
Analogous	Complementary	Triadic

4. Interest approach – Mental set

A. Complete activity Colors and Textures in Nature.doc

In this activity, students will find an assortment of colors in nature and improve their sense of observation and awareness. Collect free color plates from a home-improvement store or paint store, and have students gather leaves and try to match as many of the paint swatches as possible. Fall is a great time for the activity because of the diversity of colors unavailable during other times of the year.

B. Check off each student for pasting findings in their notebook.

C. If the students do not finish the discussion questions at the end of the activity, have them complete these for homework and collect the next day.

5. Assign reading homework: **Introduction to Color.doc**

Do not have students complete the review questions or discussion questions at the end of this reading until you complete Lesson 2.

• LESSON 2: THE PROPERTIES AND USES OF COLOR (1 HOUR)

1. Review Essential Questions. Post Essential Questions in the classroom.
 - Why is color important?
 - What is color and what are the properties of color?
 - What effect does color have on people?
 - How is color used in business, marketing, and design?
 - How can color be applied to your career area?
2. Discuss the document **Introduction to Color.doc** (This 6-page handout should have been assigned as homework at the end of Lesson 1. If not, allow students to read during class, before discussion.)
3. Present the PowerPoint presentation **Color- Properties and Uses of Color in Career Pathways.ppt** as a review of the handout.
4. Lead a discussion using the discussion questions found within the document **Introduction to Color.doc**
Lead questions are:
 - Imagine what it would be like if the default color for wall paint in your school was black instead of white. How would this change the learning environment?
 - What is your favorite color? Why do you think you like this color more than the others?
 - What are the top two most popular colors in your country? Why?
 - Pick a country in Asia, South America, or Africa and research what their top two colors are. Are these colors different or the same as in your country? Why do you think this is?
5. Have students complete review questions and discussion questions found in **Introduction to Color.doc** for homework

LESSON 3: COLOR PREFERENCES BY GENDER (1 HOUR)

1. Review Essential Questions. Post Essential Questions in the classroom.
 - Why is color important?
 - What is color and what are the properties of color?
 - What effect does color have on people?
 - How is color used in business, marketing, and design?
 - How can color be applied to your career area?
2. Deliver PowerPoint presentation **Color Preferences by Gender.ppt**

This presentation includes an activity in which the class is polled on their color preferences. This classroom study is then compared to a national study about favorite and least favorite colors.
3. Lead a brief discussion using the questions found at the end of this PowerPoint.
Other possible discussion questions:
 - Do you think there is a difference in color preferences by gender? Explain
 - What colors do men prefer?
 - What colors do women prefer?
 - What colors are popular among both men and women?
 - How do you think this affects product marketing?
 - Ask selected students, some male and some female, their favorite colors.

LESSON 4: THE USE OF COLOR IN LOGOS (1 HOUR)

1. Review Essential Questions. Post Essential Questions in the classroom.
 - Why is color important?
 - What is color and what are the properties of color?
 - What effect does color have on people?
 - How is color used in business, marketing, and design?
 - How can color be applied to your career area?
2. Lead a discussion of the use of color in logos: companies, organizations, schools, etc.
 - Ask students what colors are in common logos (from memory) such as Xaxby's, Pepsi, Coke, etc.
 - Ask students why logos are important.
3. Present the PowerPoint presentation **Logos of Companies and Organizations.ppt**
 - In the PowerPoint, students will be presented a number of common logos with the text blurred or erased.
 - Students will, in most cases, be able to tell the company or organization represented by the logo.
 - The point is that color in logos carries a message just as much as the text.
5. Lead a discussion using the discussion questions found within the document **Introduction to Color.doc**
Lead questions are:
 - Imagine what it would be like if the default color for wall paint in your school was black instead of white. How would this change the learning environment?
 - What is your favorite color? Why do you think you like this color more than the others?
 - What are the top two most popular colors in your country? Why?
 - Pick a country in Asia, South America, or Africa and research what their top two colors are. Are these colors different or the same as in your country? Why do you think this is?
5. Have students complete review questions and discussion questions found in **Introduction to Color.doc** for homework

• ATTACHMENTS FOR LESSON PLANS

- **Colors and Textures in Nature.doc**
- **Introduction to Color.doc**
- **Color- Properties and Uses of Color in Career Pathways.ppt**
- **Color Preferences by Gender.ppt**
- **Logos of Companies and Organizations.ppt**
- **Color Unit Exam.doc**

CULMINATING PERFORMANCE TASK

Culminating Unit Performance Task Title:

Applying Color (1 Hour)

Culminating Unit Performance Task Description/Directions/Differentiated Instruction:

This project will vary depending on your pathway or career area. Have students complete a small project that applies knowledge of color to their area. Here are a few examples:

- In marketing, have students find examples of various color schemes using advertisements found in magazines or online. Then have students describe what emotional effect these advertisements might have on the viewer.
- In interior design, have students design a room around the colors of the leaves they found in the interest approach activity. Provide students with home décor catalogs and have students choose carpeting colors, interior paint colors, and other decorative elements such as bedding, curtains, and furniture.

Give the students one class period to work on the assignment, then, depending on the complexity of the project, allow a few days to one week for them to complete the assignment outside of class.

UNIT RESOURCES

Web Resources:

- Use of color and texture in landscape design:
<http://video.about.com/landscaping/Make-a-Garden-Look-Bigger.htm>

Materials & Equipment:

- Assortment of color plates from home improvement store or paint store
- Gathered leaves of various colors
- Any materials needed for culminating performance task, such as old magazines or a computer lab for suggested marketing activity.

21st Century Technology Used:

<input checked="" type="checkbox"/>	Slide Show Software	<input type="checkbox"/>	Graphing Software	<input type="checkbox"/>	Audio File(s)
<input type="checkbox"/>	Interactive Whiteboard	<input type="checkbox"/>	Calculator	<input type="checkbox"/>	Graphic Organizer
<input type="checkbox"/>	Student Response System	<input type="checkbox"/>	Desktop Publishing	<input checked="" type="checkbox"/>	Image File(s)
<input type="checkbox"/>	Web Design Software	<input type="checkbox"/>	Blog	<input type="checkbox"/>	Video
<input type="checkbox"/>	Animation Software	<input type="checkbox"/>	Wiki	<input type="checkbox"/>	Electronic Game or Puzzle Maker
<input type="checkbox"/>	Email	<input checked="" type="checkbox"/>	Website		