



# IGNITE MY FUTURE

## SUBJECTS

English/Language Arts  
Art

## COMPUTATIONAL THINKING PRACTICE

Developing and  
Using Abstractions

## COMPUTATIONAL THINKING STRATEGY

Abstract

## MATERIALS

[Interpreting "The Raven"](#)  
student capture sheet

[Design Ideas](#) student handout

Copies of Poe's "[The Raven](#)" or  
sections from the poem

Video recordings of "The Raven"

Print advertisements

Markers or paints

Pens and/or pencils

Art paper

Lined index cards

Computers with access  
to the Internet

## LESSON TITLE

# A New View of Color

*Guiding Question: How does perspective shape our understanding?*

## Ignite Curiosity

- What is your favorite color?
- How does your favorite color make you feel? Do you think your favorite color makes others feel the same way?
- Can colors impact human behavior?

In this lesson, students will use the computational thinking strategy of abstraction to discover how color evokes different reactions. In **THINK**, students act as interior designers challenged to produce a useful and stylish interior that evokes the preferred emotional response. In **SOLVE** students abstract characteristics and design elements to use in four defined spaces: a medical facility, a law office, a restaurant, and a daycare center. In **CREATE** students use an online gallery tool like Padlet to create a design portfolio that they can present to their client. In **CONNECT**, students explore how color evokes different responses and connect these reactions to the purpose of a design. Students will connect this lesson to a variety of careers in art, engineering and design.

Students will be able to:

- **Apply** the abstract concept of the psychology behind colors into an interior design that evokes the preferred emotional response within a given environment,
- **Evaluate** the abstract design for functionality and safety, and
- **Create** a model of each space that promotes their design.



## Students act as interior designers challenged to create a design for a functional and appropriate aesthetic environment.

### 1 **Read** the following scenario to students:

*Imagine you are an interior designer working for a commercial architectural firm that currently has four contracts to design and build the following spaces: a medical facility, a law office, a restaurant and a daycare center. Interior designers are responsible for much more than decorating a space. People react to things in the environment, and interior designers have the power to create environments that shape behaviors and promote health. You have been given the task to create a digital portfolio to present to a corporate client. The portfolio will include color, furnishings, and other materials that provide a functional and safe environment. Let's see how well you do!*

### 2 **Activity 1:** Students will compare and contrast Edgar Allan Poe's poem "The Raven" with one or more video interpretations of the poem to analyze the effects of lighting, sound, color, or camera focus and angles.

**Teacher Note:** Encourage students to discuss how the way something is presented evokes a personal response. Sometimes, the response is emotional, and at other times, it can be behavioral. Oftentimes our responses are different because of a person's individual experiences. Ensure that students use precise words and phrases, relevant descriptive details, and sensory language to inform and explain abstract interpretations. Encourage students to support their claims with logical reasoning and relevant, accurate data.

- Distribute copies of "[The Raven](#)" or excerpts from the poem and [Interpreting "The Raven"](#) student capture sheets. Ask students to read the poem to themselves and interpret what they believe the poem means. Instruct students to record their answers on their capture sheet.
- Next, allow one or two students to read the poem as a dramatic reading. Ask students if hearing the poem evokes a different meaning of the poem for them than reading it silently to themselves.
- If a classroom computer is available, allow students to watch video interpretations of the poem. You can find recorded interpretations using an Internet search engine. Screen the recordings before class to ensure they are appropriate for students.
- Provide time for students to complete their analysis of the videos with the student worksheet. End the activity with a class discussion or small-group discussions to synthesize how the presentation of a concept is enhanced through the use of technology. Encourage students to support their claims.

### 3 **Discuss** the psychology of using color in design. Challenge students to consider how the use of color can evoke an emotional response or behavior from people.

- Ask students to draw six circles on a piece of paper and color each circle a different color of their choice with markers or paint (you can use any medium that will allow students to write words in the circle later).
- Using the following resources, ask students to write descriptive words within the circles to show how the color typically makes people respond. Remind students to evaluate any source they may find for credibility.
- Ask students to consider advertisements they have seen on television or in print, or bring in print advertisements for students to examine. Discuss as a class how color is used to help sell things. Does it fit with what they have learned about the psychology of color? Encourage students to support their response with credible sources.
- Summarize the activity by discussing how using colors in marketing and product design can evoke abstract concepts such as love, peacefulness, encouragement, or urgency.
- Finalize the class discussion by asking this question: How can thinking like a computer help interior designers make decisions about design?

 Find more easy-to-implement resources to integrate computational thinking practices into your classroom by visiting [ignitemyfutureinschool.org](http://ignitemyfutureinschool.org)



## Students act as a team of interior designers for an architectural firm that has four current design projects: a hospital, a law office, a restaurant, and a daycare center.

- 1 Divide** students into groups of four or five and ask them to consider the following questions:
  - Why are hospitals often decorated with soft colors like blues and greens?
  - Why are fast-food restaurants decorated in vibrant reds and yellows?
  - What thinking goes into a package's design, and how is color used in marketing?
  - What are some common features you see about how people connect to color or are affected by color?
- 2 Allow groups to share** their thinking on these questions for 10 to 15 minutes. They can use the results of Step 3 from [Think](#) to encourage discussion. Remind students to support their thinking with logical reasoning and credible sources.
- 3 Next**, students will begin planning their interiors.
  - Assign each group one of the four possible interiors: hospital, daycare, restaurant, or law office.
  - Distribute the [Design Ideas](#) student capture sheet.
  - Instruct students to brainstorm and identify the important factors they need to include for their assigned project on the side of the card with lines. For example, the daycare may need stimulating and calming areas, while the hospital would require a peaceful and health-inducing environment. Students should write abstract and descriptive words to guide what the desired emotional and behavioral response for their given space should be. Students should use precise words and phrases, relevant descriptive details, and sensory language to capture these abstract thoughts into concrete elements within their design.
  - On the blank side of the card, ask students to draw the design they think will best portray the abstract characteristics and design elements for their given space. (i.e., color, furnishings, patterns and textures, anything they can think of to include in the final presentation for their given space.)
  - Remind students that the goal for each project includes the following:
    - The space must be stylish.
    - The space must be functional.
    - The space must use color that evokes the desired emotional response for each project.
    - The space must be a safe environment.



Students will use the online gallery tool, Padlet, to create an online portfolio where they can present their designs to the clients.

**Teacher Note:** In advance of the lesson, you may choose to review [Padlet's educator resources](#).

- 1 Introduce** students to Padlet by quickly screening the [online tutorial](#).
- 2 Inform** students that each group will create a portfolio for its assigned project that includes colors and patterns to present to the client for the design of the space. Emphasize how the final design should portray the abstract concepts identified by the second question on their [Design Ideas](#) student capture sheet.
- 3 Groups should use the information** they have from the index cards created in [Solve](#) to help complete each space. Remind students that the design must be cohesive and fitting for the establishment. Students should use precise words and phrases, relevant descriptive details, and sensory language to capture the purpose of their choices for their design. Students must include supporting claims using credible sources to provide the argument/rationale for their design choices.
- 4 Provide** groups with 20-30 minutes to complete their designs. When groups are finished, ask each group to partner with the group nearest them in order to explain their design.



## Select one of the strategies listed below to help students answer these questions:

- **How do this problem and solution connect to me?**
- **How do this problem and solution connect to real-world careers?**
- **How do this problem and solution connect to our world?**

- 1 Write** the three questions on PPT or flip chart slides and invite students to share out responses.
- 2 Display** chart paper around the room, each with one question written on it. Ask students to write down their ideas on each sheet.
- 3 Assign** one of the questions to three different student groups to brainstorm or research, and then share out responses.
- 4 Invite** students to write down responses to each question on a sticky note, and collect them to create an affinity diagram of ideas.

### How does this connect to students?

Building models and working through a design process helps students think creatively, fosters their imagination and enables them to practice problem-solving skills.

Students will explore how the colors they see every day evoke different responses and connect that to the purpose of a design—in this case, an interior space.

### How does this connect to careers?

**Artists and Art Directors** deal with color to bring about desired emotional or behavioral responses or represent abstract thought.

**Photographers** use color to enhance their subjects and evoke certain emotions.

**Commercial, Industrial, and Interior Designers** need to use color effectively, make sure their designs are functional and safe, and provide the proper behavioral stimulation for an environment.

**Packaging Designers** and Advertisers frequently develop the abstract concept of “needs” or “desires” into the package design for marketing.

### How does this connect to our world?

A collaborative design process brings incremental changes that spur growth. The ability to transfer concepts into drawings that can be shared, simulated, tested, and modified is required in many fields. This process of design allows us to choose the best initial idea, develop prototypes, and consider ideas before developing a final solution.

Design itself is important for any business as it considers the effect of branding and advertisement on potential customers and helps provide safe, comfortable conditions in which workers can be productive.

## National Standards

### COMMON CORE STATE STANDARDS CONNECTIONS

#### **CCSS.ELA-LITERACY.WHST.6-8.1.B**

Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources.

#### **CCSS.ELA-LITERACY.WHST.6-8.2.D**

Use precise language and domain-specific vocabulary to inform about or explain the topic.

#### **Integration of Knowledge and Ideas:**

#### **CCSS.ELA-LITERACY.RL.7.7**

Compare and contrast a written story, drama, or poem to its audio, filmed, staged, or multimedia version, analyzing the effects of techniques unique to each medium (e.g., lighting, sound, color, or camera focus and angles in a film).

#### **CCSS.ELA-LITERACY.W.7.3.D**

Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events.

### K-12 CURRICULUM FRAMEWORK FOR THE ARTS

#### **Visual Arts: Curriculum Standard 6**

Students will make curriculum connections among theatre, the arts, and other disciplines.

- Incorporate elements of dance, music, and visual arts to express ideas and emotions in improvised and scripted scenes.
- Describe and compare the functions and interaction of performing and visual artists and audience members in theatre, dramatic media, musical theatre, dance, music and visual arts.

### K-12 COMPUTER SCIENCE FRAMEWORK

#### **Practice 4. Developing and Using Abstractions**

Abstractions are formed by identifying patterns and extracting common features from specific examples to create generalizations. Using generalized solutions and parts of solutions designed for broad reuse simplifies the development process by managing complexity.

## Interpreting “The Raven”

**What is your interpretation for the meaning of this poem?**

**Watch the videos interpreting the poem. Does everyone interpret the videos the same way?**

**Did one video help you discover a deeper meaning for the poem? If so, which one? Why do you think it helped you interpret the poem?**

**What similarities do you see among the techniques used to present this poem?**

**What differences do you see among the techniques used to present this poem?**

**In your opinion, which technique worked best to portray this poem?**

## Design Ideas

**Which space are you designing?**

**What emotions or behaviors do you want the design to bring out in people?**

**What colors will you need to include in your design?**

**What furnishings will you need to include in your design?**

**What type of storage will you need to include in your design?**

**What decorative items will you need to include in your design?**

**Will your design need to include different areas within the same space?**

**Use the back of this page to draw a design for your group's project.**