Lowell Milken Center for Unsung Heroes

ArtEffect

Unsung Heroes and STEAM

Visual Arts Lesson Plan

Unsung Heroes and STEAM

The [Lowell Milken Center for Unsung Heroes (LMC)](#) spotlights the stories of individuals from history who took extraordinary actions in service to others and society. Exploring Unsung Heroes who excelled in the areas of Science, Technology, Engineering, the Arts, and Mathematics allows students to make formative connections as future innovators. This lesson plan uses a STEAM lens to bring Unsung Heroes to the forefront of students' lives and provides strategies, creative approaches, and turn-key resources to connect students with these individuals through the visual arts.

At the core of a STEAM philosophy is promoting experiential learning, developing strong problem-solving skills, and leaning into collaboration as part of the creative process. Students investigate how the human brain works and how logic and creativity overlap. Students become acquainted with the LMC Unsung Heroes in STEAM disciplines using various research and investigative methods to understand their unique contributions to these disciplines. Activities explore concepts around innovation, using the elements of art and principles of design to create extraordinary artworks, and collaborative approaches to project critiques.

Learning Objectives

1. Understand STEAM as a holistic educational approach and the factors that have shaped the framework.

2. Familiarize students with the human brain and its multifaceted functions for perception, problem-solving, and artistic processes.

3. Explore the concept of innovation in artmaking and as it relates to the contributions of Unsung Heroes across various STEAM disciplines.

4. Support students in choice-based learning, collaboration, experiential learning, critique and iteration and reflection as core practices in a STEAM approach to artmaking.

5. Experiment with using design elements, symbolism, metaphors and other conceptual approaches to creatively interpreting and conveying the Unsung Hero's story in innovative ways through art.

6. Engage with Unsung Hero coloring book activities to stimulate historical empathy, cognitive development, visual and color perception, and promote mindfulness and attention to detail.

7. Strengthen connections between visual art, science, and history/social studies.

Time Frame

The introductory lesson is intended for one 60-minute class block. The STEAM research brainstorming activity spans two periods. Thumbnail sketches, planning, research should span 3-5 class periods. This timeframe may vary, depending on class period length and schedule blocking. It can easily be pushed into a larger or shorter unit (based on previous art knowledge). Project production should be a minimum of 5 class periods.

- **Day 1:**   Steps 1-2
- **Day 2-3:**   Step 3
- **Day 4:**   Step 4
- **Day 5:**   Step 5
- **Day 6-13:*****   Step 6
- **Day 14:**   Step 7
- **Day 15**:   Step 8
- **Day 16***:   Step 9
- **Day 17:**   Step 10

*Project production and writing time will vary by classroom.

Materials

Assorted art supplies for the creation of 2D and 3D visual artworks, varies by classroom.

Lesson Plan Activities

Step 1: STEM vs. STEAM: Why We Need Art!

First, review a brief history of STEM vs. STEAM and why we need art. The evolution of STEM (Science, Technology, Engineering, and Mathematics) into STEAM (adding Arts to the mix) is a relatively recent development that gained momentum in the early 21st century, but its roots can be traced back to earlier initiatives that emphasized interdisciplinary approaches to education and innovation. The shift from STEM to STEAM reflects a recognition of **the invaluable role that the arts play in fostering innovation.** The inclusion of the arts emphasizes the importance of creativity, design thinking, and the **human aspect** of fields traditionally associated with STEM. The transition from STEM to STEAM was driven by several factors – identified by the acronym **RACERS** as defined below.
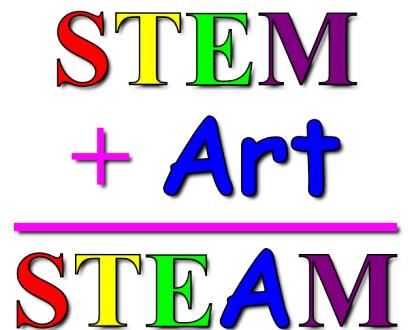
❖ **Rise of Innovation and Creativity**: As the global economy shifted towards innovation and creativity, there was a growing acknowledgment that creativity and design play crucial roles in problem-solving and technological advancements.

❖ **Advocacy for a Holistic Education**: Educators and advocates argued for a more holistic approach to education that not only focused on technical skills but also incorporated the arts to develop well-rounded individuals with diverse perspectives.

❖ **Cultural and Economic Shifts**: Changing societal needs and the increasing interdependence of STEM fields with arts and humanities in the workforce contributed to the reevaluation of educational priorities.

❖ **Recognition of the Design Process:** The design process, often associated with the arts, was acknowledged as a key component of innovation in engineering, technology, and other STEM fields.

❖ **Support from Industry Leaders:** Leaders in industry and technology began recognizing the value of employees who possess not only technical skills but also creative and critical thinking skills.

- **Resource:** STEM vs. STEAM: Why One Letter Matters

CLASS DISCUSSION: Explore these concepts with your students. Share examples.

1. *What is <u>innovation</u> and how do we do it?* **Innovation** is the process of bringing new ideas, methods, products, designs, and services, solutions that have a significant positive impact and value. Innovation often builds on and improves something already existing.
2. *Small group discussion.* Break into groups of 3-4 students. Each group identifies one common object they would like to improve. In their groups, students then brainstorm ideas for improvement, innovating to create a new and improved object.
3. *Do artists innovate? How so?*

Step 2: BRAIN BREAKS – Let's Think About Thinking!

STEAM leaders think differently! They often "think outside the box" to problem-solve and innovate. Outdated research once linked the left side of the brain to logic and the right side to creativity. We now know that in order to really think as a STEAM "RACER," you need to be more cognizant of metacognition (i.e., thinking about thinking), of how "mistakes" can actually signal growth, and of processes for collaborative problem-solving.

A) **LEARN ABOUT THE BRAIN:** To better **understand how the human brain works**, view video from the Franklin Institute on "Your Brain." Share visuals of the human brain and have students sketch illustrations**.**

B) **STROOP CHALLENGE:** The Stroop effect is a psychological phenomenon where people take significantly longer to name the color of a word when the word itself is a different color than the ink it's printed in. This effect occurs because reading words is a faster and more automatic process than identifying colors. Use this website, to run the Stroop effect challenge with your students.

Congruent	Incongruent
RED	RED
GREEN	GREEN
BLUE	BLUE
YELLOW	YELLOW

C) **CREATE YOUR OWN STROOP EFFECT:** Students will create their own Stroop effect illustration to share with their peers**.**
  1) Students pick a topic (e.g. animals)
  2) Students draw 5-10 images of the same topic and label each.
  3) Students make the labels incongruent with the drawings.
  4) Student work in pairs to challenge their partners with the Stroop Effects they created.

D) **AMBIDEXTROUS ARTIST:** View video of artist Rajacenna van Dam who draws and paints in a realistic style with both her hands and feet at the same time.

   CLASSROOM DISCUSSION: Explore these concepts with your students.

   1) As a class, discuss the concept of **"Ambidextrous Innovation"** – the ability to handle both short and long-term innovation goals as a key element of a successful product. This process balances both exploration and efficiency: looking for new opportunities while also focusing on incremental improvements as ways to maximize the impact of existing projects and products. **How do artists practice this?**

   2) Rajacenna van Dam states that with art sometimes it's important to enjoy the process more than the results. ***Discuss the value of process over product.*** For instance, the process of creating a submission for the ARTEFFECT competition is an accomplishment unto itself!

      • **Additional Resource:** The Mouth and Foot Painting Association (tagline: Self-Help, not Charity). Discuss the impact/inclusion of resources and connection between **ableism** (discrimination in favor of able-bodied people) and creativity.

   See **Extensions/Modifications** section **"CONNECTING THE DOTS"** and other **creative brainstorming** activities to help students "think outside the box."

Step 3: Discovering STEAM Unsung Heroes

Now that students' brains are warmed up and there's a basic understanding of thinking outside the box, the next step is to guide students through understanding what defines an Unsung Hero and begin connecting with individuals on the list.

UNSUNG HERO

Unsung Heroes are role models, largely unrecognized by society, who demonstrated extraordinary heroic traits and actions in service to others, and made a positive and profound impact on the course of history.

DEFINING AND SELECTING AN UNSUNG HERO

1) Lead the class in a brief discussion of what defines an "Unsung Hero." Why would some individuals who changed the course of history be "unsung?" Review the Heroic Traits and Actions and have students discuss their meanings in small groups.

2) Provide students with the approved ARTEFFECT Unsung Heroes Directory and have them begin reviewing the list for the STEAM Unsung Heroes. There are more than 30 STEAM individuals on this list!

See **Extensions/Modifications** section "**MINDFUL COLORING"** for using coloring books to help students in their selection process.

Step 4: Exploring STEAM Unsung Heroes: *Speed Meets*

In Steps 4 & 5, students will sort and eventually select their Unsung Hero. This process will take **2 class periods.**

A. "SPEED MEET" AN UNSUNG HERO

Working in small groups, students use the Unsung Heroes STEAM Worksheets to categorize and sort the STEAM Unsung Heroes from the LMC list, discussing the unique contributions of Unsung Heroes as they place them in categories. Give students 5 minutes to select 20 of the STEAM Unsung Heroes. **PRO-TIP:** Put a timer on display! You can find a wide selection online of free visual timers with music to use in your classroom. Students should take any additional notes on each Unsung Hero in their sketchbooks.

See **Extensions/Modification:** Use Unsung Heroes Coloring-Trading Cards for sorting.
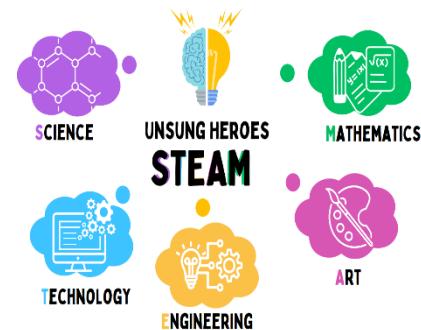
Step 5: Collaborative Connections: *Hall of Influence*

A) **TOP 5 CHOICES IN EACH CATEGORY:** Students will select their top choice in each STEAM category. Continue using the Unsung Heroes STEAM Worksheets, have students each create their own **"Hall of Influence."** This is different than a "Hall of Fame" as these Unsung Heroes did not achieve fame in their lifetime but rather had a huge influence on society. Give students **20 minutes** to look through their notes and place an asterisk next to their top five Unsung Heroes (one in each category). Partner or pod students together in small groups and give them 10 minutes to share their top selections. Discuss any overlaps among the students.
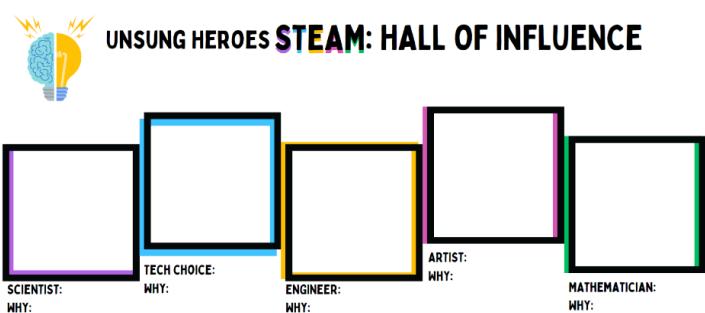
B) **TOP 3 IDEAS:** Ask students to select their top-most influential STEAM Unsung Hero. Give students time to further research this individual and their social impact. Remind students that they are thinking "outside the box" and can explore innovative and conceptual ways of illustrating and interpreting these individuals and/or their accomplishments. Students will create **3 thumbnail sketches** of their ideas.

> ● **EXTENSION:**
> Create a classroom *"Hall of Influence"* exhibit with the completed selections.

Step 6: Let's Create: Full Steam Ahead!

PLAN, PROCESS, PREPARE MEDIA

Students will pair, share, and practice in-progress critique with their peers to take their best **thumbnail sketch** and create a rough draft of their project choosing one Unsung Hero. In this rough draft, students identify the art materials they will need.

SUGGESTED MATERIALS:

Two-dimensional

Dry Media
graphite, charcoal, colored pencil, pastel, etc.

Wet Media
acrylic, oil, watercolor, gouache, ink wash, printmaking, etc.

Mixed Media
photography, graphic design, textile, collage, paper.

Digital Media (must be printed.)

## Three-dimensional
sculpture, assemblage, ceramic, wood, etc.

Step 7: Introduce Project Criteria & Evaluation

Visit the LMC website to view ARTEFFECT [student award-winners](#) and [finalists](#) from previous years of the competition. Using the [ARTEFFECT Judging Criteria Rubric](#), have students work in teams to assess the example artworks. When finished, have each group share their totals and discuss how they arrived at their scores with their peers. Scoring is weighted as follows:

- Creative Interpretation (40%)

- Aesthetic Value (40%)

- Impact Paper (20%)

Students should be actively participating in "in-progress" critiques and collaborate with their peers to create their best work. Students can explore the elements of art and principles of design while they create.
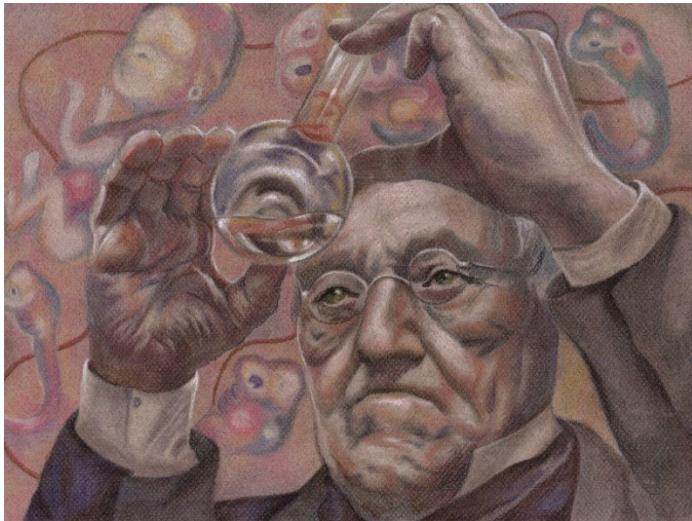
Student work should have a direct correlation to their Unsung Hero's story. Revisit the history and ideology of the term STEAM and how students are focusing on experiential learning and innovation in this project. An integral part of STEAM is collaboration and problem-solving. Discuss with students how their Unsung Hero's story embodies these facets of STEAM.

Visit the LMC website to view ARTEFFECT student award-winners and finalists from previous years to further this discussion.

Step 8: Critique and Tweak—Rounds

Students will engage in a "round robin" musical chairs style critique activity. Station the art around the classroom. Students will travel around the classroom to music. When the music stops, they have to find a seat. Upon sitting, ask the class a specific critique question (see below). Each student will answer that question as it relates to the artwork they are sitting in front of.

There are ten categories for critique questions. Guidelines for proper respectful critiques should be shared ahead of time. Rounds should be at least 5 minutes each. You can select from any questions below or create your own to use for this musical critique.

10 Categories for Critique Questions

Identity and Representation:
- How does the artwork visually represent the Unsung Hero?
- In what ways does the artist convey the identity and personality of the Unsung Hero through their artistic choices?

Symbolism and Metaphor:
- Are there symbolic elements in the artwork that represent the Unsung Hero's actions or qualities?
- How does the artist use metaphorical elements to convey the Unsung Hero's significance?

Narrative and Storytelling:
- Does the artwork tell a story about Unsung Hero, and if so, how is it conveyed visually?
- How does the composition of the artwork contribute to the narrative of the Unsung Hero?

Emotional Impact:
- How does the artwork evoke emotions related to the Unsung Hero and their story?
- In what ways does the artist capture the emotional essence of the Unsung Hero's actions or impact?

Cultural and Historical Context:
- How does the artwork reflect the cultural or historical context of the Unsung Hero's contributions?
- Are there elements in the artwork that provide insights into the h Unsung Hero's societal impact?
- How does the artwork weave historical context into the representation of the Unsung Hero's STEAM-related contributions?
- Are there visual cues that connect the Unsung Hero's achievements to the broader historical and cultural context?

Innovation and Technique:
- How does the artist use innovative artistic techniques or materials to represent the intersection of arts and sciences in the Unsung Hero's story?

- Are there unconventional methods that draw attention to the project's STEAM focus?
- How does the choice of medium and style contribute to the overall impact of the artwork?

Audience Engagement:
- How might different audiences interpret or connect with the artwork differently?
- What elements of the artwork could resonate universally, making the Unsung Hero's story accessible to a broad audience?

Comparison and Contrast:
- How does this portrayal of an Unsung Hero compare to more mainstream or celebrated figures in art or history?
- What unique aspects of the Unsung Hero's story are highlighted in this artwork compared to other representations?

Impact and Legacy:
- In what ways does the artwork communicate the lasting impact or legacy of the Unsung Hero?
- How might this representation contribute to a broader recognition of the Unsung Hero's contributions?
- How might the artwork serve as an educational tool to inspire interest in STEAM disciplines and the contributions of the Unsung Hero?
- In what ways does the project promote a broader understanding of the interconnectedness of arts and sciences?

Reflection and Action:
- After experiencing the artwork, what reflections does it inspire about the concept of Unsung Hero in general?
- How might the audience be encouraged to take action or learn more about the Unsung Hero depicted in the artwork?

Step 9: Writing the Impact Statement

As a class, review the ARTEFFECT Impact Statement Outline for full prompts. Students write an Impact Statement (500-1,000 words) that covers these 4 areas:

1. Introduce your LMC Unsung Hero and why you chose this individual.

2. Discuss your Unsung Hero's impact. How did your Unsung Hero contribute to a positive change in the course of history?

3. Describe your artistic vision and process.

4. Share the impact on yourself and others. How will your Unsung Hero's story influence your actions or outlook on life? What plans do you have to share your project with your community?

- Students are encouraged to create rough drafts for their Impact Statements and share with their peers.

STEP 10: Submit to the ARTEFFECT Competition

Support students in submitting to the ARTEFFECT competition by the annual deadline. Review competition rules and guidelines with students.
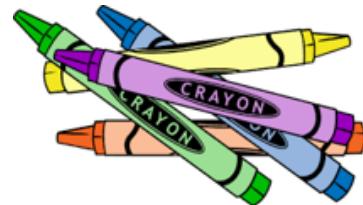
Modifications/Extensions Activities

1.   CONNECTING THE DOTS – STEP 2

Creative brainstorming is a technique for generating new ideas and solving problems through free thinking and collaboration. In this exercise, students begin by selecting a word (e.g., ART). First, they map the word on a sheet of paper by using dots to create a conceptual design. When the dots are connected with a line, they should spell out the chosen word. In the final stage, students create a short poem or phrase using the dots as points along the main message.

RESOURCE: For other creative brainstorming activities to help students "think outside the box," see *Conceptual Blockbusting: A Guide to Better Ideas by James L. Adam* (access PDF).

2.   MINDFUL COLORING – STEP 3

Reference the educational coloring books, Color Unsung Heroes, available through LMC to help students stay motivated when they need a 'brain break.' Coloring books can help students build **historical empathy by supporting mindfully connecting with these individuals in a concentrated activity.** Coloring books and the Unsung Heroes Coloring-Trading Cards are an excellent resource to introduce Unsung Heroes to elementary aged students.

RESOURCE: Read about the brain benefits of coloring

Vocabulary

Discovery is the process of finding information, a place, or an object, especially for the first time, or the thing that is found.

Elements of art/design are stylistic features that are included within an art piece to help the artist communicate. The seven most common elements include line, shape, texture, form, space, color and value, with the additions of mark making, and materiality. When analyzing these intentionally utilized elements, the viewer is guided towards a deeper understanding of the work.

Experiential Learning is an educational approach that emphasizes the acquisition of knowledge and skills through direct hands-on experiences. In this learning model, individuals engage in real-world activities, scenarios, or tasks to deepen their understanding of a subject and develop practical skills.

Innovation is the practical implementation of ideas that result in the introduction of new goods or services or improvement in offering goods or services.

Invention is a device, contrivance, or process originated after study and experiment.

Metacognition is awareness and understanding of one's own thought processes.

Principles of art represent how the artist uses the elements of art to create an effect and to help convey the artist's intent. The principles of art and design are balance, contrast, emphasis, movement, pattern, rhythm, and unity/variety. The use of these principles can help determine whether a painting is successful, and whether or not the painting is finished.

STEAM curriculum stands for Science, Technology, Engineering, Arts, and Mathematics.

Stroop effect is the delay in reaction time between congruent and incongruent stimuli.

Technology methods, systems, and devices which are the result of scientific knowledge being used for practical purposes.

Thumbnails are small sketches used for idea development created prior to the production of an artwork to help organize the composition of the final piece.

Resources

Adams, James. Conceptual Blockbusting: Gunn, J. (2018, Nov. 7).

The Art of Inquiry in STEAM Education.
ResilientEducator.com

Elements of Art
The 7 Principles of Art and Design.

Santogrosso, A. (2022, June 30). *3 Reasons Adult Coloring Can Actually Relax Your Brain.* LightlySketched.com.

STEM vs. STEAM: Why One Letter Matters. (2018, May 4). American University, School of Education.

ARTEFFECT Competition Resources

The ARTEFFECT competition is open to middle and high school students and accepts submissions on artworks about the LMC Unsung Heroes from October 1, 2025-April 21, 2026.

ARTEFFECT Website
ARTEFFECT Introduction Video
ARTEFFCT Competition
ARTEFFECT Directory of Unsung Heroes
ARTEFFECT Judging Rubric
ARTEFFECT Impact Statement Outline
Student FAQs

Curriculum Connections / Standards

Common Core Standards for Science

- CCSS.ELA-LITERACY.RST.11-12.3
  Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.
- CCSS.ELA-LITERACY.RST.11-12.7
  Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.

Common Core Standards for Literacy in History/Social Studies

- CCSS.ELA-LITERACY.RH.11-12.1
  Cite specific textual evidence to support analysis of primary and secondary sources, connecting insights gained from specific details to an understanding of the text as a whole.
- CCSS.ELA-LITERACY.RH.11-12.3
  Evaluate various explanations for actions or events and determine which explanation best accords with textual evidence, acknowledging where the text leaves matter uncertain.
- CCSS.ELA-LITERACY.RH.11-12.7
  Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem.

National Visual Art Standards

- VA:Cr1.1.IIIa
  Visualize and hypothesize to generate plans for ideas and directions for creating art and design that can affect social change.
- VA:Cr1.2.IIIa
  Choose from a range of materials and methods of traditional and contemporary artistic practices, following or breaking established conventions, to plan the making of multiple works of art and design based on a theme, idea, or concept.
- VA:Cr2.1.IIIa
  Experiment, plan, and make multiple works of art and design that explore a personally meaningful theme, idea, or concept.
- VA:Cr2.2.IIIa
  Demonstrate understanding of the importance of balancing freedom and responsibility in the use of images, materials, tools, and equipment in the creation and circulation of creative work.
- VA:Cr2.3.IIIa
  Demonstrate in works of art or design how visual and material culture defines, shapes, enhances, inhibits, and/or empowers people's lives.
- VA:Cr3.1.IIIa
  Reflect on, reengage, revise, and refine works of art or design considering relevant traditional and contemporary criteria as well as personal artistic vision.
- VA:Cn10.1.IIIa
  Synthesize knowledge of social, cultural, historical, and personal life with art-making approaches to create meaningful works of art or design.
- VA:Cn11.1.IIIa Appraise the impact of an artist or a group of artists on the beliefs, values, and behaviors of a society.

[The Lowell Milken Center for Unsung Heroes (LMC)](#) celebrates individuals from history who created positive by improving the lives of others through their extraordinary actions in service to others and society. By sharing the stories of these individuals who did extraordinary things, LMC seeks to inspire the hero within everyone.

Expanding LMC's mission, [ARTEFFECT](#) invites educators and their students to explore the diverse stories of LMC Unsung Heroes and their invaluable lessons as role-models from history through the visual arts. ARTEFFECT offers an annual competition, professional development, and exhibitions. The ARTEFFECT lesson plans support teaching and learning to generate unique, creative interpretations of these stories in an array of artistic mediums. Students are encouraged to showcase their artworks beyond the classroom to explore the potential of their art to create positive community impact and inspire social action.

The ARTEFFECT competition invites U.S. and international middle and high school students to submit exceptional artworks that creatively interpret an LMC Unsung Hero's story in a unique and compelling way accompanied by an Impact Statement. Since 2016, over 2,000 students have participated in the competition. The annual competition accepts submissions from October-April and awards prizes to students and recognition to their teachers. [Learn more](#) about the competition, previous winners, the prize categories, and the full guidelines.

> **Lesson plan created by Jennifer Braverman.** Jennifer Braverman is an artivist who combines education and visual art and actively engages her audience in contemporary issues. She is passionate about teaching and making the classroom a place for all students to thrive. Currently, she teaches AP Studio Art, Digital Mixed Media, and other courses to grades 7-12 at Maple Shade High School in NJ. Her art has been featured in solo and group exhibitions locally and nationally. She is an author and illustrator of [four educational coloring books](#). She has been an adjunct in the Women's, Gender, and Sexuality Studies department at The College of New Jersey since 2013, teaching Gender, Pop Culture, and LGBTQ Issues in K-12 Education. She has supervised over 50 independent projects in which students focus on social justice and education. Ms. Braverman was 2013 Burlington County Outstanding Woman of the Year in the Arts, and a member of the 2014 Inaugural Class of 40 under 40 for community leadership. She was also the 2016 Burlington County Teacher of the Year, the 2017 Moorestown-Masonic Lodge Teacher of the Year and is a Certified Welcoming Schools National Facilitator for the Human Rights Campaign. In 2021, she was an [LMC Fellow](#). To learn more, please visit: [www.jenbraverman.com](#).

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