

Facilitation Guide: Merging the Traditional with Cutting Edge

Challenge

Students will merge traditional analog printmaking and modern technology to produce unique, cutting edge artwork. They will replicate or combine traditional printing making techniques with cutting and engraving to design and create original artwork, such as a poster, artistic print, or clothing.

Rationale

Through combining traditional printmaking styles with digital tools, including the Glowforge, this challenge incorporates the design process, requires creative and critical thinking, and provides opportunities for students to explore innovative printmaking techniques. By combining traditional techniques, such as the [intaglio process](#) which includes etching, engraving, woodcut, and lithography, with digital tools like the Glowforge, students can create unique prints with added precision, depth, and texture that wouldn't be possible with traditional methods alone.

Using digital tools also allows for a more streamlined and efficient design process, enabling students to experiment with different concepts and techniques more easily. This combination of traditional and digital methods allows for greater creativity and flexibility, as students can use their skills and knowledge of traditional techniques to inform their use of digital tools and create truly original works of art. Through their exploration of these methods, students can develop a deeper understanding of printmaking techniques and gain new skills and insights that they can apply to their future work as artists and designers.

Standards

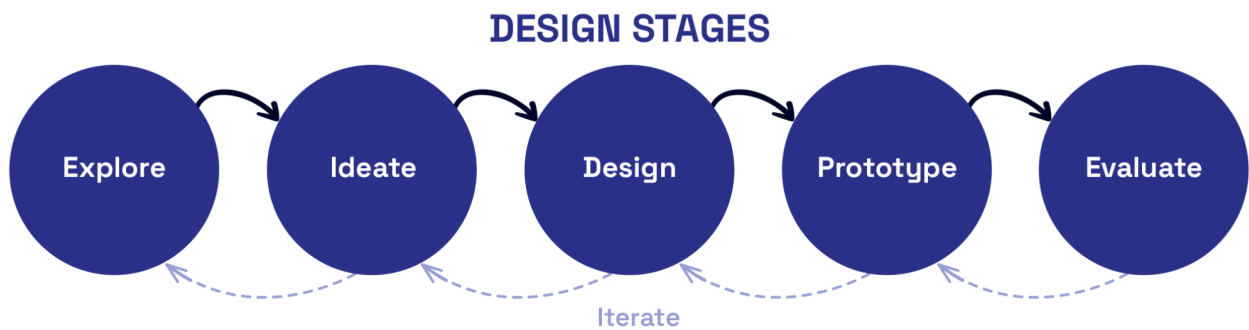
Common Career Technical Core Standards

- AR-PRT 1. Manage the printing process, including customer service and sales, scheduling, production and quality control.
- AR-PRT 2. Demonstrate the production of various print, multimedia or digital media products.

ISTE Standards for Students

- Innovative Designer 1.6.a: Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.
- Innovative Designer 1.6.b: Students create original works or responsibly repurpose or remix digital resources into new creations.

Facilitation Steps



Explore

Here, students focus on researching and investigating printmaking techniques. To ensure that students have the knowledge and skills they need to complete this stage, use the following steps.

1. Provide students with question prompts from the Explore stage of the challenge to help inspire their research and consider how to enhance analog printmaking with digital tools.
2. Provide students with resources and a brief introduction to analog printmaking.
 - Some [good techniques to start](#) with include screenprinting, etching, and engraving.
 - Encourage students to engage with articles, websites, and videos to learn more about the common techniques and the history of printmaking.
 - Help students connect with industry professionals either in-person or virtually, to conduct interviews or question and answer sessions.
3. Ask students to share their findings and discuss what they learned during the Explore stage.
 - Encourage students to share both in small and large groups. If students are working in groups to complete this design challenge, have different groups partner together to discuss what they discovered.

At the end of this stage, students will reflect on the research they did to learn more about printmaking techniques. Encourage them to consider how digital tools can be used to adapt traditional methods while enhancing the depth and texture of digitally produced prints.

Before moving on, students should consider if there are any other resources or techniques that would be helpful to explore. Once they are finished, students will continue to the Ideate stage where they will brainstorm print designs using both analog and digital tools.

Ideate

In this stage, students will take what they learned in the Explore stage and brainstorm and experiment with different ideas for their print design. This stage allows students to explore as many ideas as possible without judgment. Remind students to incorporate the use of digital tools with traditional printmaking techniques to create unique and innovative designs. To ensure that students have the knowledge and skills they need to complete this stage, use the following steps.

1. Provide students with question prompts from the Ideate stage of the challenge to help them brainstorm.
2. Encourage students to brainstorm ideas using one or more methods.
 - Allow students to brainstorm individually or in small groups to utilize multiple perspectives.
 - Provide students with examples of different ideation strategies to help them begin.
3. Inspire students to experiment and modify traditional printmaking techniques.
 - Support students to create a mind map or concept map to visualize and organize their ideas by technique, theme, or other category.
 - Consider using [Glowforge Magic Canvas](#) to provide students who are stuck with a starting point.

At the end of this stage, students will have generated multiple ideas for their print and be able to narrow their focus in order to develop a design that brings their vision to life.

Before moving on, students should consider which ideas are more feasible to use in their final print. Once they are finished, students will continue to the Design stage where they will select one or two ideas that they will develop further.

Design

In this stage, students will develop their ideas from the Ideate stage to draft a detailed plan for their print design. Students should focus on one or two ideas to better understand their needs and final design before printing. Encourage students to consider how color, composition, and various print techniques will add depth and texture to their design. To ensure that students have the knowledge and skills they need to complete this stage, use the following steps.

1. Provide students with question prompts from the Design stage of the challenge to help them design.
2. Introduce, review, or model available design software options, including [the Glowforge App](#).
 - Assist students as they create sketches or digital mockup of their design.

- Review page 28 in the [Glowforge Educator Guide](#) for more software tools and information.

At the end of this stage, students will have a detailed plan for their print design, including sketches or digital mockups, as well as a method for incorporating different techniques and tools.

Before moving on, students should consider if they'd like to revisit their design further to make any changes. Once they are finished, students will continue to the Prototype stage where they will select and test one of their fully developed design plans.

Prototype

In this stage, students will use their design plan to create a physical print. Students will select one of their fully developed design plans, print necessary elements on Glowforge, and test their techniques. To ensure that students have the knowledge and skills they need to complete this stage, use the following steps.

1. Model how to use Glowforge in a safe and efficient manner.
 - Review the [Glowforge safety guidelines](#).
 - Remind students of any applicable classroom or school policies.
2. Provide students with question prompts from the Prototype stage of the challenge to help them develop their prototype.
3. Give students the time and resources needed to produce Glowforge elements for their print and test the creation of their print.
 - Provide students with access to Glowforge using a classroom print schedule to ensure that all students are able to produce the elements they need efficiently.

At the end of this stage, students will have a finished prototype that incorporates both traditional and modern printmaking techniques.

Before moving on, students should review their finished prototype to ensure it aligns to their vision and incorporates texture and depth. Students may need to test multiple times or return to earlier stages of the design process before moving on. Once they are finished, students will continue to the Evaluate stage where they will receive feedback on their finished print.

Evaluate

In this stage, students will evaluate their print design and receive feedback from others. Feedback can be provided in pairs, small groups, or as a whole class. Encourage students to reflect on their process and consider their alignment to their original intent. To ensure that students have the knowledge and skills they need to complete this stage, use the following steps.

1. Provide students with question prompts from the Evaluate stage of the challenge to help them reflect on their print.

2. Encourage students to share and discuss their ideas to generate feedback and suggestions from their peers to refine and enhance their print.
 - Students can use the question prompts from the Evaluate stage to guide their discussions.
 - Use a peer feedback model, such as a gallery walk, affinity mapping, or a concentric circle discussion, to support students as they work in pairs, small groups, or as a whole class.
3. Provide students with question prompts to help them reflect on the feedback that they received. These might include:
 - How can you further improve and refine your design?
 - If making additional changes to your print, which of the design process stages will you return to?
4. If applicable, provide students with time to complete a learning reflection, self-assessment, and/or peer critique.
 - Use the provided Assessment Suggestions for more ideas.

At the end of this stage, students will be able to reflect on the strengths and areas for improvement of their finished print and printmaking techniques. Students should determine whether revisions are needed and return to the appropriate stage in the design process to adjust their print. Consider assessing student work using one of the Assessment Suggestions or extending the challenge using provided Extension Activities.

Supplemental Supports

- Consider providing videos of traditional analog printing, such as [this video from the British Museum](#) or [this introduction from the Arts Council Collection](#), and examples of printed materials.
- For classes that have a limited amount of time, use the [Glowforge Stamp Maker tool](#) to give students inspiration or allow for quicker production.
- For newer Glowforge users, demonstrate how to use Glowforge and its design features, including the design software, engraving capabilities, and cutting functionality. Check out the [Glowforge Educator Guide](#) for more ideas.
- For students who struggle coming up with a print focus, use [Glowforge's Magic Canvas](#) to generate examples based on a provided prompt.

Assessment Suggestions

Overall Learning Reflection

Learning reflections allow students to reflect on their learning experiences, identify key concepts, and explain how they have grown throughout the printmaking process. Ask students to write or record a video about what they learned throughout the challenge and how their learning will impact future print creation, including their experience merging traditional and

modern printmaking techniques. Students can incorporate feedback elements from the Evaluate stage to describe their strengths and areas for improvement.

Self-Assessment

Self-assessments allow students to reflect on their learning through portfolios, presentations, or learning journals that involve evaluating their own progress and identifying areas for improvement. Consider providing criteria to students prior to beginning the challenge that can be used by the student to reflect on their progress throughout the challenge. The criteria may include:

- Use of color and composition: How well did I use color and composition to add depth and texture to the print?
- Alignment of color and composition: How well did my use of color and composition align to the message or theme of the print?
- Use of digital tools: How well did I use digital tools to enhance the print?
- Use of traditional techniques: How well did I use traditional techniques to enhance the print?

Educator or Peer Assessment

Educator or peer assessments allow educators or students to review the quality and effectiveness of the finished print. The assessment can be based on specific criteria, such as composition, innovation, and creativity, or use a more open approach like a gallery walk or artist showcase. Some criteria to consider may include:

- Composition: Did the print utilize color, texture, and depth to communicate the intended message?
- Innovation: Did the print effectively combine traditional and modern printing techniques?
- Creativity: Did the print convey the intended message or theme in a unique manner?

Extension Activities

Design challenges often inspire students to think about what's next. For some, this could mean connecting with people within the printmaking or graphic design industries or applying their skills in new ways. Here are a few ideas for how you can help students extend this challenge:

- Transition from analog printing to digital by asking students to start with a digital image or a digital copy of their challenge print. Use a design software, like Inkscape, Adobe Illustrator, or Photoshop to mimic traditional print techniques by layering images on top of the original image to create mixed-media prints.
- Engage with the local community by connecting students to businesses, government agencies, or non-profit organizations to create prints, installations, or artwork that exhibit the values and interests of the community.

If students are interested in using Glowforge to find other ways to merge traditional and modern design techniques, encourage them to explore the [Laser Couture](#) design challenge.

Ready to take students to the next level? Try the Capstone Challenge [Celebrating Arts and Community](#), where students plan and promote a Community Art Celebration that includes an art installation to showcase student work and engage with the community.