Unit 4 Gimp - 3D Lithophane

Content Area: **Technology**
Course(s):
Time Period: **April**
Length: **5 Days**
Status: **Published**

Unit Overview

Students will use a variety of tools to produce a 3d-printed lithophane. A lithophane is a relief sculpture created on a 3d printer. When light shines through the lithophane, the sculpting shows up as a photograph. Students begin by selecting or creating an image using the GIMP software, an open-source analog to Photoshop. After editing their photograph, they will use online software to convert the picture into a 3d printable file. Students will then learn about the lab's 3d printers, including how they work and how to send files to them. Finally, students will use "slicing" software to prepare their creations for 3d printing. The students leave the project with their own 3d printed creation.

Standards

8.1.5.CS.3	Identify potential solutions for simple hardware and software problems using common troubleshooting strategies.
8.1.5.DA.2	Compare the amount of storage space required for different types of data.

Materials

- Laptops
- 3D Printer

Assessment

Formative Assessment

- Teacher Observation
- Checks for Understanding
- Exit Tickets

Summative Assessment

- Performance Tasks & Projects

Accommodations & Modifications

Special Education

- Follow IEP Plan which may contain some of the following examples…
- In class/pull out support with special ed teacher or assistant
- Preferred seating
- Directions repeated/clarified
- Extended time for completing tasks
- Vocabulary support
- Limit number of tasks

504

- In class/pull out support with special ed teacher or assistant
- Preferred seating
- Directions repeated/clarified
- Extended time for completing tasks
- Vocabulary support
- Limit number of tasks

ELL

- Translation device/dictionary
- Preferred seating
- Directions repeated/clarified
- Extended time for completing tasks
- Vocabulary support
- Limit number of tasks

At-risk of Failure

- Preferred seating
- Directions repeated/clarified
- Extended time for completing tasks
- Vocabulary support
- Limit number of tasks

Gifted & Talented

- Independent projects
- Online games
- Extension activities

Interdisciplinary Connections

Career Readiness, Life Literacies & Key Skills

9.4.5.CT.3	Describe how digital tools and technology may be used to solve problems.
9.4.5.CT.4	Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3).
9.4.5.IML.1	Evaluate digital sources for accuracy, perspective, credibility and relevance (e.g., Social Studies Practice - Gathering and Evaluating Sources).
9.4.2.TL.1	Identify the basic features of a digital tool and explain the purpose of the tool (e.g., 8.2.2.ED.1).
9.4.2.TL.6	Illustrate and communicate ideas and stories using multiple digital tools (e.g., SL.2.5.).