Subtractive Plaster Carving

This project introduces the subtractive sculpture technique while covering topics such as the effective use of positive and negative space.

Curriculum/State Standards
Develop critical thinking skills necessary to develop and execute their ideas with an artistic intent. Develop the skills, knowledge of techniques, and processes necessary to successfully execute their ideas and create their artwork. Understand how art reflects and documents cultural trends and historic events.

Overview
Students will plan out sculptures to be made using the subtractive carving method. The sculptures should be expressive and non-objective in style. Students will mix plaster, allow it to dry, and begin carving using an assortment of carving tools. Once the carvings are complete, students will allow their projects to dry thoroughly and paint them using a desired color palette.

Objectives
The students will understand the use of the element of art, space, including positive and negative space. The students will demonstrate the subtractive method technique for creating sculpture. The students will brainstorm, plan, and execute a carved sculpture. The students will demonstrate proper use of materials, techniques, and processes necessary for creating a sculpture.

Materials
plaster of Paris
containers for mixing
fine grain vermiculite (optional additive for plaster)
molds for pouring plaster (recycled milk/jugs)
carving tools
rasps
files
sandpaper
newspapers
acrylic paints
paint brushes
wooden student chisel 12 piece sets
medium riffler rasp 8 piece sets
gesso primer

Readiness Activity
none

Strategies/Activities
1) Introduce to students the concept of non-objective sculpture. Show them numerous visual examples and explain to them they will be creating their own sculpture using the subtractive method. Introduce the element of art, space, to students and explain how the effective use of positive and negative space will affect their overall sculpture.
2) Students will need to plan out their sculpture in sketches. Encourage students to do research and obtain visual references to help the planning process.
3) Students will begin to mix plaster and pour into molds for drying. The ratio used was 2 parts plaster, 2 parts water, and 1 part vermiculite; however, this ratio may be adjusted to suit your needs. Fine grain vermiculite can be added to plaster to help the plaster retain moisture to be softer for carving. Students should mix the dry ingredients first and then mix in the water. Plaster should be mixed in an area with good ventilation or outside if possible. If students are unable to mix the plaster and vermiculite outside,

THIS WINNING PROJECT IDEA SUBMITTED BY:
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9-12
GRADE LEVEL
ARTS
LANGUAGE
MATH
Misc
SCIENCE
HISTORY
SOCIAL STUDIES
12
HOURS
$486
TOTAL BUDGET
they should wear dust masks to prevent inhalation. The plaster and vermiculite may act as a lung irritant, especially for students with allergies. The plaster molds will need to cure overnight. Students will then pour the plaster mixture into the recycled milk and juice jugs to be used for the molds. We use containers made from the waxed cardboard material, not plastic. Leave the containers to cure overnight.

4) The following day, students may remove their plaster forms from the molds. The cured plaster form will still contain some moisture. They should use their sketches to redraw their designs on the plaster forms, extending their designs all the way to the edges.

5) Demonstrate for students the proper use of carving materials to remove unwanted plaster in order to create their subtractive sculpture, paying special attention to safety concerns. Re-emphasize the concept of positive and negative space and viewing their sculptures from all sides as they work.

6) Students may begin to carve away large areas of plaster with the carving tools until they have the desired general forms. Then they can begin to refine the shape using the rasps and files. Students should cover their work space in newspapers for easier cleanup. I encourage students to drape their projects in plastic after they are finished working for the day, so their projects dry slowly. Working with plaster that still contains moisture will be softer and easier to carve, but it will also be quite fragile. Carving dried plaster will be harder and result in a lot of dust, but you can achieve a greater amount of detail. Strongly encourage students throughout the project to work gently, as the plaster can break. Students should let their projects dry to suit the needs of the stages of their projects.

7) When students have completed carving their projects, they will need to dry them out completely. Drying may take a few days in order for the plaster to be fully removed from moisture. Students should sand their plaster sculptures with sand paper gently if there are any rough areas.

8) They will prime the plaster with acrylic gesso. Acrylic paint should be mixed to manipulate light areas for the projecting areas and darker colors for the shadows.

**Culminating Activity**
As a culminating activity students will participate in a class critique and complete a written self reflection. They will need to discuss how any sculptors/visual references influenced their designs, how they incorporated the purposeful use of positive and negative space in their sculptures, areas in which they felt successful, and areas in which they may have needed improvement. Once the class has completed their sculptures, they will present them to the class. Students will have an opportunity to comment and discuss the completed projects with the class.

**Evaluation Method**
Students will be assessed in a variety of methods. Students will earn a grade for their sculpture based on completion of their final sculpture, creativity of their design, the craftsmanship of the work they completed in class, and their ability to successfully execute their ideas through making subtractive sculptures. Upon completion of their projects, students will also write reflections of their sculptures, detailing the areas in which they felt successful, areas in which they felt needed improvement, and what they learned through the process of creating the sculptures. Finally, students will receive a grade for participation in the final project presentation and class discussion.