

Lesson/Unit Title: Cellular Ceramics
Grade Level(s): Grade 7 (adaptable)
Duration: Multi-day (multi-week) Unit



Big Idea/Unit Overview:

Students were introduced to cell biology through a Cellular Ceramics lesson. Students observed different colors, textures, lines, and shapes as inspiration for their abstract cell form with use of a microscope and a series of slides. Structures were built to merge and illustrate these observations to develop a more concrete understanding of the cell, its parts, and their function.

Essential Questions:

- *How can we critique real life objects as art objects?*
- *How can this help us critically analyze the world around us?*
- *How can we benefit from critiquing our work halfway through the art making process?*

Objectives/Outcomes:

- Interpret visual images from media sources and the immediate environment through the context of art.
- Select skills and information needed from other disciplines (science) to solve artistic problems.
- Use observation skills of the environment and personal experiences to create original imagery.
- Analyze a variety of careers in regard to how art skills are needed to be successful.

Vocabulary: Parts of a Cell, Abstract, Form, Line, Texture, Color

Materials: Sketchbooks, Clay, Clay tools, Glaze, Brushes, Kiln, Microscopes with Slides, iPads

Resources (websites, videos, images, books, etc.): n/a

Procedure:

Introduction:

Begin class by presenting a scientific animation from Harvard University. Students were asked to record any Elements and Principles seen throughout the brief film to initiate discussion. The students then formally analyzed a series of cell photography by using their art vocabulary. The discussion that followed the presentation was focused on how the images were taken by scientists using cell biology microscopes. The discussion also stressed the importance of using observation skills inside and outside of the art room. The students were then introduced to the parts of a cell as the art teacher presented each component, its function, and a visual description to assist in the recognition of these parts. Lastly, the students were introduced to several contemporary artists whose work was influenced by cell biology.

Demonstration:

The students developed several thumbnail sketches using the provided image galleries on the iPads and microscopes from the Science department. These sketches were encouraged to be abstract, while merging and utilizing different colors, textures, lines, and shapes that were observed to represent specific parts. The teacher demonstrated how to properly use a microscope and discussed topics such as how to change a slide and how adjust the lens. The students worked in groups of four to six and rotated through the microscopes to discuss the series of cell slides that were viewed.

The teacher performed a demonstration to provide students with guidance on how to develop their two-dimensional designs into three-dimensional forms.

Process:

The students built their ceramic cell tiles by using various additive and subtractive constructing techniques. The students were required to include and emphasize a nucleus and a cell wall or membrane within their piece. The students conducted a formative critique at the beginning of Day 6 to assess their progress and adjust their designs to meet the specified expectations. The students' work dried for approximately two weeks and was then fired in the kiln. The students had three class periods to complete the glazing of their work. The teacher demonstrated specific glazing techniques that students could then use to complete their piece.

Assessment:

Student progress was informally assessed through observation throughout the art making process to monitor understanding. The students completed a series of exit tickets to summarize and assess each step of the process. Students also completed an Artist Statement that discussed process, inspiration, conceptual purpose, and a formal analysis. Throughout this process, students were reminded to make visual connections to the cells that were observed at the beginning of the lesson and within their Science curriculum. These writing samples are reviewed and graded in conjunction with a rubric that assesses the planning process, construction techniques, glazing techniques, and the inclusion of specific parts of the cell.

Standards:

	Grade 7			
<p>NATIONAL CORE ARTS STANDARDS (NCAS): <i>(identify which art form/s)</i></p>	<p>VA:Cr1.2.7 Develop criteria to guide making a work of art or design to meet an identified goal.</p>	<p>VA:Cr2.3.7 Apply visual organizational strategies to design and produce a work of art, design, or media that clearly communicates information or ideas.</p>	<p>VA:Cr3.1.7 Reflect on and explain important information about personal artwork in an artist statement or another format.</p>	<p>VA:Re8.1.7 Interpret art by analyzing art-making approaches, the characteristics of form and structure, relevant contextual information, subject matter, and use of media to identify ideas and mood conveyed.</p>
<p>ENGLISH LANGUAGE ARTS COMMON CORE STANDARDS (CCSS): <i>(list specifics - Listening, Speaking, Reading, Writing)</i></p>	<p>CCSS.ELA-LITERACY.WHST.6-8.10 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.</p>	<p>CCSS.ELA-LITERACY.RST.6-8.7 Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).</p>	<p>CCSS.ELA-LITERACY.SL.8.5 Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest. <i>(MS-LS1-2)</i></p>	
<p>NEXTGEN SCIENCE STANDARDS (NGSS): <i>(list crosscutting concept)</i></p>	<p>MS-LS1-2 Molecules to Organisms: Structures & Processes Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.</p>			