Cells: Form, Function and the Art of Models

UCSB Models and Materials: Bridging Art and Science in the Secondary Curriculum
Lompoc High School and Vandenberg Middle School
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**Lesson Outline**

- **Assignment:**
  - Create a mixed media bas relief based on cells and extremophiles.
- **Procedure:**
  - Observation of a variety of cells using the elements of art:
    - PowerPoint, microscopes, internet (www.youtube.com) and videos
    - Observational drawing with a microscope.
  - More research on the computer (internet) focusing on extremophiles.
  - Choosing materials/media to make their cells/tissue.
  - Composition and color (paint and ink) to create a background
  - Modeling their cell form

**Rationale**

This project was designed to help students understand that the form of a cell is related to its function; that cells work together to form tissue, and various tissues work together to form organs.

Students individually will create a cell model and as a team of four will create a corresponding tissue drawing/model of various plant and animal cells/tissue.

**Objectives**

- To show the diversity of cells in living organisms
- To use models to demonstrate how cell form is related to its function
- To show the relationship of cells, tissues and organs
- To use the elements of art to develop observational skills

**Standards**

**Science:**

1. Cell Biology: All living organisms are composed of cells from just one to many trillions, whose details usually are visible only through a microscope.
2. Structure and Function in Living Systems: The anatomy and physiology of plants and animals illustrate the complementary nature of structure and function.

**Visual Art:**

1. 0 Artistic Perception: Processing, analyzing and responding to sensory information through the language and skills unique to the visual arts. Students perceive and respond to works of art, objects in nature, events, and the environment. They also use the vocabulary of the visual arts to express their observations.
2. 4 Creative Expression: Review and refine observational drawing skills
3. 5.0 Connections, Relationships, Applications: Students apply what they learn in visual arts across subject areas.