Science Meets Art: Using Big Science Concepts as Art Prompts
Mary Brooks
Lesley University, Masters in Education, Community Arts
With support from Camilla Kraeger (MIT), Bonyena Petrova (MIT), Tsawia Isbell (MIT), John Hirsch (Wellesley Artists), and John Wyglenesworth (Wellesley School)
Science Meets Art: Using Big Science Concepts as Art Prompts

Mary Brooks
Lesley University, Masters in Education, Community Arts
With support from Cornelia Kroeger (MIT), Boryana Petrova (MIT), Tsehai Grell (MIT), John Hirsch (Visiting Artist), and John Wigglesworth (Waring School)

Creative Lab: Summer Program for HS students
5 days, 8:30-4 pm

Morning Activity:
Science Lab
Skill building
Knowledge building
Hands on work
Visiting Scientists
Journal writing

Afternoon Activity:
Art Lab
Skill building
Knowledge building
Hands on work
Visiting Artists
Journal writing

STEAM: Science Technology Engineering Arts and Math: 
Arts-Integrated Science Programs Highlight Creativity in Science

High School STEAM: Creativity Lab Summer Program
Students Explore the Creative Process in Both Science and Art
Through discussion and reflective journal writing students determine the big science themes.
• Use these science themes as prompts for art projects
• Use science knowledge to guide their design and artistic choices
• Art-Science crosstalk
• Art Show
  • Students present their artwork to science community
  • Students describe work highlighting where science thinking influenced art decisions

Middle School STEAM: Earth Science projects
Arts-integrated Earth Science Projects as Assessment Tools
Ocean organism: Secret pages books
• Science content presented through visual art/poetry
• Art work in secret pages reflects personal connection to science topic
• Students "read" books to class/community
Ocean currents: Woven structure projects
• Wire sculptures reflect aspects of ocean currents
• Reflective writing/poetry to extend learning
Layers of the earth and atmosphere: Tapestry weaving projects
• Explore relationship between layers in our world
• Use density, color and texture to represent properties of layers
• Sensitivity to proportion of layers

Ocean currents wire structures.

Ocean currents sculptures.

Two Cells with Proteins
Exposed art Cell Membranes
Double Helix Structures
Protein Basket

Ocean organism book: Content pages
Secret pages: "Science is a big puzzle with lots of missing pieces."
**Title:** E.X.M

**Materials:** Cyanotype

**Names:** Victoria, Robert, Arie, Roe, Anni

**Inko,**

**Statement:**

1. We were inspired by the process of the epithelial and mesenchymal cells. We wanted to show how the cells start as epithelial cells then they begin to transition into mesenchymal cells and they begin to change shape.

2. We cut out shapes of the cells and placed them on the paper and painted over them with the cyanotype solution and left it in the sun to develop. Then we developed the cyanotype under a second color.
Paul’s Cancer Story (excerpt from journal writing after Cornelia’s explanation of EMT and Cancer Metastasis)

“So, basically, cancer cells evolve practical organism status. The human body is an ecosystem, just like the jungle, and from what I can see a cancer cell takes advantage of this. Somehow a cell mutates or is changed and that gives it the ability to.....compete? It evolves partial independence, no longer regulated by other body systems. It then begins its own evolution, further separating itself from the normal body cells. Just like a bad sci-fi horror, where the unregulated robot slowly gains sentience and then eventually turns on its master, the cancer cell induces and accelerates its own evolution. The cell activity influences the body for its own benefit, altering the entire body to suit its own growth, spread, evolution, etc..... which eventually destroys the body, but serves the cancer’s short-term benefits. People say that cancer is evil. I think it’s incredible, like the way that a shark is really cool but scary as crap. Cancers are the ultimate entrepreneurs.”