Abstract Watercolor Landscapes: LED Lights

ABOUT MAKERSPACE- Partners in this lesson
In an effort to spark students’ interest in Science, Technology, Engineering, and Math (STEM), San Antonio Makerspace provides a unique opportunity to learn about electronics, robotics, and advanced manufacturing. In Summer Makerspace was held at Artpace to integrate art and cultural studies with STEM.

Makerspaces come in all shapes and sizes. They serve as gathering points for tools, projects, mentors, and expertise. A collection of tools does not define a Makerspace. Rather, we define it by what it enables: making. A Makerspace is a learning environment right with possibilities. As new hardware and software tools for making, digital design, and fabrication are emerging, we’re working together- with teachers and community leaders- to place those instruments into the hands of a wider audience.

http://makerspace.com/

LESSON OVERVIEW
This lesson integrates basic science and sewing skills with the art making process. Students will be experimenting with watercolor to create abstract landscapes on muslin fabric. With the help of Makerspace students will be using conductive thread to sew a
path onto their landscapes to connect two LED lights. The students will imagine walking their abstract landscape, using the conductive thread to illustrate this path and identifying the starting and ending point with the LED lights.

OBJECTIVES
In this lesson, students will:
- Experiment with watercolors.
- Compare and contrast watercolors on different surfaces.
- Create an abstract watercolor landscape on muslin fabric.
- Experiment with basic color theory and concepts as you choose what colors in your landscape. Think about the mood that colors create (warm vs. cool)
- Employ basic knowledge of positive and negative charges to make circuit.
- Develop hand sewing skills.

MATERIALS
- Muslin
- Watercolors (tubes preferable)
- Paint brushes
- Watercolor paper
- Conductive thread
- Regular thread (if you do not have the material for LED light circuit)
- Needles
- LED lights
- Coin cell holder- Sewable SMD
- Embroidery Hoops 6”
- Images of landscapes and abstracted landscapes

WARM-UP
- Students will experiment with watercolor on watercolor paper. It is important for students to use the material first and understand the characteristics of watercolor since it is so different then tempera or acrylic paints. Demonstrate how to fade and blend the paints. Talk to them about appropriate color schemes for the landscape wish want to portray (cool vs. warm colors).

PROCEDURE
The student will...

1. Paint an abstract landscape using a selected amount of colors on their muslin fabric.
2. Allow painting to dry.
3. Disassemble their embroidery hoop.
4. Arrange fabric over inner section and reassemble the embroidery hoop.
5. Draw a positive (+) and negative (-) sign on the back of your fabric where you want to start and stop your circuit. You will be making a parallel circuit pattern.
6. Using the conductive thread students will be sewing a line across their fabric and going back parallel to the first line in order to connect the circuit.
7. **If you do not have the materials for the LED light circuit then your students can just use normal thread and sew the path they would walk with that.
8. Place the LED light in between the sewn parallel lines.
9. Attach battery (Coin cell holder- Sewable SMD) on back in between the two sewn lines.

DISCUSSION QUESTIONS TO FACILITATE A CONVERSATION WITH STUDENTS

- What is a landscape? What are different examples of a landscape?
- What does abstract mean? What are differences/similarities between abstract, realistic, and non-representational?
- How do you think our circuit is making the LED light turn on?
- Have you ever incorporated other school subjects into artwork? Writing, history, math, etc.? If so what?
- What decisions did you make when choosing the colors for your abstract landscape?
- What are embroidery hoops used for? Have you ever sewn before?
• Have you seen other art that uses light?
• What is fiber art? Do you know of any fiber artists?
• What did you learn about watercolors and the characteristic of it? Did you enjoy using it?
• What will you title your piece?

EXTENSIONS
• Create multiple landscapes each utilizing a different color scheme (indulging in mood).
• Research deeper into circuits and the advantages they bring.
• Write a short story about the journey of the path you have sewn. What would the imaginary adventure be like?
• Experiment more with sewing. Add another layer onto your abstract landscape with various sewing elements.
• Research Monet and his landscapes. Talk about his haystack series. He painted the same subject over and over yet each painting looks very different depending on the time of day he painted. The colors exude different moods and qualities, how could this same aspect affect your landscapes.

FOR OLDER STUDENTS
• Research contemporary artists that make art using light or circuits.
• Experiment with making your own thread.

FOR YOUNGER STUDENTS
• Create guidelines on what colors the students use. Do a warm up exercise on color (primary, secondary, analogous, etc.).
• Extend project into experimenting with watercolors. Have the students participate in various activities including, rubber cement, salt, masking tape, saran wrap, etc.

TEKS
• FINE ARTS
  o 117.11 (b.1), (b.2), (b.3.A), (b.4)
  o 117.14 (b.1), (b.2), (b.3.A), (b.4)
  o 117.17 (b.1), (b.2), (b.3.A), (b.4)
  o 117.32 (b.1), (b.2), (b.4)

• MATH
• 111.2 (b.1.A-C), (b.2.D), (b.6.A-D, F)
• 111.3 (b.1.A-C), (b.2.A), (b.6.A-E)
• 111.4 (b.1.A-C)
• 111.5 (b.1.A-C),
• SCIENCE
  • 112.12-112.16 (a.2), (a.4), (b.2.A)
  • 112.18-112.20 (b.2.A)
  • 112.31-112.39 (c.2.E)
• ENGLISH LANGUAGE ARTS AND READING
  • 110.10-110.16 (b.18.C)
  • 110.17-110.26 (b.13.B)
• SOCIAL STUDIES
  • 113.10-113.16 (b.2.B), (b.13.A), (b.15.B)
  • 113.17-113.20 (b.18.A, C, D)