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FOR EXCELLENCE IN MIAMI-DADE PUBLIC SCHOOLS

2021-2022

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Go Fly a Kite!

Let's Go
Fly a Kite!

STEAM Lesson

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Goals and Objectives

The goal of the **Let's Go Fly a Kite** lesson is to provide the middle school students with an interesting way to understand mathematical concepts of area, perimeter, ratios, angles, and fractions, to use scientific method, to use different media in a new and creative way, and to provide aa venue for self-expression.

Using the Florida Standards listed below, students are exposed to STEAM ideas and realization that there is a practical application for theoretical concepts learned in school.

Florida State Standards

Skills and Techniques Standard 1

- Uses and organizes two–dimensional and three-dimensional processes to produce works of art that are derived from personal experience, observation, or imagination.

  Science: SC.6.N.1 SC.7.N.3.1 SC.8.N.1 SC.6.P.11.1 SC.6.P.13 SC.7.P.11.3
  Technology: 1C

  Engineering: CTE-TECED.68.ENGTEC.04.04

  Art: VA.68.S.1.1 VA.68.S2 VA.68.S.3 VA.68.F1.2 VA.68.O.1.4 VA.68.O.2.4

  Math: MAFS.6.G.1 MAFS.7.G.1 MAFS.7.G.2.6 MAFS.7.R.P.1 MAFS.8.G.1.1

Course Outline and Overview

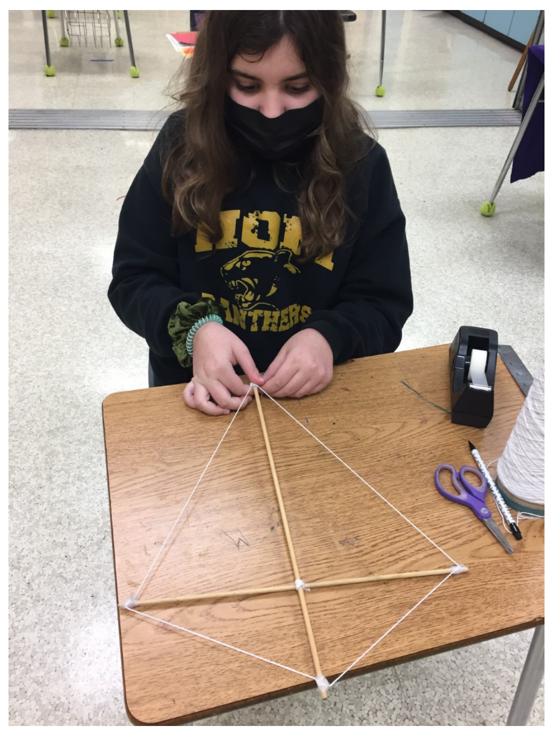
Students will participate in a group discussion about each part of the project, but will work individually to complete it. This lesson can be taught both in traditional classroom and online, providing that students learn from home with adult supervision. After introduction to kites and watching how-to videos, students will make individual kites step-by-step. Each part of the project will be graded to monitor progress and offer assistance when needed. Students will draw a sketch of the kite, create an armature, measure the paper, draw/paint… the surface, stretch the surface onto the armature, attach a tail, and add the string. Finally, during the whole class critique, students will discuss everyone's projects and share their experience of making a kite, as well as calculations made after the kite was complete. This is a multi-step project involving various disciplines. The timeline for this project is about five to six two-hour classes.

Class 1 (2 hours) – Introduction and sketch

Students will discuss the kite as both a fun activity and a contemporary art work with meaning. Students will be introduced to artist Carlos Esteves, his artwork in general, and kites in particular. After that students will watch a 10-minute video oh how this artist creates kites with children. Then students will explore creative expressive self-portraits using google on their laptops. Students will discuss which self-portrait ideas and symbols are meaningful to them, and draw an individual kite sketch either in their sketchbooks or on 8 ½” x 11” paper.

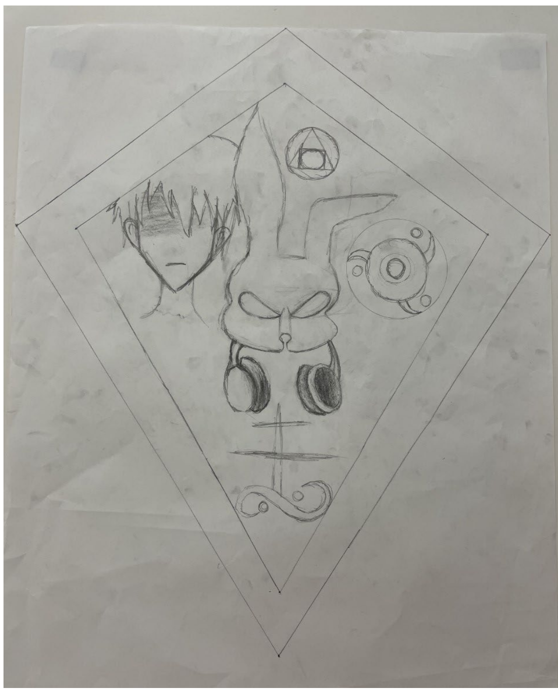
Class 2 (2 hours) - Armature

Students will be introduced to the concept of armature. With the video playing at a very slow speed with frequent pauses, students will make their own armatures. At first they will measure and connect the wooden dowels, then they will measure and tie a thick string around the edges of the dowels creating a perimeter line for the kite. Students will draw a kite on a paper using a yard stick to help them with measurements and proportions. At that time students will discuss the differences between the metric system and.



Class 3 (2 hours) – Artwork (background)

Students will draw their design lightly in pencil on the kite paper. Then students will individually choose a medium or mixed media to complete the project. They will have a choice of: Prismacolor pencils, oil pastels, watercolor, acrylic paint, and tissue paper (can only be used as a background in combination with another medium). Students should complete the background by the end of class.



Class 4 (2 hours) - Artwork

Students will continue working on their kites. By the end of the class students should complete the main object and details.

Class 5 (2 hours) – Artwork (tail and last details)

Students will attach the kite sail to the armature and use string, lace, fabric, and/or yarn to create a fitting tail for their kites. Finally, they will make a kite bridle and attach a kite line to where the spine and cross spar meet so that the kite may fly.

Class 6 (2 hours) – Critique, Flying Demo, Evaluations, and Calculations

Students will go outside to fly their kites. As they do so, they will notice whose kite flies the highest and/or the longest. Some kites may not fly. Why? Students will discuss each other’s projects in an open class critique. After that students will go back to the classroom and complete project evaluation using Word document. Finally, students will use the yard sticks and 18” rulers to measure their kites using both inches and centimeters, and calculate perimeter and area of their kites, and calculate the angles. Both critiques and the calculations need to be saved as Word documents and sent in on Teams for grading.

Visual Arts Lesson Plan

Grade: 6-8 Time: 8 hours

Lesson: Let's Go Fly a Kite!

Materials:

Sketchbook, drawing pencils, erasers, yard stick, 18" rulers, white drawing paper 24" x 36", watercolor, Prismacolor pencils, tissue paper, acrylic paint, pastels, wooden round dowels 1/8" thick, ribbon, lace, fabric, cardboard, masking tape, hot glue gun, scissors, Elmer's glue, brushes, palettes

Activities:

Students are introduced to the contemporary artist Carlos Esteves and his artwork. Students will see examples of his kites and a video on how to make them and will draw a rough sketch for the project. Teacher demonstrates how to make a kite step-by-step starting with creating an armature out of wood dowels and thick string. With the how-to video playing on the Promethean board with frequent pauses and explanations, students will create armatures for their kites. After that students will draw a diamond shape using yard sticks on 24" x 36" paper then design the individual kites on the theme "creative self-portrait." It is not necessary to actually draw a self-portrait. The artwork can include ideas and images that would describe a student. Students will choose the medium or mixed-media from the available options and complete the surface decoration for the kite. When the artwork is dry, students will cut it out of the paper making sure that there is a 2" border on each side in order to attach the artwork to the armature. Students will fold the borders of the kite over the outlining string and attach with tape and/or glue. The next step will be creating the tail for the kite, which needs to be both creative and light enough for the kite to take off. Then students will attach it to the bottom back of the kite. The last part of the kite is to make a kite spool by gluing fabric to cardboard and attach the bridle to the middle back of the kite where the spine and cross spar connect. Now the kite is ready! Students complete their measurements at this time. When the weather is favorable or the hallway is clear with the fan ready, students can fly their kites.

Vocabulary:

Composition, medium, mixed media, armature, site-specific sculpture, shape, bridle, spine, cross spar, kite sail, kite line, kite spool, contrast, scale, scientific method, potential energy, kinetic energy, velocity, gravity, opposing forces, area, perimeter, angles: acute, obtuse, right, congruent

ESOL Strategies:

VC –Vocabulary in context

WGIR – Whole group to individual response

VAKT – Visual, Auditory, Kinesthetic, tactual

Performance Assessment/Evaluation

- Observation of process

  Students get a grade for the following parts of the kite:

  1. Rough sketch
  2. Armature
  3. Kite drawing on a large paper

- Group critique
- Observation of final product
- Self-assessment by student
- Calculations and Reflection

Integrated Curriculum

STEAM: Science, Technology, Engineering, Art, Math; vocabulary

Concepts/Skills

Art: variety of media and self-expression, Math: measurement, Algebra: fractions, Geometry: area and perimeter of a triangle and a rhombus, angles, Science: The scientific method, potential and kinetic energy

Last Name ___________________First Name______________Grade __ Period __

Self-Assessment

3-D Project: Let's Go Fly a Kite!

How involved was I with the planning and preparation of my project?
Use the key bellow to answer questions 1 through 10 based on your project

Key

0 – I did not attempt
1 - I did very little – I should have done more
2 – I did some – could have done more to get better results
3 – I did a fair amount – did enough to meet project requirements
4 – I did a lot – got excellent results, able to see other possible solutions

1.) 0	1	2	3	4	Put most effort into this artwork
2.) 0	1	2	3	4	Completed work in a timely matter
3.) 0	1	2	3	4	Followed directions for the project
4). 0	1	2	3	4	Used color successfully and creatively
5.) 0	1	2	3	4	Used art media successfully and creatively
6.) 0	1	2	3	4	Made a successful and creative kite tail
7.) 0	1	2	3	4	Made a successful kite spool
8.) 0	1	2	3	4	Kite is sturdy and neat
9.) 0	1	2	3	4	Flew the kite successfully
10.) 0	1	2	3	4	Artwork is appropriate degree of difficulty

REFLECTION QUESTIONS:

Please answer using complete sentences.

1.) Describe your kite. What is the most successful part about your work?

2.) What 3 important concepts did you learn about during this project?

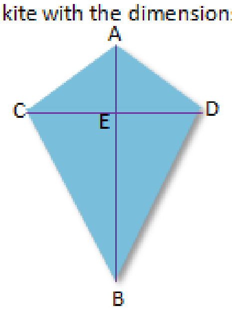
3.) What was the most challenging part of this project? How did you overcome it?

4.) What was the least challenging part of this project? Why?

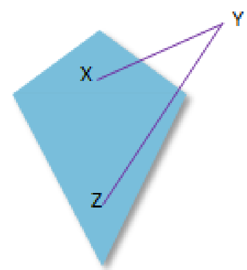
5.) What would you change about your project? How/Why?

Kite Building

A kite can be built from two wooden dowels tied together, a large sheet of paper cut to size, and a string that forms a frame around the outside of the kite that the paper is attached to. The original instructions for building a kite show a kite with the dimensions in the figures below.



AB = 90 cm
CD = 84 cm
AE = 15 cm
EB = 75 cm



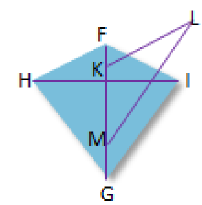
XY = 90 cm
YZ = 120 cm

Find the following:

AD = ___________ DB = ___________ the length of the string around the outside of the kite ___________

Smaller Kite

If the longest wooden dowels you can get are 72 cm, you will make a smaller kite. If the kite you make is similar to the original, calculate the following.



What is the ratio of the new kite to the original kite? ___________

What is the ratio of the original to the new? ___________

Find the dimensions of the largest kite you can make with 72 cm dowels.

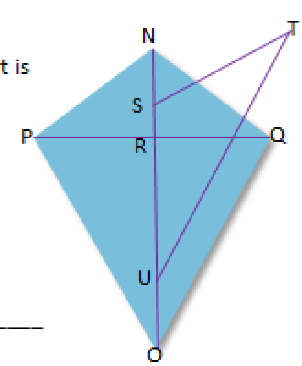
FG = ___________ HI = ___________ FJ = ___________ JG = ___________

FI = ___________ IG = ___________ KL = ___________ LM = ___________

What is the length of the string that goes around the outside of the kite? ___________

Larger Kite

After trying another store you find dowels that are 120 cm. If you make a larger kite that is similar to the original, find the following:



What is the ratio of the new kite to the original? ___________

What is the ratio of the original to the new? ___________

Find the dimensions of the largest kite you can make from these dowels.

NO = ___________ PQ = ___________ NR = ___________ RO = ___________

NQ = ___________ QO = ___________ ST = ___________ TU = ___________

The length of the string around the frame = ___________

Resource List

Videos:

https://illuminatecoralgables.org/2020/12/27/facesky-video/

https://www.youtube.com/watch?v=FzWfDvT-GnM&t=11s

Websites:

https://coralgablesmagazine.com/learn-how-to-make-kites-with-carlos-estevez/

https://myartguides.com/exhibitions/miami/carlos-estevez-celestial-traveler/

https://canyblog.com/cuban-born-artist-kite-maker-carlos-estevez-new-artwork-art-kiosk/

https://curate.la/event.php?id=5349

http://www.moomoomath.com/Definition-of-kite-in-geometry.html

Student Work Samples


XI
XII
III

ADAPTER APPLICATION

Students can use recycled materials to make a kite. For example, the kite armature can be made from cut, folded, and glued cardboard inside paper towel rolls. It would not be as sturdy, but will work for flying if handled gently. The kite sail may be made using garbage bags or wrapping paper (it would fly much better than that made out of drawing paper). Old ribbon can be used for a kite tail. Another idea may be an old shoe lace, but that might be too heavy. Small plastic hangers will work as kite spool.

This lesson may be adapted to both younger and older students in art, math, and science classes.