POCONO MOUNTAIN SCHOOL DISTRICT

COURSE: STEAM	GRADE(S): 8
UNIT: Geometry/Art	

NATIONAL ART STANDARDS:	UNIT OBJECTIVES:
VA:Cr1.2.8a Collaboratively shape an artistic investigation of an aspect of present day life using a contemporary practice of art and design**.** **STATE STANDARDS for ARTS & HUMANITIES:** **9.1** Producing, Performing, and Exhibiting the Arts and Humanities **9.2** Historical and Cultural Contexts **9.3** Critical Response to the Arts and Humanities **9.4** Aesthetic Responses to the Arts and Humanities	Students will be able to identify the two-point perspective drawing technique. Students will be able to draw objects so that they appear to be retreating in space, visually. Students will be able to use the triangle to draw vertical, horizontal, and diagonal lines.
ACTIVITIES: - Define lines: vertical, horizontal, and diagonal. Demonstrate how to use the triangle. - Draw 3 cubes in perspective. - Draw letters moving back to two points of perspective - Design artwork, adding personal ideas and objects **RESOURCES:** Colored Pencils Paper Rulers Pencils	**ASSESSMENTS:** Cube drawing Letter drawing Culminating artwork **REMEDIATION:** Fewer cube drawings, assistance with perspective and smaller culminating artwork **ENRICHMENT:** More in depth cube perspective drawing, relate it to a real world object and larger culminating project ,

POCONO MOUNTAIN SCHOOL DISTRICT

COURSE: STEAM	GRADE(S): 8
UNIT: Engineering/Math	

STATE STANDARDS for ARTS & HUMANITIES:	UNIT OBJECTIVES:
9.3 Critical Response to the Arts and Humanities **9.4** Aesthetic Responses to the Arts and Humanities	Students will be able to use technology to create a 3-dimensional object. Students will be able to design an object in 3 dimensions. Students will learn to use the program TinkerCad. Students will learn the steps to creating a 3D print. Students will understand the theory behind aeronautics. Students will test their designs in a real-world application.
ACTIVITIES: - Reintroduce Tinkercad and review program concepts - Review flight and wind resistance and how the two combine to make planes fly - Design and print a glider in Tinkercad - Test gliders for a successful flight **RESOURCES:** Computers 3d Printers	**ASSESSMENTS:** Glider Design Glider Flight **REMEDIATION:** Assistance with Tinkercad and flight, work with a partner **ENRICHMENT:** Design larger scale glider, increase flight time and calculate path

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COURSE: STEAM	GRADE(S): 8
UNIT: Engineering/Math	

STATE STANDARDS for ARTS & HUMANITIES:	UNIT OBJECTIVES:
9.1 Producing, Performing, and Exhibiting the Arts and Humanities **9.2** Historical and Cultural Contexts **9.3** Critical Response to the Arts and Humanities **9.4** Aesthetic Responses to the Arts and Humanities	Students will be able to use problem solving to solve an engineering problem. Students will be able to work in a group to design and build a windmill. Students will be able to create a three-dimensional artwork, using a variety of materials.
ACTIVITIES: • Build a windmill. • Design and build the spinning blades and construct the tower • Combine blades and tower to make it fully operational with working blades • Present and explain the work. **RESOURCES:** Popsicle Sticks Duct Tape Masking Tape Paper	**ASSESSMENTS:** Windmill Activity **REMEDIATION:** Students can work in larger groups with teacher assistance. Blades do not need to be fully operational. **ENRICHMENT:** Larger scale windmill creation that uses wind force to sustain a part of a small community. Create and explain in detail with a plan.

POCONO MOUNTAIN SCHOOL DISTRICT

COURSE: STEAM	**GRADE(S): 8**
UNIT: Electrical Engineering/Art	

STATE STANDARDS for ARTS & HUMANITIES: **9.1** Producing, Performing, and Exhibiting the Arts and Humanities **9.2** Historical and Cultural Contexts **9.3** Critical Response to the Arts and Humanities **9.4** Aesthetic Responses to the Arts and Humanities	**UNIT OBJECTIVES:** Students will be able to use technology to create an "Art Bot." Students will be able to design an artwork using multimedia, including an offset motor. Students will create a unified artwork. Students will learn how to create an Art Bot that can create its own artwork.
ACTIVITIES: - Introduce art bots, motors, circuits, and off-set center of balance. - Create Art Bot without instruction from provided materials - Create Art Bot with instruction from what was learned in prior lesson - Discover designs created by Art Bots and their movements **RESOURCES:** Plastic Cups Masking Tape DC Motor Markers Batteries Battery pack Hot glue sticks	**ASSESSMENTS:** Motor Assembly Art Bot Creation **REMEDIATION:** Larger student groups with more teacher assistance, directions given immediately, few designs created from Art Bot movement **ENRICHMENT:** Use other materials to make an Art Bot, hypothesize movements, design specific movements and have it write specific letters

POCONO MOUNTAIN SCHOOL DISTRICT

COURSE: STEAM	**GRADE(S): 8**
UNIT: Circuitry/Art	

STATE STANDARDS for ARTS & HUMANITIES: **9.1** Producing, Performing, and Exhibiting the Arts and Humanities **9.2** Historical and Cultural Contexts **9.3** Critical Response to the Arts and Humanities **9.4** Aesthetic Responses to the Arts and Humanities	**UNIT OBJECTIVES:** Students will be able to use technology to create a lit artwork. Students will be able to design an artwork using multimedia, including a lit circuit. Students will create a unified artwork. Students will learn how a circuit works.
ACTIVITIES: • Review circuits, and how to use conductive materials in order to light up a set of led lights. • Create an artwork that will include light up areas. • Implement copper wire and led lights to create a lit circuit **RESOURCES:** LED Lights Copper Wires (Or Copper Tape) Cardstock Paper Button batteries	**ASSESSMENTS:** Artwork Creation Design Lit Circuit Creation **REMEDIATION:** Smaller artwork and partner work for circuits **ENRICHMENT:** Larger scale artwork and circuitry design

POCONO MOUNTAIN SCHOOL DISTRICT

COURSE: STEAM	**GRADE(S): 8**
UNIT: Math/Art	

NATIONAL ART STANDARDS:	UNIT OBJECTIVES:
VA:Cr3.1.8a Apply relevant criteria to examine, reflection, and plan revisions for a work of art or design in progress. **STATE STANDARDS for ARTS & HUMANITIES:** **9.1** Producing, Performing, and Exhibiting the Arts and Humanities **9.2** Historical and Cultural Contexts **9.3** Critical Response to the Arts and Humanities **9.4** Aesthetic Responses to the Arts and Humanities	Students will be able to identify asymmetry and visualize it with a cohesive artwork. Students will be able to draw a balanced artwork using straight lines in an asymmetrical manner. Students will be able to use the triangle to draw vertical, horizontal, and diagonal lines.
ACTIVITIES: • Explore and discuss geometry and art • Create an asymmetrical starburst design **RESOURCES:** Paper Ruler Pencil Colored Pencils	**ASSESSMENTS:** Starburst Activity **REMEDIATION:** Smaller amount of dots used in creation, teacher assistance, additional time **ENRICHMENT:** Larger amount of dots used in creation, explore uses in society for such creations

POCONO MOUNTAIN SCHOOL DISTRICT

COURSE: STEAM	GRADE(S): 8
UNIT: Technology and Art	

STATE STANDARDS for ARTS & HUMANITIES:	UNIT OBJECTIVES
9.1 Producing, Performing, and Exhibiting the Arts and Humanities **9.2** Historical and Cultural Contexts **9.3** Critical Response to the Arts and Humanities **9.4** Aesthetic Responses to the Arts and Humanities **9.1.8.K.** Incorporating specific uses of traditional and contemporary technologies in furthering knowledge and understanding in the humanities.	Students will learn to save images to their Google drive. Students will learn to download images from their drive to their Chromebooks. Students will import images to Giphy.com, making a cohesive Gif, demonstrating movement or a progression using 5-10 photographs. Students will download images from google if they don't have access to a phone drive. Students will explore the Giphy maker, using filters, text, stickers and color.
ACTIVITIES: • Demonstration of how to use Google Drive on a Chromebook and cell phone • Create a short clip using 3 gathered images • Explore Giphy.com tools • Photograph items with Chromebooks • Create a Gif by using filters, text, timing and stickers • Evaluate gifs as a class	**ASSESSMENT:** Gif Creation **REMEDIATION:** Group work, teacher assistance, use of less filters, etc. in gif creation **ENRICHMENT:** Multiple gifs created and used in culminating project for the cycle
RESOURCES Chromebooks/photos takes or images from research all downloaded.	