

Classify • Compare



STEAM MODULE DESCRIPTION

In this series of STEAM activities, students will discover the concepts of geometry through shape exploration and the creation of choreographic sequences. Another activity in this module will allow students to identify shapes by applying a steady beat in a musical setting. The third activity will engage students by discovering the concepts of geometry through shape exploration and the creation of a geometric original composition.

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Modules provide differentiated ideas and activities aligned to a sampling of standards. The modules do not necessarily imply mastery of standards, but are intended to inspire and equip educators.

Description	Learning Targets
<p>In this series of STEAM activities, students will discover the concepts of geometry through shape exploration and the creation of choreographic sequences. Another activity in this module will allow students to identify shapes by applying a steady beat in a musical setting. The third activity will engage students by discovering the concepts of geometry through shape exploration and the creation of a geometric original composition.</p>	<p>“I Can...”</p> <ul style="list-style-type: none"> ● Identify shapes and their attributes ● Compare and contrast shapes and their attributes ● Create a simple beat to describe shapes ● Use movements to explore shapes ● Create a choreographed sequence to represent specific shapes ● Create an original composition using shapes inspired by the work of Paul Klee

ESSENTIAL QUESTION(S)

<ul style="list-style-type: none"> ● How can movement and dance help synthesize our understanding of math concepts? ● How does applying steady beat help us create a musical compilation about shapes? ● How can analyzing Paul Klee’s artwork help deepen my understanding of shapes? ● How can I use many shapes to create a new composition representing an image?

STANDARDS

Curriculum Standards	Arts Standards
<p><u>GA Performance Standards:</u> MGSEK.G.1. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.</p> <p>MGSEK.G.2. Correctly name shapes regardless of their orientations or overall size.</p> <p>MGSEK.G.5 Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.</p> <p>MGSEK.G.6 Compose simple shapes to form larger shapes.</p> <p>ELAGSEKRF2. Demonstrate understanding of spoken words, syllables, and sounds (phonemes). b. Count, pronounce, blend, and segment syllables in spoken words.</p> <p><u>National Standards:</u> CCSS.MATH.CONTENT.K.G.A.1. Describe objects in the environment using names of shapes, and describe the relative positions of these</p>	<p><u>GA Performance Standards:</u> DKFD.1. Identifies and demonstrates movement elements, skills, and terminology in dance.</p> <p>DKFD.2. Understands and models dance etiquette as a classroom participant, performer, and observer.</p> <p>DKCR.1. Demonstrates an understanding of creative and choreographic principles, processes, and structures.</p> <p>DKCO.4. Demonstrates and understands dance as it relates to other areas of knowledge.</p> <p>MKGM.4. Improvising melodies, variations, and accompaniments. a. Improvise simple body percussion patterns. b. Improvise soundscapes (e.g., weather, animals, and other sound effects).</p> <p>VAKMC.1. Engages in the creative process to generate and visualize ideas.</p> <p>VAKMC.2. Formulates personal responses.</p>

<p>objects using terms such as above, below, beside, in front of, behind, and next to.</p> <p>CCSS.MATH.CONTENT.K.G.A.2. Correctly name shapes regardless of their orientations or overall shape</p>	<p>VAKMC.3. Selects and uses subject matter, symbols, and/or ideas to communicate meaning.</p> <p>VAKCU.1. Identifies artists and offers ideas about what art is and who artists are.</p> <p>VAKCU.2. Views and discusses selected artworks.</p> <p><u>National Standards:</u> Standard 4. Applying and demonstrating critical and creative thinking skills in dance.</p> <p>Standard 7. Making connections between dance and other disciplines.</p> <p>MU:Re7.2.Ka. With guidance, demonstrate how a specific music concept (such as beat or melodic direction) is used in music.</p> <p>VA:Cr1.1.K Engage in exploration and imaginative play with materials.</p> <p>VA:Cr1.2.K Engage collaboratively in creative art-making in response to an artistic problem.</p> <p>VA:Cr2.1.K Through experimentation, build skills in various media and approaches to art-making.</p> <p>VA:Cr2.3.K Create art that represents natural and constructed environments.</p>
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KEY VOCABULARY

<p>Content Vocabulary</p> <ul style="list-style-type: none"> ● Circle: A shape with no sides and no vertices ● Classify: To sort into categories or to arrange into groups by attribute ● Compare: To decide if one number is greater than, less than, or equal to another number; can also be used to tell how shapes are alike or different ● Cone: A solid shape with a circular base, a curved surface, and one vertex ● Cube: A solid shape with six square faces ● Curve: A line that is rounded ● Curved surface: A rounded surface ● Cylinder: A solid shape with two circular bases and a curved surface ● Flat surface: A surface that is not curved; plane ● Rectangle: A plane shape with 4 sides and 4 square vertices ● Shape: The form or outline of an object (e.g., two-dimensional and three-dimensional shapes)

- **Side:** One of the line segments that makes a flat, two-dimensional shape
- **Solid shape:** A shape that is not flat; an object that has three dimensions. (i.e., height, length, and width)
- **Sort:** To group or organize according to shared attributes
- **Sphere:** A solid shape with a curved surface
- **Square:** A plane shape with 4 sides that are the same length and 4 square vertices
- **Three-dimensional:** A solid shape that has length, width, and height
- **Triangle:** A plane shape with 3 straight sides and 3 vertices
- **Two-dimensional:** A plane, flat shape that has length and width
- **Vertex:** A corner of a shape (plural: vertices; “corners”)

Arts Vocabulary

Dance Arts

- **Choreographer:** A person who creates dances
- **Beat:** Basic unit of musical time; can be heard as a regular pulse underlying music
- **Pathway:** Patterns created in the air or on the floor by the body or body parts, as a dancer moves in and through space
- **Curved shape:** A shape with no angles or vertices
- **Angular shape:** A Shape with one or more angle
- **Locomotor:** Movement that travels through space
- **Non-locomotor:** Movement that does not travel through space

Music Arts

- **Beat:** The pulse underlying music
- **Rhythm:** The long and short sounds

Visual Arts

- **Artist:** An artist's job is to create something interesting, unique or functional for use as an advertisement or product packaging, for sale or exhibition, or just to entertain. There are many types of artists and each type of art has its own job description.
- **Composition:** An arrangement of elements that make up a work of art
- **Line:** A mark with greater length than width. Lines can be horizontal, vertical, or diagonal; straight or curved; thick or thin.
- **Shapes:** Can be geometric, like squares and circles; or organic, like free-form or natural shapes. Shapes are flat and can express length and width.
- **Space:** The area between and around objects. The space around objects is often called negative space; negative space has shape. Space can also refer to the feeling of depth. Real space is three-dimensional; in visual art, when we create the feeling or illusion of depth, we call it space.
- **Color:** Light reflected off of objects. Color has three main characteristics: hue (the name of the color, such as red, green, blue, etc.), value (how light or dark it is), and intensity (how bright or dull it is).
- **Collage:** Piecing many parts together to create a composition

ASSESSMENTS

Formative	Summative
<ul style="list-style-type: none"> ● Students’ dances must match shape criteria appropriately 	<ul style="list-style-type: none"> ● Students must perform/move to steady beat ● Students must be able to identify the shape being performed

<ul style="list-style-type: none"> • Observations of students in the artistic process (large group, small group, rehearsing, performing) • Observations of students in the artistic process creating a Klee inspired composition as a whole group and individually 	<ul style="list-style-type: none"> • Students must be able to describe the shapes' attributes in their movement and visual representation of the various shapes • Ask students to identify the shapes and the attributes in their original geometric compositions
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MATERIALS

<p>Dance Arts: CD player and music Paper and pencils Images of shapes</p> <p>Music Arts: Unpitched percussion instruments Shape visuals</p> <p>Visual Arts: 10"-12" pieces of scrap felt and fabric cut into shapes Pieces of yarn in various lengths One 12"x12" piece of white paper per student Glue sticks Colored and patterned paper cut into various shapes</p>

DANCE ARTS:

Activating Strategy
<p>Before teaching this component be sure to have student desks moved off to the side of the room in order to have an open space, and be tolerant of noise and excitement - it is "working noise"!</p>
Main Activity
<ul style="list-style-type: none"> • Discuss and explore the concepts of curved and angular shapes, as well as pathways. • Identify shapes and analyze the lines (curved or angular) used to create them visually by drawing on the board: circle, square, oval, or triangle. • Divide students into groups and have them create "shape dances" in which the pathways travelled and shapes created must correspond correctly to an assigned shape. • Students will then perform their "shape dances" for the class. • During the performances, the audience will analyze and discuss the shapes and attributes presented.

MUSIC ARTS:

Activating Strategy
<ul style="list-style-type: none"> • Have students identify shapes in the classroom (e.g., paper=rectangle). • Discuss objects in the "real world" that are shapes.
Main Activity

- Challenge students to establish a simple 2-beat body percussion ostinato (e.g., pat-clap = 2-beat ostinato).
- While students perform the body percussion ostinato, teach the following chant by rote. This chant becomes the A section.



Shapes, shapes, ev -ry-where shapes, yes, shapes are all a - round.



Lines and size and an-gles all mat-ter, let's see how our shapes sound.

- Display visuals of various shapes (rectangle, triangle, square, trapezoid, quadrilateral, hexagon, pentagon, etc.) and have students identify each.
- Challenge students to say the name of each shape over 2 beats. For example:



cir - cle

- Decide on the rhythm for each shape. For example, rectangle could be spoken as:



rec - tan - gle or rec - tan - gle

- Use long and short lines as needed to solidify rhythm.
- Combine 2 shapes and speak over 4 beats. For example:



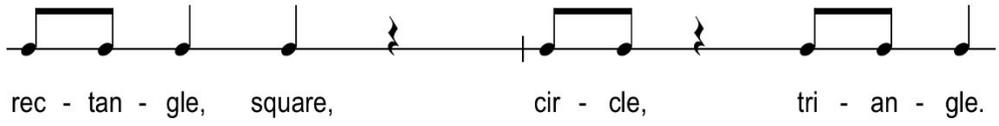
rec - tan - gle, square.

- Combine 3 shapes and speak over 6 beats. For example:



rec-tan-gle, square, cir-cle,

- Combine 4 shapes and speak over 8 beats. For example:



rec - tan - gle, square, cir - cle, tri - an - gle.

- Select student(s) to create B section by arranging shapes.
- Challenge students to speak shapes over 8 beats. This becomes the B section.
- Speak the A section, created B section, and A section. Lead students to understanding of form (ABA).
- Select new students to create B section.
- Distribute unpitched percussion instruments. Have students say, then play the rhythm, of the B section (the B section becomes 16 beats long).

VISUAL ARTS:

Activating Strategy

- Read the book *The Cat and the Bird: A Children's Book Inspired by Paul Klee* by Géraldine Elschner using the whole book approach which encourages close looking.
- Whole book Approach:
<http://www.marynewelldepalma.com/images/school/The%20Whole%20Book%20Approach.pdf>
- Pay close attention to the way that the artist uses shapes and color.
- Review shapes with students using the book.
- **Activity:**
 - Lay out felt and fabric shapes. Tell students that they will be working as a team to create shape compositions (pictures) on the floor.
 - Call on the students one by one to place their shape into the center of the circle creating a composition. Ask them to make careful choices in placing their shape above, below, or beside another shape.
 - Once the composition is finished allow students to walk around the piece.
 - Ask students to name the piece. Ask them to describe shapes and their relationships to one another using positional words.

Main Activity

- Introduce students to the project: They will be creating Klee-inspired castles composed of shapes.
- Give each student a handful of precut shapes made from different colors, patterns, and representing shapes in several sizes.
- Ask them to identify and sort their shapes. These are the building blocks that will be used to create their castle.
- Ask students to experiment arranging their shapes into a castle shape.
- Give each student a 12"x12" piece of paper.
- Instruct them to glue their pieces into place using a glue stick.

REFLECTION

Reflection Questions

- *How did the dance and music components help me better understand shapes?*
- *How did the art of Paul Klee and visual arts help me better understand shapes?*
- *Who lives in my Castle?*

ADDITIONAL RESOURCES & EXTENSION ACTIVITIES**Websites**

- PBS Kids: <http://pbskids.org/games/shapes/>
- ABCYA Online Game: http://www.abcya.com/shapes_geometry_game.htm
- YouTube Video: Paul Klee: The Castle and the Sun:
https://www.youtube.com/watch?v=h8U_nKK6ZBs
- YouTube Video: Art with Mati and Dada - Paul Klee: Animate Short:
<https://www.youtube.com/watch?v=eqHJ9gDLkL8>

Books

- *Shapes That Roll* by Karen Nagel
- *The Greedy Triangle* by Marilyn Burns
- *Round Is a Mooncake: A Book of Shapes* by Roseanne Thong and Grace Lin
- *Shapes in Art* by Rebecca Rissman

Extensions for Visual Arts:

- Instruct students to create another Klee inspired castle with a pencil and ruler. Paint with water colors.