ARTS IMPACT LESSON PLAN

Visual Arts and Math Infused Lesson

Lesson Two: Building with Shapes
Author: Meredith Essex Grade Level: Kindergarten

Enduring Understanding
Geometric shapes have specific attributes and can be combined above, below, or beside each other to make larger shapes.

Lesson Description (Use for family communication and displaying student art)
Students describe and compare attributes of 3-dimensional solids (foam stamping blocks) and 2-dimensional shapes (images stamped on paper with blocks). Students then find examples of and name shapes that are combined to make larger shapes in art and experiment with stamping shapes above, below, and beside each other to create larger shapes. Last students create a composition representing a building or machine.

Learning Targets and Assessment Criteria

Target: Identifies 2-D and 3-D geometric shapes/forms.
Criteria: Names and describes attributes of 3-dimensional stamps (geometric forms/solids) and 2-dimensional stamped images (flat shapes).

Target: Creates composite shape.
Criteria: Stamps shapes above, below, or beside each other to make larger shapes.

Target: Makes an imaginary structure.
Criteria: Stamps shapes above, below, and beside each other to make larger shapes forming a building or machine.

Vocabulary	Materials	Learning Standards
Arts Infused: 2-D 3-D Above Below Beside Cube Curved Rectangle Shape Square Triangle **Math:** Composite Corner Side **Arts:** Composition Stamping	**Museum Artworks or Performance** **Seattle, WA** Seattle Art Museum **Tacoma, WA** Children's Museum of Tacoma Tacoma Art Museum **Materials** Foam blocks: 1-3" sized cubes, rectangular and triangular prisms, (cylinders & ½" cylinders optional, mark with a large X showing the top to keep ink on one surface of the block); Newsprint: 9x12" (practice); Jumbo stamp pads: assorted colors; Arts Impact sketchbooks; White cardstock: 11x17" (final composition); Class Assessment Worksheet; Photos of structures: photos or diagrams of buildings and machines made of composite shapes. See end of lesson for examples. continued	**WA Arts Learning Standards** For the full description of each anchor standard and the grade level performance standards, see: https://www.k12.wa.us/student-success/resources-subject-area/arts/arts-k–12-learning-standards **Anchor Standard 1:** Generate and conceptualize artistic ideas and work. **Performance Standard (VA:Cr1.2.K):** a. Engage collaboratively in creative art-making in response to an artistic problem. **Anchor Standard 2:** Organize and develop artistic ideas and work. **Performance Standard (VA:Cr2.1.K):** a. Through experimentation, build skills in various media and approaches to art-making. **Performance Standard (VA:Cr2.3.K):** a. Create art that represents natural and constructed environments. **Anchor Standard 7:** Perceive and analyze artistic work. **Performance Standard (VA:Re7.2.K):** a. Describe what an image represents. **Anchor Standard 8:** Interpret intent and meaning in artistic work. **Performance Standard (VA:Re8.1.K):** a. Interpret art by identifying subject matter and describing relevant details. continued

	Connections Everyday Mathematics 1.2 – Introduction to Pattern Blocks 2.1 – Shape Collages 2.2 – Shapes By Feel 4.3 – The Pattern Block Template	**Common Core State Standards (CCSS) in Math** For a full description of CCSS Standards by grade level see: http://www.corestandards.org/Math/ K.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. K.G.2. Correctly name shapes regardless of orientation or overall size. K.G.3. Identify shapes as 2-D or 3-D. K.G.6. Compose simple shapes to form larger shapes. **CCSS Mathematical Practices** MP.4. Model with mathematics. MP 6. Attend to precision. MP 5. Use appropriate tools strategically. MP 7. Look for and make use of structure.
	 Seattle Art Museum image: Formation, 1966, Ann O'Keefe, 67.28  Seattle Art Museum Image: Abstract Composition, mid 20th century, George Kenyon, 46.265	**Early Learning Guidelines (Pre-K – Grade 3)** For a full description of Washington State Early Learning and Child Development Guidelines see: https://www.dcyf.wa.gov/sites/default/files/pubs/EL_0015.pdf (Age 4-5) 6. Learning about my world: Math: Match and sort simple shapes; Follow simple directions for position (beside, next to, between.) (Age 5 and K) 6. Learning about my world: Math: Name shapes and recognize shapes in the environment; Correctly use position words (such as beside, inside, under, etc.) to describe objects. Arts: Learn ways to create artworks; share ideas and explain own artwork to others; talk about what was done and why.

ICON KEY:

= Indicates note or reminder for teacher

☑ = Embedded assessment points in the lesson

Pre-Teach

Sketchbook Activity: Find, describe, and draw examples of shapes you see in your school building or neighborhood. Compare their relative position in space: above, below, beside. Share, compare, and reflect.

Lesson Steps Outline

1. Warm-Up: Guide students to examine and describe foam block geometric solids (which will be used as stamps). Introduce concept of 2-D and 3-D.

☑ Criteria-based process assessment: Names and describes attributes of 3-dimensional stamps (solids).

2. Demonstrate and guide stamping with a foam block (rectangular or triangular prism) on practice newsprint paper. Ask students to name anddescribe the shape that they have stamped.

☑ Criteria-based teacher checklist: Names and describes attributes of 2-dimensional stamped images (flat shapes).

3. Introduce and guide math analysis and discussion of Formation by Ann O'Keefe from the Seattle Art Museum. Ask students to name shapes they see and identify larger shapes made by combining smaller shapes. Discuss location in space of small shapes forming larger shapes. Demonstrate and guide stamping shapes on practice paper above, below, or beside other shapes to make larger shapes.

☑ Criteria-based teacher checklist: Stamps shapes above, below, or beside each other to make larger shapes.

4. Introduce and guide math analysis and discussion of Abstract Compositionby George Kenyon from the Seattle Art Museum. Facilitate discussion about location in space – above, below, beside. Demonstrate and guide stamping shapes adjacent to one another to create a structure in composition. Share pictures of buildings and machines to help students visualize.

☑ Criteria based teacher checklist: Stamps shapes above, below, or beside each other to make larger shapes forming a building or machine.

5. Lead criteria-based group reflection. Guide students in self-assessing their work.

☑ Criteria-based student self-assessment: Names shapes used. Shows where s/he stamped shapes above, below, or beside each other to make composite shapes.

LESSON STEPS

1. Warm-Up: Guide students to examine and describe foam block geometric solids (which will be used as stamps). Introduce concept of 2-D and 3-D shapes/forms used by artists and math experts who design and build buildings and machines.

- Do you know the name of this object? Can you tell us whether it is a flat 2-dimensional shape or a 3-dimensional solid? What are your clues?
- Artists and people who design buildings (architects) and machines (engineers) use 2-D and 3 -D shapes in their work.

☑ Criteria-based teacher assessment: Names and describes attributes of 3-dimensional stamps.

2. Demonstrate and guide stamping with a foam block (rectangular or triangular prism) on practice newsprint paper. Ask students to name and describe the shape that they have stamped.

Stamping with Geometric Foam Blocks

Make sure all blocks have a big dot (sticker or sharpie) that indicates the top. That way ink only goes on one surface of the block. Match a specific foam block with a color stamp pad at each table (ex: the cube and the orange are friends that can never be separated…) to reduce color contamination of blocks and stamp pads.

- First, find the dot side of your stamp: the dot side always needs to be up when you stamp! Stamping is an up and down motion. Hold your 3-dimensional stamp firmly and gently press itinto an inkpad. Use an up and down motion to stamp your inked shape on paper.
- Is the shape stamped on your paper 2-dimensional (flat) or 3-dimensional? Why?
- Tell a partner about your shape. How many sides does it have? How many corners does it have? What kind of 2-D shape does a 3-D cube make when you print it?

☑ Criteria-based teacher assessment: Names and describes attributes of 2-dimensional stamped images (flat shapes).

3. Introduce and guide math analysis and discussion of Formation by Ann O'Keefe from the Seattle Art Museum. Ask students to name shapes they see and identify larger shapes made by combining smaller shapes.

Responding to Art in the Classroom

The Seattle Art Museum's collection is available on-line at: http://www.seattleartmuseum.org/emuseum/code/collection.asp. To find the images in this lesson, enter the accession number for the work of art in the search box on the collections page of SAM's website. Accession numbers for these works of art are listed in the materials box at the beginning of this lesson.

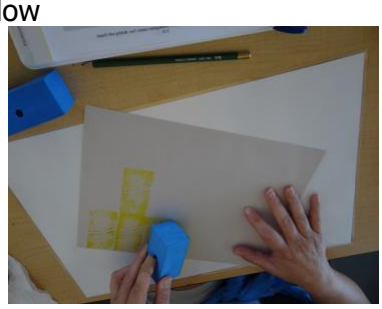
- Name the kinds of shapes you see. Which of those shapes are made by combining smaller or different shapes?

Discuss location in space of small shapes forming larger shapes. Demonstrate and guide stamping shapes on practice paper above, below, or beside (rather than "on top of") other shapes to make larger shapes.

Prompting for Creativity

- Pick one shape made from smaller shapes in the art to talk about with your partner. Are the shapes that make a bigger shape beside, above, or below each other?

- Using your stamp, make a bigger shape by stamping two shapes right next to each other. What larger shape did you make? Did you place shapes above, below, or beside each other?



☑ Criteria-based teacher checklist: Stamp shapes above, below, or beside each other to make larger shapes.

4. **Introduce and guide math analysis and discussion of *Abstract Composition* by George Kenyon from the Seattle Art Museum. Facilitate discussion about location in space – above,below, beside. Demonstrate and guide stamping shapes adjacent to one another to create a structure in composition. Share pictures of buildings and machines to help students visualize. (See some examples at end of lesson.)**

Again, review with students that dot or X faces up on foam block stamps. Match a specific foam block with specific color stamp pad at each table (example: the cube and the orange are friends that can never be separated…) to reduce color contamination of blocks and stamp pads.

- "Composition" means arranging and combining parts to make an artistic whole. We are composing with stamped shapes.

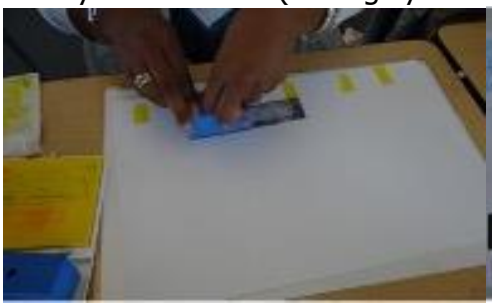
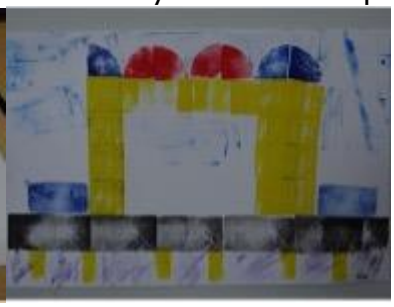
- Where do shapes combine to make other shapes in this painting? Where do we see shapes above, below, and next to each other in the painting? Does this painting remind you of something?

- Imagine making a composition of a building, tower, or machine by combining shapes above, beside, and below each other.

- What will you make? Will it be a building with lots of doors and windows? Will it be a bridge with moving decks? How will you use shapes to show those parts?

- Share and stamp with the stamps at your table to build your structure. Start from the bottom of your paper keeping one color per stamp (if we use more than one color per stamp, colors turn muddy).

- Combine shapes by stamping them next to one another until you have filled your paper with your structure (adding cylinder and ½" cylinder blocks optional).

☑ Criteria-based teacher assessment: Stamps shapes above, below, or beside each other to make larger shapes forming a building or machine.

5. Lead criteria-based group reflection. Guide students in self-assessing their work.


Guiding Reflection on Student Art

- Turn to a partner and name all of the different kinds of shapes you used in your art.
- Point to a place where you combined shapes to make a larger shape in your composition.
- Point to a shape that is above another shape…point to a shape below another shape… point to a shape beside another shape in your composition.
- Tell us about your imaginary building or machine.

☑ Criteria-based student self-assessment: Names shapes used. Shows where s/he stamped shapes above, below, or beside each other to make a composite shape.

Everyday Mathematics Extensions:
4.5 – Follow My Pattern
4.9 – Body and Rope Shapes
4.10 – Shape Comparisons
5.14 – Attribute Spinner Game
6.6 – I Spy with Shapes

ARTS IMPACT LESSON PLAN Visual Arts and Math Infusion

Kindergarten Lesson Two: Building with Shapes

CLASS ASSESSMENT WORKSHEET

Disciplines	VISUAL ARTS AND MATH			Total 3
Concept	**Attributes of 2-D and 3-D**	**Composite Shapes**	**Space/Composition**	
Criteria	Names and describes attributes of 3-dimensional stamps (geometric forms/solids) and 2-dimensional stamped images (flat shapes).	Stamps shapes above, below, or beside each other to make larger shapes.	Stamps shapes above, below, and beside each other to make larger shapes forming a building or machine.	
Students				
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30.				
Total				
Percentage				

What was effective in the lesson? Why?

What do I want to consider for the next time I teach this lesson?

What were the strongest connections between visual arts and math?

Teacher:_____ Date: _____

ARTS IMPACT FAMILY LETTER

VISUAL ARTS AND MATH LESSON: Building with Shapes

Dear Family:

Today your child participated in an **Arts and Math** lesson. We talked about how artists and math experts (who design buildings and machines) use 2-dimensional and 3-dimensional shapes in their work.

- We looked at foam blocks and talked about the difference between 2-dimensional shapes (flat) and 3-dimensional forms (solid with height, width, and length).
- We experimented with using 3-dimensional foam blocks and stamp pads to stamp 2-dimensional shapes on paper.
- We identified what kinds of shapes we stamped: triangles, rectangles, and squares.
- We looked at paintings that combined geometric shapes from math to create larger shapes, and then experimented with stamping shapes above, below, and beside each other to create larger shapes.
- We created a composition representing a structure—either building or machine—by combining stamped shapes.

At home, you could encourage your child to identify and talk about 2-D and 3-D shapes that they see all around them. You could search for and draw the shapes and combinations of shapes that make up buildings, furniture, machines, and tools.

Enduring Understanding

Geometric shapes have specific attributes and can be combined above, below, or beside each other to make larger shapes.