

Visual Arts and Math Infused Lesson

Lesson One: **Line Direction and Length**

Author: Meredith Essex Grade Level: First



Enduring Understanding

Changing direction and length of lines can create variety in composition.

Lesson Description (Use for family communication and displaying student art)

Students explore line direction and length through imaginary air-drawing. Students then look at examples of art and identify vertical, horizontal, and diagonal lines. Next, students find, compare, and order lengths of lines (short, medium, long) observed in art. Students create a composition guided by a set of directives with focus on creating lines in different directions and in different lengths. Last, students compare lines using a third object and reflect on line length, direction, and how they can create variety in composition.

Learning Targets and Assessment Criteria

Target: Compares and orders lengths of line.

Criteria: Identifies short, medium, and long lines in art.

Target: Creates variety with line direction and length.

Criteria: Draws vertical, horizontal, and diagonal lines that are short, medium, and long.

Target: Measures lines indirectly.

Criteria: Compares object to lines and identifies similar, larger, and smaller.

Vocabulary	Materials	Learning Standards
<p>Arts Infused: Diagonal Horizontal Line direction Long Medium Short Vertical</p> <p>Math: Length Measure Unit</p> <p>Arts: Composition Variety</p>	<p>Museum Artworks or Performance:</p> <p>Seattle, WA Seattle Art Museum</p> <p>Tacoma, WA Children’s Museum of Tacoma Tacoma Art Museum</p> <p>Materials Warm/neutral colored Canson Mi-teintes paper: 6x8” (practice) and 8x12” (final composition); Conté crayons: white and sanguine; Drawing pencil: 4B; Popsicle sticks; Yardstick; Arts Impact sketchbooks; Art mats; Class Assessment Worksheet</p> <p>Connections <i>Everyday Mathematics</i> 2.7 – Exploring Lengths, Straightedges, and Dominoes</p> <p><i>continued</i></p>	<p>WA Arts State Grade Level Expectations <i>For the full description of each WA State Arts Grade Level Expectation, see: http://www.k12.wa.us/Arts/Standards</i></p> <p>1.1.1 Elements: Line direction, length 1.1.7 Principles of Design: Variety 1.2.1 Skills and Techniques: Drawing 2.1.1 Creative Process 2.3.1 Responding Process 4.2.1 Connection between Visual Arts and Math</p> <p>Early Learning Guidelines (Pre-K – Grade 3) <i>For a full description of Washington State Early Learning and Child Development Guidelines see: http://www.del.wa.gov/development/guidelines/</i> (Age 4-5) 6. Learning about my world: Math: Use measuring tools in play; compare size, describe objects using size words; order three objects by one characteristic (such as from smallest to largest). (1st grade) 6. Learning about my world: Arts: Create and respond to arts.</p> <p>Common Core State Standards (CCSS) in Math <i>For a full description of CCSS Standards by grade level see: http://www.k12.wa.us/CoreStandards/Mathstandards/</i> 1.MD.1. Order three objects by length; compare the length of two objects indirectly using a third object.</p> <p>CCSS Mathematical Practices MP 4. Model with mathematics. MP 5. Use appropriate tools strategically. MP 6. Attend to precision. MP 7. Look for and make use of structure.</p>


Seattle Art Museum images
Fisherman's Wharf, 1950, Richard
Kirsten, 50.162




Hollow Log, 1995, Australian
Aborigine, 2005.152



ICON KEY:

 = Indicates note or reminder for teacher

 = Embedded assessment points in the lesson


Pre-Teach

Sketchbook Activity: Practice drawing lines in different directions. Practice making short, medium, and long lines. Make a row of lines from short to long and from long to short.


Lesson Steps Outline

1. Warm-Up: Demonstrate and guide making different directions and lengths of lines in the air. Guide students to respond to combinations of direction and length: short vertical lines...long horizontal lines, etc.


2. Introduce and guide student pairs identifying vertical, horizontal, and diagonal lines in *Fisherman's Wharf* by Richard Kirsten and *Hollow Log* created by Aboriginal artists of Australia from the Seattle Art Museum collection.

 Criteria-based teacher checklist: Identifies short, medium, and long lines in art.


3. Demonstrate creating a composition by dividing the space with vertical, horizontal, and diagonal lines using a white conté crayon. Share multiple examples that share the same criteria, but look very different. Guide students as they draw vertical, horizontal, and diagonal lines.

 Criteria-based process assessment, room scan: Draws vertical, horizontal, and diagonal lines.


4. Demonstrate choosing and filling areas of the composition with different lengths of directional lines using graphite pencil and rust colored conté crayon.

 Criteria-based teacher checklist: Draws vertical, horizontal, and diagonal lines that are short, medium, and long.

5. Guide indirect measurement using a third object for comparison.

 Criteria-based teacher checklist: Compares object to lines and identifies similar, larger, and smaller.

6. Lead criteria-based group reflection and self-assessment.

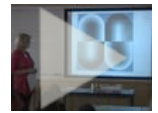
 Criteria-based student self-assessment, reflection: Draws vertical, horizontal, and diagonal lines that are short, medium, and long. Reflects on lines in art.

LESSON STEPS

1. Warm-Up: Demonstrate and guide making different directions and lengths of lines in the air. Guide students to respond to combinations of direction and length: short vertical lines...long horizontal lines, etc.

- *Draw imaginary vertical lines (up and down direction).*
- *Draw imaginary horizontal lines (side to side direction).*
- *Draw imaginary diagonal lines (corner to corner direction).*
- *Now make short lines, medium lines, and long lines.*
- *Now lets combine direction and length...make short diagonal line....make a long vertical line...make a medium diagonal line, etc.*

2. Introduce and guide student pairs identifying vertical, horizontal, and diagonal lines in *Fisherman's Wharf* by Richard Kirsten and *Hollow Log* created by Aboriginal artists of Australia from the Seattle Art Museum collection.



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 the lesson.

- *Artists make lines in different directions and lengths in compositions to create variety—to make their art interesting to look at.*
- *Work with a partner to find examples of vertical, horizontal, or diagonal lines in the art.*
- *Now find lines in the art that are short, medium, and long.*

▣ Students can compare a ruler or yardstick with lines in projected images.

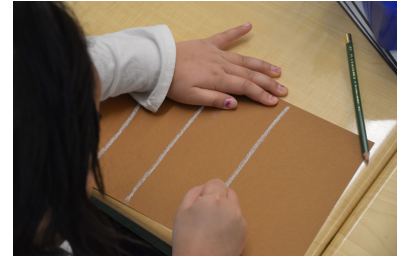
Criteria-based teacher checklist: Identifies short, medium, and long lines in art.

3. Demonstrate creating a composition by dividing the space with vertical, horizontal, and diagonal lines (equal or different lengths) using a white conté crayon. Share multiple examples that share the same criteria, but look very different.



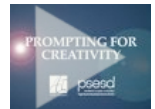
Creating Line and Value with Conte' Crayons

- *Decide first whether your paper will be vertical or horizontal.*
- *Draw three vertical lines top edge to bottom edge of your paper. Think about having different size spaces in-between.*
- *Now make three horizontal lines that touch your vertical lines—they do not have to touch the edges of the paper.*
- *Now make three diagonal lines that touch your vertical or horizontal lines—they do not have to touch the edges of the paper.*



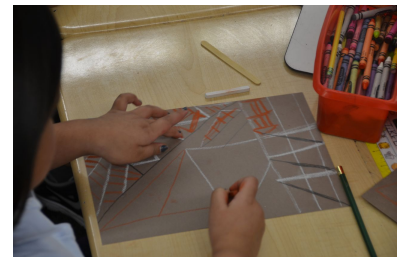
Criteria-based process assessment, room scan: Draws vertical, horizontal, and diagonal lines.

4. Demonstrate choosing and filling areas of the composition with different lengths of directional lines using graphite pencil and rust colored conté crayon.



Prompting for Creativity

- *Thoughtfully choose some places in your drawing you want to stand out. Fill those areas with vertical, horizontal, or diagonal lines.*
- *Think about repeating and combining lines in pencil and white and rust colored conté crayon within those places you want to stand out.*
- *Look closely at the art we have studied so far. It can give you ideas for ways to add lines to areas in your composition.*
- *Check to see that you have short, medium, and long vertical, horizontal, and diagonal lines in your composition.*



Criteria-based teacher checklist and student self-assessment: Draws vertical, horizontal, and diagonal lines that are short, medium, and long.

5. Guide indirect measurement using a third object for comparison.

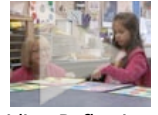
- *Using a popsicle stick to compare, find a line that is longer. Find a line that is shorter. Find a line that is similar in length.*

Criteria-based teacher checklist: Compares object to lines and identifies similar, larger, and smaller.



6. Lead criteria-based group reflection and self-assessment.

- *Look closely and point to your shortest vertical line...a medium vertical line... your longest vertical line...*
- *Look closely and point to your shortest horizontal line...a medium horizontal line... your longest horizontal line...*
- *Look closely and point to your shortest diagonal line...a medium diagonal line...your longest diagonal line...*
- *Notice and describe where artists used line to make parts of their composition stand out.*



Guiding Reflecting on Student Art

Criteria-based student self-assessment, reflection: Draws vertical, horizontal, and diagonal lines that are short, medium, and long. Reflects on lines in art.

Everyday Mathematics Extensions:

4.2 – 4.6 Standard and Non-standard Measurement

ARTS IMPACT LESSON PLAN Visual Arts and Math Infusion

First Grade Lesson One: *Line Direction and Length*

CLASS ASSESSMENT WORKSHEET

Disciplines	VISUAL ARTS AND MATH			Total 4
	Concept	Measurement	Line Direction	
Criteria	Identifies short, medium and long lines in art.	Draws vertical, horizontal and diagonal lines.	Makes lines that are short, medium and long.	Compares object to lines and identifies similar, larger and smaller.
Students				
1.				
2.				
3.				
4.				
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21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
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: _____

VISUAL ARTS AND MATH LESSON: *Line Direction and Length*

Dear Family:

Today your child participated in an **Arts and Math** lesson. We talked about how artists use math and measurement to create art. We looked at paintings with all different lengths of lines moving in different directions.

- We explored line direction by making vertical, horizontal, and diagonal lines in the air using an imaginary tool. Then we practiced making different lengths of lines in different directions.
- We looked at a painting and traditional painted artworks by Aboriginal artists of Australia and found lots of vertical, horizontal, and diagonal lines.
- Next, we found, compared, and ordered lengths of lines (short, medium, long) that we observed in the art.
- We created a drawing composition guided by a set of directions for making lines in different directions and in different lengths using special conté crayons and artist graphite pencils.
- We compare the lines in our drawing using a third object and reflected on how line length and direction can create variety in composition.

At home, you could encourage your child to compare and measure the length of objects. Together, you could search for and draw all different combinations of vertical, horizontal, and diagonal lines seen inside or outside and compare their lengths.

Enduring Understanding

Changing direction and length of lines can create variety in composition.