

ANGULAR CITYSCAPES

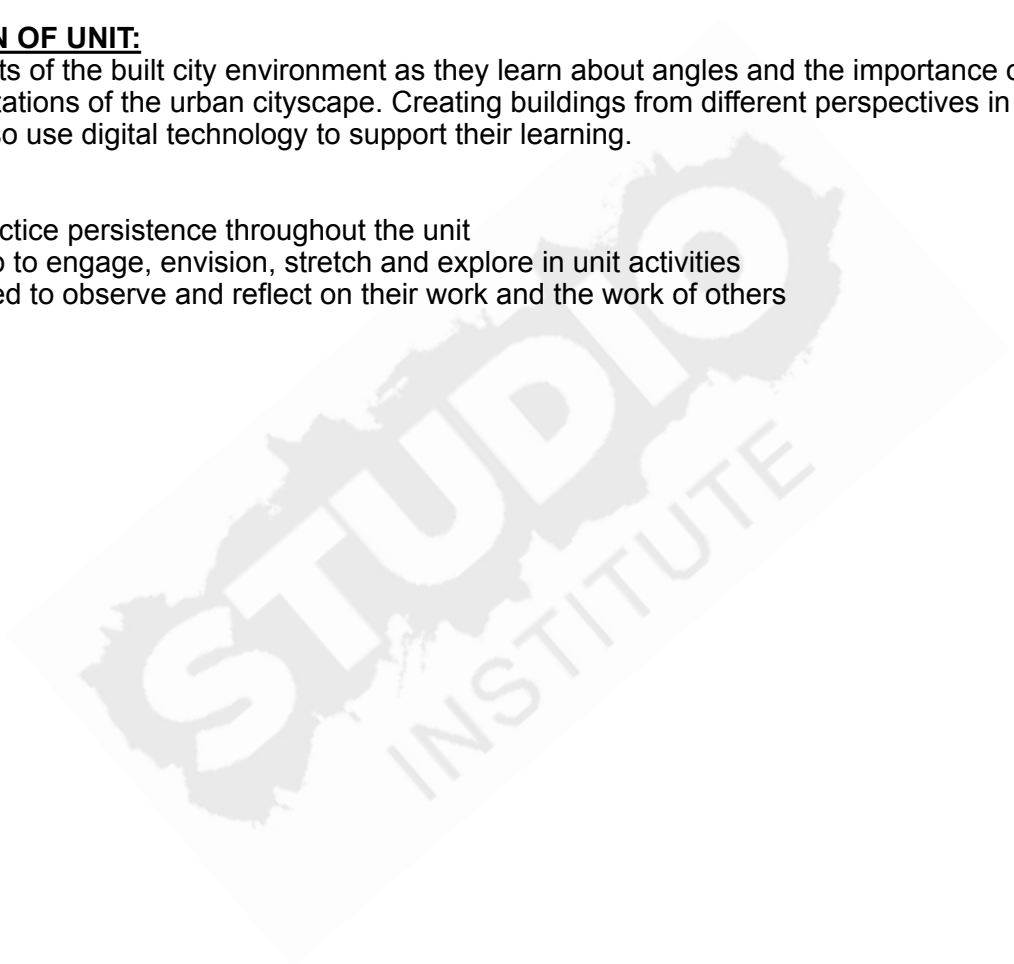
GRADE: 4th

OVERVIEW DESCRIPTION OF UNIT:

Students will explore aspects of the built city environment as they learn about angles and the importance of geometry in architectural design and visual representations of the urban cityscape. Creating buildings from different perspectives in making drawn and painted cityscapes, students will also use digital technology to support their learning.

HABITS OF MIND:

- Students will learn and practice persistence throughout the unit
- Students will be teamed up to engage, envision, stretch and explore in unit activities
- Students will be encouraged to observe and reflect on their work and the work of others



ART LEARNING

EMBEDDED STRANDS:

- 1-Art-making
- 2-Developing Art Literacy: Looking/ Discussing; Arts Vocabulary; Interpreting/ Analyzing (Reading & Writing)
- 3-Connections: Other Disciplines; Observing/Interpreting the World
- 4-Community & Cultural Resources: Public Art; Online Resources/Libraries; Community-based Organizations; Artists' Studios
- 5-Careers & Life-long Learning

GOALS:

Students will:

- learn to “think like an artist” by making choices, problem solving and developing their creativity.
- notice compositional elements and angles in the built environment of a city.

BIG IDEAS/ENDURING UNDERSTANDINGS:

- perspective, point of view
- composition
- line—quality, expressiveness, direction
- texture and mark-making
- geometric shapes in art
- light sources and shading
- color
- creative solutions to visual problems

UNIT MOTIVATION, VISUALS AND

REFERENCES: These are listed and/ or linked in each lesson.

ANCHOR STANDARDS (from National Visual Art Standards):

Creating

1. Generate and conceptualize artistic ideas and work
2. Organize and develop artistic ideas and work
3. Refine and complete artistic work

Performing/Presenting/Producing

4. Select, analyze and interpret and artistic work for presentation
5. Develop and refine artistic techniques and work for presentation
6. Convey meaning through the presentation of artistic work

Responding

7. Perceive and analyze artistic work
8. Interpret intent and meaning in artistic work
9. Apply criteria to evaluate artistic work

Connecting

10. Synthesize and relate knowledge and personal experiences to make art
11. Relate artistic ideas and works with societal, cultural, and historical context to deepen understanding

ESSENTIAL QUESTIONS:

What is composition? How do we depict buildings from different points of view? Why are angles an important part of drawing a building in perspective? What role does geometry play in art?

BENCHMARK SKILLS:

- exploration of directional lines such as horizontal, vertical and diagonal
- identification and rendering of detail
- use of contour line to define a figure or object
- inventive use of...watercolors through blending, mixing and layering
- ability to create a variety of visual textures through mark making
- basic organization of space such as foreground and background

VOCABULARY:

cityscape; architect, architecture; perspective; point of view; eye level texture; light source; shading, value line quality; hatching, cross-hatching; stippling; blending; precision; intersect parallel; perpendicular; diagonal

MATERIALS:

- iPads for each student with *Google Maps* or *Apple Maps* and *Explain Everything* loaded
- “Doodle-line” sheets to jumpstart students in lesson #1 (reproduced on copier)
- drawing paper, also lightly-textured watercolor paper
- pencils (#2, B or 3B)
- erasers
- fine or extra-fine permanent black markers
- watercolors, water containers, paper towels
- soft brushes

MATH LEARNING

GOALS:

Students will:

- learn to use a protractor to find and measure and create angles
- learn the difference between acute, obtuse, right and straight angles
- gain mastery of measurement and precision with a ruler and protractor
- be able to draw and identify types of lines (parallel, perpendicular and intersecting)
- be able to identify geometric shapes

ESSENTIAL QUESTIONS:

How can we estimate and find angle measurements? How can we describe, measure and draw angles? How can polygons be classified?

PRACTICES AND SKILLS:

- make sense of problems and persevere in solving them
- reason abstractly and quantitatively
- model with mathematics
- use appropriate tools strategically

MATH/ELA STANDARDS/ COMMON CORE:

- 4.MD.5: Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.
- 4.MD.6: Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.
- 4.MD.7: Recognize angle measure as additive.
- 4.G.1: Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines.
- 4.G.2: Classify 2-D figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size.
- 4.G.3: Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts

VOCABULARY:

obtuse
acute
angle
protractor
ray
vertex
polygon
precision
intersect
parallel
perpendicular
diagonal

MATERIALS:

- rulers
- protractors
- manipulatives to form polygons

TECHNOLOGY GOALS:

Students will:

- explore how to use an iPad
- use Google and/or Apple Maps to find buildings and find and trace angles from different points of view
- create individual *Explain Everything* portfolios using multiple slides

ESSENTIAL QUESTIONS-TECHNOLOGY:

- How can we use the program *Explain Everything* to create a student portfolio containing multiple slides?
- How can *Google* or *Apple Maps* be used to locate buildings and structures in my neighborhood?
- What are some of the angles I can find when I look at different points of view of buildings on *Google* or *Apple Maps*?

MATERIALS:

- interactive whiteboard, iPads, *Google Maps* or *Apple Maps*, *Explain Everything* Application

LESSON #1A: MATH

What is a Straight, Right, Acute and Obtuse Angle?

Learning Goals:

- Students will be able to identify angles by using right angles as a benchmark “this is an acute angle because it is smaller than 90 degrees.”
- Students will be able to measure angles using a protractor.

Essential Questions:

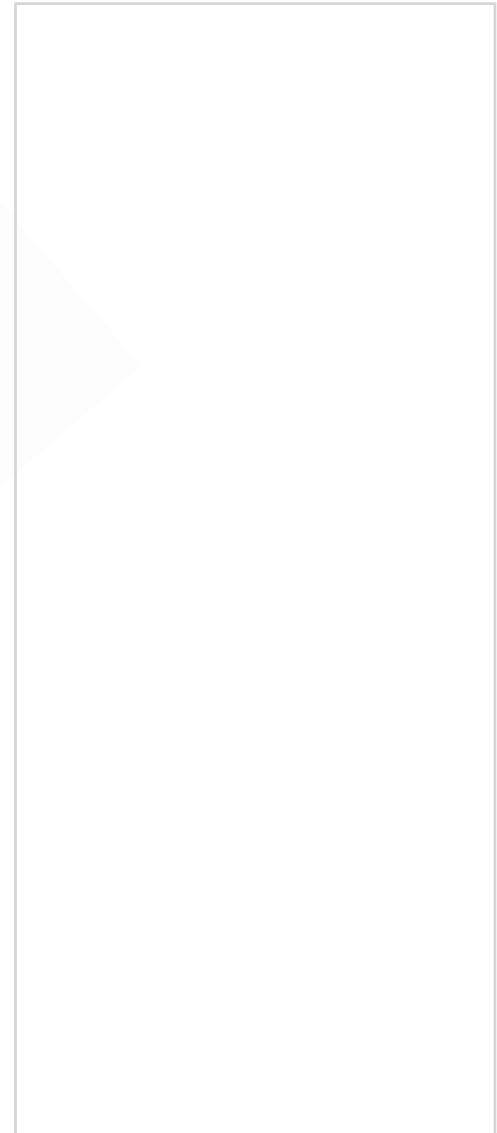
What are angles? How can we estimate and find angle measurements?

Materials/Tools/Technology:

protractors, pencils

Possible Math Component:

Students will be introduced to the protractor and the different types of angles. They will learn about rays forming a vertex, how to place the protractor on an angle and how to quickly determine if an angle is acute or obtuse. Classroom teachers or specialists may use whatever approach seems best, based on their understanding of their students' abilities.



LESSON #1B: ART-MAKING

Point of View, Google or Apple Maps

Art Essential Questions:

What is point of view? How does an eye level view differ from a looking up or looking down view? How do artists use angles to show point of view? How can we find angles in images of buildings? Can we identify acute angles before we measure them by just “eyeballing” them?

Goals:

- Students will learn about *point of view* by looking at images from *Shared Perspectives: the Printmaker and Photographer in New York, 1900-1950*, or other images selected by the Artist/Teacher
- By looking at art references, students will understand how an artist interprets what he or she sees in individual ways.
- After looking at satellite photos of their school or other neighborhood buildings in *Google/Apple Maps*, students will navigate the street and be challenged to notice what the building looks like from above, below, and straight at it.
- Students will be asked to take screenshots within *Google/Apple Maps* of different points of view. Then they will import them into *Explain Everything*.
- Students will be asked to identify the angles, and draw on top of the screenshots of their images.

Habits of Mind:

Exploring, Envisioning, Observing

Materials/Tools/Technology:

- iPads (individual or shared) loaded with Google Drive folders that give students the ability to manage their files and share; *Apple Maps 3D Mode* or *Google Maps* which allow students to view buildings from different angles and perspectives); *Explain Everything*, an app that allows students to document, annotate and record for the purposes of planning, reflection, and documenting their work.

Possible Motivation/Visuals/References:

- *Apple Maps* or *Google Maps* images of one’s neighborhood
- *Shared Perspectives: the Printmaker and Photographer in New York, 1900-1950: prints from the collection of Reba & Dave Williams*, photographs from the collection of the Museum of the City of New York
- Romare Bearden’s *The Block* (for point of view)

National Visual Arts Standards:

VA: Cr1.1.4a Brainstorm multiple approaches to a creative art or design problem.
VA: Cr2.1.4a Explore and invent art-making techniques and approaches.
VA: Cr2.3.4a Document, describe, and represent regional constructed environments.
VA: Re8.1.4a Interpret art by referring to contextual information and analyzing relevant subject matter, characteristics of form, and use of media.

Vocabulary:

cityscape, angles, point of view, perspective, eye level, bird’s eye view, worm’s point of view (looking-up view), eye-balling

Math skills being targeted:

Noticing angles from different points of view as a way to learn the importance of using angles in an artwork depicting a building.

Possible Student Checklist:

___ I have used my iPad to explore various points of view
___ I imported an image into *Explain Everything*.
___ I have found and drawn angles into my image on my iPad.

Engagement:

In the upcoming unit, students will be working like artists to represent a city. Share Bearden's *The Block* or another artwork of your choice that depicts angles and perspective. Introduce the idea of *point of view* with a class discussion. Images from *Shared Perspectives* could be shown to highlight how photographs and artworks of the same buildings differ.

Then, show students how to bring up an *Apple Map* visual of their school by typing in the location, turning on satellite view from the three lines that lead to menu, clicking on the red pin drop where the address is found, and clicking on the small street view image. (Or, if preferable, use *Google Maps*.) Students can then navigate around the street and neighborhood. Artist/Teacher will demonstrate how to achieve different points of view—bird's point of view, worm's point of view and straight on. Ask students how they can tell whether they are looking at a structure from above, below or eye level. Students will next find buildings in their neighborhood and look at various points of view (angles of perspective). Students will put their images into *Explain Everything* and draw over the angles and lines of their building. They also might be asked to draw a creative addition onto the original building using the iPad, just for fun.

Differentiation:

For learning and/or physically-disabled students: pair students with an aide or absent that possibility, divide the class into small groups, so the student(s) can be supported and participate fully in the lesson. For advanced students, encourage them draw in extra details.

Reflection:

Artist/Teacher directs students to talk about a few of the drawings. "What kind of angles do you notice? Which is harder: drawing from a bird's eye perspective or a worm's perspective? What kind of effect do angles produce (Dramatic? Boring? Three-dimensional? Flat?)? Why do you think that is? Why do artists often use angles in their work when painting or drawing cityscapes?"

LESSON #2A: MATH

Creating, Finding and Identifying Angles

Math Essential Questions:

How can I use my arms and legs to physically describe, sort and document angles? Where can I find geometric objects and angles in my environment?

Learning Goals:

- Students will be able to form, sort and label angles
- Students will be able to find, identify and document angles in their environment
- Students will be able to measure angles with a protractor

Motivation/Visuals/References:

Optional—Teachers may review artworks in art component

Materials/Tools/Technology:

iPads with *Google Drive*, print outs, protractors, pencils

Possible Math Component:

Students partner off and take turn using the iPads to photograph each other making four kinds of angles using their bodies—straight, right, acute and obtuse.

- Students will also look around the classroom to document different angles in their environment.
- Students will use protractors to measure the angles they created with their bodies and the found angles from around the room.
- Students will use *Explain Everything* as a work area to document, measure, label and classify their angles (have students also write their name on the slide identification).
- Students will sort their classified angles by upload images of their angles into folders on the Google Drive that correspond with their classification (right, obtuse, or acute).

Differentiation:

If doing the lesson where students pair off and photograph each other, teachers need to be mindful of physical limitations that might make forming angles difficult for some children. Learning disabled students may need extra assistance. Gifted students may need extra challenges such as trying to make an acute and obtuse angle with arms and legs at the same time, etc.

Habits of Mind:

Persisting, Exploring, Envisioning, Observing

LESSON #2B: ART-MAKING

Google/Apple Maps and Art Game, (“Doodle-lines” or Drawing)

Art Essential Questions:

How can an artist depict point of view by using the art element of line? How can we draw angles in images of buildings to show point of view in an urban setting? What are some details that can be added to our drawings to make them more interesting?

Goals:

- Students will review the concept of point of view in art
- Students will use angles to draw a building with their protractors or rulers from a particular point of view
- Students will add fanciful details to their buildings

Materials/Tools/Technology:

- “Doodle-line” sheets copied for each student or 9 x 12” drawing paper (*see resources*)
- pencils and erasers
- rulers, protractors

Motivation/Visuals/References:

Images from *Google* or *Apple Maps* or other sources to show art or photographs of buildings depicted at eye level, from above or from below.

Engagement:

Review the idea of point of view with a class discussion. Using *Google* or *Apple Map* visuals (or other art images as desired) on the smart board, ask students to identify whether the viewer is a bird or a worm or whether the view is from eye level. (This could be in game form...one section against another, etc.)

Using a “Doodle-lines” sheet, (which already has two or three lines drawn on it) or a blank sheet of paper, show students how to draw a building from an angled point of view going up. Ask them if they see the top of the roof when drawing from this point of view. (They don’t.) Next show them how to make a bird’s point of view drawing. In this case, do they see the roof of the building? (Yes.)

Students are then asked to choose a point of view and make a drawing on their “Doodle-lines” sheet or blank drawing paper. Encourage using many kinds of line (thick, thin, wavy, zig zag) and adding windows and other architectural details or decorations (angular windows, doors, balconies, sculptural details, gargoyles, pilasters or columns, window boxes,

National Visual Arts Standards:

VA: Cr1.1.4a Brainstorm multiple approaches to a creative art or design problem.

VA: Cr2.1.4a Explore and invent art-making techniques and approaches.

Vocabulary:

urban, fanciful details, gargoyle, column, pilaster

Habits of Mind:

Persisting, Envisioning, Exploring

Student Checklist:

___ I have drawn a building from a bird’s or worm’s eye point of view.

___ I have used several kinds of lines in my drawing.

___ I have added some architectural details to my drawing.

antennae, satellite dishes, etc.).

Differentiation:

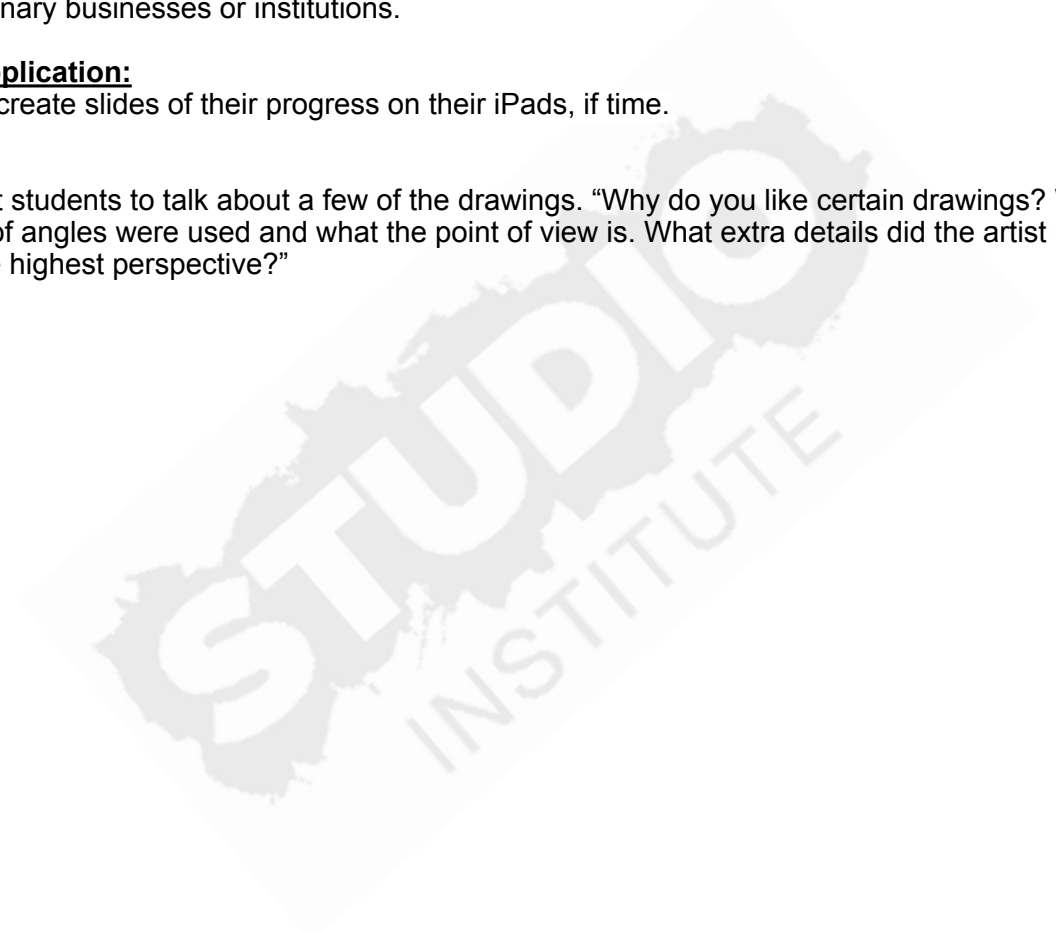
For learning and/or physically-disabled students: pair students with an aide or absent that possibility, divide the class into small groups, so the student(s) can be supported and participate fully in the lesson. For advanced students, have them draw in signs, billboards or ads for imaginary businesses or institutions.

Possible Technology Application:

Students can continue to create slides of their progress on their iPads, if time.

Reflection:

Artist/Teacher might direct students to talk about a few of the drawings. “Why do you like certain drawings? What is it that catches your eye? Ask what kind of angles were used and what the point of view is. What extra details did the artist use? Which drawing is from the highest perspective?”



LESSON #3A: MATH

Measuring and Classifying Angles

Math Essential Questions:

How can we specifically describe angles? Can angles be additive? What happens when you have two angles next to each other? Does the measurement of the angle change? Is it possible to determine the measure of an unknown angle?

Learning Goals:

- Students will be able to identify, write and correctly use mathematical language when describing angles
- Students will understand that angle measures are additive
- Students will be able to determine the measure of an unknown angle
- Students will understand that artists use lines and angles in their art

Possible Math Component:

Students will be shown an Emilio Sanchez's work, *Bronx Store Front, Best Auto Glass* on the interactive whiteboard or their individual iPads. The teacher will have marked and labeled different angles on the artwork for students to find the exact measurements of and classify the angles. Students will need to be very specific in the language they use to talk about the angles. When writing and sharing the answers, students should say "Angle ABC blank degrees and is an acute, obtuse or right angle." When writing, they must include the symbol for angle, the name of the angle, the measurement with a degree sign and the write out the angle classification. Students will look at the artwork to notice and identify two small that make a larger angle. These angles should not be labeled ahead of class. Allow students to look through the artwork to locate and identify these angles.

Materials, Tools/Technology:

Interactive whiteboard and/or iPads

Motivation/Visuals/References:

Emilio Sanchez's *Store Front, Best Auto Glass*

Differentiation:

Students with learning or physical disabilities may need extra assistance from an aide or specialist. Advanced students may be asked to create a series of unknown angles with their protractors and then estimate the degrees before actually measuring them and seeing how they did.

Habits of Mind:

Observing, Envisioning, Exploring, Persisting, Reflecting

LESSON #3B: ART-MAKING

Developing Drawing and Composition Skills

Art Essential Questions:

What is an architect? How does an architect use angles in his/her work? How does a painter who paints cityscapes use angles? How can the students use what they know about angles to create a cityscape? What kind of angular city would the students want to make?

Goals:

- Students will work with protractors and rulers to develop their drawing skills using tools to create a cityscape from a particular point of view
- Students will combine angles they have documented to create buildings
- Students will notice how angles can change the perspective or point of view of the buildings.

Materials/Tools/Technology:

- large, drawing paper
- pencils and erasers
- rulers, protractors

Motivation/Visuals/References:

Images of contemporary angular buildings and paintings of buildings chosen by artist/teacher

Engagement:

Review the “Doodle-line” drawings from last week. Have students share their drawings in groups. Ask the students what they notice about the buildings. What angles make up the buildings? How many angles do you see in the drawings that help make these sketches look three-dimensional?

Review the point of views discussed last week. Discuss the combination of angles students could use to create these different perspectives. For example: two obtuse angles touching with an angle open to the left and one to the right would look like a “bird’s eye view.” Two acute angles together to create the corner of a building would be an extreme “worm’s eye view”.

Demonstrate how to use the ruler and protractor to draw a building using angle measurements created or found during the previous math component. During the demonstration remind students to keep in mind the point of view they plan to show in their drawing. Encourage students to have a variety of sizes of buildings and space or placement of buildings.

National Visual Arts Standards:

VA: Cr2.1.4a Explore and invent art-making techniques and approaches.

VA: Cr2.2.4a When making works of art, utilize and care for materials, tools, and equipment in a manner that prevents danger to oneself and others.

VA: Re8.1.4a Interpret art by referring to contextual information and analyzing relevant subject matter, characteristics of form, and use of media.

Vocabulary:

generic, specific, angular, function, sketch (light, quick drawing), composition

Habits of Mind:

Observing, Envisioning, Exploring, Persisting, Reflecting

Student Checklist:

___ I have used a protractor and ruler to make angled buildings from a particular point of view.

___ I made a composition by creating 3-6 buildings in my drawing.

Students will develop a composition that has 3-6 buildings of various sizes but all from the same point of view.

Differentiation:

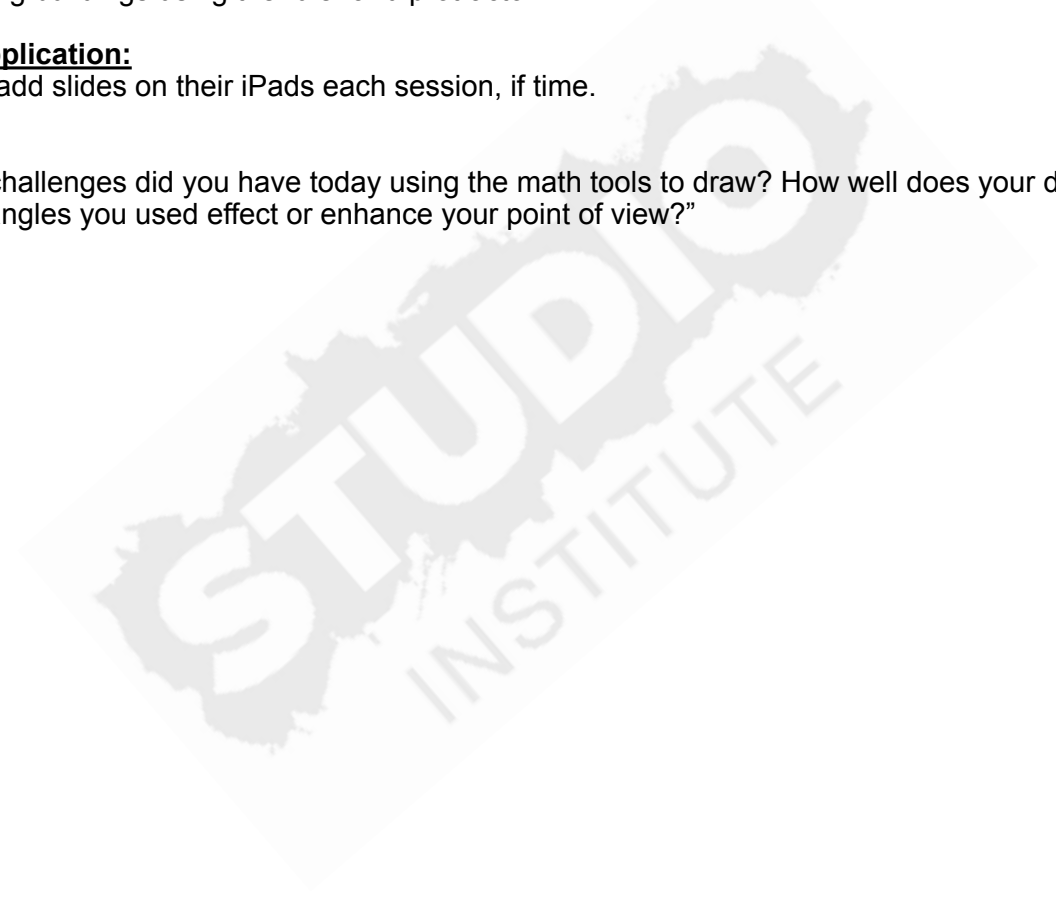
Provide angle measurements for students that are having difficulty selecting angles to draw in order to create a specific point of view. Challenge students to start adding architectural details that match the perspective/point of view of the buildings. Have students work together to practice drawing buildings using the ruler and protractor.

Possible Technology Application:

Students can continue to add slides on their iPads each session, if time.

Reflection:

Ask “What successes or challenges did you have today using the math tools to draw? How well does your drawing show what you envisioned? How do the angles you used effect or enhance your point of view?”



LESSON #4A: MATH

Triangles, Attributes and Grouping

Math Essential Questions:

How can triangles be classified? Where do we find geometry in our community?

Learning Goals:

- Students will be able to classify triangles based on their attributes
- Students will be able to notice and create combinations of triangles to create larger angles

Materials/Tools/Technology:

- Math manipulatives, *Google* or *Apple Maps* on student iPads

Possible Math Component:

Students will describe ways in which they can classify triangles by their attributes and give examples. They will work with manipulatives grouping different triangles into categories based on their attributes. Students will use *Google* or *Apple Maps* to look at buildings from different angles to notice and classify triangles that could be used to help draw that building.

Alternative Activity: Students could look back at the *Shared Perspectives* collection of photographs and prints and notice how artist used triangles. Students can document measure and classify triangles they find.

In either activity used students should also document where they find small triangles touching to make a larger angle. Students can use these measurements as inspiration for angles in their cityscape drawing.

Differentiation:

For learning disabled or students, an aide or specialist may be of help. For physically challenged learners, appropriate adaptations may be made. Advanced students could create extra categories to classify their triangles or triangle combinations.

Habits of Mind:

Observing, Envisioning, Exploring,
Persisting, Reflecting

LESSON #4B: ART-MAKING

Architects, Contemporary Architecture and Beginning a Large Angular Cityscape

Art Essential Questions:

What is an architect? How does an architect use angles in his/her work? How does a painter who paints cityscapes use angles? What do some modern buildings designed by architects look like? What kind of angular city would the students want to make?

Goals:

- Students will work with protractors and rulers to draw an original cityscape from a particular point of view
- Students will play with line and detail to make a creative cityscape of their own

Materials/Tools/Technology:

- large, not-too-textured watercolor paper
- pencils and erasers
- rulers, protractors

Motivation/Visuals/References:

Images of contemporary angular buildings and paintings of buildings

Engagement:

A discussion about architects and architecture is initiated by the Artist/Teacher. “Who designs a building? What are some of the things they have to keep in mind when they plan a building? What math skills might they need?” etc. Students are then shown images of actual geometric-style contemporary architecture as well as a few examples of drawings, prints and paintings of cityscapes. Students are encouraged to describe what they see and what they especially like.

A discussion on “What makes a design “generic” and what does “specific” mean? What makes a design artistic, interesting or amazing?” A few of the pre-assessment drawings are shown (without names or identification) or the Artist/Teacher could hand the students his or her pre-assessment drawing, just so they can compare what they now understand about angles, drawing, design and details. If they were going to draw the same building that day, how would it differ?

They are then asked if they could invent an angular cityscape of their own, what might it look like? Would it be generic or extraordinary? What point of view would they like to draw it from for dramatic effect? Students will be encouraged to use at least three angles in their drawings

National Visual Arts Standards:

VA: Cr1.1.4a Brainstorm multiple approaches to a creative art or design problem.

VA: Cr2.1.4a Explore and invent art-making techniques and approaches.

VA: Re8.1.4a Interpret art by referring to contextual information and analyzing relevant subject matter, characteristics of form, and use of media.

Vocabulary:

generic, specific, angular, function, sketch (light, quick drawing)

Habits of Mind:

Exploring, Stretching, Persisting, Reflecting

Student Checklist:

I know what an architect is.

I understand the difference between a generic and a specific building is.

I used at least three angles to draw a building.

—one large and two smaller. If desired, the Artist/Teacher can have students make a light sketch or sketches of ideas before moving to the “good” paper. Work is begun on the large paper. Pressing down *lightly* is emphasized, in case students need to change their minds. Students should be reminded that drawing several angles in their cityscapes will make them more dramatic-looking.

Differentiation:

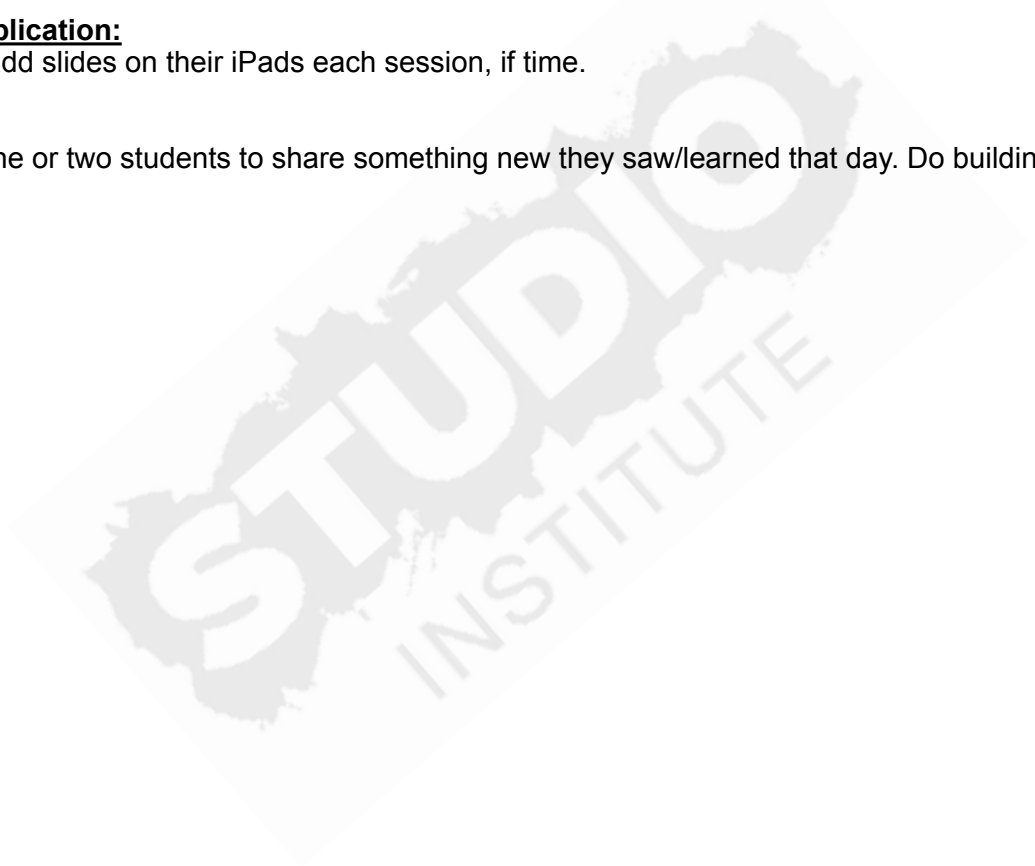
For learning and/or physically-disabled students: pair students with an aide and make any accommodations necessary (larger pencil, angular templates or tracers). Advanced students might be encouraged to add patterns to their hatching and stippling.

Possible Technology Application:

Students can continue to add slides on their iPads each session, if time.

Reflection:

Artist/Teacher might ask one or two students to share something new they saw/learned that day. Do buildings always have to be rectangular, for example?



LESSON #5A: MATH

Parallel, Perpendicular and Intersecting Lines

Math Essential Questions:

How can you identify and draw parallel, perpendicular, and intersecting lines? Where do you see them in your room, home or community?

Learning Goals:

- Students will learn the qualifications for parallel, intersecting, and perpendicular lines
- Students will apply this knowledge by identifying in reference artworks and on a math skills building worksheets

Materials, Tools/Technology:

Chart, power point or smart board slide with terms and definitions, examples of drawn lines, how to read it and how to write it. Teacher-developed worksheets or diagrams to be used for discussion and skill building for practice.

Possible Math Component:

Students will look at a reference artwork to identify and label different kinds of lines. Discuss why an artist or architect would need to understand parallel, intersecting, and perpendicular lines. Students may complete math skill buildings worksheets that lead the students through identification and labeling diagrams. The teacher and artist instructor could work together to labeled art references to be used for a math skill building worksheet.

Differentiation:

For learning and/or physically-disabled students: pair students with an aide and make any accommodations necessary.

Habits of Mind:

Observing, Envisioning, Exploring, Persisting, Reflecting

LESSON #5B: ART-MAKING

Angular Cityscape, Continued; Details Make Your Art More Interesting

Art Essential Questions:

How can architectural details enhance a cityscape? How do details help you identify a building's purpose? How can you use parallel, perpendicular or intersecting lines to create these architectural details? What are the drawing techniques of hatching and stippling?

Goals:

- Students will learn how architectural details can enhance their cityscapes
- Students will use their critical skills to decide how to make improvements in their cityscapes
- The importance of adding details to a work of art will be explored
- Students will create texture and details with the mark-making techniques of hatching, cross-hatching and stippling

Materials/Tools/Technology:

- drawings on large paper from previous lesson
- pencils and erasers
- permanent fine/thin markers
- rulers, protractors
- smart board and/or iPads with architectural detail images

Motivation/Visuals/References:

Examples of architectural details on smart board and/or iPads

Engagement:

Artist/teacher will encourage students to think about their compositions and add enough buildings to make their drawings interesting. Explain that persistence is an important quality in an artist and that making art is not about being in a hurry. Talk about some of the difference kind of buildings that might be in a city (office buildings, schools, stores, churches, synagogues, apartment buildings, theaters, museums, etc. and how you get clues as to their use by noticing their details. Next show students several images on the smart board of architectural details, such as arches, brackets, chimneys, spires, fan windows, towers, columns and gargoyles. A discussion will follow on what kind of building or buildings might feature the various details. A demonstration of some of the possibilities of mark-marking should be given (cross-hatching and stippling).

Differentiation:

For learning and/or physically-disabled Students: pair students with an aide and make any

National Visual Arts Standards:

VA: Cr1.1.4a Brainstorm multiple approaches to a creative art or design problem.

VA: Cr2.1.4a Explore and invent art-making techniques and approaches.

VA: Cr3.1.4a Revise artwork in progress on the basis of insights gained through peer discussion.

Vocabulary:

composition, background, foreground, middle ground, , texture, hatching, cross-hatching, stipple,

Habits of Mind:

Persisting, Envisioning, Stretching

Student Checklist:

___ I have observed my drawing carefully and have made any changes or additions that it needs to make it stronger.

___ I have used texture and added details to make my work more interesting and personal.

accommodations necessary. Advanced students might want to add unusual details (blimps, sky-writing, people in the windows, etc.).

Technology Application:

Students can continue to add more slides on their iPads each session, if time.

Reflection:

Artist/Teacher might ask one or two students to share something new they saw/learned that day.



LESSON #6A: ART-MAKING

Adding a Light Source & Texture and Exploring Watercolor Washes

Art Essential Questions:

What is a light source? What is shading in art? How can we make our buildings look more “real” by thinking about light source and using shading? What are some textures that artists might use in a drawing? How can watercolor add to the overall effect of light source in your drawing? How do we use watercolor as a wash?

Goals:

- Students will understand what a light source is and how to use it in their art
- Students will learn ways to add shading to their drawings
- Students will explore watercolor as a medium to add value

Habits of Mind:

Persisting, Stretching, Exploring, Engaging, Observing

Materials/Tools/Technology:

- drawings on large paper from previous lesson
- pencils and erasers
- permanent fine/thin markers (Note: only use on DRY WORK!)
- watercolors*
- watercolor brushes
- water cans

*You may choose to have students use only one color to wash their shading in with, such as black, blue or brown. This will keep the graphic feel of the work alive.

Motivation/Visuals/References:

- Images of cityscapes at different times of day and seasons (photographs and reproductions of paintings and prints such as O’Keeffe’s New York paintings and photographs by Berenice Abbott)
- Examples of hatching, cross-hatching and stippling
- *Optional:* Another possibility is to darken the room and use a flashlight on a folded sheet of Bristol board to show how lighting changes and one moves the light from side to side

Engagement:

Ask students what they notice about the cityscapes they are shown (they should have deep shadows and look very three-dimensional). What makes the images look three-dimensional? What direction do you think the light is coming from? What happens to the side of the building

National Visual Arts Standards:

VA: Cr1.1.4a Brainstorm multiple approaches to a creative art or design problem.

VA: Cr1.2.4a Collaboratively set goals and create artwork that is meaningful and has purpose to the makers.

VA: Cr2.1.4a Explore and invent art-making techniques and approaches.

VA: Cr2.3.4a Document, describe, and represent regional constructed environments.

VA: Cr3.1.4a Revise artwork in progress on the basis of insights gained through peer discussion.

Vocabulary:

light source, washes of color

Rubrics/Progressions/

Assessment:

To be determined by the individual teacher

Student Checklist:

___ I have added a light source to my cityscape.

___ I have added textural details to create a sense of light and dark in my cityscape.

___ I have added watercolor washes to emphasize the light and dark in my cityscape.

that doesn't get hit directly by the light?

After showing the students some sample images of textures, the Artist/Teacher might demonstrate how to use permanent markers to make hatching and stippling. Explain how an artist might draw textures to show the shaded parts of an object. From far away, stipples and hatches can look tonal. Close up they are textured.

Students should choose a light source for their cityscapes and, once drawn in, can begin adding textures to show the light source.

During the last 10-15 minutes of art making show students how to use watercolor washes in order to quickly add value to their buildings. Give students a very limited palette or only black for the washes.

Possible Variation:

Give a tutorial on use all the watercolor colors and show students how to mix and blend. It is especially important to teach them how to wash their brushes between colors. A discussion of background color could ensue and students might add colors that show the season, what the weather is like and perhaps, create a mood.

Differentiation:

For learning and/or physically-disabled students: pair students with an aide and make any accommodations necessary (larger pencil, angular templates or tracers). Advanced students might be encouraged to continue adding unusual angles and extra buildings to their work.

Technology Application:

Students can continue to add slides on their iPads each session, if there is time.

Reflection:

Artist/Teacher might ask one or two students to share textures they made and why they put them where they did.

LESSON #6B: MATH

Figuring Angles, Estimation and Reviewing Protractor Use

Math Essential Questions:

What information do I need in order to learn the measurement of an angle if I don't have a protractor? If I know the measurement of large angle that is divided into two smaller angles, can I learn the measurement of one small angle if I know the angle of the other, without a protractor?

Learning Goals:

Students will be able to estimate angle measures. Students will be able to apply properties of angles to find missing angles. Students will become more proficient in using a protractor.

Materials/Tools/Technology:

smart board illustration of angle problem and lists of weird angles to draw, protractors, pencils, and paper (can be developed by teacher and artist instructor depending on whether using art reference or map image from Google or Apple maps.)

Possible Math Component:

Students are given the following problem: "You are given a large angle that was divided into two smaller angles. You know the measurement of the large angle and the measurement of one of the angles. You do not have a protractor. How can you determine the measurement of the other angle?" Either individually in in groups of two or three, they are given time to work on a possible answer.

Students will then review how to use protractors and asked to draw a variety of particular angles with them.

Differentiation:

For learning disabled students, an aide or specialist may be of help. For physically challenged learners, appropriate adaptations may be made. Advanced students could draw extra angles with their protractor.

Habits of Mind:

Persisting, Stretching, Reflecting

LESSON #7A: ART-MAKING

Angular Cityscape: Final Details

Art Essential Questions:

What other elements might make one's artwork more extraordinary?

Goals:

- Students will be challenged to decide when their cityscape is “finished”
- Students will observe their work and their peers and reflect on the process of making their work

Materials/Tools/Technology:

- drawings on large paper from previous lesson
- pencils and erasers
- permanent fine/thin markers
- rulers, protractors

Engagement:

Have students work to add final details to their buildings. Students may draw overtop of painted areas to add more details of texture or value. Students can take a photo of their drawing and add color to their buildings using Bamboo Paper as an option for students who are finished with their drawing.

Differentiation:

For learning and/or physically-disabled students: pair students with an aide or willing partner and make any accommodations necessary. Advanced students might be challenged to definitely make the pop-outs to animate their work.

Technology Application:

Students should add the final slides on their iPads and share their process with one another. Students may use *Bamboo Paper* to create a color version of their cityscape.

Reflection:

Artist/Teacher takes time to reflect in depth with students about their finished works. How has math helped them make these cityscapes? What have they learned about angles in perspective and points of view from making their art? What inspired their choices? (An artwork? An image of a building? Something else? Their own imaginations?)

National Visual Arts Standards:

VA: Cr2.2.4a When making works of art, utilize and care for materials, tools, and equipment in a manner that prevents danger to oneself and others.

VA: Cr3.1.4a Revise artwork in progress on the basis of insights gained through peer discussion.

VA: Re7.1.4a Compare responses to a work of art before and after working in similar media.

VA: Re7.2.4a Analyze components in visual imagery that convey messages.

Vocabulary:

details, texture, revisions

Habits of Mind:

Persisting, Engaging, Observing, Reflecting

Student Checklist:

___ I have thought about and made my work as extraordinary as I possibly can.

___ I have used my materials and tools appropriately in the making of my work.

LESSON #7B: MATH

Reflection/Exhibition

This lesson could be used as finishing-up period for the art or for a math component of the teacher's choosing. Another option is to use the period for reflection and viewing/discussing an exhibition of the finished work.

Possible Math Component/Reflection:

Artist/Teacher should take time to reflect in depth with students about their finished works. How has math helped them make these cityscapes? What have they learned about angles in perspective and points of view from making their art? What inspired their choices? (An artwork? An image of a building? Something else? Their own imaginations?)

National Visual Arts Standards Used in this Reflection:

VA: Re7.1.4a Compare responses to a work of art before and after working in similar media.

VA: Re7.2.4a Analyze components in visual imagery that convey messages.

VA: Re8.1.4a Interpret art by referring to contextual information and analyzing relevant subject matter, characteristics of form, and use of media.

VA: Re9.1.4a Apply one set of criteria to evaluate more than one work of art.