Unit Title: Shape Detectives

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This unit was authored by a team of Colorado educators. The template provided one example of unit design that enabled teacher-authors to organize possible learning experiences, resources, differentiation, and assessments. The unit is intended to support teachers, schools, and districts as they make their own local decisions around the best instructional plans and practices for all students.

DATE POSTED: SEPTEMBER 1, 2016
### Colorado Teacher-Authored Sample Instructional Unit

<table>
<thead>
<tr>
<th>Content Area</th>
<th>Integrated Mathematics/Visual Arts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Name/Course Code</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard</th>
<th>Grade Level Expectations (GLE)</th>
<th>GLE Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Shape, Dimension, and Geometric Relationships</td>
<td>1. Shapes can be described by their characteristics and position and created by composing and decomposing</td>
<td>MA10-GR.K-S.4-GLE.1</td>
</tr>
<tr>
<td></td>
<td>2. Measurement is used to compare and order objects</td>
<td>MA10-GR.K-S.4-GLE.2</td>
</tr>
<tr>
<td>1. Observe and Learn to Comprehend</td>
<td>1. Artists and viewers recognize characteristics and expressive features within works of art</td>
<td>VA09-GR.K-S.1-GLE.1</td>
</tr>
<tr>
<td></td>
<td>2. Personal feelings are described in and through works of art</td>
<td>VA09-GR.K-S.1-GLE.2</td>
</tr>
<tr>
<td>2. Envision and Critique to Reflect</td>
<td>1. Identify that art represents and tells the stories of people, places, or things</td>
<td>VA09-GR.K-S.2-GLE.1</td>
</tr>
<tr>
<td>3. Invent and Discover to Create</td>
<td>1. Create two- and three-dimensional work of art based on person relevance</td>
<td>VA09-GR.K-S.3-GLE.1</td>
</tr>
</tbody>
</table>

### Colorado 21st Century Skills

- **Critical Thinking and Reasoning:** Thinking Deeply, Thinking Differently
- **Information Literacy:** Untangling the Web
- **Collaboration:** Working Together, Learning Together
- **Self-Direction:** Own Your Learning
- **Invention:** Creating Solutions

**Integrated Curriculum Design:** This interdisciplinary approach matches basic concepts in mathematics and visual arts – shape, line, compose, and compare - forming overlaps in instruction of certain topics in an authentic integrated model.

<table>
<thead>
<tr>
<th>Unit Titles</th>
<th>Length of Unit/Contact Hours</th>
<th>Unit Number/Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shape Detectives</td>
<td>Instructor choice</td>
<td>Instructor choice</td>
</tr>
<tr>
<td>Unit Title</td>
<td>Shape Detectives</td>
<td>Length of Unit</td>
</tr>
<tr>
<td>----------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Focusing Lens(es)</td>
<td>Point of view/Comparison</td>
<td>Standards and Grade Level Expectations Addressed in this Unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Inquiry Questions (Engaging-Debatable): | - Why do things look different out the window of your house at night vs. during the day? When it rains? When it snows? In the fall? In the spring? (VA09-GR.K-S.1-GLE.1) and (VA09-GR.K-S.3-GLE.1-EO.a,b,c,d) and (VA09-GR.K-S.4-GLE.1-EO. a, d)  
- Can artists create under, over, beneath, around, inside? (MA10-GR.K-S.4-GLE.1.EO.a.i)  
- Why do some people see things differently than other people? (VA09-GR.K-S1. GLE.2-EO.c)  
- What things are round? Square? Triangular? Conical? (MA10-GR.K-S.4-GLE.1-EO.2)  
- What do things that are the same shape have in common? (MA10-GR.K-S.4-GLE.1-IQ.2)  
- How can you express your feelings without words? (VA09-GR.K-S.1-GLE.1- EO. a, b, c) |                                                                                  | |
| Unit Strands               | Geometry, Measurement and Data, Comprehend, Reflect, Create,                      |                                                                                 |                                     |
| Concepts                   | Dimension, attributes, compose, line, shape (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres), position/orientation (above, below, beside, in front of, behind, and next to), comparison, model, describe, order, classify, attributes, length, observation, perspective, proportion, expression, point of view, personal relevance, story, setting |                                                                                 |                                     |

<table>
<thead>
<tr>
<th>Generalizations</th>
<th>My students will Understand that...</th>
<th>Factual</th>
<th>Guiding Questions</th>
<th>Conceptual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composing and reorienting basic shapes creates more complex shapes, which reflect the kinds of shapes we find in the real world, texts, and works of art(MA10-GR.K-S.4-GLE.1-EO.b) (VA09-GR.K-S.1-GLE.1- EO. a, c)</td>
<td>What shapes can be used to create other shapes? (VA09-GR.K-S.1-GLE.1-EO. b)</td>
<td>How do shapes help us describe things and tell stories in our world? (VA09-GR.K-S.2-GLE.1- EO. b, c)</td>
<td>How can you make one shape with other shapes? (MA10-GR.K-S.4-GLE.1-IQ.4)</td>
<td></td>
</tr>
<tr>
<td>Relative position provides the means to document an object’s spatial location/position in relation to another object (MA10-GR.K-S.4-GLE.1-EO.a.i) (VA09-GR.K-S.1-GLE.1- EO. a, b)</td>
<td>What words describe an objects relative position? What are the ways to describe where an object is? (MA10-GR.K-S.4-GLE.1-IQ.1)</td>
<td>How does one’s perspective change what one see or how they would describe a shape? (VA09-GR.K-S1. GLE.2-EO.c)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defining attributes describe and provide a means for comparing and naming shapes regardless of orientation, size, or color (MA10-GR.K-S.4-GLE.1-EO.a) (VA09-GR.K-S.1-GLE.1- EO. a, b)</td>
<td>What is an attribute? What shape has three sides? What are names of basic shapes and what do these shapes look like? What is the difference between a two-dimensional and three-dimensional shape?</td>
<td>How can shapes be described and compared? (VA09-GR.K-S.2-GLE.1- EO. b, c)</td>
<td>How are these shapes alike and how are they different? (MA10-GR.K-S.4-GLE.1-IQ.3)</td>
<td>How can you use attributes to name shapes used in the art making process? (VA09-GR.K-S.3-GLE.1- EO. c)</td>
</tr>
</tbody>
</table>
Students observe the world from unique perspectives and their viewpoints inform their understanding. (VA09-GR.K-S.1-GLE.1, EO.a, c) (MA10-GR.K.S.4-GLE.1-EO.a.i)
(VA09-GR.K.S.2-GLE.1- EO. b, c)

<table>
<thead>
<tr>
<th>Critical Content:</th>
<th>Key Skills:</th>
</tr>
</thead>
<tbody>
<tr>
<td>My students will <strong>Know</strong>...</td>
<td>My students will be able to <strong>(Do)</strong>...</td>
</tr>
<tr>
<td>• Ways that historical and/or contemporary artworks and picture books inspire and provide ideas for personal art and demonstrate a unique point of view. (VA09-GR.K-S.2-GLE.1)</td>
<td>• Compare and contrast the unique organizational styles and point of view or perspective in works of art and in the real world. (VA09-GR.K-S.1-GLE.1-EO.a,b,c, GLE.3-EO.1)</td>
</tr>
<tr>
<td>• Art making, such as techniques, tools, and media such as but not limited to drawing, collage, painting, sculpture, and printmaking. (VA09-GR.K.S.3-GLE.1-EO.a,b,c,d)</td>
<td>• Use intentional planning trial and error to create a two or three dimensional artwork. (VA09-GR.K.S.3-GLE.1-EO.a,b,c,d)</td>
</tr>
<tr>
<td>• Characteristics and expressive features of art and design including shape and line in art, mathematics, and in the real world. (VA09-GR.K-S.1-GLE.1)</td>
<td>• Draw or sculpt lines and shapes to expresses an intent. (VA09-GR.K.S.3-GLE.1-EO.a,b,c,d)</td>
</tr>
<tr>
<td>• Identify and correctly names shapes regardless of their orientation including squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres (MA10-GR.K.S.4-GLE.1-EO.a)</td>
<td>• Describe and discuss the personal stories of the artist as represented in the 2 and or 3-dimensional art work. (VA09-GR.k.S.1-GLE.2-EO.a,b,c)</td>
</tr>
<tr>
<td>• Identify shapes as two-dimensional or three-dimensional (MA10-GR.K.S.4-GLE.1-EO.a.iii)</td>
<td>• Analyze and compare shapes using their attributes in different sizes and orientations, using informal language to describe their similarities, differences, parts, and other attributes (MA10-GR.K.S.4-GLE.1-EO.b.i)</td>
</tr>
<tr>
<td>• How to identify shapes using positional words including above, below, beside, in front of, behind, and next to in artworks, images, and in the real world. (MA10-GR.K.S.4-GLE.1-EO.a.i) (VA09-GR.K.S.1-GLE.1)</td>
<td>• Compose or model simple shapes to form larger shapes in a work of art (VA09-GR.K.S.3-GLE.1-EO.a,b,c,d) (MA10-GR.K.S.4-GLE.1-EO.b. ii, iii)</td>
</tr>
<tr>
<td>• Describe several measureable attributes of objects in the real world and in artistic images (length, weight, height) (MA10-GR.K.S.4-GLE.2-EO.a.i, a.ii) (VA09-GR.K.S.1-GLE.1)</td>
<td>• Describe several measureable attributes of objects in the real world and in artistic images (length, weight, height) (MA10-GR.K.S.4-GLE.2-EO.a.i, a.ii) (VA09-GR.K.S.1-GLE.1)</td>
</tr>
</tbody>
</table>

Critical Language: includes the Academic and Technical vocabulary, semantics, and discourse which are particular to and necessary for accessing a given discipline.

EXAMPLE: A student in Language Arts can demonstrate the ability to apply and comprehend critical language through the following statement: "Mark Twain exposes the hypocrisy of slavery through the use of satire."

**A student in _____________ can demonstrate the ability to apply and comprehend critical language through the following statement(s):**

- *I can create a piece of art using lines and shapes that tells a story.*
- *The green triangle shape is on top of the circular table.*
- *The ice cream cone has a cone or conical shape.*
**Academic Vocabulary:**
Discovery, organization, compare, contrast, techniques, construct, demonstrate, personal, intent, positional words (e.g., below, above, in front of, behind, next to, and beside), describe, identify, analyze, building, differences, similarities, create, size, corners, describe, sort, classify, objects, difference, similar.

**Technical Vocabulary:**
Techniques and media, artistic intent, expressive characteristics and features, drawing, sculpture, model, shapes, (e.g., sphere, circle, cube, square, triangle, rectangle, cone, cylinder, hexagon), geometric, organic, line, flat, solid, compose, decompose, two-dimensional, three-dimensional, non-objective, orientation, attributes, sides, measureable, attributes, length, height, representational, non-objective, collage.

This instructional unit integrates the following separate curriculum overviews:
- Mathematics, Kindergarten, *Shapes All Around Us* (see the curriculum overview here in both Word and PDF format [here](#)); and
- Visual Art, Kindergarten, *What Do I See...?* (see the curriculum overview here in both Word and PDF format [here](#)).

Throughout this unit we denote levels of content area integration by listing an **Integration Continuum Color**, as follows:

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GREEN</strong></td>
<td>Active involvement in developmentally appropriate knowledge production results in work that fuses arts and non-arts disciplines.</td>
</tr>
<tr>
<td><strong>BLUE</strong></td>
<td>Equal and significant attention is given to arts and non-arts techniques, skills, or concepts. Authentic experiences and media are used.</td>
</tr>
<tr>
<td><strong>PINK</strong></td>
<td>Work combines some techniques, skills, and concepts from arts and non-arts disciplines, but proficiency is uneven.</td>
</tr>
<tr>
<td><strong>YELLOW</strong></td>
<td>Peripheral affective goals are met through the work. Learning is demonstrated in one discipline or the other, but not both.</td>
</tr>
</tbody>
</table>

*Adapted from Varieties of Arts Integration developed by Center for Applied Research and Educational Improvement and Perpich Center for Arts Education ©2002 Regents of the University of Minnesota*

**Unit Description:**
This unit focuses on recognizing, naming, and using geometric shapes.

**Considerations:**
This unit has been designed to be taught in a kindergarten classroom or an art room, or in collaboration between the two. 4, 7 and performance assessment are particularly suitable for the art specialist.

When starting this unit you need to consider the prior knowledge of your students and their preparedness level in terms of fine motor skills, and language development.

For many of the lessons students will need precut shapes.

**Key Generalization:**
Defining attributes describe and provide a means for comparing and naming shapes regardless of orientation, size, or color.

**Supporting Generalizations:**
Composing and reorienting basic shapes creates more complex shapes, which reflect the kinds of shapes we find in the real world, texts, and works of art.

Relative position provides the means to document an object’s spatial location/position in relation to another object.

Experimentation and playing with materials and techniques reveal personal observational perspectives in artwork.

Students observe the world from unique perspectives and their viewpoints inform their understanding.

**Performance Assessment:** *The capstone/summative assessment for this unit.*

**Claims:**
Identify and describe geometric shapes. Compare and name shapes regardless of orientation, size, or color.

LEVEL OF INTEGRATION: **GREEN**
### Colorado Teacher-Authored Sample Instructional Unit

**Stimulus Material:**
(Engaging scenario that includes role, audience, goal/outcome and explicitly connects the key generalization)

As an artist you are going to show your artistic and math skills by creating a non-objective geometric shape collage to share with the school (bulletin board, art show school website, parent back to school night, etc.).

**Product/Evidence:**
(Expected product from students)

Students will produce an individual collage to show that they can identify, name, and count shapes regardless of orientation, size, or color. They will create a collage that will incorporate a thoughtful composition using color, shape, and space. Students will count the numbers of shapes in each category and record them on a provided template.

**Differentiation:**
(Multiple modes for student expression)

Teachers can scribe for students who need additional support.

### Texts for independent reading or for class read aloud to support the content

<table>
<thead>
<tr>
<th>Informational/Non-Fiction</th>
<th>Fiction</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>I Spy Art</em> - Lucy McKlethwart</td>
<td></td>
</tr>
<tr>
<td><em>Shapes in Nature</em> - Judy Feldman</td>
<td></td>
</tr>
<tr>
<td><em>Shapes, Shapes, Shapes</em> - Tana Hoban</td>
<td></td>
</tr>
<tr>
<td><em>Paul Klee for Children</em> - Silke Vry</td>
<td></td>
</tr>
<tr>
<td><em>Shapes in Art</em> - Rebecca Rissman</td>
<td></td>
</tr>
<tr>
<td><em>An Eye For Color-(Bio of Josef Alber)</em> - Natasha Wing</td>
<td></td>
</tr>
<tr>
<td><em>Piet Mondrian, Getting to Know World’s Greatest Artists</em> - Mike Venezia</td>
<td></td>
</tr>
<tr>
<td><em>The Shape of Things</em> - Dayle Ann Dodds</td>
<td></td>
</tr>
<tr>
<td><em>Mouse Shapes</em> - Ellen Stoll Walsh</td>
<td></td>
</tr>
<tr>
<td><em>When a Line Bends a Shape Begins</em> - Rhonda Growler Greene</td>
<td></td>
</tr>
<tr>
<td><em>Shapes That Roll</em> - Karen Berman</td>
<td></td>
</tr>
<tr>
<td><em>The Wing of a Flee</em> - Ed Emberley</td>
<td></td>
</tr>
<tr>
<td><em>The Cat and The Bird (Inspired by Paul Klee)</em> - Geraldine Elschner</td>
<td></td>
</tr>
</tbody>
</table>

### Ongoing Discipline-Specific Learning Experiences – Mathematics

<table>
<thead>
<tr>
<th>Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Think/work like a mathematician – Expressing mathematical reasoning by constructing viable arguments, critiquing the reasoning of others</td>
</tr>
<tr>
<td>Teacher Resources:</td>
</tr>
<tr>
<td>[Mathematical Practice 3]</td>
</tr>
<tr>
<td>Student Resources:</td>
</tr>
<tr>
<td><a href="http://schools.nyc.gov/Academics/CommonCoreLibrary/TasksUnitsStudentWork/default.htm">http://schools.nyc.gov/Academics/CommonCoreLibrary/TasksUnitsStudentWork/default.htm</a> (lesson plans contains exemplars that could be replicated for students to critique the reasoning of others)</td>
</tr>
<tr>
<td><a href="http://www.mathwire.com/problemsolving/probs.html">http://www.mathwire.com/problemsolving/probs.html</a> (problem-solving resources)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skills:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present and defend solutions to problems and identify and describe the flaw in reasoning of others</td>
</tr>
<tr>
<td>Assessment:</td>
</tr>
<tr>
<td>Students choose their strategy for solving addition and subtraction problems and explain why their strategy led to a correct response. Students can also be presented an incorrect solution strategy and describe the error in the strategy (what went wrong).</td>
</tr>
</tbody>
</table>

### Ongoing Discipline-Specific Learning Experiences – Visual Art

<table>
<thead>
<tr>
<th>Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Think like an artist: Recognize the</td>
</tr>
<tr>
<td>Teacher</td>
</tr>
<tr>
<td><em>Studio thinking 2: The real benefits of visual arts education</em> - Hetland, I., Winner, E., Veenema,</td>
</tr>
</tbody>
</table>
## Prior Knowledge and Experiences

The description of the working knowledge and skills necessary for students to access the learning experiences throughout the unit. Teachers will use their professional judgment and knowledge of their students (including information gained from relevant pre-assessments) to determine the kinds of introductory learning experiences and/or reinforcement experiences that may need to be delivered prior to or within the unit.

## Learning Experience # 1

### LEVEL OF INTEGRATION: PINK

The teacher may provide pattern blocks so that students can analyze and compare geometric shapes.

### Generalization Connection(s):

Defining attributes describe and provide a means for comparing and naming shapes regardless of orientation, size, or color.

### Teacher Resources:

- Pattern block manipulatives specific to your math program. 
  - [www.starfall.com](http://www.starfall.com)
  - [http://interactivesites.weebly.com/geometry-shapes.html](http://interactivesites.weebly.com/geometry-shapes.html)

### Student Resources:

- [www.starfall.com](http://www.starfall.com)
  - [http://interactivesites.weebly.com/geometry-shapes.html](http://interactivesites.weebly.com/geometry-shapes.html)

### Assessment:

- Students will be sorting geometric shapes and classifying by shape (not size or color).
- Students will be sharing their discoveries.

### Differentiation:

(Multiple means for students to access content and multiple modes for student to express understanding.)

<table>
<thead>
<tr>
<th>Access (Resources and/or Process)</th>
<th>Expression (Products and/or Performance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher may need to provide clarification of the concept of same and different.</td>
<td>Students may work in pairs.</td>
</tr>
</tbody>
</table>

### Extensions for depth and complexity:

<table>
<thead>
<tr>
<th>Access (Resources and/or Process)</th>
<th>Expression (Products and/or Performance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher will provide the opportunity to look at the faces of 3-D shapes.</td>
<td>Students will discuss and identify relationships between 2-D and 3-D.</td>
</tr>
</tbody>
</table>
**Critical Content:**  
- Recognize similarities between shapes

**Key Skills:**  
- Sorting by shape

**Critical Language:**  
Geometric shape, same, different, side, line

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### Learning Experience # 2  

**LEVEL OF INTEGRATION:** YELLOW

The teacher may introduce circles, squares, triangles, rectangles, hexagons, rhombus, and trapezoids so that students can identify and describe shapes.

**Generalization Connection(s):**  
Defining attributes describe and provide a means for comparing and naming shapes regardless of orientation, size, or color.

**Teacher Resources:**
- [http://www.abcy.ca/shapes_geometry_game.htm](http://www.abcy.ca/shapesGeometry_game.htm)
- [http://www.firstschoolyears.com/numeracy/shape/shape.html](http://www.firstschoolyears.com/numeracy/shape/shape.html) (worksheets)

**Student Resources:**
- [http://www.abcy.ca/shapes_geometry_game.htm](http://www.abcy.ca/shapesGeometry_game.htm)
- [http://www.firstschoolyears.com/numeracy/shape/shape.html](http://www.firstschoolyears.com/numeracy/shape/shape.html) (worksheets)

**Assessment:**  
Students will be able to name the geometric shape regardless of size and color.

**Differentiation:**  
(Multiple means for students to access content and multiple modes for student to express understanding.)

<table>
<thead>
<tr>
<th>Access (Resources and/or Process)</th>
<th>Expression (Products and/or Performance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher provide template for matching each shape. Teacher will help children arrange their bodies on the floor to make shapes.</td>
<td>Students who have mastered the concept can help others.</td>
</tr>
</tbody>
</table>

**Extensions for depth and complexity:**

<table>
<thead>
<tr>
<th>Access (Resources and/or Process)</th>
<th>Expression (Products and/or Performance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers will provide a template to match the written word to the correct shape. Teacher will provide Geoboards.</td>
<td>Students can trace, copy, or write the name of each shape. Students can use geo boards to form shapes using rubber bands</td>
</tr>
</tbody>
</table>

**Critical Content:**  
- Naming geometric shapes
- Understanding shapes are the same regardless of size and color
- Understanding geometric shapes vs. organic shapes

**Key Skills:**  
- Naming and recognizing the characteristics or attributes of geometric shapes

**Critical Language:**  
Attributes, geometric shapes, organic shapes, circle, square, triangle, rectangle, hexagon, rhombus, and trapezoid...
## Learning Experience # 3

**LEVEL OF INTEGRATION:** BLUE

### The teacher may provide pattern block mats so that students can create and compose shapes.

**Generalization Connection(s):**

Defining attributes describe and provide a means for comparing and naming shapes regardless of orientation, size, or color. Identify and describe geometric shapes. Compare and name shapes regardless of orientation, size, or color. Experimentation and playing with materials and techniques reveal personal observational perspectives in artwork.

### Teacher Resources:

- [www.prekinders.com/pattern-blocks](http://www.prekinders.com/pattern-blocks)
- [http://www.abcyacom/shapes_geometry_game.htm](http://www.abcyacom/shapes_geometry_game.htm)

### Student Resources:

- [http://interactivesites.weebly.com/geometry-shapes.html](http://interactivesites.weebly.com/geometry-shapes.html)
- [http://www.abcyacom/shapes_geometry_game.htm](http://www.abcyacom/shapes_geometry_game.htm)

### Assessment:

Students will show that they can complete the pattern block mats by matching the shapes.

### Differentiation:

**Access (Resources and/or Process):**

Teacher will provide pattern block mats or teacher printed papers that have a limited number of shapes for students to match.

Teacher will provide each student with each of the shapes then sing Hokey Pokey with shapes ("You put you rectangle in....")

**Expression (Products and/or Performance):**

Students will be able to match a limited number of shapes.

Students will use the correct shape for the game...watching other students first if necessary.

### Extensions for depth and complexity:

**Access (Resources and/or Process):**

Teacher will provide the pattern block mats without the individual shapes drawn in.

Teacher will provide shape stencils for children to trace and combine to make pictures.

**Expression (Products and/or Performance):**

Students can identify and name shapes that they have used in their composition.

### Critical Content:

- Comparing measurable attributes noticing that the orientation does not change the shape.
- Characteristics and expressive features of art and design including shape and line.

### Key Skills:

- Creating a composition using geometric shapes.

### Critical Language:

Composition, attributes, geometric shapes

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## Learning Experience # 4

**LEVEL OF INTEGRATION:** GREEN

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Kindergarten, Integrated – Mathematics and Visual Art
The teacher may introduce art vocabulary including shape, line, orientation (such as over, under, beneath, around, inside), and composition so that students can understand how these elements are used in art.

**Generalization Connection(s):**
Composing and reorienting basic shapes creates more complex shapes, which reflect the kinds of shapes we find in the real world, texts, and works of art.
Relative position provides the means to document an object’s spatial location/position in relation to another object.
Identify and describe geometric shapes. Compare and name shapes regardless of orientation, size, or color.
Experimentation and playing with materials and techniques reveal personal observational perspectives in artwork.
Students observe the world from unique perspectives and their viewpoints inform their understanding.

**Teacher Resources:**
http://www.k-5mathteachingresources.com/support-files/pattern-block-barrier-game.pdf (directions for pattern block barrier games, a shape book template, and numerous other activities)

**Student Resources:**
http://www.teachingideas.co.uk/subjects/2d-shape (worksheets)
YouTube Cray-Pas Art in the Classroom: (Paul Klee inspired city scape)

**Assessment:**
Students will be able to create a composition using precut geometric shapes. They will be able to distinguish between line shape, geometric, and organic shapes.

**Differentiation:**
(Multiple means for students to access content and multiple modes for student to express understanding.)

<table>
<thead>
<tr>
<th>Access (Resources and/or Process)</th>
<th>Expression (Products and/or Performance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The teacher may provide pattern block mat as a visual reference to create a composition.</td>
<td>Students can create their own composition using the visual reference.</td>
</tr>
</tbody>
</table>

**Extensions for depth and complexity:**

<table>
<thead>
<tr>
<th>Access (Resources and/or Process)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>The teacher may provide an opportunity for students to describe their composition. The student may provide shape sponges, stamps or cookie cutters for children to use to create pictures.</td>
<td>Students can count the numbers of each shapes and describe their orientation.</td>
</tr>
</tbody>
</table>

**Critical Content:**
- Use trial and error and reorganize materials (geometric shapes) and processes to plan and create works of art.
- Comparing measurable attributes.

**Key Skills:**
- Arranging their shapes to create a composition.

**Critical Language:**
Composition, line, orientation, arranging, geometric, organic

**Learning Experience # 5 **

**LEVEL OF INTEGRATION: GREEN**

The teacher may provide an opportunity for students to discover and identify shapes in the real world.

**Generalization Connection(s):**
Composing and reorienting basic shapes creates more complex shapes, which reflect the kinds of shapes we find in the real world.
Relative position provides the means to document an object’s spatial location/position in relation to another object. Identify and describe geometric shapes. Compare and name shapes regardless of orientation, size, or color. Students observe the world from unique perspectives and their viewpoints inform their understanding.

**Teacher Resources:**
*Shapes in Nature* - Judy Feldman  
*Shapes, Shapes, Shapes* - Tana Hoban  
[http://www.thinkingfountain.org/nav/shapescluster.html](http://www.thinkingfountain.org/nav/shapescluster.html) (activities from the science museum of Minnesota)  
[http://baynature.org/article/a-natural-geometry-class/](http://baynature.org/article/a-natural-geometry-class/)

**Student Resources:**  

**Assessment:**  
Students will be able to identify geometric shapes around their school and outside in nature by going on a shape hunt. In a discovery journal students can draw the shapes they find.

**Differentiation:**  
(Multiple means for students to access content and multiple modes for student to express understanding.)

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<thead>
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<tbody>
<tr>
<td>Prior to doing the shape hunt the teacher may show nature photographs or videos that depict shapes in nature. If some children can’t transfer well enough to recognize shapes in nature, the teacher can encourage them to look for more concrete shapes (road signs, etc.)</td>
<td>Students may work in pairs. Students may record concrete shapes.</td>
</tr>
</tbody>
</table>

**Extensions for depth and complexity:**

<table>
<thead>
<tr>
<th>Access (Resources and/or Process)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>The teacher provides an opportunity for the student to label and count the shapes they find. Teacher may provide smart phones for recording shapes</td>
<td>The students will be able to label, count and share the shapes they find. Students use smart phones to take photos.</td>
</tr>
</tbody>
</table>

**Critical Content:**
- Recognize characteristics and expressive features of art and design.  
- Classify objects into given categories  
- Describe several measurable attributes of a single object.

**Key Skills:**
- Observe, Discover, Identify, Label shapes in the real world.

**Critical Language:**
- Observe, orientation, position, geometric shapes

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**Learning Experience #6**  
**LEVEL OF INTEGRATION: YELLOW**

The teacher may provide an opportunity for students to demonstrate an understanding of how to count shapes that are not in linear order.

**Generalization Connection(s):**  
Relative position provides the means to document an object’s spatial location/position in relation to another object.

**Teacher Resources:**  
*The Cheerio Counting Book* by Barbara McGraff
### Student Resources:
http://ius.tech/counting-objects-worksheets-kindergarten

### Assessment:
Students will be able to count shapes that are not in linear order using manipulatives.

### Differentiation:
(_multiple means for students to access content and multiple modes for student to express understanding.)

<table>
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</thead>
<tbody>
<tr>
<td>The teacher may provide manipulatives for children to move from straight lines to random arrays.</td>
<td>The students will work with 10 or fewer objects.</td>
</tr>
</tbody>
</table>

### Extensions for depth and complexity:

<table>
<thead>
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<th>Expression (Products and/or Performance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The teacher may provide manipulatives for children to move from straight lines to random arrays. Students will have the opportunity to estimate before counting.</td>
<td>Children will work with larger numbers of objects.</td>
</tr>
</tbody>
</table>

### Critical Content:
- Understanding how to count shapes that are not lined up or in order.

### Key Skills:
- Count shapes when they are not lined up or in order.

### Critical Language:
Geometric shapes, arrays, estimate

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**Learning Experience #7**

**LEVEL OF INTEGRATION: PINK**

The teacher may show examples found in picture books of representational and non-objective art so that students can see and discuss examples of and then draw representational works of art using geometric shapes.

**Generalization Connection(s):**
Composing and reorienting basic shapes creates more complex shapes, which reflect the kinds of shapes we find in the real world, texts, and works of art.
Relative position provides the means to document an object’s spatial location/position in relation to another object.
Identify and describe geometric shapes. Compare and name shapes regardless of orientation, size, or color.
Experimentation and playing with materials and techniques reveal personal observational perspectives in artwork.
Students observe the world from unique perspectives and their viewpoints inform their understanding.

**Teacher Resources:**
Google examples of non-objective art using geometric forms and take your pick.
YouTube Mondrian art for children (MovingBox Productions)
http://www.onceuponanartroom.com/ (examples of children’s art)

**Student Resources:**
http://makingartfun.com/pietmondrian
http://artsmarts4kids.blogspot.com/2008/05/paul-klee.htm

**Assessment:**
Student will be to create a drawing using geometric shapes as a basis for their drawing.

**Differentiation:**
Access (Resources and/or Process) | Expression (Products and/or Performance)
### Extensions for depth and complexity:

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Teachers will encourage students to use repetition of color, and or shape setting for their picture.</td>
<td>Students can use repetition of shape and or color in their composition.</td>
</tr>
<tr>
<td>Teachers will encourage students to create a background.</td>
<td>Students can create a background.</td>
</tr>
</tbody>
</table>

### Critical Content:

- Model shapes in the world by building shapes from components and drawing shapes.
- Compose simple shapes to form larger shapes.
- Recognize characteristics and expressive features of art and design in works of art.

### Key Skills:

- Design a drawing made of shapes.

### Critical Language:

Geometric shapes, setting, background, composition, orientation, representational, non-objective