

**GEOMETRIC SHAPES INTERMEDIATE**  
Math

Grades: 4-5

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**Acceleration Approach**

Standard has been accelerated by moving grade level 4/5 up to the standard used for grade level 6/7.

K	1	2	3	4	5	6	7	8	9	CIM	CRLS/ CAM yes
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**Organizing Overarching Concept (e.g. systems, patterns of change, models, scales)**

- Patterns of Change

**Organizing Higher Order Skills (e.g. Bloom’s, Paul’s Model of Reasoning)**

- Bloom’s Taxonomy – comprehension, application, analysis and synthesis

**Differentiation Features - Students**

- Assigned fewer tasks to master standard of learning
- Assessed earlier or prior to teaching
- Clustered by higher order thinking
- Have additional variables to study
- Develop a product

**Common Curriculum Goal**

**Math – Properties and Relationships**

Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric.

**Grade Level Standards**

**Math – Properties and Relationships**

4<sup>th</sup> Grade - Identify, describe, compare and classify quadrilaterals by their sides and angles. (Assessed on state knowledge and skills tests.)

4<sup>th</sup> Grade - Identify right, acute, and obtuse angles in isolation and in geometric figures.

5<sup>th</sup> Grade - Identify, describe, compare and classify triangles by their sides and angles. (Assessed on state knowledge and skills tests.)

6<sup>th</sup> Grade - Identify, describe, compare and classify polygons by their sides and angles. (Assessed on state knowledge and skills tests.)

7<sup>th</sup> Grade - Determine defining properties that characterize classes of quadrilaterals including side an angle measurements and their component parts (e.g., altitudes, medians, diagonals, bisectors). (Assessed on state knowledge and skills tests.)

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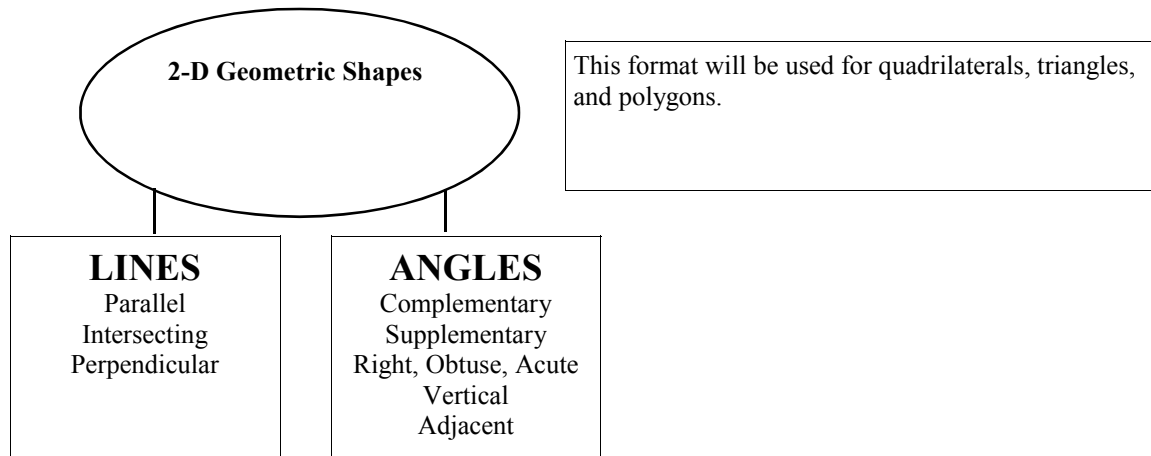
#### Archetypal Model

Students analyze characteristics and properties of two dimensional geometric shapes and develop mathematical argument

#### TASK DEMAND

#### Sample Task Activity

**Representational Format:** Students will be able to analyze characteristics and properties of two dimensional geometric shapes and develop mathematical argument.



Using geoboards, students will create two or more polygons that would allow them to demonstrate geometric properties.

#### Questions

- What is the relationship between different polygons.?• How does the measure of angles change as the number of sides increases?
- Prove two different ways that a set of lines is parallel.

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**Interdisciplinary Connection**

- Extensions in engineering application, bridge building, etc.

**Extensions**

- Relate to 3-D (weight, volume, capacity, etc.)
- Surface area (science)

**Implementation Time**

- 45 minute class period (4 periods to complete)

The editor used the internet for many resources listed in this document. The listed books and internet sites should be reviewed and evaluated by the teacher before using.

**Resources**

- *Math for Morons* <http://library.thinkquest.org/20991/home.html>
- *Math on Call*. (1997). Middle School Handbook. Great Source Education Group Inc.
- *Geometer's Sketchpad* software <http://www.keypress.com/sketchpad/sketchdemo.html>

<b>Scoring Guide</b>	<b>6 Exemplary</b>	<b>5 Proficient</b>	<b>4 Strong</b>	<b>3 Developing</b>	<b>2 Emerging</b>	<b>1 Beginning</b>
<b>Students will be able to:</b>						
Select appropriate polygons to demonstrate appropriate geometric properties.						
Label specified geometric properties of lines (sides).						
Label specified geometric properties of angles.						

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**TAG NEEDS ADDRESSED**

<b>INTELLECTUALLY GIFTED</b>	<b>ACADEMICALLY TALENTED MATH</b>	<b>CAREER RELATED LEARNING STANDARDS FOR CAM - Certificate of Advanced Mastery</b>	<b>TEACHER CHECKS THE BENCHMARK LEVEL STUDENT IS PURSUING</b>
<input checked="" type="checkbox"/> Advanced Critical Reasoning <input type="checkbox"/> Scholarly Interaction <input checked="" type="checkbox"/> Continuous Progress for Level and Rate* <input type="checkbox"/> Challenging Resources <input type="checkbox"/> Effecting Change <input type="checkbox"/> Decision Making; Ethical Use of Influence <input type="checkbox"/> Leadership Training/Career <input type="checkbox"/> Realistic Goal Setting <input type="checkbox"/> Regular Interaction with Intellectual Peers <input type="checkbox"/> Social-Emotional Issues; Support; Coping Strategies <input type="checkbox"/> Advanced Academic Planning <input type="checkbox"/> Opportunity for Competition/ Failures/Successes <input type="checkbox"/> Creative Problem Solving with Real Problems/Audiences <input type="checkbox"/> Pursuit of Advanced Level Research <input type="checkbox"/> Advanced Vocabulary Development	<input type="checkbox"/> Advanced Critical Thinking in Math <input checked="" type="checkbox"/> Continuous Progress/Level and Rate* in Math <input type="checkbox"/> Challenging Math Resources <input checked="" type="checkbox"/> Creative Problem Solving Strategies in Math Advanced Vocabulary Development <input type="checkbox"/> Leadership Training/Career <input type="checkbox"/> Decision Making; Ethical Use of Influence <input type="checkbox"/> Regular Interaction with Talented Math Peers <input type="checkbox"/> Realistic Goal Setting <input type="checkbox"/> Opportunity for Competition/Failures/Successes <input type="checkbox"/> Advanced Academic Planning in Math	<input type="checkbox"/> Personal Management <input checked="" type="checkbox"/> Problem Solving <input checked="" type="checkbox"/> Communication <input type="checkbox"/> Teamwork <input type="checkbox"/> Employment Foundations <input type="checkbox"/> Career Development	<p><b>Math:</b></p> <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> CIM <input type="checkbox"/> CAM

**Student** \_\_\_\_\_ **Grade** \_\_\_\_\_

**Teacher** \_\_\_\_\_ **School** \_\_\_\_\_

**Date Initiated** \_\_\_\_\_ **Date Completed** \_\_\_\_\_

\* Rate requires monitoring to ensure that the student was allowed to move ahead upon acquiring concepts

**Check TAG Identification category:**  Intellectual  Academic Math  Academic LA