Orange Public Schools

Office of Curriculum & Instruction
2019-2020 Mathematics Curriculum Guide

6th Grade Mathematics

Math in Focus - Unit 4: Geometry

April 10, 2020 – June 22, 2020

Board Approved: 1.14.2020

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References

"Math in Focus" *Houghton Mifflin Harcourt.* 2015 <https://my.hrw.com>

I. Unit Overview

In this unit, students will ….

- Understand measurement of polygonal surfaces and three-dimensional objects.
- Study four kinds of measurements appropriate for Grade 6: perimeter, area, surface area, and volume
- Build a robust understanding of what it means to measure area, perimeter, surface area, and volume.
- Develop strategies for measuring perimeter and area of both rectangular and nonrectangular shapes.
- Use their understanding of area of rectangles to develop strategies for finding area of triangles, parallelograms, and other polygons, and extend this understanding to three-dimensional objects.
- Find the areas of individual faces of objects to find total surface area, and they incorporate height into their calculations to find volume of rectangular prisms.
- Determine the number of square units needed to cover the surface of the shape of a polygon.
- Find the number of linear units needed to surround the shape of the polygon. Students
- Use these definitions to develop area and perimeter formulas for triangles and parallelograms.
- Look for patterns or regularities that lead to more efficient strategies and formulas.
- Formulate rules for finding area and perimeter of rectangles, triangles, and parallelograms as they discuss their strategies.
- relate these concepts to three-dimensional figures
- Develop an understanding of the distinction between area and perimeter as they investigate the relationship between the perimeter and shape of a rectangle when it has a fixed area.
- Investigate the relationship between the area and shape of a rectangle when it has a fixed perimeter, which leads to the idea of maximum and minimum.

Essential Questions
• How can you derive a formula for the area of a parallelogram? • How can you derive a formula for the area of a triangle? • How can you find the area of the entire surface of a prism? • How can you use a net to find the surface area of a pyramid? • How can you find the volume of a rectangular prism with fractional edge lengths?
Enduring Understanding
• Reason about area to include shapes that are not composed of rectangles. • The area of a rectangle is composed of two congruent right triangles. • Understand the area of a triangle is half of the product of one of its side-lengths and its corresponding height. • The areas of polygons can be found by decomposing and rearranging them to make figures whose areas can be determined. • Polyhedra nets can be used to determine the surface area.

II. Pacing Guide

Activity	New Jersey Student Learning Standards (NJSLS)	Estimated Time
Chapter 9		
Chapter 9 Recall Prior Knowledge / Pre-Test (MIF)	6.NS.6, 6.NS.6c, 6.NS.7c, 6.NS.8 6.G.3	2 Block
Chapter 9 (MIF) Transition Lesson	6.NS.6, 6.NS.6c, 6.NS.7c, 6.NS.8 6.G.3	1 Block
Chapter 9 (MIF) Lesson 9.1	6.NS.6, 6.NS.6c 6.G.3	2 Blocks
Chapter 9 (MIF) Lesson 9.2	6.NS.8, 6.EE.2c, 6.G.3	2 Blocks
Chapter 9 (MIF) Lesson 9.3	6.NS.8, 6.RP.3a, 6.RP.3b, 6.G.3	2 Blocks
Chapter 9 (MIF) Wrap-Up / Review	6.NS.6, 6.NS.6c, 6.NS.7c, 6.NS.8 6.RP.3a, 6.RP.3b 6.G.3	½ Blocks
Chapter 9 Assessment (MIF) *Optional*	6.NS.6, 6.NS.6c, 6.NS.7c, 6.NS.8 6.RP.3a, 6.RP.3b 6.G.3	½ Block
Total Time		**11 ½ Blocks**

Major Work Supporting Content Additional Content

Activity	New Jersey Student Learning Standards (NJSLS)	Estimated Time
Chapter 10		
Chapter 10 Recall Prior Knowledge / Pre-Test (MIF)	6.EE.2c, 6.G.1, 6.G.3	2 Block
Chapter 10 (MIF) Transition Lesson	6.EE.2c, 6.G.1, 6.G.3	1 Block
Chapter 10 (MIF) Lesson 10.1	6.EE.2c 6.G.1	2 Blocks
Chapter 10 (MIF) Lesson 10.2	6.G.1, 6.G.3	3 Blocks
Chapter 10 (MIF) Lesson 10.3	6.G.1	2 Blocks
Chapter 10 (MIF) Lesson 10.4	6.G.1	2 Blocks
Chapter 10 (MIF) Wrap-Up / Review	6.EE.2c, 6.G.1, 6.G.	2 Blocks
Chapter 10 Assessment (MIF) *Optional*		½ Block
Total Time		**14 Blocks**

Major Work Supporting Content Additional Content

Activity	New Jersey Student Learning Standards (NJSLS)	Estimated Time
Chapter 12		
Chapter 12 Recall Prior Knowledge / Pre-Test (MIF)	6.EE.1, 6.EE.2c, 6.G.2, 6.G.4	2 Block
Chapter 12 (MIF) Transition Lesson	6.EE.1, 6.EE.2c, 6.G.2, 6.G.4	1 Block
Chapter 12 (MIF) Lesson 12.1	6.G.4	2 Blocks
Chapter 12 (MIF) Lesson 12.2	6.EE.1, 6.G.4	3 Blocks
Chapter 12 (MIF) Lesson 12.3	6.EE.1, 6.G.2	2 Blocks
Chapter 12 (MIF) Lesson 12.4	6.EE.2c, 6.G.4	1 Blocks
Chapter 10 (MIF) Wrap-Up / Review	6.EE.2c, 6.G.1, 6.G.	2 Blocks
Chapter 12 Assessment (MIF) *Optional*		½ Block
Solidify Unit 3 Concepts / ***(Project Based Learning)***		2 Blocks
Total Time		**14 ½ Blocks**

Major Work Supporting Content Additional Content

III. Pacing Calendar

Please complete the pacing calendar based on the suggested pacing (*see Pacing Guide on pages 2-3)*.

APRIL						
Sunday	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**
			1	**2**	**3**	**4**
5	**6**	**7**	**8**	**9**	**10**	**11**
12	**13**	**14**	**15**	**16**	**17**	**18**
19	**20**	**21**	**22**	**23**	**24**	**25**
26	**27**	**28**	**29**	**30**		

MAY

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

JUNE

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

IV. Math Background

While this Unit does not focus on the global aspects of what it means to measure, it does raise issues that help students see relationships and characteristics of all measurements. The measurement process involves several key elements.

Phenomenon or object is chosen, and an attribute that can be measured is identified.

An appropriate unit of measure is selected. The unit depends on the kind of measurement to be made and the degree of precision needed for the measurement.

The unit is used repeatedly to "match" the attribute of the phenomenon or object in an appropriate way.

The number of units is determined. The number of units is the measure of the attribute of the phenomenon or object.

V. NJSLA Assessment Evidence Statements

NJSLS	Evidence Statement	Clarification	Math Practices	Calculator
6.EE.1	Write numerical expressions involving whole-number exponents	i) Tasks involve expressing b-fold products a•a•a …•a in the form a^b, were a and b are non-zero whole numbers. i)) Tasks do not require use of the laws of exponents.	8	No
	Evaluate numerical expressions involving whole-number exponents	i) Tasks may involve simple fractions raised to small whole-number powers, e.g., $(\frac{1}{2})^3, (\frac{2}{3})^2$. ii) Tasks may involve nonnegative decimals raised to whole-number powers. iii) The testing interface can provide students with a calculation aid of the specified kind for these tasks. iv) Tasks do not have a context.	8	Yes
6.EE.2	Write, read, and evaluate expressions in which letters stand for numbers. a. Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation “Subtract y from 5” as 5 – y.	i) Tasks do not have a context. ii) Numerical values in these expressions may include whole numbers, fractions, and decimals. iii) The testing interface can provide students with a calculation aid of the specified kind for these tasks.	8	Yes
	b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. *For example, describe the expression 2 (8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms.*	i) Tasks do not have a context. ii) Numerical values in these expressions may include whole numbers, fractions, and decimals. iii) The testing interface can provide students with a calculation aid of the specified kind for these tasks.	7	Yes
	c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional	i) Tasks do not have a context. ii) Numerical value in these expressions may include whole number, fractions, and decimals. iii) The testing interface can provide students with a calculation aid of the specified	7	Yes

	order when there are no parentheses to specify a particular order (Order of Operations).	kind for these tasks.		
	c. Evaluate expressions at specific values of their variables. *For example, use the formulas $V = s^3$ and $A = 6 s^2$ to find the volume and surface area of a cube with sides of length s = 1/2.*	i) Tasks are simple applications of formulas that are provided in the prompt. ii) Tasks do not require the student to manipulate the formula or isolate variables to solve an equation. iii) Tasks have "thin context" or no context. iv) Numerical values in these expressions may include whole numbers, fractions, and decimals. v) The testing interface can provide students with a calculation aid of the specified kind for these tasks.	7	Yes
6.EE.3	Apply the properties of operations to generate equivalent expressions. *For example, apply the distributive property to the expression 3 (2 + x) to produce the equivalent expression 6 + 3x; apply the distributive property to the expression 24x + 18y to produce the equivalent expression 6 (4x + 3y); apply properties of operations to y + y + y to produce the equivalent expression 3y.*	None	7, 8	No
6.EE.4	Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.*	None	7	No

	Understand solving an equation as a process of answering a question: Which values from a specified set, if any, make the equation true?	i) The testing interface can provide students with a ii) calculation aid of the specified kind for these tasks.	5, 6	Yes
6.EE.5	Use substitution to determine whether a given number in a specified set makes an inequality true.	i) 80% of tasks involve values from an infinite set of nonnegative numbers (e.g., even numbers; whole numbers; fractions). 20% of tasks involve values from a finite set of nonnegative numbers e.g., {2, 5, 7, 9}. ii) The testing interface can provide students with a calculation aid of the specified kind for these tasks.	5, 6	Yes
6.EE.6	Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	i) Tasks may require students to write an expression to represent a real-world or mathematical problem. Tasks do not require students to find a solution. ii) Tasks may require students to interpret a variable as a specific unknown number, or, as a number that could represent any number in a specified set.	2, 6, 7	No
6.EE.7	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q, and x are nonnegative rational numbers.	i) Problem situations are of "algebraic" type, not "arithmetic" type. ii) 50% of tasks involve fraction or decimal value of p, q, and/or x. Fractions and decimals should not appear in the same problem. iii) A valid equation and the correct answer are both required for full credit. iv) The testing interface can provide students with a calculation aid of the specified kind for these tasks.	1, 2, 6, 7	Yes

6.EE.8	Write an inequality of the form x > c or x < c to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form x > c or x < c have infinitely many solutions; represent solutions of such inequalities on number line diagrams.	i) Constraint values (denoted c in standard 6.EE.8) are not limited to integers.	2, 6, 7	No
6.EE.9	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. *For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time.*	i) The testing interface can provide students with a calculation aid of the specified kind for these tasks.	2, 4, 6, 8	Yes
	Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12.	i) Tasks do not have a context. ii) Tasks require students to find the greatest common factor or the least common multiple only.	-	No
6.NS.4	Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express 36 + 8 as 4(9 + 2).	i) Tasks do not have a context.	7	No

6.G.1	Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.	i) The testing interface can provide students with a calculation aid of the specified kind for these tasks. ii) A trapezoid is defined as "A quadrilateral with at least one pair of parallel sides."	1, 2, 5, 7	Yes
6.G.2-1	Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism	i)Tasks do not have a context. ii)Tasks focus on the connection between packing the solid figure and computing the volume.	2	No
6.G.2-2	Apply the formulas V = lwh and V = Bh to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.	i) Tasks focus using the formulas in problem-solving contexts. ii) The testing interface can provide students with a calculation aid of the specified kind for these tasks.	1, 4, 5	Yes
6.G.3	Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.	i) The testing interface can provide students with a calculation aid of the specified kind for these tasks.	1,5	Yes
6.G.4	Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems	i) The testing interface can provide students with a calculation aid of the specified kind for these tasks.	1,4,5	Yes

VI. Differentiated Instruction

Chapter 9

Assessment and Intervention

	ASSESSMENT	RtI STRUGGLING LEARNERS
DIAGNOSTIC	• Quick Check in Recall Prior Knowledge in Student Book B, pp. 1–4 • Chapter 8 Pre-Test in *Assessments*	• Skills 31–34 in *Transition Guide, Course 1*
ON-GOING	• Guided Practice • Lesson Check • Ticket Out the Door	• Reteach worksheets • Extra Practice worksheets • *Activity Book*, Chapter 8
END-OF-CHAPTER	• Chapter Review/Test • Chapter 8 Test in *Assessments* • ExamView® Assessment Suite CD-ROM Course 1	• Reteach worksheets

ELL ENGLISH LANGUAGE LEARNERS

Review the terms *equation* and *inequality*.

Say An *equation* is a mathematical statement that two quantities are *equal*, that they have the same value.

Model Write the equation $x + 2 = 5$. Then model the equation using a balance scale. Point out that the scale is balanced, so the amounts on the two sides of the scale must be the same. They are equal: $x + 2 = 5$.

Say An *inequality* is a mathematical statement that two quantities are *not equal*, that they do *not* have the same value.

Model Write the inequality $x + 3 > 8$. Then model the inequality using a balance scale. Point out that the scale is unbalanced, so the amounts on the two sides of the scale must be different. The amount on the left side is heavier than the amount on the right, so $x + 3 > 8$.

For definitions, see Glossary, page 301, and Online Multilingual Glossary.

ADVANCED LEARNERS

- Have students write their own real-world problems that involve inequalities. Challenge them to come up with problems where the real-world situation places limitations on the solution set, such as excluding non-integers and/or negative numbers. For example:

  Simone bought a 1-gallon container of milk. She put it in her refrigerator and used the milk. Write an inequality that best describes the amount of milk in the container, c, while it was in Simone's refrigerator. ($0 \leq c \leq 1$.) Draw a number line to represent the inequality.

- As needed, provide direction for students. Demonstrate compound inequalities. Also suggest a list of questions to consider: Is there a lower limit to the solution set? An upper limit? Can the solutions include fractions or decimals? Negative numbers?

To provide additional challenges use:
- *Enrichment*, Chapter 8
- Student Book A, Brain@Work problem

Chapter 10

Assessment and Intervention

	ASSESSMENT	RtI STRUGGLING LEARNERS
DIAGNOSTIC	• Quick Check in Recall Prior Knowledge in Student Book B, pp. 73–74 • Chapter 10 Pre-Test in *Assessments*	• Skills 39–41 in *Transition Guide, Course 1*
ON-GOING	• Guided Practice • Lesson Check • Ticket Out the Door	• Reteach worksheets • Extra Practice worksheets • *Activity Book*, Chapter 10
END-OF-CHAPTER	• Chapter Review/Test • Chapter 10 Test in *Assessments* • ExamView® Assessment Suite CD-ROM Course 1	• Reteach worksheets

ELL ENGLISH LANGUAGE LEARNERS

Review the term *base*.

Say In everyday English, the word *base* means the bottom piece of something. The top of a table sits on its base. A statue of a man or woman often stands on a stone base. In geometry, *base* has a special meaning.

Model Draw a triangle and a parallelogram.

Say Any side of a triangle can be its base, Any side of a parallelogram can be its base. The base of a triangle or parallelogram does not have to be on the bottom.

Model Draw two trapezoids, one with its bases at bottom and top, the other with bases left and right.

Say A trapezoid has two bases. The bases of a trapezoid are the two sides that are parallel. The bases of a trapezoid do not have to be its top and bottom.

For definitions, see Glossary, on page 301, and Online Multilingual Glossary.

ADVANCED LEARNERS

- On page 91 of Student Book B, students derive the formula for the area of a trapezoid by dividing a trapezoid into two triangles. There are other means of arriving at this formula. Have students derive the formula by using one or both of two other methods: by dividing the trapezoid into two trapezoids, or by dividing it into a rectangle and two right triangles.
- As needed, provide direction for students. Have them begin with trapezoid *ABDE* on page 91. To use two trapezoids, suggest students divide *ABDE* by drawing a horizontal segment across the midpoints of the nonparallel sides, then flipping the top trapezoid clockwise to form one long parallelogram.
- To divide trapezoid *ABDE* into a rectangle and two right triangles, suggest students draw line segments from points *A* and *E* perpendicular to $\overline{BD}$.

To provide additional challenges use:

- *Enrichment*, Chapter 10
- Student Book A, Brain@Work problem

Chapter 12

Assessment and Intervention

	ASSESSMENT	RtI STRUGGLING LEARNERS
DIAGNOSTIC	• Quick Check in Recall Prior Knowledge in Student Book B, pp. 169–171 • Chapter 12 Pre-Test in *Assessments*	• Skills 48–50 in *Transition Guide, Course 1*
ON-GOING	• Guided Practice • Lesson Check • Ticket Out the Door	• Reteach worksheets • Extra Practice worksheets • *Activity Book*, Chapter 12
END-OF-CHAPTER	• Chapter Review/Test • Chapter 12 Test in *Assessments* • ExamView® Assessment Suite CD-ROM Course 1	• Reteach worksheets

ELL ENGLISH LANGUAGE LEARNERS

Review the terms *prism, base, face,* and *pyramid.*

Model Draw a scalene triangular prism.

Say A *prism* is a type of solid. A prism has two *bases.* The bases are the same size and shape, and are parallel. The sides of a prism that are not bases are called *faces.* All the faces of any prism are parallelograms. (Here they are rectangles.) The faces of a prism connect its two bases.

Model Draw a square pyramid.

Say A *pyramid* is a type of solid. A pyramid has only one *base.* Any polygon can be the base of a pyramid. (Here the base is a square.) The sides of a pyramid are called *faces.* The faces of any pyramid are triangles. Each face of a pyramid begins at one side of the base and ends at the vertex.

For definitions, see Glossary, page 301, and Online Multilingual Glossary.

ADVANCED LEARNERS

- Students can explore how surface area and volume change as a prism is scaled up. Draw a rectangular prism 2 units by 2 units by 1 unit. Have students find its surface area and volume. Then have them double each dimension and find the surface area and volume again. Have students repeat the process two more times, recording all their measurements in a table.
- Start with the same rectangular prism. Have students triple its dimensions three times, finding its surface area and volume after each tripling, and recording all measurements in a table.
- Ask students to identify patterns as the dimensions of the prism are increased. (When doubled, surface area increases 4, or 2^2, times and volume increases 8, or 2^3, times. When tripled, surface area increases 9, or 3^2, times and volume increases 27, or 3^3, times.)

To provide additional challenges use:
- *Enrichment*, Chapter 12
- Student Book B, Brain@Work problem

VII. Connections to the Mathematical Practices

1	Make sense of problems and persevere in solving them
	- Students make sense of expressions and formulas by connecting them to real world contexts when evaluating. - Students create the appropriate representations for equations or inequalities
2	Reason abstractly and quantitatively
	- Students contextualize to understand the meaning of the number or variable as related to the problem and decontextualize to manipulate symbolic representations by applying properties of operations. - Students represent ideas and concepts in inequalities, equations, graphs, and tables
3	Construct viable arguments and critique the reasoning of others
	- Students construct and critique arguments regarding the equivalence of expressions and the use of variable expressions to represent real-world situations. - Students construct arguments using verbal or written explanations accompanied by expressions, equations, inequalities, models, graphs, and tables.
4	Model with mathematics
	- Students form expressions from real world contexts. Students use algebra tiles to model algebraic expressions. - Students model real world problems in equations, expressions, and inequalities
5	Use appropriate tools strategically
	- Students determine which algebraic representations are appropriate for given contexts. - Students use number lines to graph equations and inequalities
6	Attend to precision
	- Students use the language of real-world situations to create appropriate expressions. - Students accurately define variables in the context of a problem
7	Look for and make use of structure
	- Students apply properties to generate equivalent expressions. They interpret the structure of an expression in terms of a context. Students identify a “term” in an expression. - Students seek patterns or structures to model problems using tables and inequalities
8	Look for and express regularity in repeated reasoning
	- Students can work with expressions involving variables without the focus on a specific number or numbers that the variable may represent. Students focus on the patterns that lead to generalizations that lay the foundation for their future work in algebra. Students work with the structure of the distributive property $2(3x + 5) = 6x + 10$. - Students find processes for representing equations and inequalities

VIII. Vocabulary

Term	Definition
Coordinate	An ordered pair of numbers that gives the location of a point on a coordinate plane.
Coordinate Plane	An ordered pair of numbers that gives the location of a coordinate plane.
Linear Graph	A straight-line graph.
Quadrants of a coordinate plane	A grid formed by a horizontal number line, called the x-axis, and a vertical number line, called the y-axis, that intersect at right angles.
X-axis	The horizontal axis on a coordinate plane.
Y-axis	The vertical axis on a coordinate plane.

Term	Definition
Base (of a triangle)	Any side of a triangle from which the height of a triangle is measured.
Formula	A general mathematical equation or rule.
Height (of a triangle)	The perpendicular distance from the base to the opposite vertex of a triangle.
Regular Polygon	A polygon whose sides are all the same length, and whose angles are all the same measure.

Term	Definition
Cross Section	A shape formed when a plane slices through a solid.
Net	A plane figure that can be folded to make a solid.
Pyramid	A solid whose base is a polygon and whose other faces are triangles that share a common vertex.
Surface Area	The total area of the faces (including the bases) and curved surfaces of a solid.

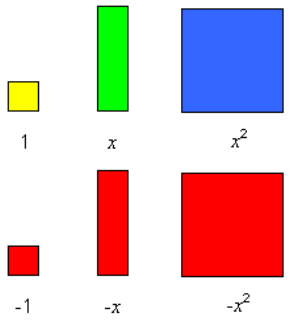
IX. Potential Student Misconceptions

- Students may forget that the x-coordinate comes first in an ordered pair. The ordered pair (2,3) does not name the same point as (3,2).
- Students may fail to notice interval changes on the axes (scale). Encourage students to check intervals on any coordinate plane or graph that they are given.
- Understand length is a non-negative quantity. It can be zero or positive.
- Any side of a triangle can be called the base. The height of the triangle is the perpendicular distance from the opposite vertex to the base.
- Point out to students that the bases of the trapezoid are always the two parallel sides. Trapezoids are not like triangles and parallelograms, where any side can be the base.
- Some students may think that all six-square nets can form cubes. Point out that this is not always true and that the placement of the squares ultimately determines whether the net can actually form a cube.

X. Teaching Multiple Representations

CONCRETE REPRESENTATIONS

Algebra Tiles

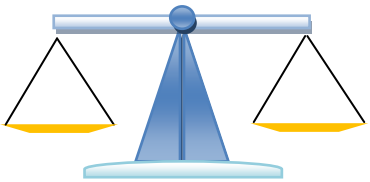


PICTORIAL REPRESENTATIONS

Graphic Organizers i.e. input/output charts, tables, etc.

Input (days)	Output ($)
1	15
2	20
4	30
6	40
9	55
11	65

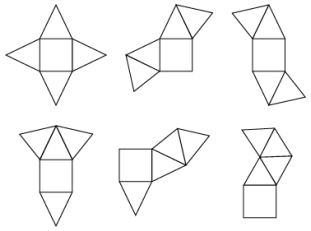
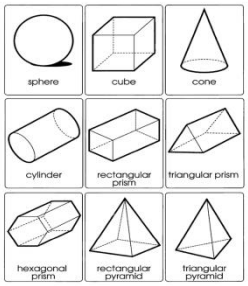
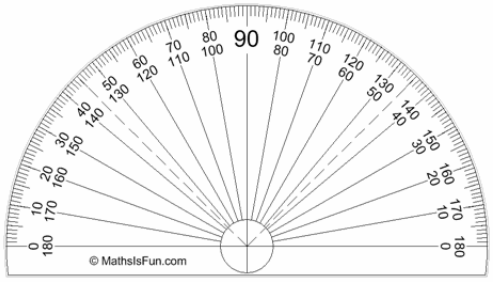
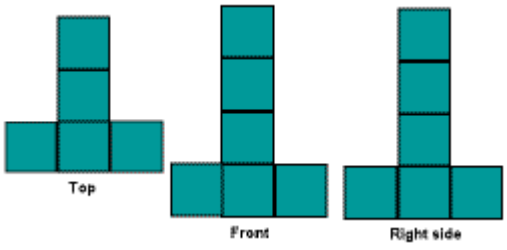
Pan Balance



ABSTRACT REPRESENTATIONS

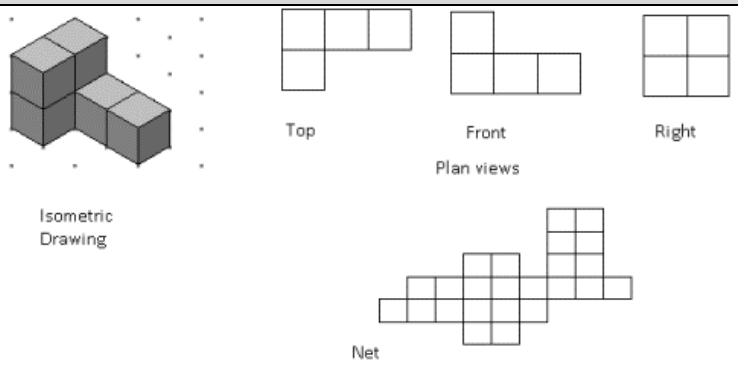
- Order of Operations
- Properties of Addition and Multiplication
- Standard algorithms for addition, subtraction, multiplication, and division

	Word Phrases	Expression
+	• a number plus 5 • add 5 to a number • sum of a number and 5 • 5 more than a number • a number increased by 5	$n + 5$
−	•a number minus 11 • subtract 11 from a number • difference of a number and 11 • 11 less than a number • a number decreased by 11	$x - 11$
×	• 3 times a number • 3 multiplied by a number • product of 3 and a number	$3m$
÷	• a number divided by 7 • 7 divided into a number • quotient of a number and 7	$\frac{a}{7}$ or $a \div 7$

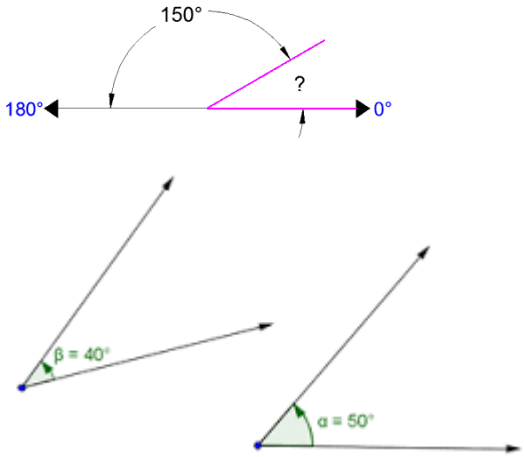
Concrete Representations	
• Nets	
• Solids • Boxes	
• Real life representations (eg: doors, windows, steps, corners)	
• Angle ruler	
• Projections and views	

Pictorial Representations

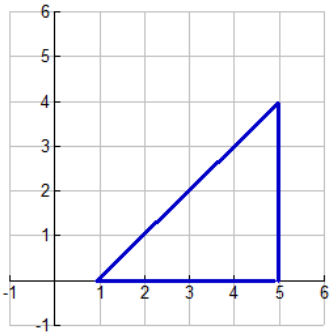
- 3-Dimensional scale drawings of polygons



- Angles drawn to Measure (supplementary and complementary)



- Coordinate Graphs



Abstract Representations

Refer to the 6th grade reference sheet for formulas for surface area and volume

Supplementary angles: pairs of angles that add up to 180 degrees.

Complementary angles: angles whose measures sum to 90°

XI. Assessment Framework

Unit 4 Assessment Framework				
Assessment	**NJSLS**	**Estimated Time**	**Format**	**Graded ?**
Unit 4 Chapter 9 PreTest (Beginning of Unit) *MIF*	6.NS.6, 6.NS.6c, 6.NS.7c, 6.NS.8 6.G.3	½ Block	Individual	Yes (Score will not have weight in Genesis)
Unit 4 Assessment 1 (After Chapter 9)	6.NS.6, 6.NS.6c, 6.NS.7c, 6.NS.8, 6.EE.2c, 6.G.3, 6.RP.3a, 6.RP.3b,	1 Block	Individual	Yes
Unit 4 Chapter 10 PreTest (Middle of Unit) *MIF*	6.NS.C8, 6.EE.A.2, 6.EE.B.6, 6.EE.C.9, 6.G.A.1, 6.G.A.3	½ Block	Group	Yes (Score will not have weight in Genesis)
Unit 4 Chapter 12 PreTest (End of Unit) *MIF*	6.NS.C8, 6.EE.A.2, 6.EE.B.6, 6.EE.C.9, 6.G.A.1, 6.G.A.3	½ Block	Group	Yes (Score will not have weight in Genesis)
Unit 4 Assessment 2 (Conclusion of Unit 12) *Model Curriculum*	6.NS.C8, 6.EE.A.2, 6.EE.B.6, 6.EE.C.9, 6.G.A.1, 6.G.A.3,	1 Block	Individual	Yes
Grade 6 Interim Assessment 4 (June) District Assessment	6.EE.1, 6.EE.2, 6.EE.9	1 Block	Individual	Yes

Unit 4 Performance Assessment Framework				
Assessment	**CCSS**	**Estimated Time**	**Format**	**Graded ?**
Unit 4 Performance Task 1 (Early May) *Finding Areas of Polygon*	6.G.A.1	½ Block	Group	Yes; Rubric
Unit 4 Performance Task 2 (Early June) *How much is needed for redecoration*	6.G.A.4	½ Block	Individual w/ Interview Opportunity	Yes: rubric
Unit 4 Performance Task Option 1 (optional)	6.G.A.2	Teacher Discretion	Teacher Discretion	Yes, if administered
Unit 4 Performance Task Option 2 (optional)	6.G.A.3	Teacher Discretion	Teacher Discretion	Yes, if administered
Extended Constructed Response (ECR)* (click here for access)	Dependent on unit of study & month of administration	Up to 30 minutes	Individual	Yes; Rubric

* Use the following links to access ECR protocol and district assessment scoring documents:

- *Assessment & Data in Mathematics Bulletin*
- *Extended Constructed Response Protocol*

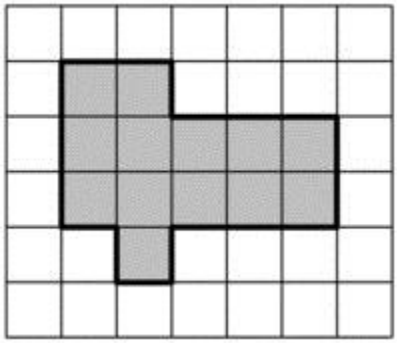
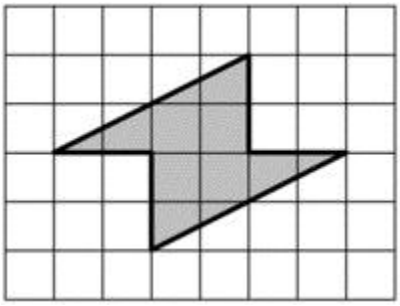
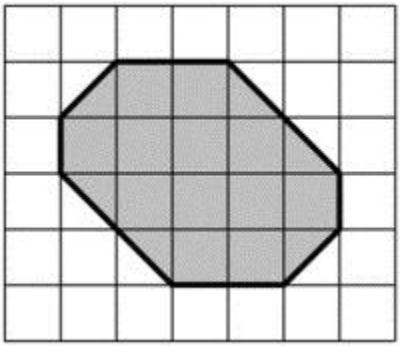
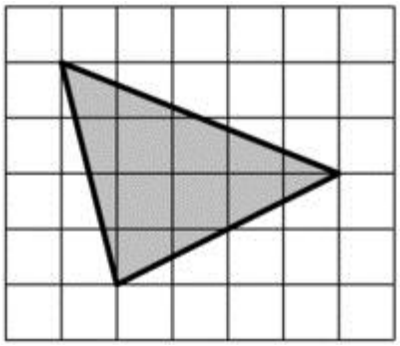
Performance Tasks

Unit 4 Performance Task 1

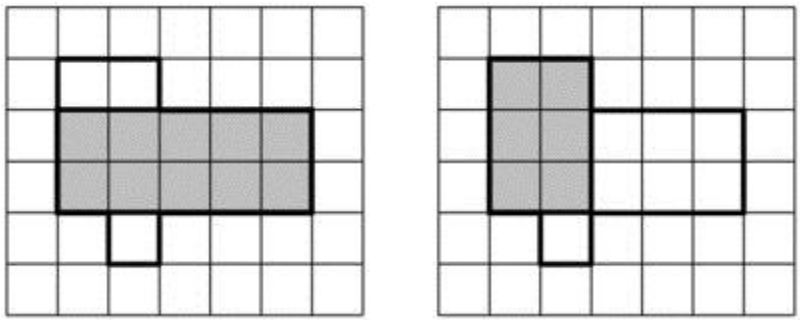
Finding Areas of Polygons

6.G.A.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

Find the area that is shaded in each figure in at least two different ways

a. 	b. 
c. 	d. 

Solution:

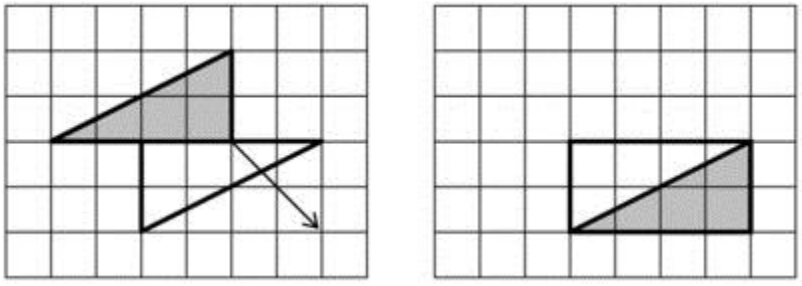
a. 

On the left we can see that the figure is composed of a rectangle with area of $2 \cdot 5 = 10$ square units plus another with area 2 and a third with area 1 square unit. So the total area is

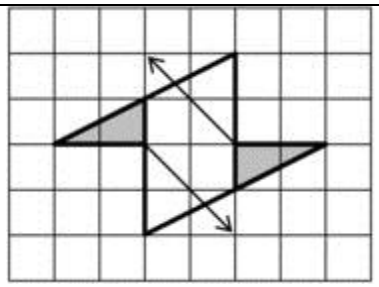
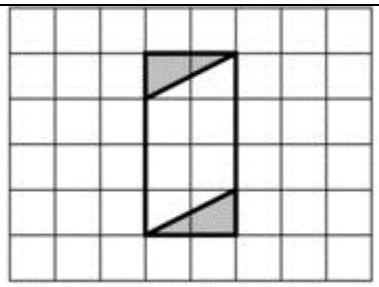
$10+2+1=13$ square units.

On the right we can see that the area is composed of two rectangles and a single square: $2(2 \cdot 3)+1=13$.

In either case, we see the area is 13 square units.

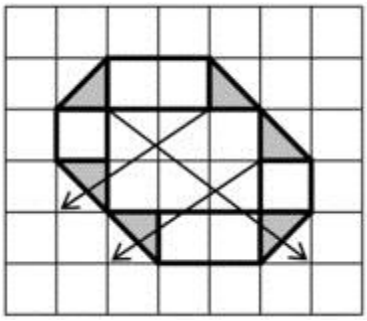
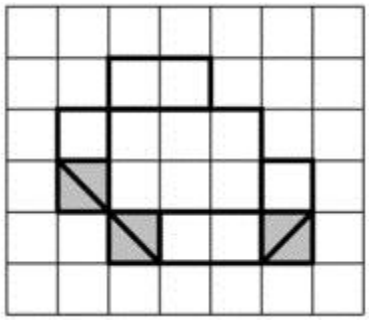
b. 

In the figure above, we see that we can subdivide the figure into two right triangles that can be recombined into a rectangle with length 4 units and width 2 units. So the area is $4 \cdot 2 = 8$ square units.

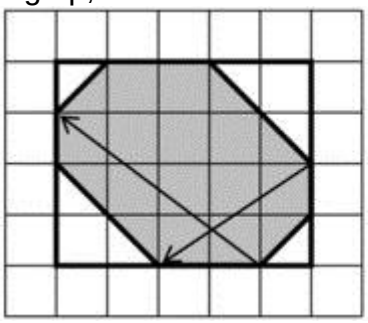
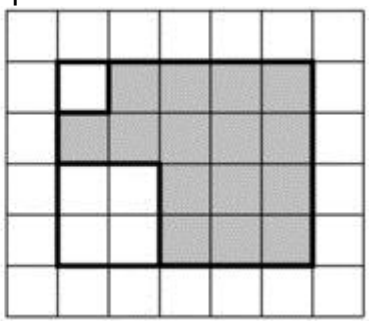



Another way to look at this figure is to cut off the small triangles that "stick out" on the sides and place them so they complete a rectangle that has a length of 2 units and a width of 4 units. So the area of the figure is equivalent to a rectangle with area $2 \cdot 4 = 8$ square units.

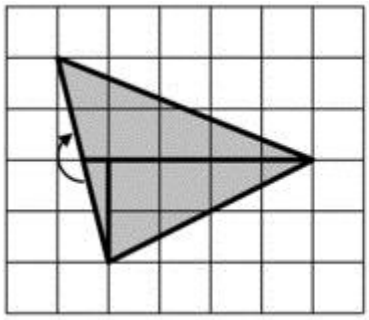
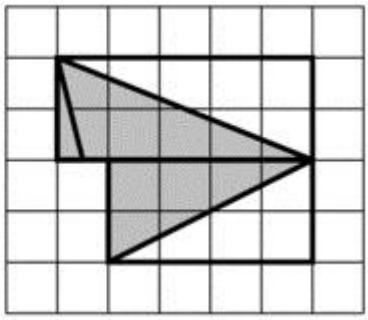
c.

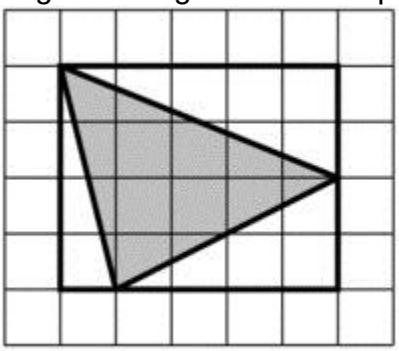
This figure shows that if we are persistent, we can decompose this figure into a bunch of triangles with area 12 square unit along with some rectangles. Moving them around and adding everything up, we see the area is 15 square units.

We can find the area in fewer steps if we "enclose" the figure with a rectangle. Now we can see that we can recombine the "white space" into a square with area 1 square unit and another with area 4 square units. The entire rectangle has area $4 \cdot 5$ square units, so the area of the original figure is $20 - 4 - 1 = 15$ square units.

d.  

There is a clever way to do it by moving pieces around that shows the area of the figure is the sum of the area of two right triangles, one of which has an area that is half a 2 by 5 rectangle and the other of which is a 2 by 4 rectangle. All told, this means the area of the original triangle is $5+4=9$ square units.



This is the figure where it is most helpful to understand that since the area of non-overlapping regions is additive, it can also be subtracted. If the triangle is "enclosed" by a rectangle with area $4 \cdot 5=20$ square units, we can subtract the area of three right triangles, each with area 2, 4, and 5. So the area of the original triangle is $20-2-4-5=9$ square units, as we found before.

Unit 4 Performance Task 1 PLD Rubric

SOLUTION

- **Student indicates that the area is 13 square units for the first figure and explains there answer**
- **Student indicates that the area is 8 square units for the second figure and explains there answer**
- **Student indicates that the area is 15 square units for the third figure and explains there answer**
- **Student indicates that the area is 9 square units for the fourth figure and explains there answer**

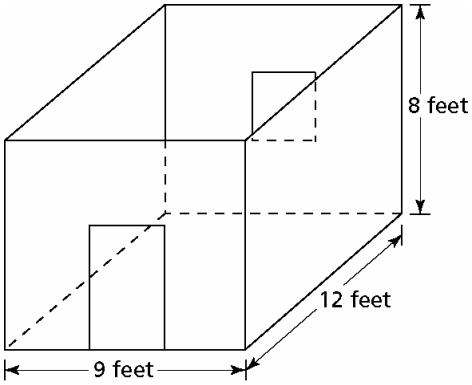
Level 5: Distinguished Command	**Level 4: Strong Command**	**Level 3: Moderate Command**	**Level 2: Partial Command**	**Level 1: No Command**
Clearly constructs and communicates a complete response based on concrete referents provided in the prompt or constructed by the student such as diagrams that are connected to a written (symbolic) method, number line diagrams or coordinate plane diagrams, including: • a logical approach based on a conjecture and/or stated assumptions • a logical and complete progression of steps • complete justification of a conclusion with minor computational error	Clearly constructs and communicates a complete response based on concrete referents provided in the prompt or constructed by the student such as diagrams that are connected to a written (symbolic) method, number line diagrams or coordinate plane diagrams, including: • a logical approach based on a conjecture and/or stated assumptions • a logical and complete progression of steps • complete justification of a conclusionwith minor conceptual error	Constructs and communicates a complete response based on concrete referents provided in the prompt or constructed by the student such as diagrams that are connected to a written (symbolic) method, number line diagrams or coordinate plane diagrams, including: • a logical, but incomplete, progression of steps • minor calculation errors • partial justification of a conclusion	Constructs and communicates an incomplete response based on concrete referents provided in the prompt such as: diagrams, number line diagrams or coordinate plane diagrams, which may include: • a faulty approach based on a conjecture and/or stated assumptions • An illogical and Incomplete progression of steps • major calculation errors • partial justification of a conclusion	The student shows no work or justification.

Unit 4 Performance Task 2

How much is needed for redecoration

6.G.A.4 Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

Jason is planning to redecorate his bedroom. He measured the room and made this rough sketch.



He is planning to buy paint for the walls and ceiling.

a. Jason is planning to buy carpet for his floor. Does he need to find area or perimeter? Explain your reasoning. How much carpet will Jason need? Include the units.

b. He is planning to buy baseboard for around the bottom of the walls. Does he need to find area or perimeter? Explain your reasoning. How much baseboard will Jason need? Include the units.

c. He is also planning to paint the walls and ceiling. Does he need to find the area or perimeter? Explain your reason If a gallon of paint covers 350 square feet, how much paint does Jason need for the walls and ceiling? Show your work.

Solution

a. Jason will need to find the area in square feet/yard, because he needs to find out how much carpet is needed to cover the space on the floor. The room is 3 yards (9 feet) by 4 yards (12 feet), so 3 ´ 4 = 12 square yards of carpet are needed (108 square feet is also correct).

b. He will need to find the perimeter in feet, because the baseboard is needed for around the wall and perimeter will measure the distance around the wall. He will need (9 + 12) ´ 2 = 42 feet of baseboard (Some students may argue for less than 42 feet-say, 39 feet-because of the door opening not needing baseboard. This is a reasonable answer as well.)

c. Jason will need to find surface area of the walls and ceiling to find out how much space should be covered in paint. Two of the walls need 12 ´ 8 = 96 square feet of paint, two of the walls need 9 ´8 = 72 square feet of paint, and the ceiling needs 12 ´ 9 = 108 square feet of paint, so there is (96 ´2) + (72 ´2) + 108 = 444 square feet to cover.
This would require 444 ¸ 350 = about 1.27 gallons of paint, so you would need $1\frac{1}{2}$ or 2 gallons (if the paint came only in full gallons).

Unit 4 Performance Task 2 PLD Rubric

SOLUTION

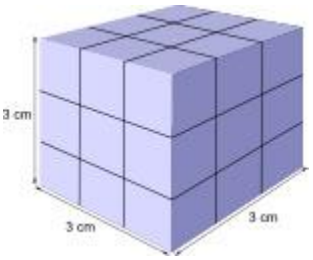
- **Student indicates area in units and explains the reason. Student mentions that 108 square feet of carpet is needed**
- **Student indicates perimeter in units and explains the reason. Student mentions that 42 feet of baseboard is needed to surround wall on floor.**
- **Student indicates all the areas (walls and ceiling) and explains the reason. Student indicates the space that needs to be covered with paint (444 square feet) and about 1.27 gallons (1 and ½ or 2 gallons) of paints needed**

Level 5: Distinguished Command	**Level 4: Strong Command**	**Level 3: Moderate Command**	**Level 2: Partial Command**	**Level 1: No Command**
Clearly constructs and communicates a complete response based on concrete referents provided in the prompt or constructed by the student such as diagrams that are connected to a written (symbolic) method, number line diagrams or coordinate plane diagrams, including: • a logical approach based on a conjecture and/or stated assumptions • a logical and complete progression of steps • complete justification of a conclusion with minor computational error	Clearly constructs and communicates a complete response based on concrete referents provided in the prompt or constructed by the student such as diagrams that are connected to a written (symbolic) method, number line diagrams or coordinate plane diagrams, including: • a logical approach based on a conjecture and/or stated assumptions • a logical and complete progression of steps • complete justification of a conclusionwith minor conceptual error	Constructs and communicates a complete response based on concrete referents provided in the prompt or constructed by the student such as diagrams that are connected to a written (symbolic) method, number line diagrams or coordinate plane diagrams, including: • a logical, but incomplete, progression of steps • minor calculation errors • partial justification of a conclusion	Constructs and communicates an incomplete response based on concrete referents provided in the prompt such as: diagrams, number line diagrams or coordinate plane diagrams, which may include: • a faulty approach based on a conjecture and/or stated assumptions • An illogical and Incomplete progression of steps • major calculation errors • partial justification of a conclusion	The student shows no work or justification.

Unit 4 Performance Task Option 1

Computing Volume (6.G.A.2)

a. Amy wants to build a cube with 3 cm sides using 1 cm cubes. How many cubes does she need?



b. How many 1 cm cubes would she need to build a cube with 6cm sides?

Unit 4 Performance Task Option 2

Polygon in the Coordinate plane (6.G.A.3)

- The vertices of eight polygons are given below. For each polygon:
- Plot the points in the coordinate plane connect the points in the order that they are listed.
- Color the shape the indicated color and identify the type of polygon it is.
- Find the area.

a) The first polygon is GREY and has these vertices:

(−7,4) (−8,5) (−8,6) (−7,7) (−5,7) (−5,5) (−7,4)

b) The second polygon is ORANGE and has these vertices:

(−2,−7) (−1,−4)(3,−1) (6,−7) (−2,−7)

c) The third polygon is GREEN and has these vertices:

(4,3) (3,3) (2,2) (2,1) (3,0) (4,0) (5,1) (5,2) (4,3)

d) The fourth polygon is BROWN and has these vertices:

(0,−10) (0,−8) (7,−10) (0,−10)

e) The fifth polygon is PURPLE and has these vertices:

(−8,−5) (−8,−8) (−5,−8) (−5,−5) (−8,−5)

f) The sixth polygon is PINK and has these vertices:

(9,−1) (6,1) (6,−3) (9,−1)

g) The seventh polygon is BLUE and has these vertices:

(−6,−4) (−6,1) (−9,1) (−9,−4) (−6,−4)

h) The eighth polygon is YELLOW and has these vertices:

(−5,1) (−3,−3) (−1,−2) (0,3) (−3,3) (−5,1)

XIII. Modifications

Special Education/ 504:	English Language Learners:
-Adhere to all modifications and health concerns stated in each IEP. -Give students a MENU options, allowing students to pick assignments from different levels based on difficulty. -Accommodate Instructional Strategies: reading aloud text, graphic organizers, one-on-one instruction, class website (Google Classroom), handouts, definition list with visuals, extended time -Allow students to demonstrate understanding of a problem by drawing the picture of the answer and then explaining the reasoning orally and/or writing , such as Read-Draw-Write -Provide breaks between tasks, use positive reinforcement, use proximity -Assure students have experiences that are on the Concrete- Pictorial- Abstract spectrum by using manipulatives -Implement supports for students with disabilities (click here) - Make use of strategies imbedded within lessons -Common Core Approach to Differentiate Instruction: Students with Disabilities (pg 17-18) - Strategies for students with 504 plans	- Use manipulatives to promote conceptual understanding and enhance vocabulary usage - Provide graphic representations, gestures, drawings, equations, realia, and pictures during all segments of instruction - During i-Ready lessons, click on “Español” to hear specific words in Spanish - Utilize graphic organizers which are concrete, pictorial ways of constructing knowledge and organizing information - Use sentence frames and questioning strategies so that students will explain their thinking/ process of how to solve word problems - Utilize program translations (if available) for L1/ L2 students - Reword questions in simpler language - Make use of the ELL Mathematical Language Routines (click here for additional information) -Scaffolding instruction for ELL Learners -Common Core Approach to Differentiate Instruction: Students with Disabilities (pg 16-17)
Gifted and Talented:	**Students at Risk for Failure:**
- Elevated contextual complexity - Inquiry based or open ended assignments and projects - More time to study concepts with greater depth - Promote the synthesis of concepts and making real world connections - Provide students with enrichment practice that are imbedded in the curriculum such as: ● Application / Conceptual Development ● Are you ready for more? - Provide opportunities for math competitions - Alternative instruction pathways available - Common Core Approach to Differentiate Instruction: Students with Disabilities (pg. 20)	- Assure students have experiences that are on the Concrete- Pictorial- Abstract spectrum - Modify Instructional Strategies, reading aloud text, graphic organizers, one-on-one instruction, class website (Google Classroom), inclusion of more visuals and manipulatives, Peer Support - Constant parental/ guardian contact - Provide academic contracts to students & guardians - Create an interactive notebook with samples, key vocabulary words, student goals/ objectives. - Plan to address students at risk in your learning tasks, instructions, and directions. Anticipate where the needs will be, then address them prior to lessons. -Common Core Approach to Differentiate Instruction: Students with Disabilities (pg 19)

21st Century Life and Career Skills:

Career Ready Practices describe the career-ready skills that all educators in all content areas should seek to develop in their students. They are practices that have been linked to increase college, career, and life success. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.
https://www.state.nj.us/education/cccs/2014/career/9.pdf

- **CRP1**. Act as a responsible and contributing citizen and employee.
- **CRP2**. Apply appropriate academic and technical skills.
- **CRP3**. Attend to personal health and financial well-being.
- **CRP4**. Communicate clearly and effectively and with reason.
- **CRP5**. Consider the environmental, social and economic impacts of decisions.
- **CRP6**. Demonstrate creativity and innovation.
- **CRP7**. Employ valid and reliable research strategies.
- **CRP8**. Utilize critical thinking to make sense of problems and persevere in solving them.
- **CRP9**. Model integrity, ethical leadership and effective management.
- **CRP10**. Plan education and career paths aligned to personal goals.
- **CRP11**. Use technology to enhance productivity.
- **CRP12**. Work productively in teams while using cultural global competence.

Students are given an opportunity to communicate with peers effectively, clearly, and with the use of technical language. They are encouraged to reason through experiences that promote critical thinking and emphasize the importance of perseverance. Students are exposed to various mediums of technology, such as digital learning, calculators, and educational websites.

Technology Standards:

All students will be prepared to meet the challenge of a dynamic global society in which they participate, contribute, achieve, and flourish through universal access to people, information, and ideas.
https://www.state.nj.us/education/cccs/2014/tech/

8.1 Educational Technology:	8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming:
All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.	All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.
A. **Technology Operations and Concepts:** Students demonstrate a sound understanding of technology concepts, systems and operations. B. **Creativity and Innovation:** Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology. C. **Communication and Collaboration:** Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. D. **Digital Citizenship:** Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. E. **Research and Information Fluency:** Students apply digital tools to gather, evaluate, and use of information. F. **Critical thinking, problem solving, and decision making:** Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.	A. **The Nature of Technology: Creativity and Innovation-** Technology systems impact every aspect of the world in which we live. B. **Technology and Society:** Knowledge and understanding of human, cultural, and societal values are fundamental when designing technological systems and products in the global society. C. **Design:** The design process is a systematic approach to solving problems. D. **Abilities in a Technological World:** The designed world in a product of a design process that provides the means to convert resources into products and systems. E. **Computational Thinking: Programming-** Computational thinking builds and enhances problem solving, allowing students to move beyond using knowledge to creating knowledge.

Interdisciplinary Connections:	
English Language Arts:	
L.6.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.
SL.6.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.
W.6.1	Write arguments to support claims with clear reasons and relevant evidence.

XIV. Core Instruction & Supplemental Resources

Core Instruction

MATH IN FOCUS v. 2015
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GRADE	TEACHER RESOURCES	STUDENT RESOURCES
2-5	• **Teacher Edition (A & B)** • Implementation Guide • Assessment Package • Enrichment Bundle • Extra Practice Guide • Transition Guides • Reteaching Guide • Home -to- School Connection Book • Online Teacher Technology Kit • Fact Fluency • Online Interactive Whiteboard Lessons	• Student Texts (A & B) • Student Workbooks • Online Student Technology Kit • Student Interactivities
6-7	• **Teacher Edition (A & B)** • Implementation Guide • Assessment Package • Enrichment Bundle • Extra Practice Guide • Transition Guides • Reteaching Guide • Home -to- School Connection Book • Online Teacher Technology Kit	• Student Texts (A & B) • Online Student Interactive Manipulatives

5 Practices for Orchestrating Productive Mathematics Discussions

Anticipate

Consider how students might mathematically interpret a problem, the array of strategies—both correct and incorrect—that they might use to tackle it, and how those strategies and interpretations might relate to the mathematical concepts, representations, procedures, and practices that you would like the students to learn.

- Solve the problem yourself first. If possible work with colleagues.
- Ask yourself the following questions:
  - What strategies have students used in the past?
  - What representations are students most likely to use?
  - What incorrect or unproductive strategies are students likely to try?
  - What things might get in the way of students being able to engage with the problem? How can you remove those barriers?
  - What questions will you ask those who struggle?

Monitor

Pay close attention to students' mathematical thinking and solution strategies as they work on the task.

- Create a list of strategies the students may produce.
- Circulate the room. Watch and listen to students as they work.
- If any students use strategies you anticipated, write their name or group number on your list.
- Ask questions that will help students make their thinking visible.
- Ask questions that will help students clarify their thinking.
- Press students to consider aspects of the task to which they need to attend.

Select

Select particular students to share their work with the rest of the class to get specific mathematics into the open for discussion. The selection of particular students and their solutions is guided by the previously anticipated strategies and your assessment of how each approach will contribute to that goal.

- Based on the previously anticipated strategies and the mathematical goal of the activity, decide which student strategies to highlight.
- Select students who will share their work with the class.

Sequence

Make purposeful choices about the order in which students' work is shared to maximize the chances of achieving the mathematical goals for the discussion.

- Based on the mathematical goal, decide on the purpose for the sequence of work. For example: least efficient to most efficient, concrete to abstract, misconceptions to conceptions, or building representations.
- Decide in which order students will present their work.

Connect

Help students draw connections between their solutions and other students' solutions as well as the key mathematical ideas in the lesson. Help students to make judgments about the consequences of different approaches for the range of problems that can be solved, one's likely accuracy and efficiency in solving them, and the kinds of mathematical patterns that can be most easily discerned. Know where you want the discussion to "land" and make choices that are likely to get you there. If necessary, you may have to demonstrate an approach that students didn't come up with themselves.

- As students share, ask questions to elicit and clarify student thinking.
- After each student shares, ask questions to connect it to previously shared work or ask a student to summarize what another student said in their own words.
- Ask students to compare and contrast strategies or representations during the discussion.
- If students did not come up with an approach that you need them to see in order for the discussion to "land," demonstrate this approach and connect it to the work that students did.

IDEAL MATH BLOCK

Whole Group Instruction	55min	INSTRUCTION (Grades 3 – 8) Daily Routine: Mathematical Content or Language Routine (7 – 10 min) Anchor Task: Anticipate, Monitor, Select, Sequence, Connect Tech Integration: Digital applets embedded within lessons designed to enhance student learning Collaborative Work* Guided Learning/Guided Practice Independent Work (Demonstration of Student Thinking) Additional Activities / Let's Practice		
Rotation Stations (Student Notebooks & Chromebooks Needed)	1-2X 30 min	STATION 1: Focus on current Grade Level Content STUDENT EXPLORATION* Independent or groups of 2-3 Emphasis on MP's 3, 6 (Reasoning and Precision) And MP's 1 & 4 (Problem Solving and Application) TOOLS/RESOURCES Practice Problems Extra Practice/Enrichment Are you ready for more? Put Your Thinking Cap On	STATION 2: Focus on Student Needs TECH STATION Independent TECH INTEGRATION iReady - *i-Ready* delivers online lessons driven by student data to provide tailored instruction that meets students where they are in their learning trajectory. Dreambox (ELL) – Adaptive online learning platform.	TEACHER STATION: Focus on Grade Level Content; heavily scaffolded to connect deficiencies TARGETED INSTRUCTION 4 – 5 Students TOOLS/ RESOURCES Homework Manipulatives Reteach Workbook Transition Guide *all students seen in 2 weeks
Closure	5 min	INSTRUCTION Exit Ticket (Demonstration of Student Thinking) TOOLS/RESOURCES Notebooks or Exit Ticket Slips		

* Promotes discourse and collaboration

Supplemental Resources

Achieve the Core

Tasks - https://achievethecore.org/category/416/mathematics-tasks

Coherence Map - https://achievethecore.org/page/1118/coherence-map

Embarc

https://embarc.online/

Engage NY

https://www.engageny.org/ccss-library/?f%5B0%5D=field_subject%253Aparents_all%3A13601

iReady Digital Platform

https://login.i-ready.com/

Math in Focus

https://my.hrw.com/

Illustrative Mathematics

Content Standard Tasks - https://tasks.illustrativemathematics.org/content-standards

Practice Standard Tasks - https://tasks.illustrativemathematics.org/practice-standards

Open Up Resources - https://access.openupresources.org/sign_in

iM Additional Resources - https://bit.ly/imshare

Khan Academy

https://www.khanacademy.org/math/illustrative-math

NJDOE Digital Item Library

https://nj.digitalitemlibrary.com/home?subject=Math

Ready Teacher Toolbox

https://teacher-toolbox.com/