Plainfield Public Schools
Mathematics
Unit Planning Organizer

Grade	Grade 6
Unit of Study	**Unit 2 Expression**
Pacing	7 weeks

Standards for Mathematical Practices
MP1. Make sense of problems and persevere in solving them. MP2. Reason abstractly and quantitatively. MP3. Construct viable arguments and critique the reasoning of others. MP4. Model with mathematics. MP5. Use appropriate tools strategically. MP6. Attend to precision. MP7. Look for and make use of structure. MP8. Look for and express regularity in repeated reasoning.

Hyperlinks are noted underlined in italics

6.EE.A.1 Write and evaluate numerical expressions involving whole-number exponents

6.EE.A.2.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

6.EE.A.2.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

6.EE.A.2.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 order when there are no parentheses to specify a particular order (Order of Operations). *For example, use the formulas V = s3 and A = 6 s2 to find the volume and surface area of a cube with sides of length s = ½*

6.EE.A.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*

6 .EE.A.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.*

6.EE.B.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.

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6.G.A.2 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. Apply the formulas V = l w h and V = B h to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.
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

Hyperlinks are noted underlined in italics

"Unwrapped" Skills (students need to be able to do)	"Unwrapped" Concepts (students need to know)	DOK Levels
FOCUS STANDARD: 6.EE.A.1Write and evaluate numerical expressions involving whole-number exponents		
Write evaluate	Number expressions exponents	2 1

"Unwrapped" Skills (students need to be able to do)	"Unwrapped" Concepts (students need to know)	DOK Levels
FOCUS STANDARD: 6.EE.A.2.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		
Write	expressions	2

"Unwrapped" Skills (students need to be able to do)	"Unwrapped" Concepts (students need to know)	DOK Levels
FOCUS STANDARD: 6.EE.A.2.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*		
Identify	Expression	1

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"Unwrapped" Skills (students need to be able to do)	"Unwrapped" Concepts (students need to know)	DOK Levels
FOCUS STANDARD: **6.EE.A.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***		
Apply	Equivalent expression	2

"Unwrapped" Skills (students need to be able to do)	"Unwrapped" Concepts (students need to know)	DOK Levels
FOCUS STANDARD: **6 .EE.A.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.***		
identify	equivalent	1

"Unwrapped" Skills (students need to be able to do)	"Unwrapped" Concepts (students need to know)	DOK Levels
FOCUS STANDARD: **6.EE.B.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.**		
Use Write	expressions	1 2

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"Unwrapped" Skills (students need to be able to do)	"Unwrapped" Concepts (students need to know)	DOK Levels
SUPPORTING STANDARD: **6.G.A.2 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. Apply the formulas V = (l)(w)(h) and V =(B)(h) to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.**		
Find Show Apply	Volume	1 1 2

"Unwrapped" Skills (students need to be able to do)	"Unwrapped" Concepts (students need to know)	DOK Levels
SUPPORTING STANDARD: **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.**		
Represent use	Net Surface Area	2

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II .Mathematical Standards and Practices Examples and Explanation

Expressions and Equations (EE)

Apply and extend previous understandings of arithmetic to algebraic expressions.

Standards	*Mathematical Practices*	*Explanations and Examples*
6.EE.A.1. Write and evaluate numerical expressions involving whole-number exponents.	*6.MP.2.* Reason abstractly and quantitatively.	**Examples:** • Write the following as a numerical expressions using exponential notation. o The area of a square with a side length of 8 m (Solution: $8^2 m^2$) o The volume of a cube with a side length of 5 ft.: (Solution: $5^3 ft^3 5^3 5^3$) o Yu-Lee has a pair of mice. The mice each have 2 babies. The babies grow up and have two babies of their own: (Solution: 2^3 mice) • Evaluate: o 4^3 (Solution: 64) o $5 + 2^4 \bullet 6$ (Solution: 101) o $7^2 - 24 \div 3 + 26$ (Solution: 67)
6.EE.A.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.*	*6.MP.1.* Make sense of problems and persevere in solving them. *6.MP.2.* Reason abstractly and quantitatively. *6.MP.3.* Construct viable arguments and critique the reasoning of others. *6.MP.4.* Model with	It is important for students to read algebraic expressions in a manner that reinforces that the variable represents a number. • r + 21 as "some number plus 21 as well as "r plus 21" • n · 6 as "some number times 6 as well as "n times 6" • $\frac{s}{6}$ and s ÷ 6 as "as some number divided by 6" as well as "s divided by 6" Students should identify the parts of an algebraic expression including variables, coefficients, constants, and the names of operations (sum, difference, product, and quotient). Development

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	mathematics. *6.MP.6*. Attend to precision.	of this common language helps students to understand the structure of expressions and explain their process for simplifying expressions.
6.EE.A.2. b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, and 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.* 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 order when there are no parentheses to specify a particular order (Order of Operations). *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.*		Terms are the parts of a sum. When the term is an explicit number, it is called a constant. When the term is a product of a number and a variable, the number is called the coefficient of the variable. Variables are letters that represent numbers. There are various possibilities for the numbers they can represent; students can substitute these possible numbers for the letters in the expression for various different purposes. Consider the following expression: $x^2 + 5y + 3x + 6$ The variables are x and y. There are 4 terms, x^2, 5y, 3x, and 6. There are 3 variable terms, x^2, 5y, 3x. They have coefficients of 1, 5, and 3 respectively. The coefficient of x^2 is 1, since $x^2 = 1\ x^2$. The term 5y represent 5 y's or 5 * y. There is one constant term, 6. The expression shows a sum of all four terms. Examples: ● 7 more than 3 times a number (Solution: $3x + 7$) ● 3 times the sum of a number and 5 (Solution: $3(x + 5)$ ● 7 less than the product of 2 and a number (Solution: $2x - 7$) ● Twice the difference between a number and 5 (Solution: $2(z - 5)$)

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		• Evaluate $5(n + 3) – 7n$, when $n = \frac{1}{2}$. • The expression c + 0.07c can be used to find the total cost of an item with 7% sales tax, where *c* is the pre-tax cost of the item. Use the expression to find the total cost of an item that cost $25. • The perimeter of a parallelogram is found using the formula $p = 2l + 2w$. What is the perimeter of a rectangular picture frame with dimensions of 8.5 inches by 11 inches.

6.EE.A.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.*	*6.MP.2.* Reason abstractly and quantitatively. *6.MP.3*. Construct viable arguments and critique the reasoning of others. *6.MP.4.* Model with mathematics. *6.MP.6.* Attend to precision. *6.MP.7.* Look for and make use of structure.	Students use their understanding of multiplication to interpret *3 (2 + x). For example,* *3 groups of (2 + x).* They use a model to represent x, and make an array to show the meaning of *3(2 + x).* They can explain why it makes sense that *3(2 + x)* is equal to *6 + 3x.* An array with 3 columns and *x* + 2 in each column:  Students interpret *y* as referring to one *y.* Thus, they can reason that one *y* plus one *y* plus one *y* must be *3y.* They also the distributive property, the multiplicative identity property of 1, and the commutative property for multiplication to prove that $y + y + y = 3y$: $y + y + y = y \times 1 + y \times 1 + y \times 1 = y \times (1 + 1 + 1) = y \times 3 = 3y$
6.EE.A.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*	*6.MP.2.* Reason abstractly and quantitatively. *6.MP.3.* Construct viable arguments and critique the reasoning of others. *6.MP.4.* Model with	Students connect their experiences with finding and identifying equivalent forms of whole numbers and can write expressions in various forms. Students generate equivalent expressions using the associative, commutative, and distributive properties. They can prove that the

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the same number regardless of which number y stands for.	mathematics. *6.MP.6.* Attend to precision. *6.MP.7.* Look for and make use of structure.	expressions are equivalent by simplifying each expression into the same form.

6. EE.A.4.		**Example:** ● Are the expressions equivalent? How do you know? *4m + 8* *4(m+2)* *3m + 8 + m* *2 + 2m + m + 6 + m* Solution:
6.EE.B.6. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem;	*6.MP.2.* Reason abstractly and quantitatively. *6.MP.4.* Model with	**Connecting writing expressions with story problems and/or drawing pictures will give students a context for this work. It is important for students to read algebraic expressions in a manner that reinforces that the variable represents a number.**

Expression	Simplifying the Expression	Explanation
4m + 8	*4m + 8*	Already in simplest form
4(m+2)	*4(m+2)* *4m + 8*	*Distributive property*
3m + 8 + m	*3m + 8 + m* *3m + m + 8* *(3m + m) + 8* *4m + 8*	*Combined like terms*
2 + 2m + m + 6 + m	*2 + 2m + m + 6 + m* *2 + 6 + 2m + m + m* *(2 + 6) + (2m + m + m)* *8 + 4m* *4m + 8*	*Combined like terms*

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understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	mathematics. *6.MP.7.* Look for and make use of structure.	Examples: ● Maria has three more than twice as many crayons as Elizabeth. Write an algebraic expression to represent the number of crayons that Maria has. (Solution: 2*c* + 3 where *c* represents the number of crayons that Elizabeth has.) ● An amusement park charges $28 to enter and $0.35 per ticket. Write an algebraic expression to represent the total amount spent. (Solution: 28 + 0.35*t* where *t* represents the number of tickets purchased) ● Andrew has a summer job doing yard work. He is paid $15 per hour and a $20 bonus when he completes the yard. He was paid $85 for completing one yard. Write an equation to represent the amount of money he earned. (Solution: 15*h* + 20 = 85 where *h* is the number of hours worked) ● Describe a problem situation that can be solved using the equation 2*c* + 3 = 15; where *c* represents the cost of an item ● Bill earned $5.00 mowing the lawn on Saturday. He earned more money on Sunday. Write an expression that shows the amount of money Bill has earned. (Solution: $5.00 + *n)*

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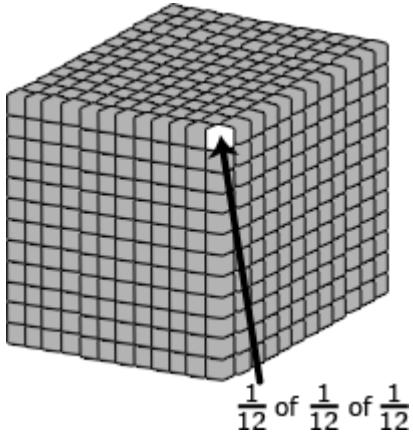
Geometry (G)

Solve real-world and mathematical problems involving area, surface area, and volume.

Standards	*Practices*	*Explanation and examples*
6.G.A.2. 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. Apply the formulas $V = l\ w\ h$ and $V = B\ h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.	*6.MP.1.* Make sense of problems and persevere in solving them. *6.MP.2.* Reason abstractly and quantitatively. *6.MP.3.* Construct viable arguments and critique the reasoning of others. *6.MP.4.* Model with mathematics. *6.MP.5.* Use appropriate tools strategically. *6.MP.6.* Attend to precision. *6.MP.7.* Look for and make use of structure. *6.MP.8.* Look for and express regularity in repeated reasoning.	Students need multiple opportunities to measure volume by filling rectangular prisms with blocks and looking at the relationship between the total volume and the area of the base. Through these experiences, students derive the volume formula (volume equals the area of the base times the height). Students can explore the connection between filling a box with unit cubes and the volume formula using interactive applets such as the Cubes Tool on NCTM's Illuminations (http://illuminations.nctm.org/ActivityDetail.aspx?ID=6). In addition to filling boxes, students can draw diagrams to represent fractional side lengths, connecting with multiplication of fractions. This process is similar to composing and decomposing two dimensional shapes. **Examples:** • The model shows a cubic foot filled with cubic inches. The cubic inches can also be labeled as a fractional cubic unit with dimensions of $\frac{1}{12}$ ft^3.  *Continue on next page*

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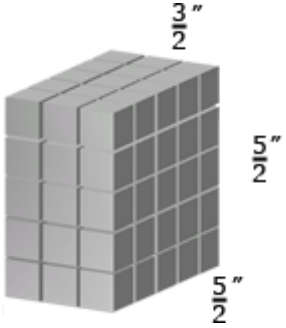
		• The models show a rectangular prism with dimensions 3/2 inches, 5/2 inches, and 5/2 inches. Each of the cubic units in the model is $\frac{1}{8}$ in^3. Students work with the model to illustrate 3/2 x 5/2 x 5/2 = (3 x 5 x 5) x 1/8. Students reason that a small cube has volume 1/8 because 8 of them fit in a unit cube. 
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.	*6.MP.1.* Make sense of problems and persevere in solving them. *6.MP.2.* Reason abstractly and quantitatively. *6.MP.3.* Construct viable arguments and critique the reasoning of others. *6.MP.4.* Model with mathematics. *6.MP.5.* Use appropriate tools strategically. *6.MP.6.* Attend to precision. *6.MP.7.* Look for and make use of structure.	Students construct models and nets of three dimensional figures, describing them by the number of edges, vertices, and faces. Solids include rectangular and triangular prisms. Students are expected to use the net to calculate the surface area. Students can create nets of 3D figures with specified dimensions using the Dynamic Paper Tool on NCTM's Illuminations (http://illuminations.nctm.org/ActivityDetail.aspx?ID=205). Students also describe the types of faces needed to create a three-dimensional figure. Students make and test conjectures by determining what is needed to create a specific three-dimensional figure. **Examples:**

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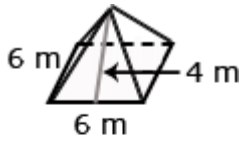
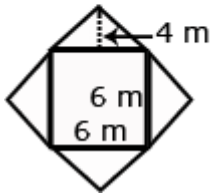
	6.MP.8. Look for and express regularity in repeated reasoning.	• Describe the shapes of the faces needed to construct a rectangular pyramid. Cut out the shapes and create a model. Did your faces work? Why or why not? • Create the net for a given prism or pyramid, and then use the net to calculate the surface area.  

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III. Essential Questions …… Corresponding Ideas

Essential Questions	Corresponding Big Ideas
What is the purpose of an equal sign? How do you recognize an expression?	An equal sign can indicate that two expressions are equivalent. The equal sign can be used in defining or giving a name to an expression of function rule
How can you determine if two or more expressions are equivalent?	Expressions are powerful tools for exploring, reasoning about, and representing situations.
How can you generate equivalent expressions?	Two or more expressions may be equivalent, even when their symbolic forms differ. A relatively small number of symbolic transformations can be applied to expressions to yield equivalent expressions.
What is a variable? How are variables used in expressions?	Variables have many different meaning, depending on context and purpose. Variables can be used to write expressions whose values are not known or vary under different circumstance Naming is not just about nomenclature: it draws attention to properties and objects of geometric interest. Definition can both generate and reflect structure: definitions are often dependent on a specific classification. Conjectures emerge out of a problem-posing process that generates claims that need to be justified.

Hyperlinks are noted underlined in italics

	Source: *Lloyd, G., Herbel-Eisenmann, B., & Star, J.R. (2011). Developing essential understanding of expressions, equations, and functions for teaching mathematics in grades 6-8. Reston, VA: The National Council of Teachers of Mathematics, Inc* *Sinclair, Nathalie. (2010). Developing essential understanding of Geometry teaching mathematics in grades 6-8 . Reston, VA: The National Council of Teachers of Mathematics, Inc.*

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IV. Student Learning Objectives

Student Learning Objective	Skills/Concepts	Instructional Clarification	Mathematical Practices
Write and evaluate numerical expressions involving whole number exponents. 6.E E.1	**Concept(s**): No new concept(s) introduced **Students are able to:** • Write numerical expressions (involving whole number exponents) from verbal descriptions. • Evaluate numerical expressions involving whole number exponents.	▪ Tasks involve of exponents. expressing b-fold products a · a · … · a in the form ab, where a and b are non-zero whole numbers. ▪ Tasks do not require use of the laws Tasks may involve simple fractions raised to small whole-number powers, e.g. (1/2)3, (2/3)2. ▪ Tasks may involve nonnegative decimals raised to whole-number powers. ▪ Tasks do not have a context	MP.2 MP.7
Use mathematical language to identify parts of an expression. Write and evaluate algebraic expressions involving exponents (include evaluating formulas 6.EE.2	**Concept(s)**: No new concept(s) introduced **Students are able to:** • Write algebraic expressions from verbal descriptions. • Use mathematical terms (sum, term, product, factor, quotient, coefficient) to identify the parts of an expression.	▪ Tasks do not have a context. ▪ Numerical values in these expressions may include whole numbers, fractions, and decimals.	MP.2 MP.7

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	• Evaluate algebraic expressions and formulas, including those involving exponents. • Properties of operations: distributive property, combining like terms		
Apply properties of operations (factor, distribute, and combine like terms) to generate equivalent expressions and to identify when two expressions are equivalent. 6.EE.A.3, 6.EE.A.4	**Concept(s)**: No new concept(s) introduced **Students are able to:** • Combine like terms to generate an equivalent expression. • Factor to generate an equivalent expression. • Multiply (apply the distributive property) to generate an equivalent expression.	▪ Tasks do not have a context. ▪ Tasks require writing or finding the equivalent ▪ Expression with the greatest common factor.	MP.2 MP.3 MP.6 MP.7

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Use variables to represent numbers and write expressions when solving real world or mathematical problems. 6.EE.B6	**Concept(s):** • A variable can represent an unknown number or any number in a set of numbers. **Students are able to:** • Write expressions for solving real-world problems.	▪ 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. ▪ 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.	MP.2 MP.3 MP.6 MP.7
Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes and show that the volume is the same as it would be if found by multiplying the edge lengths; apply volume formulas to right rectangular prisms with fractional edge lengths.6.G.A.2	**Concept(s):** No new concept(s) introduced **Students are able to:** • Pack a right rectangular prism with fractional edge lengths with unit fraction cubes. • Show that the volume found by packing is the same as would be found by multiplying the edge lengths of the prism. apply volume formulas, $V = l\ w\ h$ and $V = b\ h$, to right rectangular prisms with fractional edge lengths.	▪ Tasks do not have a context. ▪ Tasks require focusing on the connection between packing the solid figure and computing the volume.	MP.2 MP.3 MP.6 MP.7

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Represent three dimensional figures objects with nets made of rectangles and triangles, and use the nets to find the surface area of the figures in order to solve real world and mathematical problems.6.G.A.4	Concept(s): No new concept(s) introduced Students are able to: • Represent three dimensional objects with nets made up of rectangles and triangles. • Find surface area of three-dimensional objects using nets. • Solve real world and mathematical problems involving surface area using nets.		MP.2 MP.3 MP.6 MP.7

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V. Unit Vocabulary

Unit 3 Vocabulary Terms		
Exponent	Polygon	isosceles triangle
Factor	Quadrilateral	acute triangle
Power	Area	scalene triangle
based	Three dimensional	equivalent triangle
Squared	Prism	
Cubed	Volume	
Equation	Surface Area	
Equality	base	
Like terms	coordinates	
Variable	edge	
Expression	equilateral triangle	
Term	face	
Inequality	formula	
Inverse property		

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VI. Differentiation/Modifications Teaching Strategies

Research Based Effective Teaching Strategies	Modifications (how do I differentiate instruction?)	Special Education	Strategies for English Language Learners
Task /Activities that solidifies mathematical concepts Use questioning techniques to facilitate learning Reinforcing Effort, Providing Recognition Practice reinforce and connect to other ideas within mathematics Promotes linguistic and nonlinguistic representations Cooperative Learning Setting Objectives, Providing Feedback Varied opportunities for	**Modifications** Before or after school tutorial program Leveled rubrics Increased intervention Small groups Change in pace Calculators Extended time Alternative assessments Tiered activities/products Color coded notes Use of movements Use any form of technology *** Students act out algebraic expressions using technology or physical materials. Extension *Students write a skit, cartoon or story which character faced a real world problem for which*	Change in pace Calculators Alternative assessments Accommodations as per IEP Modifications as per IEP Use graphic organizer to clarify mathematical functions for students with processing and organizing difficulties'. Constant review of math concepts to strengthen understanding of prior concepts for difficulties recalling facts. Use self-regulations strategies for student to monitor and assess their thinking and performance for difficultly attending to task . Cooperative learning (small group, teaming, peer assisted tutoring) to foster	*Whiteboards* *Small Group / Triads* *Word Walls* *Partially Completed Solution* *Gestures* *Native Language Supports* *Pictures / Photos* *Partner Work* *Work Banks* *Teacher Modeling* *Math Journals* *See Connected Math Program Classroom Differentiating English Language Learners* ***Translate mathematical situations expressed as words into symbols and vice versa*

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students to communicate mathematically Use technological and /or physical tools	*they must solve an equation with variables on both side. Presentations should include problem, solution and strategy for solving* *See Connected Math Program 3 Classroom Differentiating the Gifted Students*	communication and strengthen confidence. Use technology and/or hands on devices to: clarify abstract concepts and process for: 1. Difficulty interpreting pictures and diagram. 2.Difficulties with oral communications 3. Difficulty correctly identifying symbols of numeral 4.Difficulty maintaining attentions Simplify and reduces strategies / Goal structure to enhance motivation, foster independence and self-direction for: 1.difficulty attending to task	**Create a vocabulary graphic organizer to learn how vocabulary words are related: Constant coefficient Term Like term

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21st Century Learning Skills : Teamwork and Collaboration Initiative and Leadership Curiosity and Imagination Innovation and Creativity Critical thinking and Problem Solving Flexibility and Adaptability Effective Oral and Written Communication Accessing and Analyzing Information		2. difficulty with following a sequence of steps to solution. 3.difficulty processing and organizing Scaffolding math idea/concepts guided practice and questioning strategies' to clarify and enhance understanding of math big ideas for: 1.Difficulty with process and organization 2.Difficulty with oral and written communication Teacher models strategies' and think out aloud strategies to specify step by step process for 1. Difficulties processing and organization 2. Difficulty attending to tasks.	

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		Use bold numbers and/or words to draw students' attention to important information. ***Create a vocabulary graphic organizer to learn how vocabulary words are related: (example)* *Constant coefficient* *Terms Like term* *Compare multiply integers to evaluating powers. Students explain how terms increase in each use.* *See Connected Math Program Classroom Differentiating for Special Education*	

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VII. Instructional Resources

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Extended responses
Checks for Understanding
Exit tickets
Teacher observation
Projects
Timed Practice Test – Multiple Choice & Open-Ended Questions

<u>Performance Tasks:</u>

<u>6.EE.A.4 Equivalent Expressions</u>

<u>6.G.A.2 Volumes With Fractional Edge Lengths</u>

Additional Writing Tasks for class use:

<u>6.EE.A.1 The Djinni's Offer</u>
<u>6.EE.A.2 Rectangle Perimeter 1</u>
<u>6.EE.A.4 Rectangle Perimeter 2</u></td><td colspan="2">Connected Math Program Grade 6 Unit :Covering and Surrounding
<u>Scope and Sequence for Covering and Surrounding</u></td></tr>
<tr><td colspan="2">Technology</td></tr>
<tr><td>Resources for teachers
*<u>NJ CORE</u>
<u>Connected Math Project (Michigan State University)</u>
<u>My Pearson Training : Connected Math Program</u>
<u>Annenberg Learning : Insight into Algebra 1</u>
<u>National Council of Teachers of Mathematics</u>
<u>Mathematics Assessment Projects</u>
<u>Achieve the Core</u>
<u>Illustrative Mathematics</u>
<u>Mathematics Assessment Projects</u>
<u>Get the Math</u>
<u>Webmath.com</u>
<u>sosmath.com</u>
<u>Mathplanet.com</u>
<u>Interactive Mathematics.com</u>
<u>Inside Mathmatics.org</u>
<u>Asia Pacific Economic Cooperation : :Lesson Study Videos</u></td><td>Resources for Students
<u>My Math Universe.com</u>
<u>Math is Fun website</u>
<u>Khan Academy</u>
<u>Figure This.org website</u>
<u>Virtual Nerd website</u>
<u>Math Snacks websites</u>

<u>Internet 4 Classroom website</u>
<u>A Maths Dictionary for kids</u></td></tr>
</table>

<u>Hyperlinks are noted underlined in italics</u>

6.G.A.4 Nets for Pyramids and Prisms **Project (optional)** *Teach 21 Problem Based Learning : Computer the Root of All Evil or the Essence of Our Being*	*Genderchip.org* *Interactive Geometry* *Mathematical Association of America* *learner.org* *Math Forum : Teacher Place* *Shmoop /common core math*	

Hyperlinks are noted underlined in italics

PPS Mathematics Curriculum Grade 6

Hyperlinks are noted underlined in italics

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