South Park School District	**Unit Plan**	**2018-2019**
Dates This unit consists of approximately 10 days of instruction, review, and assessment.	**Course/Grade**	7th Grade Math
Unit Expressions and Equations Unit 3 Part 1	**Teacher**	**Mrs. Radomski**

Essential Questions (Maximum 2):

How can we use expressions and equations to represent real-world situations?

Pennsylvania State Standards: (Mathematics)

M07.B-E.1.1.1 Apply properties of operations to add, subtract, factor, and expand linear expressions with rational coefficients.

M07.B-E.2.1.1 Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate.

M07.B-E.2.2.1 Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers.

M07.B-E.2.3.1 Determine the reasonableness of an answer(s), or interpret the solution(s) in the context of the problem.

Pennsylvania State Common Core Standards: **(Mathematics)**

2.2 Algebraic Concepts

CC.2.2.7.B.1 Apply properties of operations to generate equivalent expressions.

CC.2.2.7.B.3 Model and solve real- world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.

CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities and systems of equations/ inequalities algebraically and graphically.

Pennsylvania State Common Core Standards: (English Language Arts)

1.2 Reading Informational Text
Students read, understand, and respond to informational text—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with focus on textual evidence.

CC.1.2.7.A
Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text.

CC.1.2.7.B
Cite several pieces of textual evidence to support analysis of what the text says explicitly, as well as inferences, conclusions, and/or generalizations drawn from the text.

CC.1.2.7.F
Determine the meaning of words and phrases as they are used in grade-level reading and content, including interpretation of figurative, connotative, and technical meanings.

CC.1.2.7.J
Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

CC.1.2.7.K
Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade-level reading and content, choosing flexibly from a range of strategies and tools.

CC.1.2.7.L
Read and comprehend literary nonfiction and informational text on grade level, reading independently and proficiently.

1.3 Reading Literature
Students read and respond to works of literature—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with a focus on textual evidence.

CC.1.3.7.B
Cite several pieces of textual evidence to support analysis of what the text says explicitly, as well as inferences, conclusions, and/or generalizations drawn from the text.

CC.1.3.7.F
Determine the meaning of words and phrases as they are used in grade-level reading and content, including interpretation of figurative, connotative meanings.

CC.1.3.7.I
Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade-level reading and content, choosing flexibly from a range of strategies and tools.

1.4 Writing
Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

CC.1.4.7.A
Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information clearly.

CC.1.4.7.C
Develop and analyze the topic with relevant facts, definitions, concrete details, quotations, or other information and examples; include graphics and multimedia when useful to aiding comprehension.

CC.1.4.7.D
Organize ideas, concepts, and information using strategies such as definition, classification, comparison/contrast, and cause/effect; use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts; provide a concluding statement or section; include formatting when useful to aiding comprehension.

CC.1.4.7.F
Demonstrate a grade appropriate command of the conventions of Standard English grammar, usage, capitalization, punctuation, and spelling.

CC.1.4.7G
Write arguments to support claims.

CC.1.4.7.I
Acknowledge alternate or opposing claims and support claim with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic.

CC.1.4.7.J
Organize the claim(s) with clear reasons and evidence clearly; clarify relationships among claim(s) and reasons by using words, phrases, and clauses to create cohesion; provide a concluding statement or section that follows from and supports the argument presented.

CC.1.4.7.L
Demonstrate a grade appropriate command of the conventions of Standard English grammar, usage, capitalization, punctuation, and spelling.

1.5 Speaking and Listening
Students present appropriately in formal speaking situations, listen critically, and respond intelligently as individuals or in group discussions.

CC.1.5.7.A
Engage effectively in a range of collaborative discussions, on grade-level topics, texts, and issues, building on others' ideas and expressing their own clearly.

CC.1.5.7.D
Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.

CC.1.5.7.G
Demonstrate command of the conventions of Standard English when speaking based on Grade 7 level and content.

Skills

- Use Order of Operations to Simplify Numerical Expressions
- Identify Properties of Rational Numbers and Use Them to Simplify Numerical Expressions
- Simplify & Evaluate Algebraic Expressions
- Translate Words in Numbers, Variables, & Operations
- Determine Whether a Number is a Solution of an Equation
- Solve One-Step Equations by Using +, -, x, or ÷.
- Solve Two-Step Equations
- Solve Multi-Step Equations
- Solve Real World Problems Using Equations

Assessments

☒Tests   ☐Peer Evaluation
☒Quizzes   ☐Rubric Scoring
☒Worksheets   ☒Group Grade
☒Homework   ☐Other
☒Teacher Observation
☒Student Writing
☒Student Presentations
☐Student Projects
☒Student Written
    Response (reflection)

Resources

☒Textbook
Go Math Accelerated Grade 7 Workbook
Scholastic Math Magazine

☒Supplementary Materials
Materials listed on Unit Lesson Plans

☒Workbook/Worksheets

☒Teacher-prepared materials

☒Individual Title

☒Technology
Go Math Online Textbook
Chromebooks
Google Classroom
Khan Academy

☒Other
Modified homework and assessments:
Intervention and Enrichment worksheets to help reinforce difficult concepts presented or to engage in higher-level applications of concepts.

Special Education Adaptations/Modifications:
• Adapted/modified assignments and/or assessments for gifted / enriched students
• Follow IEP / 504 / GIEP / SDI accommodations as documented

Differentiated Instruction / SGI Activities:
• Critical thinking – Open-ended class discussion
• Cooperative learning
• Peer lead grouping
• Problem-solving activities

Reading & Writing:
• Non-fiction reading excerpts that include writing prompts and multiple choice questions – monthly Scholastic Math Magazines and unit related articles

Math 7
Mrs. Radomski
Unit 3 Part 1– Expressions and Equations (10 days)

Unit Order *Date*	**Lessons and *Objectives*** **Bell Ringer**	**Activities / Materials / Assessments / <u>Homework</u>**
1 of 10 *10/22/18*	Variables and Expressions *Students will be able to evaluate algebraic expressions.* **Warm-up Question:** What is the difference between an expression and an equation? {an equation has an equal sign}	▪ Pass back and go over the Unit 2 Part 2 Test ▪ Go over Order of Operations Notes ▪ Have the students complete the front of the Order of Operations WS and go over it as a class. ▪ Have each student do one of the problems on the back and go around the room for them to answer. This can be used by the students as an additional practice sheet. ▪ Go over the Variables and Expressions Notes ▪ Go over the Variables and Expressions Practice A WS together ▪ Have the students work on the Variables and Expressions Practice B WS with their partner and go over after they finish **HW: Complete the Variables and Expressions Problem Solving WS**
2 of 10 *10/23/18*	Combining Like Terms *Students will be able to combine like terms in an expression.* Distributing with a Positive Number and Factoring *Students will be able to demonstrate the distributive property with numbers and variables.* **Warm-up Question**: Which of the following is a constant and which is a variable: your age {variable} and the year you were born {constant}	▪ Check and go over the homework (Variables and Expressions Problem Solving WS) ▪ Go over the How Can Terms Be Combined? Notes ▪ Have the students work on the How Can Terms Be Combined WS and go over it when they finish ▪ Go over the How Does Grouping Affect An Expression? Notes ▪ Have the student work with their partners on the How Does Grouping Affect An Expression? WS and go over it when they finish **HW: Complete the Combining Like Terms and Distributive Property WS**
3 of 10 *10/24/18*	Distributing with a Negative Number and Factoring *Students will be able to demonstrate the distributive property with negative numbers and variables.* **Warm-up Question**: What does distribute mean? {to give out}	▪ Check and go over the homework (Combining Like Terms and Distributive Property WS) ▪ Go over the Perimeter Notes ▪ Go over the How Can You Distribute a Negative Number? Notes ▪ <mark>Have the students work in small groups on the Distributive Property WS</mark> ▪ Go over the answers when the students finish **HW: Complete the How Can You Distribute a Negative Number? WS**

4 of 10 *10/25/18*	Expressions Check Point *Students discuss and demonstrate understanding of previous lessons by working on a graded assessment.* **Warm-up Question:** Are there any questions before the check point? {Answers will vary}	▪ Check and go over the homework (How Can You Distribute a Negative Number? WS) ▪ Have the students play the Expanding Expressions with the Distributive Property Card Match Activity ▪ During the second period, have the students complete the Expressions Check Point ▪ When the students finish the check point, they should work on Khan Academy on their Chrome Books **HW: None**

5 of 10
 	
10/29/18
	Solving One-Step Equations Using All Four Operations
	Students will be able to evaluate one-step algebraic equations using the four operations.
	
	Warm-up Question: What everyday things "undo" each other? Explain.
		Regular Math Lesson
		
		▪ Pass back and go over the Expression Check Point
		▪ Go over the How Do You Solve A One-Step Equation? Notes
		▪ Have the students work on the More Practice with Solving One-Step Equations and Problem Solving WS
		▪ Go over the answers when the students finish
		▪ We will work through the One Step Equations WS with the whiteboards
		▪ When they are finished, they should work on How Do You Solve A One-Step Equation? WS
		
		HW: Complete How Do You Solve A One-Step Equation? WS
		<hr>Accelerated Math Lesson
		
		▪ Pass back and go over the **Expression Check Point**
		▪ Go over the **How Do You Solve A One-Step Equation? Notes**
		▪ Have the students work on the **More Practice with Solving One-Step Equations and Problem Solving WS**
		▪ Go over the **How Do You Solve A Two-Step Equation? Notes**
		▪ Small Group Instruction
		  o SGI Group 1: **"He Said, She Said" Two Step Equations Activity** to reinforce the concepts taught in this lesson (Partners)
		  o SGI Group 2: **Two Step Equations WS** to reinforce the concepts taught in this lesson (Teacher will work with this group)
		
		HW: None

6 of 10 *10/30/18*	Solving Two-Step Equations Using All Four Operations *Students will be able to evaluate two-step algebraic equations using the four operations.* **Warm-up Question:** List the operations and their inverses. {add and subtract… multiply and divide}	Regular Math Lesson ▪ Check and go over the homework (How Do You Solve A One-Step Equation? WS) ▪ Go over the How Do You Solve A Two-Step Equation? Notes ▪ Have the students work on the pg. 195 #6-17 (don't rip out) with their partners and go over the answers when they finish ▪ Small Group Instruction o SGI Group 1: "He Said, She Said" Two Step Equations Activity to reinforce the concepts

taught in this lesson (Partners)
- SGI Group 2: Two Step Equations WS to reinforce the concepts taught in this lesson (Teacher will work with this group)
- SGI Group 3: Algebra Meltdown Online Game (https://www.mangahigh.com/en-us/games/algebrameltdown) to reinforce the concepts taught in the last two lessons (Independent on Chrome Book)

HW: None

Accelerated Math Lesson

- Have the students take the **Mini-Quiz: One and Two Step Equations**
- When the students finish the quiz, they should work on **Khan Academy** on their **Chrome Books**
- Go over the **Can You Distribute In An Equation? Notes**
- Have the students work on the **Solving Equations with the Distributive Property Activity**
- When they finish, they should work on the **Can You Distribute In An Equation? WS**

HW: Complete the Can You Distribute In An Equation? WS

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7 of 10 10/31/18	Solving Multi-Step Equations Using All Four Operations *Students will be able to evaluate multi-step algebraic equations using the four operations.* **Warm-up Question:** Jessica is three inches shorter than her brother Sam. If Jessica is 44 inches tall, how tall is Sam? {47 inches}	Regular Math Lesson ▪ Have the students take the Mini-Quiz: One and Two Step Equations ▪ When the students finish the quiz, they should work on Khan Academy on their Chrome Books ▪ Go over the Can You Distribute In An Equation? Notes ▪ Have the students work on the Solving Equations with the Distributive Property Activity ▪ When they finish, they should work on the Can You Distribute In An Equation? WS **HW: Complete the Can You Distribute In An Equation? WS**

Accelerated Math Lesson

- Check and go over the homework (**Can You Distribute In An Equation? WS**)
- Go over the **How Do You Use Equations To Solve Problems? Notes**
- Have the students complete **pg. 195 #18-24** and go over the answers when they finish
- Have the students work on the **Writing Equations From Real World Problems Domino Activity**
- When they finish, they should work on the **How Do You Use Equations To Solve Problems? WS**

HW: Complete the How Do You Use Equations To Solve Problems? WS

8 of 10 *11/1/18*	Solving Real World Problems Using Equations *Students will be able to solve real-world problems using algebraic equations.* **Warm-up Question:** Solve -5.5x + 0.56 = -1.64 { x = 0.4 }	Regular Math Lesson ▪ Check and go over the homework (Can You Distribute In An Equation? WS) ▪ Go over the How Do You Use Equations To Solve Problems? Notes ▪ Have the students work on the Writing Equations From Real World Problems Domino Activity ▪ When they finish, they should work on the How Do You Use Equations To Solve Problems? WS **HW: Complete the How Do You Use Equations To Solve Problems? WS** Accelerated Math Lesson ▪ Check and go over the homework (**How Do You Use Equations To Solve Problems? WS**) ▪ Have the students work on the **Practice with Variables on Both Sides WS** ▪ Go over the **Multiplying Polynomials (FOIL) Notes** ▪ The class will play **Multiplying Polynomials BINGO** ▪ When we finish, have the students work on the **Multiplying Polynomials WS** **HW: Complete the Multiplying Polynomials WS**
9 of 10 *11/2/18*	Cumulative review of Unit 3 Part 1 objectives. *Students will be able to review the material covered in Unit 3 Part 1.* **Warm-up Question:** Factor 24a + 12b - 30 { 6(4a + 2b-5) }	▪ Check and go over the homework (How Do You Use Equations To Solve Problems? WS) ▪ Have the students complete the Expressions and Equations Task Card Review ▪ When they are finished, they should work on the Expressions and Equations Unit Review Sheet **HW: Complete the Expressions and Equations Unit Review Sheet and Study for the Unit 3 Part 1 Test tomorrow**
10 of 10 *11/5/18*	Unit 3 Part 1Test *Students are individually evaluated on their understanding of the objectives in Unit 3 Part 1.* **Warm-up Question:** Are there any questions before the test? {Answers will vary}	▪ Check and go over the homework (Expressions and Equations Unit Review Sheet) ▪ Give the students a final chance to ask any questions they have about the material that will be covered on the test ▪ Have the students complete the Unit 3 Part 1Test ▪ When they are finished, the students will complete their monthly Reading/Writing Assignment using the Scholastic Math Magazine ▪ When the students finish the assignment, they should work on Khan Academy on their Chrome Books **HW: None**