Grade 7 Mathematics - Semester 1			
Unit 1: Proportional Relationships: Conserve or Splurge?	**Unit 2: Percentages: Make Sense of Everyday Percentages**	**Unit 3: Integers: Analyze Environmental Challenges**	**Unit 4: Expressions and Equations: Problem Deconstruction**
3 weeks	3 Weeks	4 to 5 Weeks	5 weeks
			
Where are we wasting water? We start by digging into equivalent ratios and unit rates from 6th grade to build understanding of proportional reasoning. Our focus is to use tables, graphs, and equations to recognize and analyze proportional relationships. We then apply proportional relationships to analyze a problem about water usage.	***How do percentages rule the world?*** Next, we deepen our understanding of proportional relationships by modeling and connecting fractions, decimals, and percents. Get ready to apply your percentage skills to decode the math behind many daily realities like interest, tax, markups, gratuities, and more. Finally, tackle questions about the society in which we live by using what you've learned about increasing and decreasing by a percentage.	***How do we interpret and model climate issues using integers?*** Math can give insight into urgent issues by objectively looking at data trends. We circle back to our initial understanding of integers from 6th grade. We then deepen our understanding of integers by using a variety of strategies to add, subtract, multiply, and divide with negative numbers. Finally, we apply what we know about integers to make sense of a climate issue.	***How do we use equivalent expressions to simplify mathematical problems?*** We now focus on the analysis and deconstruction of the structure of math problems. Students make sense of verbal descriptions of situations and compare and contrast situations in similar contexts. We then build on our 6th grade foundation of one-step equations to solve multi-step equations. We use strategies such as combining, expanding, and factoring to explore the power of equivalent expressions in problem-based scenarios.
1. I can identify the constant of proportionality in tables, graphs, equations, diagrams, and verbal descriptions. **DOK 2** 2. I can plot proportional relationships on a graph **DOK 1** and interpret the meaning of the points. **DOK 2** 3. I can write equations to represent proportional relationships and explain what each part of the equation means in the context of the problem. **DOK 2** 4. I can explain my mathematical thinking using keywords including unit	1. I can convert fractions, decimals, and percents. **DOK 1** 2. I can solve problems involving percentages in contexts like interest, tax, markups, and gratuities. **DOK 2** 3. I can explain how fractions, decimals, and percents are related and used interchangeably. **DOK 2** 4. I can analyze how percentages affect daily financial decisions such as budgeting and saving. **DOK 3** 5. I can model real-world situations using proportional relationships involving fractions, decimals, and percents. **DOK 2**	1. I can add and subtract integers using a number line or rules for signs. **DOK 1** 2. I can multiply and divide integers, understanding the rules for positive and negative numbers. **DOK 1** 3. I can explain whether or not two numerical expressions have the same value. **DOK 2** 4. I can solve multi-step problems involving integers in contexts, support my reasoning with calculations, models, and the chosen strategy. **DOK 3** 5. I can analyze data trends using integers to interpret changes in a real-world context. **DOK 2** 6. I can model scenarios using positive and negative integers	1. I can define what equivalent expressions are and list strategies for simplifying mathematical expressions. **DOK 1** 2. I can simplify expressions by combining terms, distributing, and factoring. **DOK 1** 3. I can compare and contrast different mathematical situations using equivalent expressions. **DOK 2** 4. I can use visual representations to represent expressions, equations, and situations in context. **DOK 2** 5. I can identify strategies for solving equations based on the structure of the equation. **DOK 2**

rate, proportion, and constant of proportionality in the context of the problem. **DOK 2** 5. I can determine if situations are proportional from various representations, such as real-world contexts, graphs, equations, and tables. **DOK 2** 6. I can create mathematical models, including equations, tables, and graphs, that accurately represent proportional relationships. **DOK 2** 7. I can develop a mathematical argument to support the solution to a real-world problem applying proportional reasoning. **DOK 3**	6. I can solve multi-step problems involving percentages, and explain my reasoning with calculations, models, and the chosen strategy. **DOK 3**	to represent changes in a real-world context and evaluate the impact. **DOK 3**	6. I can solve multi-step equations by using strategies like combining and distributing and support my reasoning with calculations, models, and the chosen strategy **DOK 3** 7. I can write equations for complex situations, explaining my answer in context. **DOK 2** 8. I can evaluate the efficiency of different strategies for simplifying and solving equations. **DOK 3** 9. I can propose alternative approaches to mathematical problems using equivalent expressions. **DOK 2**
Standards of Math Practice: 1, 6, 7 ***PA Standards and Eligible Content:*** CC.2.1.7.D.1 - M07.A-R.1.1.1-5	***Standards of Math Practice:*** 1, 2, 8 ***PA Standards and Eligible Content:*** CC.2.1.7.D.1 - M07.A-R.1.1.6 CC.2.2.7.B.3 - M07.B-E.2.1.1	***Standards of Math Practice:*** 2, 3, 4 ***PA Standards and Eligible Content***: CC.2.1.7.E.1 - M07.A-N.1.1.1 - 3 CC.2.2.7.B.3 - M07.B-E.2.1.1	***Standards of Math Practice***: 1, 3, 7 ***PA Standards and Eligible Content:*** CC.2.2.7.B.1 - M07.B-E.1.1.1 CC.2.2.7.B.3 - M07.B-E.2.2.1

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