

TN Standards Major Work of the Grade:

- Operations with fractions
- Proportional Relationships
- Equivalent Expressions from properties
- Contextual problems involving equations and inequalities

Supporting:

- Geometrical figures
- Angle measure, area, surface area, volume
- Random sampling
- Compare two populations
- Probability
- Data Sets

The Standards for Mathematical Practice

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.

2nd Nine Weeks

TN Standards	Learning Outcomes	Instructional Focus	Content
Equations and Inequalities (Allow 5 weeks for instruction, review, and assessment)			
7.EE.B.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.	I can... Solve multi-step real world problems using whole numbers, fractions, and decimals. Convert between fractions, decimals, and percents in order to solve a	Students with a level 3 understanding of this standard will most likely be able to: Solve contextual problems leading to equations in the form $px + q = r$ or $p(x + q) = r$.	GO Math Lessons: Lesson 6.2 One-Step Equations with Rational Coefficients Lesson 6.3. Writing Two-Step Equations

<p>a. Solve contextual problems leading to equations of the form $px+q = r$ and $p(x+q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.</p> <p>b. Solve contextual problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality on a number line and interpret it in the context of the problem.</p>	<p>problem. For example: If a woman making \$25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or \$2.50, for a new salary of \$27.50.</p> <p>Apply reason to a solution to determine if my answer is Logical. Ex: : If a woman making \$25 an hour gets a 10% raise, what is her new salary? $25 \times .10 = 2.50$. Is that a logical new salary? No, you must add 2.50 to 25 to get the new salary.</p> <p>I can</p> <p>Solve a two-step equation using inverse operations and explain each step.</p> <p>Solve a multi-step equation and explain each step (distributive property or combine like terms before using inverse operations).</p> <p>Solve a two-step inequality and graph the solution on a number line.</p> <p>Solve a multi-step inequality and graph the solution on a number line.</p>	<p>Solve contextual problems leading to inequalities in the form $px + q > r$ or $px + q < r$.</p> <p>Graph the solution set for an inequality in the form $px + q > r$ or $px + q < r$ on a number line.</p> <p>Interpret the solution set for an inequality in the form $px + q > r$ or $px + q < r$ in the context of the problem.</p>	<p>Modify- Writing Equations with Distributive Property. EngageNY, Module 3, Topic B This lesson needs more practice including distributive property with writing verbal and algebraic expressions.</p> <p>Lesson 6.4 Solving Two-Step Equations Modify- Solving Two-Step Equations with Fractions and Decimals. EngageNY, Module 3, Topic B. This lesson needs problems solving Two-Step equations with fractions and decimals.</p> <p>Lesson 7.1 Writing and Solving One-Step Inequalities (p. 203) Lesson 7.2 Writing Two-Step Inequalities (p. 211) Lesson 7.3 Solving Two-Step Inequalities (p. 217)</p> <p>Engage NY Task: Module 3, Topic A, Topic B</p>
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	<p>Write an equation to model a situation, define the variable, and explain the solution within the context of the problem. EX: <i>the perimeter of a rectangle is 54cm. Its length is 6 cm. What is its width?</i></p>		<p>Use Properties of Operations to Generate Equivalent Expressions Solve Problems Using Expressions, Equations, and Inequalities</p>
<p>Proportional Relationships (Allow 4 weeks for instruction, review, and assessment)</p>			
<p>7.RP.A.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.</p>	<p>I can..... Write a ratio in three ways (ie, 2/3, 2:3, 2 to 3) and simplify, if appropriate, using the GCF. Compute unit rates with ratios of fractions Ex.: <i>if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2/1/4 miles per hour, equivalently 2 miles per hour</i></p>	<p>Students with a level 3 understanding of this standard will most likely be able to: Write ratios to model situations involving fractional quantities measured in like or different units and use the ratio to determine a unit rate.</p>	<p>GO Math Lesson: 4.1 Unit Rates Engage NY Task: Module 4, Topic A, Topic B, Topic C, Topic D Finding the Whole Percent Problems Including More than One Whole Scale Drawings</p>

	<p>Compute unit rates with ratios of lengths, areas, and other quantities</p> <p>Compute unit rates with ratios measured in like units</p> <p>Compute unit rates with ratios measured in unlike units</p>		<p>Population, Mixture, and Counting Problems Involving Percents</p>
<p>7.RP.A.2 Recognize and represent proportional relationships between quantities.</p> <p>a. Decide whether two quantities are in a proportional relationship, e.g, by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.</p> <p>b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</p> <p>c. Represent proportional relationships by equations.</p> <p>d. Explain what a point (x,y) on the graph of a proportional relationship</p>	<p>I can...</p> <p>Identify and write a proportion using a correct relationship and units.</p> <p>Determine whether two ratios are proportional – cross-multiply, reduce fractions, create decimals, etc.</p> <p>Solve proportions by using cross multiplication.</p> <p>Graph points on a table to determine if the result is a straight line through the origin.</p> <p>Identify the unit rate (constant of proportionality) from a table.</p> <p>Identify the unit rate (constant of proportionality) from a graph.</p>	<p>Students with a level 3 understanding of this standard will most likely be able to:</p> <p>Identify the constant of proportionality (unit rate) from a wide variety of representations of a proportional relationship.</p>	<p>GO Math Lessons:</p> <p>4.2 Constant Rate of Change Modify- Porportional Relationships <u>EngageNY, Module 1, Topic Overview.</u> This lesson needs proportional relationship application problems relating to vertical and horizontal tables as well as graphing proportional relationships.</p> <p>4.3 Proportional Relationships and Graphs- Modify Proportional Relationship Involving Constant Rate <u>EngageNY, Module 1, Topic B</u> This lesson needs additional practice on comparing/analyzing</p>

<p>means in terms of the situation, with special attention to the points (0,0) and (1,r) where r is the unit rate.</p>	<p>Identify the unit rate (constant of proportionality) from an equation.</p> <p>Represent a proportional relationship with an equation. Ex.: <i>if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as $t = pn$</i></p> <p>Identify equations in direct proportion (direct variation) $y = kx$ where k is the unit rate</p> <p>Explain in words what a specific point means on a graph demonstrating a proportional relationship in a context. Determine especially the meaning of the points (0,0) and (1,r) where r is the unit rate</p>		<p>proportional tables to proportional graphs.</p> <p>Use Engage NY Task: <u>Module 1, Topic A, Topic B, Topic C</u> <u>Proportional Relationships</u> <u>Unit Rate and the Constant of Proportionality</u> <u>Ratios and Rates Involving Fractions</u></p>
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<p>7.RP.A.3 Use proportional relationships to solve multistep ratio and percent problems. <i>Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.</i></p>	<p>I can..... Demonstrate that I can proficiently convert numbers from fraction to decimal to percent and back to fraction</p> <p>I can find the percent of a number by multiplication or a proportion. I can solve problems involving percents (ie., percent proportion)</p> <p>I can solve for simple interest ($I = PRT$) if given the principal, rate, and time in months.</p> <p>I can solve for tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.</p>	<p>Students with a level 3 understanding of this standard will most likely be able to:</p> <p>Solve multi-step ratio and percent problems.</p>	<p>GO Math Lesson:</p> <p>5.1 Percent Increase and Decrease Modify- Combine with Lesson 5.3, EngageNY, Module 4, Lesson 7 Standard 7.RP.A.3 is not fully addressed in this lesson</p> <p>5.2 Rewriting Percent Expression Modify- EngageNY, Module 4, Lesson 6. Standard 7.EE.A.2 is not fully addressed.</p> <p>5.3 Applications of Percent Modify- Combine with Lesson 5.3, EngageNY, Module 4, Lesson 7</p>
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7th Grade Math
Second Nine Weeks
2019-2020

Resource Toolbox:

<http://www.kutasoftware.com/free.html>

<http://illuminations.nctm.org/>

<http://cuacs8.mck.ncsu.edu/mathsampleitems/main.html>

http://www.ilovemath.org/index.php?option=com_docman

<http://www.math-aids.com>

<http://www.commoncoresheets.com>

<http://www.mathworksheetsland.com>