



CORE Assessment Module Module Overview

Content Area	Mathematics
Title	Speedy Texting
Grade Level	Grade 7
Problem Type	Performance Task
Standards for Mathematical Practice	<p>Mathematical Practice 2 (MP2): Reason abstractly and quantitatively. Mathematically proficient students:</p> <ul style="list-style-type: none"> • Make sense of quantities and their relationships in problem situations. • Bring two complementary abilities to bear on problems involving quantitative relationships: <ul style="list-style-type: none"> ○ Decontextualize—to abstract a given situation and represent it symbolically; and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents) and ○ Contextualize—to pause as needed during the manipulation process in order to probe into the referents for the symbols involved). • Use quantitative reasoning that entails creating a coherent representation of the problem at hand, considering the units involved, attending to the meaning of quantities (not just how to compute them), and knowing and flexibly using different properties of operations and objects. <p>Mathematical Practice 4 (MP4): Model with mathematics. Mathematically proficient students:</p> <ul style="list-style-type: none"> • Apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. <ul style="list-style-type: none"> ○ In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. ○ By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. • Make assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. • Identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. • Analyze those relationships mathematically to draw conclusions. <p>Interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.</p>
Common Core State Standards	<p>7.EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically.</p> <p>7.EE.4 Use variables to represent quantities in a real-world or mathematical</p>

	<p>problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p> <ul style="list-style-type: none"> • 7.EE.4a Solve word problems leading to equations of the form $px + q = r$, 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.
SBAC Assessment Claims	<p>Claim 1: Concepts and Procedures—Students can explain and apply mathematical concepts and interpret and carry out mathematical procedures with precision and fluency.</p> <p>Claim 3: Communicating Reasoning—Students can clearly and precisely construct viable arguments to support their own reasoning and to critique the reasoning of others.</p>
Task Overview	Students will write algebraic expressions, write and solve equations, and explain their sequence of operations used to solve each equation. Students will interpret the meaning of a variable in the context of a given real-life scenario and will write a real-life scenario given an equation.
Teacher Resource	<p>A U.S. teenager has scooped fifty thousand dollars in prize money at the national phone speed texting competition.</p> <p>http://www.youtube.com/watch?v=GvVbJwAWtes</p>
Module Components	<p>1) Scoring Guide</p> <p>2) Task</p>

Speedy Texting Scoring Guide

Description	Points	Total Points
Credit for specific aspects of performance should be given as follows:		
1. a. Student gives correct answer: $2\frac{1}{2}$ characters per second	1	4
b. Student gives correct answer: 3 characters per second	1	
c. Student gives correct answer: $3\frac{1}{2}$ characters per second	1	
d. Student gives the correct equation: $s = \frac{1}{2}m + 2$	1	
2. a. Student solves the equation $\frac{1}{2}m + 2 = 8$ using inverse operations (subtract 2 from both sides of the equation and multiply by 3, or divide by $\frac{1}{2}$ on both sides).	1	3
b. Student explanation should include:		
<ul style="list-style-type: none"> • subtract 2 or put the additive inverse of 2 on both sides of the equation • divide by $\frac{1}{2}$ or put the multiplicative inverse of $\frac{1}{2}$ on both sides of the equation 	1 1	
3. a. Student uses the correct steps to solve the equation $10r + 4 = 8$:		3
<ul style="list-style-type: none"> • Subtract 4 or put additive inverse of 4 on both sides • Divide by 10 or put multiplicative inverse of 10 on both sides • Correct answer of $r = \frac{4}{10}, \frac{2}{5},$ or 0.4 	1 1 1	
b. Student response should include that r represents the amount Lydia's texting speed must increase each month of practice	1	
4. Student response should include a real-life scenario that can appropriately model the given equation. For example: Molly needs to save \$37 to buy a new dress for the next school dance. Molly already has \$5 saved. If Molly can earn \$8 per hour babysitting, how long will it take Molly to save enough money to buy the dress?	1	1
TOTAL POINTS: (possible points = 12 points)		

Student Name _____

Lydia would also like to compete in the same speed texting competition as James. She currently texts at a rate of 4 characters per second, but will only have 10 months to practice before the competition.

3. a. If Lydia wants to text at least 8 characters per second, like James, then the equation $10r + 4 = 8$ could be used to model this situation. Solve this equation for r .

b. Explain what the variable r represents in the equation given in question 3a.

4. Consider the equation $8x + 5 = 37$. Write a real-life scenario that this equation could model.