



# Rigorous Curriculum Design

## Unit Planning Organizer

Subject:	Mathematics	Grade:	4
Unit Number:	5	Unit Name:	Measurement and Conversions
Unit Length	Days: 14 days	Mins / Day:	60
Unit Synopsis	In this unit students build a conceptual understanding of the relative size of units of measure within a single system of measurement. Measurement conversions are used to introduce multiplication as a comparison. Students will solve word problems involving measurement.		

	Math CCSS	Standards for Mathematical Practice	
Priority Standards	<p><b>4. MD.1</b> - Know relative sizes of measurement units within one system of units including km, m, cm; kg, g, lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...</p> <p><b>4.MD.2</b> - Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, <del>and money, including problems involving simple fractions or decimals</del>, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</p> <p><b>4.OA.3</b> - Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Make sense of problems and persevere in solving them</li> <li><input checked="" type="checkbox"/> Reason abstractly and quantitatively</li> <li><input type="checkbox"/> Construct viable arguments and critique the reasoning of others</li> <li><input type="checkbox"/> Model with mathematics</li> <li><input type="checkbox"/> Use appropriate tools strategically</li> <li><input checked="" type="checkbox"/> Attend to precision</li> <li><input checked="" type="checkbox"/> Look for and make use of structure</li> <li><input type="checkbox"/> Look for and express regularity in repeated reasoning</li> </ul>	
	Math CCSS	ELA CCSS	NG ELD Standards
	<p><b>4.OA.1</b> - Interpret a multiplication equation as a comparison, e.g., interpret <math>35 = 5 \times 7</math> as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.</p> <p><b>4.OA.5</b> - Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.</p> <p><b>4.NBT.1</b> - Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that <math>700 \div 70 = 10</math> by applying concepts of place value and division.</p> <p><b>4.NBT.4</b> - <del>Fluently</del> add and subtract multi-digit whole numbers using the standard algorithm.</p> <p><b>4.NBT.5</b> - Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> <p><b>4.NBT.6</b> - Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p>	<p><b>RI.4.7</b> Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.</p> <p><b>W.4.10</b> Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.</p> <p><b>SL.4.1.a-d</b> Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.</p> <p><b>SL.4.2</b> Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.</p> <p><b>SL.4.3</b> Identify the reasons and evidence a speaker provides to support particular points.</p> <p><b>L.4.4.a-c</b> Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 4 reading and content, choosing flexibly from a range of strategies.</p> <p><b>L.4.5.c</b> Demonstrate understanding of words by relating them to their opposites (antonyms) and to words with similar but not identical meanings (synonyms).</p> <p><b>L.4.6A</b> Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being (e.g., quizzed, whined, stammered) and that are basic to a particular topic (e.g., wildlife, conservation, and endangered when discussing animal preservation).</p>	<p><b>ELD.4.IB.6</b> (RI.4.1, RI.4.4, L.4.3) Reading closely literary and informational texts and viewing multimedia to determine how meaning is conveyed explicitly and implicitly through language.</p> <p><b>ELD.4.IB.7</b> (L.4.3, L.4.5.c) Listening actively to spoken English in a range of social and academic context.</p> <p><b>ELD.4.IA.2</b> (L.4.6) Interacting with others in writing language in various communicative forms (print, communicative technology, and multimedia).</p> <p><b>ELD.4.IC.10</b> (W.4.2.d, W.4.10) Writing literary and informational text to present, describe, and explain ideas and information, using appropriate technology.</p>

Interdisciplinary Standards	
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**Unwrapped Priority Standards**

Standard 1:	<b>4. MD.1</b> - Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...		
Skills	Concepts	Bloom's	DOK
Know	relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement,	1	1
Express	within a single system of measurement, express measurements in a larger unit in terms of a smaller unit.	2	1
Record	measurement equivalents in a two-column table. <ul style="list-style-type: none"> <li>For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...</li> </ul>	3	2

Standard 2:	<b>4.MD.2</b> - Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, <del>and money, including problems involving simple fractions or decimals</del> , and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.		
Skills	Concepts	Bloom's	DOK
Solve	Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, <del>and money, including problems involving simple fractions or decimals</del> , and problems that require expressing measurements given in a larger unit in terms of a smaller unit.	4	3
Represent	measurement quantities using diagrams such as number line diagrams that feature a measurement scale	3	2

Standard 3:	<b>4.OA.3</b> - Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.		
Skills	Concepts	Bloom's	DOK
Solve	multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted	4	3
Represent	Represent these problems using equations with a letter standing for the unknown quantity.	3	2
Assess	the reasonableness of answers using mental computation and estimation strategies including rounding.	5	3

**Learning Progressions**

Standard 1:		<b>OA.3</b> Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.			
Previous Grade 3OA.3,8		Current Grade		Next Grade 5NF.7C,5NBT.5-7	
Skills	Concepts	Skills	Concepts	Skills	Concepts
Use	multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. <sup>1</sup>	Solve	multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	Solve	real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share $\frac{1}{2}$ lb of chocolate equally? How many $\frac{1}{3}$ -cup servings are in 2 cups of raisins?
Solve	two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. <sup>3</sup>				NBT 5-7?

Standard 2:		<b>MD.1</b> Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...			
Previous Grade 3MD.1		Current Grade		Next Grade 5MD1	
Skills	Concepts	Skills	Concepts	Skills	Concepts
Tell and write	time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.	Know	relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...	Convert	among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

Standard 3:		<b>MD 2</b> Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale			
Previous Grade 3MD.2		Current Grade		Next Grade 5MD.5a	
Skills	Concepts	Skills	Concepts	Skills	Concepts
Measure and estimate	liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). <sup>1</sup> Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. <sup>2</sup>	Use	the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale	Measure  Relate  Find	volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.  volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.  the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.

Big Idea(s)	Corresponding Essential Question(s)
<p><b>4. MD.1</b> – Measurement units can be expressed in various forms.</p> <p><b>4.MD.2</b> – The four mathematical operations can be used to solve words problems involving measurement.</p> <p><b>4.OA.3</b> – Multi-step word problems are solved using equations which could include a variable standing for an unknown quantity.</p> <p><b>4.OA.3</b> – The reasonableness of multi-step word problems can be assessed using mental computation and estimation.</p>	<p><b>4. MD.1</b> – How can you express measurement using smaller or larger units?</p> <p><b>4.MD.2</b> – How can you solve words problems involving distances, intervals of time, liquid volumes, masses of objects, money, and measurement conversions?</p> <p><b>4.OA.3</b> – How do you solve a multi-step word problem with an unknown variable?</p> <p><b>4.OA.3</b> – How do you assess the reasonableness of an answer in a multi-step word problem?</p>

Unit Vocabulary Words	
Academic Cross-Curricular Vocabulary (Tier 2)	Content/Domain Specific Vocabulary (Tier 3)
<ul style="list-style-type: none"> <li>Relative sizes</li> <li>Record</li> <li>Express</li> <li>Generate</li> <li>Represent</li> <li>Feature</li> <li>Solve</li> <li>Interpreted</li> <li>Assess</li> <li>Reasonableness</li> </ul>	<ul style="list-style-type: none"> <li>Measurement</li> <li>Units</li> <li>km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec, ft., in.</li> <li>Equivalents</li> <li>2-column table</li> <li>Length</li> <li>Conversion</li> <li>Operations</li> <li>Distance</li> <li>Intervals of time</li> <li>Liquid Volumes</li> <li>Masses</li> <li>Money</li> <li>Quantities</li> <li>Diagrams</li> <li>Number line</li> <li>Scale</li> <li>Multi-Step</li> <li>Remainders</li> <li>Mental Computation</li> <li>Estimation</li> <li>Rounding</li> </ul>

Resources for Vocabulary Development (Strategies, Routines and Activities)

21<sup>st</sup> Century Skills

- |   |  |
|---|--|
| <input type="checkbox"/> Creativity and Innovation<br><input checked="" type="checkbox"/> Critical Thinking and Problem Solving<br><input checked="" type="checkbox"/> Communication and Collaboration<br><input type="checkbox"/> Flexibility and Adaptability | <input type="checkbox"/> Initiative and Self-Direction<br><input type="checkbox"/> Social and Cross-Cultural Skills<br><input type="checkbox"/> Productivity and Accountability<br><input checked="" type="checkbox"/> Leadership and Responsibility |
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Costa & Kallick, 2008

Unit Assessments

Pre-Assessment

Pre-Assessment

Please see [www.alvordschools.org/cfa](http://www.alvordschools.org/cfa) for the most current ID numbers.

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Scoring Guides and Answer Keys

Embedded within EADMS

Embedded within EADMS

Engaging Scenario Overview (Situation, challenge, role, audience, product or performance)		
You are a 4 <sup>th</sup> grade student studying California missions. Your teacher has asked you to draw a to-scale blueprint of a mission’s layout to be judged at your school’s Social Studies Fair. At the end of Task 4, students will have produced a mission blueprint.		Suggested Length of Time: Days: 14 Days Mins/Day: 60
Engaging Learning Experiences Synopsis of Authentic Performance Tasks		
Authentic Performance Tasks	Description	Suggested Length of Time
<p align="center"><b>Task 1: Units of Time</b></p> <p><b>4. MD.1</b> - Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...</p> <p><b>4.MD.2</b> - Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</p> <p><b>4.OA.3</b> - Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</p> <p><b>Big Ideas:</b></p> <p><b>4. MD.1</b> – Measurement units can be expressed in various forms.</p> <p><b>4.MD.2</b> – The four mathematical operations can be used to solve words problems involving measurement.</p> <p><b>4.OA.3</b> – Multi-step word problems are solved using equations which could include a variable standing for an unknown quantity.</p> <p><b>4.OA.3</b> – The reasonableness of multi-step word problems can be assessed using mental computation and estimation.</p> <p><b>Essential Questions:</b></p> <p><b>4. MD.1</b> – How can you express measurement using smaller or larger units?</p> <p><b>4.MD.2</b> – How can you solve words problems involving distances, intervals of time, liquid volumes, masses of objects, money, and measurement conversions?</p> <p><b>4.OA.3</b> – How do you solve a multi-step word problem with an unknown variable?</p> <p><b>4.OA.3</b> – How do you assess the reasonableness of an answer in a multi-step word problem?</p>	<p>Your teacher has given you three weeks to complete your mission blueprint. In a table, convert the three weeks into days, hours, minutes and seconds.</p> <p>*Students should also have the ability to solve word problems using the four operations involving these concepts</p> <p><b>*Add more with elapsed time.</b></p>	<p>Days: 2-3 Days</p> <p>Mins/Day: 60</p>
<p align="center"><b>Task 2: Customary Measurement</b></p> <p><b>4. MD.1</b> - Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...</p> <p><b>4.MD.2</b> - Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</p> <p><b>4.OA.3</b> - Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</p> <p><b>Big Ideas:</b></p> <p><b>4. MD.1</b> – Measurement units can be expressed in various forms.</p> <p><b>4.MD.2</b> – The four mathematical operations can be used to solve words problems involving measurement.</p> <p><b>4.OA.3</b> – Multi-step word problems are solved using equations which could include a variable standing for an unknown quantity.</p>	<p>Your mission’s rectangular outside dimensions are 32 yards by 28 yards. In a table, convert these dimensions into feet and inches.</p> <p>Your mission has produced 43 pounds of potatoes, 67 pounds of corn, and 99 pounds of grapes. In a table, convert these measurements to ounces.</p> <p>Your mission’s water tank holds 8,480 cups of water. In a table, convert this into pints, quarts, and gallons.</p> <p>*Students should also have the ability to solve word problems using the four operations involving these</p>	<p>Days: 3-4 Days</p> <p>Mins/Day: 60</p>

<p><b>4.OA.3</b> – The reasonableness of multi-step word problems can be assessed using mental computation and estimation.</p> <p><b>Essential Questions:</b></p> <p><b>4. MD.1</b> – How can you express measurement using smaller or larger units?</p> <p><b>4.MD.2</b> – How can you solve words problems involving distances, intervals of time, liquid volumes, masses of objects, money, and measurement conversions?</p> <p><b>4.OA.3</b> – How do you solve a multi-step word problem with an unknown variable?</p> <p><b>4.OA.3</b> – How do you assess the reasonableness of an answer in a multi-step word problem?</p>	<p>concepts</p> <p><b>**Teachers should allow students to use a conversion table to aide with this task (see included conversion table in student booklet)</b></p>	
<p style="text-align: center;"><b>Task 3: Metric Measurement</b></p> <p><b>4. MD.1</b> - Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...</p> <p><b>4.MD.2</b> - Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</p> <p><b>4.OA.3</b> - Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</p> <p><b>Big Ideas:</b></p> <p><b>4. MD.1</b> – Measurement units can be expressed in various forms.</p> <p><b>4.MD.2</b> – The four mathematical operations can be used to solve words problems involving measurement.</p> <p><b>4.OA.3</b> – Multi-step word problems are solved using equations which could include a variable standing for an unknown quantity.</p> <p><b>4.OA.3</b> – The reasonableness of multi-step word problems can be assessed using mental computation and estimation.</p> <p><b>Essential Questions:</b></p> <p><b>4. MD.1</b> – How can you express measurement using smaller or larger units?</p> <p><b>4.MD.2</b> – How can you solve words problems involving distances, intervals of time, liquid volumes, masses of objects, money, and measurement conversions?</p> <p><b>4.OA.3</b> – How do you solve a multi-step word problem with an unknown variable?</p> <p><b>4.OA.3</b> – How do you assess the reasonableness of an answer in a multi-step word problem?</p>	<p>Each day, the mission workers had to walk 6 kilometers to get water and 8 kilometers to get their cattle from the field. Convert these units from kilometers into meters and centimeters.</p> <p>Your mission has produced 5,000 grams of wool, 7,000 grams of apples, and 9,000 grams of tallow. In a table, convert these measurements into kilograms and milligrams.</p> <p>The cows on your mission produce 400 liters of milk each day. In a table, convert this measurement into milliliters.</p> <p><b>*Students should also have the ability to solve word problems using the four operations involving these concepts</b></p> <p><b>**Teachers should allow students to use a conversion table to aide with this task (see included conversion table in student booklet)</b></p>	<p>Days: 3-4 Days</p> <p>Mins/Day: 60</p>
<p style="text-align: center;"><b>Task 4: Completing your Mission Blueprint</b></p> <p><b>4. MD.1</b> - Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...</p> <p><b>4.MD.2</b> - Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</p> <p><b>4.OA.3</b> - Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</p> <p><b>Big Ideas:</b></p> <p><b>4. MD.1</b> – Measurement units can be expressed in various forms.</p> <p><b>4.MD.2</b> – The four mathematical operations can be used to solve words problems involving measurement.</p> <p><b>4.OA.3</b> – Multi-step word problems are solved using equations which could include a variable standing for an unknown quantity.</p>	<p>Using graph/chart paper, students will draw a to-scale blueprint of a mission. Use 44 yards by 36 yards for the Mission’s outside dimensions, and 14 meters by 18 meters for the Mission’s courtyard dimensions. Show your conversions for each of these dimensions (yards to feet and inches) and (meters to centimeters). Students should also include at least 2 other features normally found at a mission, such as a church building, living quarters, animal pen, fountain, garden, etc. For any additional features included, students must also give the measurements of the feature and their conversions.</p>	<p>Days: 2-3 Days</p> <p>Mins/ Day: 60</p>

<p><b>4.OA.3</b> – The reasonableness of multi-step word problems can be assessed using mental computation and estimation.</p> <p><b>Essential Questions:</b></p> <p><b>4. MD.1</b> – How can you express measurement using smaller or larger units?</p> <p><b>4.MD.2</b> – How can you solve words problems involving distances, intervals of time, liquid volumes, masses of objects, money, and measurement conversions?</p> <p><b>4.OA.3</b> – How do you solve a multi-step word problem with an unknown variable?</p> <p><b>4.OA.3</b> – How do you assess the reasonableness of an answer in a multi-step word problem?</p>	<p><b>**Teachers should allow students to use a conversion table to aide with this task (see included conversion table in student booklet)</b></p>	
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**Authentic Performance Task 1**

Name:	Units of Time		Suggested Length	Days: 2-3 Days Mins/Day: 60
<b>Priority Standards</b>				
<b>CCSS Math</b>			<b>Standards for Mathematical Practice</b>	
<p><b>4. MD.1</b> - Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...</p>			<p><input checked="" type="checkbox"/> Make sense of problems and persevere in solving them</p> <p><input checked="" type="checkbox"/> Reason abstractly and quantitatively</p> <p><input checked="" type="checkbox"/> Construct viable arguments and critique the reasoning of others</p> <p><input checked="" type="checkbox"/> Model with mathematics</p> <p><input type="checkbox"/> Use appropriate tools strategically</p> <p><input checked="" type="checkbox"/> Attend to precision</p> <p><input type="checkbox"/> Look for and make use of structure</p> <p><input type="checkbox"/> Look for and express regularity in repeated reasoning</p>	
<b>Supporting Standards</b>				
<b>CCSS Math</b>			<b>CCSS ELA</b>	<b>NG ELD</b>
<p><b>4.OA.1</b> - Interpret a multiplication equation as a comparison, e.g., interpret <math>35 = 5 \times 7</math> as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.</p> <p><b>4.OA.5</b> - Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.</p> <p><b>4.NBT.1</b> - Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that <math>700 \div 70 = 10</math> by applying concepts of place value and division.</p> <p><b>4.NBT.4</b> - Fluently add and subtract multi-digit whole numbers using the standard algorithm.</p> <p><b>4.NBT.5</b> - Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> <p><b>4.NBT.6</b> - Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p>			<p><b>RI.4.4</b> Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.</p> <p><b>RI.4.7</b> Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.</p> <p><b>L.4.6</b> Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being (e.g., quizzed, whined, stammered) and that are basic to a particular topic (e.g., wildlife, conservation, and endangered when discussing animal preservation).</p>	<p><b>ELD.4.IB.6</b> (RI.4.1, RI.4.4, L.4.3) Reading closely literary and informational texts and viewing multimedia to determine how meaning is conveyed explicitly and implicitly through language.</p> <p><b>ELD.4.IB.7</b> (L.4.3, L.4.5.c) Listening actively to spoken English in a range of social and academic context.</p> <p><b>ELD.4.IC.10</b> (W.4.2.d, W.4.10) Writing literary and informational text to present, describe, and explain ideas and information, using appropriate technology.</p>
<b>Suggestions:</b>				<b>Bloom’s</b>
Teach units of measurement including: km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec.				2
Teach how to express these measurements within smaller and larger units and record in a two-column table to show conversions.				1
<b>Resources:</b>				<b>Scoring Rubric</b>
Engage New York				4 – Thorough
Common Core Georgia Performance Standards (CCGPS)				3 – Adequate
www.learnzillions.com				2 – Partial
www.commoncoresheets.com				1 – Minimal
4 <sup>th</sup> Grade Math Framework: <a href="http://www.cde.ca.gov/ci/ma/cf/documents/aug2013grade4.pdf">http://www.cde.ca.gov/ci/ma/cf/documents/aug2013grade4.pdf</a>				
Your teacher has given you three weeks to complete your mission blueprint. In a table, convert the three weeks into days, hours, minutes and seconds.				
*Students should also have the ability to solve word problems using the four operations involving these concepts				
**Teachers should allow students to use a conversion table to aide with this task ( <i>see included conversion table in student booklet</i> )				
<b>Instructional Strategies</b>				
<b>All Students</b>	<b>SWD</b>	<b>ELs</b>	<b>Enrichment</b>	
<ul style="list-style-type: none"> <li>Cooperative Grouping with assigned roles</li> <li>Study Buddy</li> <li>Think-Pair-Share</li> <li>Clear expectations and examples</li> <li>Addressing learning</li> </ul>	<ul style="list-style-type: none"> <li>Graphic organizers</li> <li>Differentiated instruction</li> <li>Repetition</li> <li>Manipulatives</li> <li>Modified curriculum</li> <li>Additional time</li> </ul>	<ul style="list-style-type: none"> <li>Graphic organizers</li> <li>Differentiated instruction</li> <li>Repetition</li> <li>Manipulatives</li> </ul>	<ul style="list-style-type: none"> <li>Cooperative Grouping with assigned roles.</li> <li>More challenging work above and beyond grade level.</li> <li>Tiered assignments.</li> </ul>	

modalities/Accommodating learning style preferences.	<a href="http://www.alvordusdrcd.org">www.alvordusdrcd.org</a>		
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**Authentic Performance Task 2**

Name:	Customary Measurement		Suggested Length	Days: 3-4 Days Mins/Day: 60	
Standards Addressed	Priority Standards				
	CCSS Math	Standards for Mathematical Practice			
	<p><b>4.MD.2</b> - Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, <del>including problems involving simple fractions or decimals</del>, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</p>	<input checked="" type="checkbox"/> Make sense of problems and persevere in solving them <input checked="" type="checkbox"/> Reason abstractly and quantitatively <input checked="" type="checkbox"/> Construct viable arguments and critique the reasoning of others <input checked="" type="checkbox"/> Model with mathematics <input type="checkbox"/> Use appropriate tools strategically <input checked="" type="checkbox"/> Attend to precision <input type="checkbox"/> Look for and make use of structure <input type="checkbox"/> Look for and express regularity in repeated reasoning			
	Supporting Standards				
CCSS Math	CCSS ELA	NG ELD			
<p><b>4.OA.1</b> - Interpret a multiplication equation as a comparison, e.g., interpret <math>35 = 5 \times 7</math> as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.</p> <p><b>4.OA.5</b> - Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.</p> <p><b>4.NBT.1</b> - Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that <math>700 \div 70 = 10</math> by applying concepts of place value and division.</p> <p><b>4.NBT.4</b> - Fluently add and subtract multi-digit whole numbers using the standard algorithm.</p> <p><b>4.NBT.5</b> - Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> <p><b>4.NBT.6</b> - Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p>	<p><b>RI.4.4</b> Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.</p> <p><b>RI.4.7</b> Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.</p> <p><b>L.4.6</b> Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being (e.g., quizzed, whined, stammered) and that are basic to a particular topic (e.g., wildlife, conservation, and endangered when discussing animal preservation).</p>	<p><b>ELD.4.I.B.6</b> (RI.4.1, RI.4.4, L.4.3) Reading closely literary and informational texts and viewing multimedia to determine how meaning is conveyed explicitly and implicitly through language.</p> <p><b>ELD.4.I.B.7</b> (L.4.3, L.4.5.c) Listening actively to spoken English in a range of social and academic context.</p> <p><b>ELD.4.I.A.2</b> (L.4.6) Interacting with others in writing language in various communicative forms (print, communicative technology, and multi-media).</p> <p><b>ELD.4.I.C.10</b> (W.4.2.d, W.4.10) Writing literary and informational text to present, describe, and explain ideas and information, using appropriate technology.</p>			
Teaching and Learning Progression	<b>Suggestions:</b>			Bloom's	DOK
	<p>Teach the four operations to solve word problems involving distances, time, volumes, mass, and money. Teach conversions of these measurements and represent them in diagrams such as number lines and/or scales.</p>			2	1
	<b>Resources:</b>			Scoring Rubric	
	<p>Engage New York            Common Core Georgia Performance Standards (CCGPS)  <a href="http://www.learnzillions.com">www.learnzillions.com</a>  <a href="http://www.commoncoresheets.com">www.commoncoresheets.com</a>            4<sup>th</sup> Grade Math Framework: <a href="http://www.cde.ca.gov/ci/ma/cf/documents/aug2013grade4.pdf">http://www.cde.ca.gov/ci/ma/cf/documents/aug2013grade4.pdf</a></p> <p>Your mission’s rectangular outside dimensions are 32 yards by 28 yards. In a table, convert these dimensions into feet and inches.</p> <p>Your mission has produced 43 pounds of potatoes, 67 pounds of corn, and 99 pounds of grapes. In a table, convert these measurements to ounces.</p> <p>Your mission’s water tank holds 8,480 cups of water. In a table, convert this into pints, quarts, and gallons.</p> <p>*Students should also have the ability to solve word problems using the four operations involving these concepts            **Teachers should allow students to use a conversion table to aide with this task (<i>see included conversion table in student booklet</i>)</p>			<p>4 – Thorough            3 – Adequate            2 – Partial            1 – Minimal</p>	
Instructional Strategies					

All Students	SWD	ELs	Enrichment
<ul style="list-style-type: none"> <li>• Cooperative Grouping with assigned roles</li> <li>• Study Buddy</li> <li>• Think-Pair-Share</li> <li>• Clear expectations and examples</li> <li>• Addressing learning modalities/Accommodating learning style preferences.</li> </ul>	<ul style="list-style-type: none"> <li>• Graphic organizers</li> <li>• Differentiated instruction</li> <li>• Repetition</li> <li>• Manipulatives</li> <li>• Modified curriculum</li> <li>• Additional time</li> </ul> <p><a href="http://www.alvordusdrdc.org">www.alvordusdrdc.org</a></p>	<ul style="list-style-type: none"> <li>• Graphic organizers</li> <li>• Differentiated instruction</li> <li>• Repetition</li> <li>• Manipulatives</li> </ul>	<ul style="list-style-type: none"> <li>• Cooperative Grouping with assigned roles.</li> <li>• More challenging work above and beyond grade level.</li> <li>• Tiered assignments.</li> </ul>

**Authentic Performance Task 3**

Name:	Metric Measurement		Suggested Length	Days: 3-4 Days Mins/Day: 60	
Standards Addressed	Priority Standards				
	CCSS Math	Standards for Mathematical Practice			
	<p><b>4.OA.3</b> - Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</p>	<p><input checked="" type="checkbox"/> Make sense of problems and persevere in solving them</p> <p><input checked="" type="checkbox"/> Reason abstractly and quantitatively</p> <p><input checked="" type="checkbox"/> Construct viable arguments and critique the reasoning of others</p> <p><input checked="" type="checkbox"/> Model with mathematics</p> <p><input type="checkbox"/> Use appropriate tools strategically</p> <p><input checked="" type="checkbox"/> Attend to precision</p> <p><input type="checkbox"/> Look for and make use of structure</p> <p><input type="checkbox"/> Look for and express regularity in repeated reasoning</p>			
	Supporting Standards				
CCSS Math	CCSS ELA	NG ELD			
<p><b>4.OA.1</b> - Interpret a multiplication equation as a comparison, e.g., interpret <math>35 = 5 \times 7</math> as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.</p> <p><b>4.OA.5</b> - Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.</p> <p><b>4.NBT.1</b> - Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that <math>700 \div 70 = 10</math> by applying concepts of place value and division.</p> <p><b>4.NBT.4</b> - Fluently add and subtract multi-digit whole numbers using the standard algorithm.</p> <p><b>4.NBT.5</b> - Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> <p><b>4.NBT.6</b> - Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p>	<p><b>RI.4.4</b> Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.</p> <p><b>RI.4.7</b> Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.</p> <p><b>SL.4.1.a-d</b> Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.</p> <p><b>SL.4.3</b> Identify the reasons and evidence a speaker provides to support particular points.</p> <p><b>L.4.6</b> Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being (e.g., quizzed, whined, stammered) and that are basic to a particular topic (e.g., wildlife, conservation, and endangered when discussing animal preservation).</p>	<p><b>ELD.4.IB.6</b> (RI.4.1, RI.4.4, L.4.3) Reading closely literary and informational texts and viewing multimedia to determine how meaning is conveyed explicitly and implicitly through language.</p> <p><b>ELD.4.IB.7</b> (L.4.3, L.4.5.c) Listening actively to spoken English in a range of social and academic context.</p> <p><b>ELD.4.IA.2</b> (L.4.6) Interacting with others in writing language in various communicative forms (print, communicative technology, and multi-media).</p> <p><b>ELD.4.IC.10</b> (W.4.2.d, W.4.10) Writing literary and informational text to present, describe, and explain ideas and information, using appropriate technology.</p> <p><b>ELD.4.IIA.1</b> (W.4.2.d) Understanding Text structure.</p> <p><b>ELD.4.IIA.2</b> (W.4.2.d) Understanding cohesion</p>			
Teaching and Learning Progression	<p style="text-align: center;"><b>Suggestions:</b></p> <p>Teach students to solve multistep word problems with whole numbers using the four operations and use a letter to stand for an unknown quantity. Teach students to use mental computation, estimation, and rounding.</p> <p style="text-align: center;"><b>Resources:</b></p> <p>Engage New York Common Core Georgia Performance Standards (CCGPS) www.learnzillions.com www.commoncoresheets.com 4<sup>th</sup> Grade Math Framework: <a href="http://www.cde.ca.gov/ci/ma/cf/documents/aug2013gradefour.pdf">http://www.cde.ca.gov/ci/ma/cf/documents/aug2013gradefour.pdf</a></p> <p>Each day, the mission workers had to walk 6 kilometers to get water and 8 kilometers to get their cattle from the field. Convert these units from kilometers into meters and centimeters.</p> <p>Your mission has produced 5,000 grams of wool, 7,000 grams of apples, and 9,000 grams of tallow. In a table, convert these measurements into kilograms and milligrams.</p> <p>The cows on your mission produce 400 liters of milk each day. In a table, convert this measurement into milliliters.</p>			Bloom's 2	DOK 1
Scoring Rubric					
				4 – Thorough 3 – Adequate 2 – Partial 1 – Minimal	

	<p>*Students should also have the ability to solve word problems using the four operations involving these concepts                  **Teachers should allow students to use a conversion table to aide with this task (<i>see included conversion table in student booklet</i>)</p>		
Instructional Strategies			
All Students	SWD	ELs	Enrichment
<ul style="list-style-type: none"> <li>• Cooperative Grouping with assigned roles</li> <li>• Study Buddy</li> <li>• Think-Pair-Share</li> <li>• Clear expectations and examples</li> <li>• Addressing learning modalities/Accommodating learning style preferences.</li> </ul>	<ul style="list-style-type: none"> <li>• Graphic organizers</li> <li>• Differentiated instruction</li> <li>• Repetition</li> <li>• Manipulatives</li> <li>• Modified curriculum</li> <li>• Additional time</li> </ul> <p><a href="http://www.alvordusdrdcd.org">www.alvordusdrdcd.org</a></p>	<ul style="list-style-type: none"> <li>• Graphic organizers</li> <li>• Differentiated instruction</li> <li>• Repetition</li> <li>• Manipulatives</li> </ul>	<ul style="list-style-type: none"> <li>• Cooperative Grouping with assigned roles.</li> <li>• More challenging work above and beyond grade level.</li> <li>• Tiered assignments.</li> </ul>

**Authentic Performance Task 4**

Name:	Completing your Mission		Suggested Length	Days: 2-3 Days Mins/Day: 60	
Standards Addressed	Priority Standards				
	CCSS Math		Standards for Mathematical Practice		
	<p><b>4. MD.1</b> - Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...</p> <p><b>4. MD.2</b> - Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, <del>including problems involving simple fractions or decimals</del>, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</p> <p><b>4.OA.3</b> - Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</p>		<input type="checkbox"/> Make sense of problems and persevere in solving them <input type="checkbox"/> Reason abstractly and quantitatively <input checked="" type="checkbox"/> Construct viable arguments and critique the reasoning of others <input type="checkbox"/> Model with mathematics <input type="checkbox"/> Use appropriate tools strategically <input checked="" type="checkbox"/> Attend to precision <input type="checkbox"/> Look for and make use of structure <input checked="" type="checkbox"/> Look for and express regularity in repeated reasoning		
	Supporting Standards				
CCSS Math		CCSS ELA		NG ELD	
<p><b>4.OA.1</b> - Interpret a multiplication equation as a comparison, e.g., interpret <math>35 = 5 \times 7</math> as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.</p> <p><b>4.OA.5</b> - Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.</p> <p><b>4.NBT.1</b> - Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that <math>700 \div 70 = 10</math> by applying concepts of place value and division.</p> <p><b>4.NBT.4</b> - Fluently add and subtract multi-digit whole numbers using the standard algorithm.</p> <p><b>4.NBT.5</b> - Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> <p><b>4.NBT.6</b> - Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p>		<p><b>RI.4.4</b> Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.</p> <p><b>RI.4.7</b> Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.</p> <p><b>SL.4.1.a-d</b> Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.</p> <p><b>SL.4.3</b> Identify the reasons and evidence a speaker provides to support particular points.</p> <p><b>L.4.6</b> Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being (e.g., quizzed, whined, stammered) and that are basic to a particular topic (e.g., wildlife, conservation, and endangered when discussing animal preservation).</p>		<p><b>ELD.4.I.B.6</b> (RI.4.1, RI.4.4, L.4.3) Reading closely literary and informational texts and viewing multimedia to determine how meaning is conveyed explicitly and implicitly through language.</p> <p><b>ELD.4.I.B.7</b> (L.4.3, L.4.5.c) Listening actively to spoken English in a range of social and academic context.</p> <p><b>ELD.4.I.A.2</b> (L.4.6) Interacting with others in writing language in various communicative forms (print, communicative technology, and multi-media).</p> <p><b>ELD.4.I.C.10</b> (W.4.2.d, W.4.10) Writing literary and informational text to present, describe, and explain ideas and information, using appropriate technology.</p> <p><b>ELD.4.II.A.1</b> (W.4.2.d) Understanding Text structure.</p> <p><b>ELD.4.II.A.2</b> (W.4.2.d) Understanding cohesion</p>	
Teaching and Learning Progression	<b>Suggestions:</b>			Bloom's	DOK
	Review units of measurement including: km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Review how to express these measurements within smaller and larger units and record in a two-column table to show conversions.			2	1
	Review the four operations to solve word problems involving distances, time, volumes, mass, and money. Teach conversions of these measurements and represent them in diagrams such as number lines and/or scales.			Scoring Rubric	
	Review how to solve multistep word problems with whole numbers using the four operations and use a letter to stand for an unknown quantity. Teach students to use mental computation, estimation, and rounding.			4 – Thorough 3 – Adequate 2 – Partial 1 – Minimal	
<b>Resources:</b>					
Engage New York					

	<p>Common Core Georgia Performance Standards (CCGPS)  <a href="http://www.learnzillions.com">www.learnzillions.com</a>  <a href="http://www.commoncoresheets.com">www.commoncoresheets.com</a>                      4<sup>th</sup> Grade Math Framework: <a href="http://www.cde.ca.gov/ci/ma/cf/documents/aug2013grade4.pdf">http://www.cde.ca.gov/ci/ma/cf/documents/aug2013grade4.pdf</a></p> <p>Using graph/chart paper, students will draw a to-scale blueprint of a mission. Use 44 yards by 36 yards for the Mission’s outside dimensions, and 14 meters by 18 meters for the Mission’s courtyard dimensions. Show your conversions for each of these dimensions (yards to feet and inches) and (meters to centimeters). Students should also include at least 2 other features normally found at a mission, such as a church building, living quarters, animal pen, fountain, garden, etc. For any additional features included, students must also give the measurements of the feature and their conversions.</p> <p><b>**Teachers should allow students to use a conversion table to aide with this task (see included conversion table in student booklet)</b></p>	
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Instructional Strategies			
All Students	SWD	ELs	Enrichment
<ul style="list-style-type: none"> <li>Cooperative Grouping with assigned roles</li> <li>Study Buddy</li> <li>Think-Pair-Share</li> <li>Clear expectations and examples</li> <li>Addressing learning modalities/Accommodating learning style preferences.</li> </ul>	<ul style="list-style-type: none"> <li>Graphic organizers</li> <li>Differentiated instruction</li> <li>Repetition</li> <li>Manipulatives</li> <li>Modified curriculum</li> <li>Additional time</li> </ul> <p><a href="http://www.alvordusdrd.org">www.alvordusdrd.org</a></p>	<ul style="list-style-type: none"> <li>Graphic organizers</li> <li>Differentiated instruction</li> <li>Repetition</li> <li>Manipulatives</li> </ul>	<ul style="list-style-type: none"> <li>Cooperative Grouping with assigned roles.</li> <li>More challenging work above and beyond grade level.</li> <li>Tiered assignments.</li> </ul>

**Engaging Scenario**

Detailed Description (situation, challenge, role, audience, product or performance)			
<p>Description: You are a 4<sup>th</sup> grade student studying California missions. Your teacher has asked you to draw a to-scale blueprint of a replica mission’s layout to be judged at your school’s Social Studies Fair. At the end of Task 4, students will have produced a mission blueprint to present to their principal.</p> <p>Using their to-scale blueprint of their replica mission, students will split into groups. They will decide on which replica mission to use. They will take the replica they voted to use and create a group mission replica. The courtyard must be included. Convert your original dimensions (yards) to feet and inches and (meters) to kilometers and centimeters. Students need to include other areas normally found at a mission as well, such as a church building, living quarters, animal pen, fountain, garden, etc., as long as it fits into their overall design keeping in mind the dimensions given. This group mission replica will be used to present to the class.</p>			
Instructional Strategies			
All Students	SWD	ELs	Enrichment
<ul style="list-style-type: none"> <li>Cooperative Grouping with assigned roles</li> <li>Study Buddy</li> <li>Think-Pair-Share</li> <li>Clear expectations and examples</li> <li>Addressing learning modalities/Accommodating learning style preferences.</li> </ul>	<ul style="list-style-type: none"> <li>Graphic organizers</li> <li>Differentiated instruction</li> <li>Repetition</li> <li>Manipulatives</li> <li>Modified curriculum</li> <li>Additional time</li> </ul> <p><a href="http://www.alvordusdrd.org">www.alvordusdrd.org</a></p>	<ul style="list-style-type: none"> <li>Graphic organizers</li> <li>Differentiated instruction</li> <li>Repetition</li> <li>Manipulatives</li> </ul>	<ul style="list-style-type: none"> <li>Cooperative Grouping with assigned roles.</li> <li>More challenging work above and beyond grade level.</li> <li>Tiered assignments.</li> </ul>