

**NUMBER SENSE AND OPERATIONS**  
**Measurement Topic: Number Sense and Number Systems**  
 Grade Five

**Evidence shows student has met or exceeded the learning target**

**Evidence shows misunderstanding, misconceptions, or omissions**

<b>4.0</b>	<b>In addition to score 3.0, in-depth inferences and applications that go beyond what was taught</b>
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
<b>Score 3.0</b>	<p><b>Student exhibits no major errors or omissions and demonstrates understanding by:</b></p> <ul style="list-style-type: none"> <li>• Reading, writing, comparing, ordering, and plotting integers, decimals, and fractions:           <ul style="list-style-type: none"> <li>○ Comparing, ordering, and plotting whole numbers (up to 1 billion), decimals (up to 5 places), and fractions (including improper fractions and mixed numbers)</li> <li>○ Representing, comparing, and ordering negative numbers by extending the number line and using familiar applications (e.g., temperature, owing money)</li> <li>○ Representing whole numbers (up to 1 billion) in expanded form (with and without exponents)</li> <li>○ Identifying and finding equivalent fractions (e.g., <math>\frac{4}{7} = \frac{8}{14} = \frac{20}{35}</math>)</li> <li>○ Expressing decimals as fractions and fractions as decimals</li> <li>○ Expressing percents as fractions and decimals</li> </ul> </li> <li>• Expressing fractions (including improper fractions and mixed numbers) in simplest terms</li> <li>• Explaining different interpretations of fractions (parts of a whole, parts of a set, division of whole numbers by whole numbers) and ratios (part-to-part, part-to-whole) using models and visual representations</li> <li>• Distinguishing between repeating and terminating decimals</li> <li>• Finding factors and multiples of whole numbers:           <ul style="list-style-type: none"> <li>○ Describing and identifying prime and composite numbers</li> <li>○ Determining the common factors and greatest common factor of whole numbers</li> <li>○ Determining multiples and the least common multiple of whole numbers</li> <li>○ Finding the prime factorization of whole numbers and expressing in exponential form</li> </ul> </li> <li>• Rounding whole numbers and decimals to a given place value</li> </ul>

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
<b>Score 2.0</b>	<p><b>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</b></p> <ul style="list-style-type: none"> <li>• Recognizing and recalling specific terminology such as:           <ul style="list-style-type: none"> <li>○ Prime factorization</li> <li>○ Ratio</li> <li>○ Terminating decimal</li> </ul> </li> <li>• Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as:           <ul style="list-style-type: none"> <li>○ Recognizing fractions that are equivalent</li> <li>○ <math>\frac{3}{4} = 0.75</math></li> <li>○ A fraction can represent division of whole numbers by whole numbers</li> <li>○ <math>1/9</math> results in a repeating decimal</li> <li>○ Recognizing various numbers as prime or composite</li> <li>○ 0.234742 rounded to the third decimal place is 0.235</li> </ul> </li> </ul>
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
<b>1.0</b>	<b>With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements</b>
0.5	With assistance, a partial understanding of some of score 2.0 elements but not score 3.0 elements

**NUMBER SENSE AND OPERATIONS**  
**Measurement Topic: Addition and Subtraction**  
 Grade Five

**Evidence shows student has met or exceeded the learning target**

**Evidence shows misunderstanding, misconceptions, or omissions**

4.0	<b>In addition to score 3.0, in-depth inferences and applications that go beyond what was taught</b>
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
<b>Score 3.0</b>	<b>Student exhibits no major errors or omissions and demonstrates understanding by:</b> <ul style="list-style-type: none"> <li>• Adding and subtracting whole numbers and decimals (to any place value)</li> <li>• Adding and subtracting integers using physical models, visual representations, and algorithms</li> <li>• Adding and subtracting fractions with like and unlike denominators</li> <li>• Adding and subtracting mixed numbers with like and unlike denominators using physical models, visual representations, and algorithms</li> </ul>

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
<b>Score 2.0</b>	<b>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</b> <ul style="list-style-type: none"> <li>• Recognizing and recalling specific terminology such as:           <ul style="list-style-type: none"> <li>○ Uncommon denominator</li> <li>○ Mixed number</li> </ul> </li> <li>• Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as:           <ul style="list-style-type: none"> <li>○ <math>12,000 + 100.75 = 12,100.75</math></li> <li>○ <math>-65 + 15 = -50</math></li> <li>○ <math>\frac{1}{2} + \frac{5}{8}</math>, the first step would be to multiply <math>\frac{1}{2}</math> by <math>\frac{4}{4}</math> to make the denominators in both fractions the same</li> <li>○ Writing fractions (including improper fractions and mixed numbers) using common denominators (e.g., given <math>\frac{2}{3}</math> and <math>\frac{4}{5}</math>, write as <math>\frac{10}{15}</math> and <math>\frac{12}{15}</math>)</li> </ul> </li> </ul>
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
1.0	<b>With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements</b>
0.5	With assistance, a partial understanding of some of score 2.0 elements but not score 3.0 elements

**NUMBER SENSE AND OPERATIONS**  
**Measurement Topic: Multiplication and Division**  
 Grade Five

**Evidence shows student has met or exceeded the learning target**

**Evidence shows misunderstanding, misconceptions, or omissions**

<b>4.0</b>	<b>In addition to score 3.0, in-depth inferences and applications that go beyond what was taught</b>
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
<b>Score 3.0</b>	<p><b>Student exhibits no major errors or omissions and demonstrates understanding by:</b></p> <ul style="list-style-type: none"> <li>• Applying divisibility rules to determine if a number is divisible by 2, 3, 4, 5, 6, 9, or 10</li> <li>• Multiplying whole numbers, decimals, fractions, and mixed numbers:           <ul style="list-style-type: none"> <li>○ Multiplying multi-digit whole numbers by 2- and 3-digit whole numbers</li> <li>○ Multiplying fractions by whole numbers, fractions, and mixed numbers</li> <li>○ Multiplying 1- and 2- digit whole numbers by decimals up to two decimal places</li> <li>○ Multiplying decimals up to two decimal places by decimals up to two decimal places using models and algorithms</li> </ul> </li> <li>• Dividing whole numbers, decimals, and fractions:           <ul style="list-style-type: none"> <li>○ Dividing multi-digit whole numbers by 2- and 3-digit whole numbers</li> <li>○ Dividing whole numbers by fractions using models and algorithms</li> <li>○ Dividing fractions by whole numbers</li> <li>○ Dividing 1- and 2-digit whole numbers by decimals up to two decimal places</li> <li>○ Dividing decimals by whole numbers</li> </ul> </li> </ul>

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
<b>Score 2.0</b>	<p><b>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</b></p> <ul style="list-style-type: none"> <li>• Recognizing and recalling specific terminology such as:           <ul style="list-style-type: none"> <li>○ Quotient</li> <li>○ Dividend</li> </ul> </li> <li>• Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as:           <ul style="list-style-type: none"> <li>○ Applying divisibility rules to determine if a number is divisible by 2, 5, or 10</li> <li>○ Multiplying and dividing decimals by 10s, 100s, and 1,000s (e.g., <math>.7 \div 100</math>)</li> <li>○ <math>220 \times 10 = 2,200</math></li> <li>○ <math>125 \div 25 = 5</math></li> </ul> </li> </ul>
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
<b>1.0</b>	<b>With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements</b>
0.5	With assistance, a partial understanding of some of score 2.0 elements but not score 3.0 elements

**NUMBER SENSE AND OPERATIONS**  
**Measurement Topic: Operations, Computations, and Estimation**  
 Grade Five

**Evidence shows student has met or exceeded the learning target**

**Evidence shows misunderstanding, misconceptions, or omissions**

<b>4.0</b>	<b>In addition to score 3.0, in-depth inferences and applications that go beyond what was taught</b>
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
<b>Score 3.0</b>	<p><b>Student exhibits no major errors or omissions and demonstrates understanding by:</b></p> <ul style="list-style-type: none"> <li>• Applying basic properties of real numbers (Identity, Inverse, Zero, Commutative, Associate, Distributive)</li> <li>• Applying algebraic order of operations to evaluate expression using parentheses</li> <li>• Calculating and estimating the percent of various numbers (e.g., 15% of 30)</li> <li>• Estimating sums and differences of fractions and decimals and products of whole numbers, decimals, fractions, and mixed numbers</li> <li>• Using mental arithmetic to add, subtract, multiply, and divide whole numbers</li> </ul>

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
<b>Score 2.0</b>	<p><b>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</b></p> <ul style="list-style-type: none"> <li>• Recognizing and recalling specific terminology such as:             <ul style="list-style-type: none"> <li>○ Percent</li> <li>○ Inverse Property</li> </ul> </li> <li>• Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as:             <ul style="list-style-type: none"> <li>○ In the following example <math>x + 7 + (-7) = 12 + (-7)</math>, the quantities in parentheses show how the additive inverse would be applied to solve for <math>x</math></li> <li>○ Using PMDAS the following example <math>8 \div 2 \times 3 + (10 - 5)</math> would be evaluated in the following sequence: step 1) <math>8 \div 2 \times 3 + (10 - 5)</math>, step 2) <math>8 \div 2 \times 3 + (10 - 5)</math>, step 3) <math>4 \times 3 + (10 - 5)</math>, step 4) <math>12 + 5</math></li> <li>○ Representing percents as part of a hundred</li> <li>○ <math>3,125 \times 25 = 78,125</math> using front end estimation without rounding would be: <math>3000 \times 20 = 60,000</math></li> <li>○ <math>20 \times 20 = 400</math></li> </ul> </li> </ul>
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
<b>1.0</b>	<b>With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements</b>
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**ALGEBRA AND FUNCTIONS**  
**Measurement Topic: Basic Patterns**  
 Grade Five

**Evidence shows student has met or exceeded the learning target**

**Evidence shows misunderstanding, misconceptions, or omissions**

<b>4.0</b>	<b>In addition to score 3.0, in-depth inferences and applications that go beyond what was taught</b>
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
<b>Score 3.0</b>	<b>Student exhibits no major errors or omissions and demonstrates understanding by:</b> <ul style="list-style-type: none"> <li>• Creating and describing numeric patterns (addition, subtraction, multiplication, division) using algebraic expressions, tables, and graphs</li> </ul>

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements												
<b>Score 2.0</b>	<b>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</b> <ul style="list-style-type: none"> <li>• Recognizing and recalling specific terminology such as:           <ul style="list-style-type: none"> <li>○ Algebraic expression</li> <li>○ Patterns</li> </ul> </li> <li>• Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as:           <ul style="list-style-type: none"> <li>○ the following table shows an increasing pattern using <math>4x</math></li> </ul> </li> </ul> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;"><math>x</math></td> <td style="text-align: center;"><math>4x</math></td> </tr> <tr> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">4</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">8</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">12</td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">16</td> </tr> </table>	$x$	$4x$	0	0	1	4	2	8	3	12	4	16
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**ALGEBRA AND FUNCTIONS**  
**Measurement Topic: Functions and Equations**  
 Grade Five

**Evidence shows student has met or exceeded the learning target**

**Evidence shows misunderstanding, misconceptions, or omissions**

<b>4.0</b>	<b>In addition to score 3.0, in-depth inferences and applications that go beyond what was taught</b>
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
<b>Score 3.0</b>	<b>Student exhibits no major errors or omissions and demonstrates understanding by:</b> <ul style="list-style-type: none"> <li>• Using letters to represent unknown quantities in equations, inequalities, and expressions</li> <li>• Modeling and using Addition and Subtraction Properties of Equality</li> <li>• Writing and evaluating simple algebraic expressions in one or two variables</li> <li>• Writing and solve equations containing whole numbers, fractions, and decimals (e.g., <math>\frac{1}{4} + x = \frac{7}{12}</math>, <math>.5 \div z = .25</math>)</li> </ul>

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
<b>Score 2.0</b>	<b>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</b> <ul style="list-style-type: none"> <li>• Recognizing and recalling specific terminology such as:           <ul style="list-style-type: none"> <li>○ Variable</li> <li>○ Equation</li> </ul> </li> <li>• Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as:           <ul style="list-style-type: none"> <li>○ In the expression <math>a + 6</math>, “<math>a</math>” represents a quantity that is not known</li> <li>○ The following example shows the Addition Property of Equality               <math display="block">x - 4 = 3</math> <math display="block">x - 4 + 4 = 3 + 4</math> <math display="block">x = 7</math> </li> <li>○ <math>2x + 3y</math>, solve for <math>x = 2</math> and <math>y = 4</math>; solution: <math>2(2) + 3(4) = 4 + 12 = 16</math></li> <li>○ <math>3x - 6 = 0</math>, solution: step 1) <math>3x - 6 + 6 = 0 + 6</math>; step 2) <math>3x(1/3) = 6(1/3)</math>; and step 3) <math>x = 2</math></li> </ul> </li> </ul>
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
<b>1.0</b>	<b>With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements</b>
0.5	With assistance, a partial understanding of some of score 2.0 elements but not score 3.0 elements

**ALGEBRA AND FUNCTIONS**  
**Measurement Topic: Algebraic Representations and Mathematical Models**  
 Grade Five

**Evidence shows student has met or exceeded the learning target**

**Evidence shows misunderstanding, misconceptions, or omissions**

<b>4.0</b>	<b>In addition to score 3.0, in-depth inferences and applications that go beyond what was taught</b>
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
<b>Score 3.0</b>	<b>Student exhibits no major errors or omissions and demonstrates understanding by:</b> <ul style="list-style-type: none"> <li>• Finding and graphing positive ordered pairs that fit a linear equation and drawing the line they determine</li> <li>• Graphing inequalities on the number line (e.g., <math>x &gt; 5</math>, <math>y \leq 2</math>)</li> </ul>

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
<b>Score 2.0</b>	<b>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</b> <ul style="list-style-type: none"> <li>• Recognizing and recalling specific terminology such as:           <ul style="list-style-type: none"> <li>○ Linear equation</li> <li>○ Inequality</li> </ul> </li> <li>• Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as:           <ul style="list-style-type: none"> <li>○ The points (3, 0) and (0, 6) fit the equation <math>y = 2x - 6</math></li> <li>○ The graph for <math>x &gt; 5</math> includes all numbers greater than 5 on the number line</li> </ul> </li> </ul>
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
<b>1.0</b>	<b>With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements</b>
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**GEOMETRY**  
**Measurement Topic: Lines, Angles, and Geometric Objects**  
 Grade Five

**Evidence shows student has met or exceeded the learning target**

**Evidence shows misunderstanding, misconceptions, or omissions**

<b>4.0</b>	<b>In addition to score 3.0, in-depth inferences and applications that go beyond what was taught</b>
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
<b>Score 3.0</b>	<p><b>Student exhibits no major errors or omissions and demonstrates understanding by:</b></p> <ul style="list-style-type: none"> <li>• Analyzing and classifying geometric figures:           <ul style="list-style-type: none"> <li>○ Identifying and classifying angles (right, acute, obtuse, straight)</li> <li>○ Classifying triangles and quadrilaterals (e.g., right triangle, equilateral triangle, parallelogram, square)</li> <li>○ Describing the relationships between parts of a circle (radius, diameter, chord, central angle)</li> <li>○ Analyzing three-dimensional figures based on their faces, edges, and vertices</li> </ul> </li> <li>• Solving problems involving angles:           <ul style="list-style-type: none"> <li>○ Finding the sum of interior angles for triangles and quadrilaterals</li> <li>○ Finding unknown angles when given two angles in a triangle</li> </ul> </li> </ul>

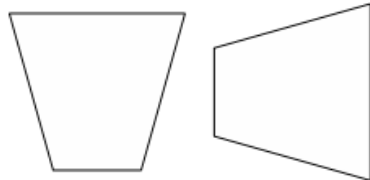
2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
<b>Score 2.0</b>	<p><b>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</b></p> <ul style="list-style-type: none"> <li>• Recognizing and recalling specific terminology such as:           <ul style="list-style-type: none"> <li>○ Interior angles</li> <li>○ Central angle</li> <li>○ Diameter</li> </ul> </li> <li>• Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as:           <ul style="list-style-type: none"> <li>○ The diameter of a circle is a chord going through the center of the circle</li> <li>○ The sum of the measure of the interior angles of a triangle is 180 degrees</li> </ul> </li> </ul>
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
<b>1.0</b>	<b>With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements</b>
0.5	With assistance, a partial understanding of some of score 2.0 elements but not score 3.0 elements

**GEOMETRY**  
**Measurement Topic: Transformations, Congruency, and Similarity**  
 Grade Five

**Evidence shows student has met or exceeded the learning target**

**Evidence shows misunderstanding, misconceptions, or omissions**

<b>4.0</b>	<b>In addition to score 3.0, in-depth inferences and applications that go beyond what was taught</b>
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
<b>Score 3.0</b>	<p><b>Student exhibits no major errors or omissions and demonstrates understanding by:</b></p> <ul style="list-style-type: none"> <li>• Analyzing and drawing similar shapes and relating similarity to ratios of corresponding sides</li> <li>• Determining whether a figure exhibits reflection or rotation symmetry and drawing lines of symmetry</li> <li>• Analyzing and predict transformations of figures:             <ul style="list-style-type: none"> <li>○ Analyzing and predicting transformations of two-dimensional figures (translation, reflection, rotation)</li> <li>○ Predicting what three-dimensional object will result from folding a two-dimensional pattern (net)</li> </ul> </li> <li>• Identifying congruent figures and justify decisions by referring to sides and angles</li> </ul>

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
<b>Score 2.0</b>	<p><b>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</b></p> <ul style="list-style-type: none"> <li>• Recognizing and recalling specific terminology such as:             <ul style="list-style-type: none"> <li>○ Reflection symmetry</li> <li>○ Net</li> <li>○ Congruent</li> </ul> </li> <li>• Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as:             <ul style="list-style-type: none"> <li>○ Identifying figures that are congruent</li> <li>○ One figure is a reflection of another if it is the mirror opposite of the first</li> <li>○ The first figure rotated 90° to the right would look like the second figure</li> </ul> </li> </ul> <div style="text-align: center;">  </div> <ul style="list-style-type: none"> <li>○ Identifying two congruent figures</li> </ul>
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
<b>1.0</b>	<b>With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements</b>
0.5	With assistance, a partial understanding of some of score 2.0 elements but not score 3.0 elements

**MEASUREMENT**  
**Measurement Topic: Measurement Systems**  
 Grade Five

**Evidence shows student has met or exceeded the learning target**

**Evidence shows misunderstanding, misconceptions, or omissions**

<b>4.0</b>	<b>In addition to score 3.0, in-depth inferences and applications that go beyond what was taught</b>
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
<b>Score 3.0</b>	<b>Student exhibits no major errors or omissions and demonstrates understanding by:</b> <ul style="list-style-type: none"> <li>• Converting within measurement systems (area, volume/capacity)</li> <li>• Selecting and applying appropriate units and tools to measure and estimate length, weight/mass, and capacity using U.S. customary and metric units</li> <li>• Reading and interpreting basic scale drawings</li> </ul>

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
<b>Score 2.0</b>	<b>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</b> <ul style="list-style-type: none"> <li>• Recognizing and recalling specific terminology such as:           <ul style="list-style-type: none"> <li>○ Scale drawing</li> <li>○ Scale factor</li> </ul> </li> <li>• Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as:           <ul style="list-style-type: none"> <li>○ 1 centimeter = 0.01 meter</li> <li>○ A room in a building is often measured in feet and inches</li> <li>○ The scale of a drawing is the ratio of the size of the drawing to the actual size of the object</li> </ul> </li> </ul>
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
<b>1.0</b>	<b>With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements</b>
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**MEASUREMENT**  
**Measurement Topic: Time, Temperature, and Money**  
 Grade Five

**Evidence shows student has met or exceeded the learning target**

**Evidence shows misunderstanding, misconceptions, or omissions**

<b>4.0</b>	<b>In addition to score 3.0, in-depth inferences and applications that go beyond what was taught</b>
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
<b>Score 3.0</b>	<b>Student exhibits no major errors or omissions and demonstrates understanding by:</b> <ul style="list-style-type: none"> <li>• Selecting and applying appropriate units and tools to measure and estimate time and temperature</li> <li>• Multiplying and dividing money in decimal notation</li> </ul>

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
<b>Score 2.0</b>	<b>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</b> <ul style="list-style-type: none"> <li>• Recognizing and recalling specific terminology such as:           <ul style="list-style-type: none"> <li>○ Celsius</li> <li>○ Fahrenheit</li> </ul> </li> <li>• Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as:           <ul style="list-style-type: none"> <li>○ An electronic digital thermometer is easier to read than a mercury-in-glass thermometer</li> <li>○ Solving simple multiplication and division problems with money in decimal notation</li> </ul> </li> </ul>
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
<b>1.0</b>	<b>With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements</b>
0.5	With assistance, a partial understanding of some of score 2.0 elements but not score 3.0 elements

**MEASUREMENT**  
**Measurement Topic: Perimeter, Area, and Volume**  
 Grade Five

**Evidence shows student has met or exceeded the learning target**

**Evidence shows misunderstanding, misconceptions, or omissions**

4.0	<b>In addition to score 3.0, in-depth inferences and applications that go beyond what was taught</b>
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
<b>Score 3.0</b>	<p><b>Student exhibits no major errors or omissions and demonstrates understanding by:</b></p> <ul style="list-style-type: none"> <li>• Finding and estimating the perimeter/circumference of circles, triangles, quadrilaterals, and regular polygons</li> <li>• Finding and estimating the area of triangles, rectangles, parallelograms, and trapezoids using models and formulas</li> <li>• Finding and estimating the volume of rectangular prisms using unit cubes and formulas</li> <li>• Finding and estimating the area of irregular polygons and the surface area of rectangular prisms using models and formulas</li> <li>• Analyzing characteristics of perimeter, area, surface area, and volume:             <ul style="list-style-type: none"> <li>○ Demonstrating that two figures may have the same perimeter but different areas</li> <li>○ Demonstrating that two figures may have the same area but different perimeters</li> <li>○ Explaining the difference between perimeter, area, surface area, and volume</li> </ul> </li> </ul>

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
<b>Score 2.0</b>	<p><b>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</b></p> <ul style="list-style-type: none"> <li>• Recognizing and recalling specific terminology such as:             <ul style="list-style-type: none"> <li>○ Area formula for quadrilaterals</li> <li>○ Volume formula for rectangular prisms</li> </ul> </li> <li>• Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as:             <ul style="list-style-type: none"> <li>○ The perimeter of a rectangle with top and bottom lengths of 8 cm and left and right widths of 3 cm would be <math>P = 2l + 2w = (2 \times 8) + (2 \times 3) = 16 + 6 = 22</math> cm</li> <li>○ The area of a triangle with a base length of 10 cm and height of 7 cm would be <math>A = (1/2)bh = 1/2 \times 10 \times 7 = 5 \times 7 = 35</math> cm<sup>2</sup></li> <li>○ The volume of a rectangular prism with a length of 10 cm, a width of 8 cm, and a height of 7 cm would be <math>V = lwh = 10 \times 8 \times 7 = 80 \times 7 = 560</math> cm<sup>3</sup></li> <li>○ Simple shapes can be used to find the area of complex shapes</li> <li>○ Two figures may have the same perimeter but different areas</li> </ul> </li> </ul>
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
1.0	<b>With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements</b>
0.5	With assistance, a partial understanding of some of score 2.0 elements but not score 3.0 elements

**DATA ANALYSIS AND PROBABILITY**  
**Measurement Topic: Data Organization and Interpretation**  
 Grade Five

**Evidence shows student has met or exceeded the learning target**

**Evidence shows misunderstanding, misconceptions, or omissions**

<b>4.0</b>	<b>In addition to score 3.0, in-depth inferences and applications that go beyond what was taught</b>
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
<b>Score 3.0</b>	<p><b>Student exhibits no major errors or omissions and demonstrates understanding by:</b></p> <ul style="list-style-type: none"> <li>• Collecting and organizing data from a variety of sources (e.g., observations, surveys, experiments, newspapers)</li> <li>• Constructing and interpreting simple circle graphs and histograms</li> <li>• Computing the mean, median, mode, and range of a set of data and explaining what each measure does and does not indicate about the set of data</li> <li>• Selecting and using appropriate graphs (line graph, bar graph, pictograph, line plot, stem-and-leaf plot, circle graph, histogram)</li> </ul>

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
<b>Score 2.0</b>	<p><b>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</b></p> <ul style="list-style-type: none"> <li>• Recognizing and recalling specific terminology such as:             <ul style="list-style-type: none"> <li>○ Circle graph</li> <li>○ Histogram</li> </ul> </li> <li>• Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as:             <ul style="list-style-type: none"> <li>○ Information about the sleep habits of students in class could be collected and organized into three types of sleeper: light, medium, and heavy</li> <li>○ A circle graph can show the percentage of students in class who prefer different types of pizza</li> <li>○ Mode would be most appropriate to determine the greatest frequency of responses for categorical data</li> <li>○ A line graph would not be suitable to show the percentage of students who prefer different types of movies</li> </ul> </li> </ul>
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
<b>1.0</b>	<b>With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements</b>
0.5	With assistance, a partial understanding of some of score 2.0 elements but not score 3.0 elements

# DATA ORGANIZATION AND PROBABILITY

## Measurement Topic: Probability

Grade Five

Evidence shows student has met or exceeded the learning target

Evidence shows misunderstanding, misconceptions, or omissions

<b>4.0</b>	<b>In addition to score 3.0, in-depth inferences and applications that go beyond what was taught</b>
<b>3.5</b>	In addition to score 3.0, in-depth inferences and applications with partial success
<b>Score 3.0</b>	<p><b>Student exhibits no major errors or omissions and demonstrates understanding by:</b></p> <ul style="list-style-type: none"> <li>• Determining and comparing experimental and theoretical probabilities of a simple experiment</li> <li>• Using tree diagrams to list and explaining all the possible outcomes of a given situation</li> <li>• Making predictions based on experimental and theoretical probabilities</li> </ul>

<b>2.5</b>	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements																												
<b>Score 2.0</b>	<p><b>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</b></p> <ul style="list-style-type: none"> <li>• Recognizing and recalling specific terminology such as:             <ul style="list-style-type: none"> <li>○ Theoretical probability</li> <li>○ Experimental probability</li> </ul> </li> <li>• Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as:             <ul style="list-style-type: none"> <li>○ Experimental probability is determined from conducting experiments or simulations</li> <li>○ The following example shows a tree diagram for counting the number of possible outcomes for tossing three coins</li> </ul> </li> </ul> <div style="text-align: center; margin: 10px 0;"> <table style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th style="padding: 0 10px;">First Coin</th> <th style="padding: 0 10px;">Second Coin</th> <th style="padding: 0 10px;">Third Coin</th> <th style="padding: 0 10px;">Outcomes</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td style="text-align: center;">H</td> <td style="text-align: center;">HHH</td> </tr> <tr> <td style="text-align: center;">H</td> <td style="text-align: center;">H</td> <td style="text-align: center;">T</td> <td style="text-align: center;">HHT HTH</td> </tr> <tr> <td></td> <td style="text-align: center;">T</td> <td style="text-align: center;">H</td> <td style="text-align: center;">HTT THT</td> </tr> <tr> <td></td> <td style="text-align: center;">T</td> <td style="text-align: center;">T</td> <td style="text-align: center;">THH TTH</td> </tr> <tr> <td style="text-align: center;">T</td> <td style="text-align: center;">H</td> <td style="text-align: center;">H</td> <td style="text-align: center;">THT TTH</td> </tr> <tr> <td></td> <td style="text-align: center;">T</td> <td style="text-align: center;">T</td> <td style="text-align: center;">TTT</td> </tr> </tbody> </table> </div> <ul style="list-style-type: none"> <li>○ Probability is the measure of how likely an event is</li> </ul>	First Coin	Second Coin	Third Coin	Outcomes			H	HHH	H	H	T	HHT HTH		T	H	HTT THT		T	T	THH TTH	T	H	H	THT TTH		T	T	TTT
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**PROBLEM SOLVING**  
**Measurement Topic: Strategies and Reasoning**  
 Grade Five

**Evidence shows student has met or exceeded the learning target**

**Evidence shows misunderstanding, misconceptions, or omissions**

<b>4.0</b>	<b>In addition to score 3.0, in-depth inferences and applications that go beyond what was taught</b>
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
<b>Score 3.0</b>	<p><b>Student exhibits no major errors or omissions and demonstrates understanding by:</b></p> <ul style="list-style-type: none"> <li>• Analyzing problems individually or as a group by identifying relationships, distinguishing relevant from irrelevant information, sequencing and prioritizing information, and observing patterns</li> <li>• Selecting and applying appropriate strategies to solve problems individually or as a group (e.g., modeling with pictures or manipulatives, breaking into simpler parts, solving a simpler problem, work backwards, trial and error)</li> <li>• Expressing solutions clearly and logically and determining whether an approximate or exact answer is appropriate:             <ul style="list-style-type: none"> <li>○ Expressing solutions clearly and logically, supporting with appropriate verbal and symbolic work (what you did and how you did it)</li> <li>○ Indicating the relative advantages of exact and approximate solutions to problems and giving answers to a specified degree of accuracy</li> </ul> </li> <li>• Analyzing basic problem solving methods:             <ul style="list-style-type: none"> <li>○ Evaluating the efficiency of different representations and solution methods of a problem, and describing the advantages and disadvantages of each</li> <li>○ Noting the method of finding the solution and showing a conceptual understanding of the method by solving similar problems</li> </ul> </li> </ul>

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
<b>Score 2.0</b>	<p><b>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</b></p> <ul style="list-style-type: none"> <li>• Recognizing and recalling specific terminology such as:             <ul style="list-style-type: none"> <li>○ Trial and error</li> <li>○ Working backwards</li> </ul> </li> <li>• Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as:             <ul style="list-style-type: none"> <li>○ Recognizing examples of relevant and irrelevant information</li> <li>○ Choosing examples of simpler problems to help solve more complex problems</li> <li>○ Recognizing examples of clear and logical examples</li> <li>○ Recognizing the method used to solve a given problem</li> </ul> </li> </ul>
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
<b>1.0</b>	<b>With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements</b>
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**PROBLEM SOLVING**  
**Measurement Topic: Validity of Results**  
 Grade Five

**Evidence shows student has met or exceeded the learning target**

**Evidence shows misunderstanding, misconceptions, or omissions**

<b>4.0</b>	<b>In addition to score 3.0, in-depth inferences and applications that go beyond what was taught</b>
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
<b>Score 3.0</b>	<b>Student exhibits no major errors or omissions and demonstrates understanding by:</b> <ul style="list-style-type: none"> <li>• Making precise calculations and evaluate the reasonableness of the solution in the context of the problem</li> <li>• Explaining and justifying the reasoning and strategies used to solve a problem (what you did and why you chose to do it that way)</li> </ul>

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
<b>Score 2.0</b>	<b>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</b> <ul style="list-style-type: none"> <li>• Recognizing and recalling specific terminology such as:           <ul style="list-style-type: none"> <li>○ Justify</li> <li>○ Precise</li> </ul> </li> <li>• Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as:           <ul style="list-style-type: none"> <li>○ Recognizing correct calculations and basic ways to check for validity</li> <li>○ Recognizing different ways to solve a problem</li> </ul> </li> </ul>
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
<b>1.0</b>	<b>With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements</b>
0.5	With assistance, a partial understanding of some of score 2.0 elements but not score 3.0 elements