

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

Evidence shows student has met or exceeded the learning target

Evidence shows misunderstanding, misconceptions, or omissions

4.0	In addition to score 3.0, in-depth inferences and applications that go beyond what was taught
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
Score 3.0	<p>Student exhibits no major errors or omissions and demonstrates understanding by:</p> <ul style="list-style-type: none"> • Reading, writing, comparing, ordering, and plotting integers, decimals, percents, and fractions: <ul style="list-style-type: none"> ○ Reading, writing, comparing, ordering, and plotting integers, decimals, and fractions (including improper fractions and mixed numbers) ○ Expressing fractions as terminating or repeating decimals ○ Converting between various fractions, decimals, and percents • Reading, writing, and comparing larger numbers written in scientific notation • Finding the prime factorization of whole number and expressing in exponential form • Demonstrating concepts of ratio, proportion, and percent: <ul style="list-style-type: none"> ○ Interpreting and using the appropriate notation ($\frac{a}{b}$, a to b, $a:b$) for ratios to show the relative size of two quantities ○ Finding equivalent ratios by scaling up or down and expressing as a proportion ○ Explaining, modeling, and relating the concepts of ratio, proportion, and percent (including percents less than 1 and greater than 100)

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
Score 2.0	<p>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</p> <ul style="list-style-type: none"> • Recognizing and recalling specific terminology such as: <ul style="list-style-type: none"> ○ Exponent ○ Proportion ○ Scientific notation • Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as: <ul style="list-style-type: none"> ○ $7/20 = 0.35$ ○ 275,000 written in scientific notation is 2.75×10^5 ○ $2 * 3 * 5$ is the prime factorization of 30 ○ A ratio can be written three different ways: $a:b$, a to b, a/b
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
1.0	With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements
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 Six

Evidence shows student has met or exceeded the learning target

Evidence shows misunderstanding, misconceptions, or omissions

4.0	In addition to score 3.0, in-depth inferences and applications that go beyond what was taught
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
Score 3.0	Student exhibits no major errors or omissions and demonstrates understanding by: <ul style="list-style-type: none"> • Adding and subtracting integers, fractions, and decimals • Adding and subtracting mixed numbers with unlike denominators

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
Score 2.0	Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as: <ul style="list-style-type: none"> • Recognizing and recalling specific terminology such as: <ul style="list-style-type: none"> ○ Mixed number • Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as: <ul style="list-style-type: none"> ○ Adding and subtracting whole numbers ○ Adding and subtracting integers with like denominators
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
1.0	With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements
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 Six

Evidence shows student has met or exceeded the learning target

Evidence shows misunderstanding, misconceptions, or omissions

4.0	In addition to score 3.0, in-depth inferences and applications that go beyond what was taught
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
Score 3.0	Student exhibits no major errors or omissions and demonstrates understanding by: <ul style="list-style-type: none"> • Multiplying integers, decimals, fractions, and mixed numbers (including decimals by decimals and whole numbers) • Dividing integers, decimals, fractions, and mixed numbers (including decimals by decimals and whole numbers, whole numbers by fractions and mixed numbers)

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
Score 2.0	Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as: <ul style="list-style-type: none"> • Recognizing and recalling specific terminology such as: <ul style="list-style-type: none"> ○ Quotient ○ Dividend • Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as: <ul style="list-style-type: none"> ○ $0.25 \times 0.5 = 0.125$ ○ $0.5 \div 2 = 0.25$
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
1.0	With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements
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 Six

Evidence shows student has met or exceeded the learning target

Evidence shows misunderstanding, misconceptions, or omissions

4.0	In addition to score 3.0, in-depth inferences and applications that go beyond what was taught
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
Score 3.0	<p>Student exhibits no major errors or omissions and demonstrates understanding by:</p> <ul style="list-style-type: none"> • Applying the algebraic order of operations (including the use of exponents) and properties of real numbers (Identity, Inverse, Zero, Commutative, Associative, Distributive) to simplify expressions and perform computations • Performing computations involving percents, proportions, and absolute values: <ul style="list-style-type: none"> ○ Describing how to find a specific percent of a number ○ Using percents to solve problems (simple interest, discounts, markups, sales tax, tips) ○ Using proportions to solve problems (scaling, similar figures, equivalent fractions) ○ Evaluating the absolute value of rational numbers • Describing the meaning and evaluating positive exponents • Using estimation strategies to estimate a solution • Using mental arithmetic to add or subtract simple fractions and decimals

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
Score 2.0	<p>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</p> <ul style="list-style-type: none"> • Recognizing and recalling specific terminology such as: <ul style="list-style-type: none"> ○ Absolute value ○ Exponent ○ Simple interest • Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as: <ul style="list-style-type: none"> ○ The following example shows how cross-multiplication is used to solve for x $2x/3 = 5/6$ $(2 \times 6)x = 3 \times 5$ $12x = 15$ $x = 15/12 = 5/4 = 1 \frac{1}{4}$ ○ 70 % of 50 is 35 ○ x^3 is the same as $x * x * x$ ○ A reasonable estimate of $0.24 + 0.45$ would be to round to the nearest tenth: $0.2 + 0.5 = 0.7$ (actual answer: 0.69) ○ $1/2 + 1/4 = 3/4$
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
1.0	With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements
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: Functions and Equations
 Grade Six

Evidence shows student has met or exceeded the learning target

Evidence shows misunderstanding, misconceptions, or omissions

4.0	In addition to score 3.0, in-depth inferences and applications that go beyond what was taught
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
Score 3.0	<p>Student exhibits no major errors or omissions and demonstrates understanding by:</p> <ul style="list-style-type: none"> • Describing the concept of a variable (e.g., a placeholder for a specific unknown, a representative of a range of values) • Modeling and using the four Properties of Equality: Addition; Subtraction; Multiplication; Division • Writing, simplifying, and evaluating algebraic expressions and one- and two-step linear equations and inequalities: <ul style="list-style-type: none"> ○ Using standard conventions when writing algebraic expressions (e.g., $2x + 1$ means “two times x, plus 1”) ○ Simplifying and evaluating algebraic expressions ○ Writing and solving one- and two-step linear equations in one variable and verifying the reasonableness of the results ○ Writing and solving one- and two-step linear inequalities in one variable and verifying the reasonableness of the results ○ Explaining why an inequality is reversed when both sides are multiplied or divided by a negative number • Representing, analyzing, and extending patterns and functions

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
Score 2.0	<p>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</p> <ul style="list-style-type: none"> • Recognizing and recalling specific terminology such as: <ul style="list-style-type: none"> ○ Properties of Equality ○ One-step linear equation ○ Function • Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as: <ul style="list-style-type: none"> ○ A variable is often used to represent an unknown quantity ○ The following example shows the Multiplication Property of Equality $-x = 3$ $-x * -1 = 3 * -1$ $x = -3$ ○ Inequality: $x + 7 > 3$; solution: $x > -4$ ○ Identifying functions as linear or nonlinear
1.5	<p style="text-align: center;">Partial knowledge of score 2.0 elements</p> <p style="text-align: center;">Major errors or omissions regarding score 3.0 elements</p>
1.0	With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements
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 Six

Evidence shows student has met or exceeded the learning target

Evidence shows misunderstanding, misconceptions, or omissions

4.0	In addition to score 3.0, in-depth inferences and applications that go beyond what was taught
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
Score 3.0	Student exhibits no major errors or omissions and demonstrates understanding by: <ul style="list-style-type: none"> • Graphing basic linear equations and inequalities • Defining slope and demonstrating the slope of a line graphically • Identifying and graphing ordered pairs in the four quadrants of the coordinate plane

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
Score 2.0	Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as: <ul style="list-style-type: none"> • Recognizing and recalling specific terminology such as: <ul style="list-style-type: none"> ○ Slope ○ Quadrant ○ Cartesian plane • Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as: <ul style="list-style-type: none"> ○ The graph of the equation $y = 3x + 2$ is a straight line passing through points $(-2, 4)$, $(0, 2)$, and $(2, 8)$ ○ Vertical lines do not have slope ○ Identifying the coordinates of points in the coordinate plane
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
1.0	With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements
0.5	With assistance, a partial understanding of some of score 2.0 elements but not score 3.0 elements

GEOMETRY
Measurement Topic: Lines, Angles, and Geometric Objects
 Grade Six

Evidence shows student has met or exceeded the learning target

Evidence shows misunderstanding, misconceptions, or omissions

4.0	In addition to score 3.0, in-depth inferences and applications that go beyond what was taught
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
Score 3.0	<p>Student exhibits no major errors or omissions and demonstrates understanding by:</p> <ul style="list-style-type: none"> • Analyzing and classify geometric figures (angles, triangles, quadrilaterals, polygons, and three-dimensional figures) • Using the Pythagorean Theorem to find the missing side of a right triangle • Constructing angles, triangles, quadrilaterals, and three-dimensional figures: <ul style="list-style-type: none"> ○ Drawing angles (vertical, adjacent, complementary, and supplementary) ○ Constructing quadrilaterals and triangles from given information about them ○ Constructing two-dimensional patterns (nets) for three-dimensional objects • Analyzing angle relationships: <ul style="list-style-type: none"> ○ Describing the relationships among vertical, adjacent, complementary, and supplementary angles ○ Explaining the relationship between the angles formed when: two lines intersect and when parallel lines are cut by a transversal • Finding the sum of the interior angles of regular convex polygons

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
Score 2.0	<p>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</p> <ul style="list-style-type: none"> • Recognizing and recalling specific terminology such as: <ul style="list-style-type: none"> ○ Convex polygon ○ Complementary angles ○ Pythagorean Theorem • Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as: <ul style="list-style-type: none"> ○ A hexagon is a two-dimensional figure with six sides ○ The Pythagorean Theorem can be used to determine the length of an unknown side of a right triangle ○ A cone can be constructed by combining a triangle and an ellipse ○ It two complementary angles are adjacent, their non-shared sides form a right angle ○ The sum of the interior angles of a pentagon is 540 degrees
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
1.0	With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements
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 Six

Evidence shows student has met or exceeded the learning target

Evidence shows misunderstanding, misconceptions, or omissions

4.0	In addition to score 3.0, in-depth inferences and applications that go beyond what was taught
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
Score 3.0	Student exhibits no major errors or omissions and demonstrates understanding by: <ul style="list-style-type: none"> • Analyzing and drawing transformations of figures (translation, reflection, rotation) • Analyzing properties of congruent and similar figures: <ul style="list-style-type: none"> ○ Describing the relationship between corresponding angles and sides in congruent and similar figures ○ Using the properties of similar figures to find unknown lengths

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
Score 2.0	Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as: <ul style="list-style-type: none"> • Recognizing and recalling specific terminology such as: <ul style="list-style-type: none"> ○ Corresponding angles ○ Similar figures ○ Rotation • Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as: <ul style="list-style-type: none"> ○ Recognizing figures that have reflection and rotation symmetry ○ Triangles can be classified as congruent if they have a corresponding side, angle, side that are the same
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
1.0	With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements
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 Six

Evidence shows student has met or exceeded the learning target

Evidence shows misunderstanding, misconceptions, or omissions

4.0	In addition to score 3.0, in-depth inferences and applications that go beyond what was taught
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
Score 3.0	Student exhibits no major errors or omissions and demonstrates understanding by: <ul style="list-style-type: none"> • Converting basic measurements between and within measurement systems (e.g., feet to inches, grams to pounds) • Selecting and applying appropriate units and tools to measure and estimate • Examining significant figures and how they relate to measurement

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
Score 2.0	Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as: <ul style="list-style-type: none"> • Recognizing and recalling specific terminology such as: <ul style="list-style-type: none"> ○ Significant figures ○ Ounces • Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as: <ul style="list-style-type: none"> ○ 1 gram = 0.001 kilogram ○ Distances between cities are measured in miles or kilometers ○ If some weights were determined on a scale and rounded to the nearest pound improperly, when added together the total approximate weight would not be as accurate
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
1.0	With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements
0.5	With assistance, a partial understanding of some of score 2.0 elements but not score 3.0 elements

MEASUREMENT
Measurement Topic: Time, Temperature, and Money
 Grade Six

Evidence shows student has met or exceeded the learning target

Evidence shows misunderstanding, misconceptions, or omissions

4.0	In addition to score 3.0, in-depth inferences and applications that go beyond what was taught
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
Score 3.0	Student exhibits no major errors or omissions and demonstrates understanding by: <ul style="list-style-type: none"> • Selecting and applying appropriate units and tools to measure and estimate time and temperature • Adding, subtracting, multiplying, and dividing money in decimal notation • Examining significant figures and how they relate to time, temperature, and money • Converting between Fahrenheit and Celsius

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
Score 2.0	Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as: <ul style="list-style-type: none"> • Recognizing and recalling specific terminology such as: <ul style="list-style-type: none"> ○ Significant figures ○ Thermometer • Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as: <ul style="list-style-type: none"> ○ An infrared thermometer could be used to safely determine the surface temperature of a frying pan on a stove ○ Solving simple addition, subtraction, multiplication, and division problems with money in decimal notation ○ When solving problems involving money, if amounts are rounded improperly the result will be incorrect ○ 75 degrees Celsius = 167 degrees Fahrenheit
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
1.0	With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements
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 Six

Evidence shows student has met or exceeded the learning target

Evidence shows misunderstanding, misconceptions, or omissions

4.0	In addition to score 3.0, in-depth inferences and applications that go beyond what was taught
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
Score 3.0	<p>Student exhibits no major errors or omissions and demonstrates understanding by:</p> <ul style="list-style-type: none"> • Finding the perimeter/circumference and area of circles, triangles, quadrilaterals, and regular/irregular polygons • Finding the surface area and volume of rectangular prisms, cylinders, pyramids, and cones • Analyzing characteristics of perimeter/circumference, area, and volume: <ul style="list-style-type: none"> ○ Describing what happens to the area and perimeter of a two-dimensional shapes when the measurements of the shape are changed (e.g., length of sides are doubled) ○ Explaining the relationships among perimeter/circumference, area, and volume and determining which is appropriate for given contexts (e.g., perimeter for fencing a garden) • Examining the relationship between circumference and diameter of a circle

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
Score 2.0	<p>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</p> <ul style="list-style-type: none"> • Recognizing and recalling specific terminology such as: <ul style="list-style-type: none"> ○ Formula for the volume of cylinders ○ Formula for the surface area of pyramids • Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as: <ul style="list-style-type: none"> ○ The formula for finding the area of a trapezoid is $A = ((b_1 + b_2) / 2) \times h$ ○ The volume of a cube with side length 5 inches would be $V = s^3 = 5^3 = 125$ in³ ○ Two figures may have the same volume but different surface areas
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
1.0	With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements
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 Six

Evidence shows student has met or exceeded the learning target

Evidence shows misunderstanding, misconceptions, or omissions

4.0	In addition to score 3.0, in-depth inferences and applications that go beyond what was taught
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
Score 3.0	<p>Student exhibits no major errors or omissions and demonstrates understanding by:</p> <ul style="list-style-type: none"> • Constructing and interpreting simple scatter and box-and-whisker plots • Computing the mean, median, mode, and range of a set of data and determining which measure is most appropriate in a given context • Examining different ways of selecting a sample and which method makes a sample more representative for a population • Examining misleading statistics and graphs • Constructing and interpreting appropriate graphs (line graph, bar graph, circle graph, histogram, line plot, stem-and-leaf plot)

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
Score 2.0	<p>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</p> <ul style="list-style-type: none"> • Recognizing and recalling specific terminology such as: <ul style="list-style-type: none"> ○ Box-and-whisker plot ○ Scatter plot ○ Population • Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as: <ul style="list-style-type: none"> ○ The set of five values in a box-and-whisker plot have been given the name “the five-number summary” ○ Mode would be the most appropriate to determine the greatest frequency of responses for categorical data ○ Convenience sampling does not represent the entire population ○ Researchers cannot control the answers of survey respondents ○ Correctly reading and identifying a line graph
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
1.0	With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements
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 Six

Evidence shows student has met or exceeded the learning target

Evidence shows misunderstanding, misconceptions, or omissions

4.0	In addition to score 3.0, in-depth inferences and applications that go beyond what was taught
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
Score 3.0	<p>Student exhibits no major errors or omissions and demonstrates understanding by:</p> <ul style="list-style-type: none"> • Determining simple experimental and theoretical probabilities from a given sample space • Finding and representing possible outcomes: <ul style="list-style-type: none"> ○ Using permutations to find possible arrangements ○ Using combinations to find possible arrangements ○ Using the Counting Principle to find the number of outcomes of two events ○ Representing all possible outcomes for independent and dependent events in an organized way • Representing probabilities as ratios, proportions, decimals, and percentages • Making and justifying predictions from statistical data and graphs

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
Score 2.0	<p>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</p> <ul style="list-style-type: none"> • Recognizing and recalling specific terminology such as: <ul style="list-style-type: none"> ○ Permutation ○ Combination ○ Counting Principle ○ Sample Space • Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as: <ul style="list-style-type: none"> ○ A dependent event is one where the outcome of the second event is influenced by the outcome of the first event ○ The total number of outcomes for tossing one penny and rolling one die is $2 \times 6 = 12$ outcomes ○ The probability of picking one of the 15 nickels at random out of a jar containing 40 coins would be $\frac{3}{8}$ or .4 (rounded to the nearest tenth) or 40% ○ Experimental probabilities can be used to estimate the probability of future events
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
1.0	With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements
0.5	With assistance, a partial understanding of some of score 2.0 elements but not score 3.0 elements

PROBLEM SOLVING
Measurement Topic: Strategies and Reasoning
 Grade Six

Evidence shows student has met or exceeded the learning target

Evidence shows misunderstanding, misconceptions, or omissions

4.0	In addition to score 3.0, in-depth inferences and applications that go beyond what was taught
3.5	In addition to score 3.0, in-depth inferences and applications with partial success
Score 3.0	<p>Student exhibits no major errors or omissions and demonstrates understanding by:</p> <ul style="list-style-type: none"> • Analyzing problems by identifying relationships, distinguishing relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns • 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, counterexamples, proportionality) • Expressing solutions clearly and logically and determining whether an approximate or exact answer is appropriate: <ul style="list-style-type: none"> ○ Expressing solutions clearly and logically, supporting with appropriate verbal and symbolic work (what you did and how you did it) ○ Indicating the relative advantages of exact and approximate solutions to problems and giving answers to a specified degree of accuracy • Analyzing different problem solving methods: <ul style="list-style-type: none"> ○ Evaluating the efficiency of different representations and solution methods of a problem, and describing the advantages and disadvantages of each ○ Noting the method of finding the solution and showing a conceptual understanding of the method by solving similar problems • Making and testing mathematical conjectures using inductive and deductive reasoning

2.5	No major errors or omissions regarding score 2.0 elements with partial knowledge of score 3.0 elements
Score 2.0	<p>Student exhibits major errors or omissions with score 3.0 elements. No major errors or omissions regarding the simpler details and processes such as:</p> <ul style="list-style-type: none"> • Recognizing and recalling specific terminology such as: <ul style="list-style-type: none"> ○ Counterexample ○ Proportionality ○ Inductive reasoning • Performing basic processes and recognizing and recalling the accuracy of basic solutions and information such as: <ul style="list-style-type: none"> ○ Recognizing relevant information ○ Describing how to use simpler problems to solve more complex problems ○ Expressing solutions clearly and logically ○ Recognizing situations to use a given problem solving method ○ Making mathematical conjectures based on a description of a mathematical problem
1.5	Partial knowledge of score 2.0 elements Major errors or omissions regarding score 3.0 elements
1.0	With assistance, student demonstrates partial understanding of some of score 2.0 elements and some of score 3.0 elements
0.5	With assistance, a partial understanding of some of score 2.0 elements but not score 3.0 elements

PROBLEM SOLVING
Measurement Topic: Validity of Results
 Grade Six

Evidence shows student has met or exceeded the learning target

Evidence shows misunderstanding, misconceptions, or omissions

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

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