

## 7<sup>th</sup> Grade Math

<b>Numbers and Operations Standard:</b> Understands and applies concepts of numbers and operations				
<b>Power Benchmark 1:</b> Understands numbers, ways of representing numbers, relationships among numbers, and number systems				
<b>Grade Level Benchmark</b>	<b>Vocabulary</b>	<b>Background Knowledge/Prior Skills</b>	<b>Skills to Assess</b>	
a. <u>Uses the appropriate form of a rational number (fraction, decimal, percent) in computations</u> ITBS ***	<ul style="list-style-type: none"> <li>• Rational number</li> <li>• Fraction</li> <li>• Decimal</li> <li>• Percent</li> <li>• Equivalent fractions</li> </ul>	<ul style="list-style-type: none"> <li>• Understands fractions, decimals, and percents can be expressed in various ways</li> <li>• Knows which rational number is most appropriate based on the context of the problem</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Converts fractions, decimals and percents to equivalent forms</u> -</li> <li>• Identifies the appropriate rational number to use in a problem situation -</li> </ul>	
b. <u>Understands the use of negative and positive numbers in computations</u> ITBS*	<ul style="list-style-type: none"> <li>• Negative number</li> <li>• Positive number</li> <li>• Absolute value</li> </ul>	<ul style="list-style-type: none"> <li>• Knows absolute value of a number is its distance from zero on a number line</li> <li>• Knows negative numbers are the opposite of positive numbers</li> <li>• Knows applications for negative numbers</li> </ul>	<ul style="list-style-type: none"> <li>• Finds the absolute value of given numbers -</li> <li>• <u>Simplifies expressions involving integers</u> -</li> </ul>	
c. <u>Expresses numbers using exponents</u> ITBS*	<ul style="list-style-type: none"> <li>• Exponent</li> <li>• Base</li> <li>• Powers</li> </ul>	<ul style="list-style-type: none"> <li>• Knows an exponent tells how many times a base is used as a factor</li> </ul>	<ul style="list-style-type: none"> <li>• Simplifies expressions containing exponents -</li> </ul>	

<b>Numbers and Operations Standard:</b> Understands and applies concepts of numbers and operations				
<b>Power Benchmark 2:</b> Understands meanings of operations and how they relate to one another				
<b>Grade Level Benchmark</b>	<b>Vocabulary</b>	<b>Background Knowledge/Prior Skills</b>	<b>Skills to Assess</b>	
a. <u>Uses the properties of operations to simplify computations</u> ITBS*	<ul style="list-style-type: none"> <li>• Identity property</li> <li>• Inverse property</li> <li>• Distributive property</li> <li>• Associative property</li> <li>• Commutative property</li> <li>• Squaring</li> </ul>	<ul style="list-style-type: none"> <li>• Knows that inverse operations undo each other</li> <li>• Knows the identity properties of all operations</li> <li>• Knows the distributive, associative, and commutative properties</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Simplifies equations using properties of operations</u> -</li> <li>• <u>Explains the meaning of adding, subtracting, multiplying and dividing integers</u> -</li> <li>• <u>Uses inverse properties and relationships to solve problems</u></li> <li>• <u>Uses distributive property</u> -</li> </ul>	
b. <u>Uses order of operations, including grouping symbols, to simplify computations</u> ITBS*	<ul style="list-style-type: none"> <li>• Order of operations</li> <li>• Grouping</li> </ul>	<ul style="list-style-type: none"> <li>• Knows the order of operations</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Simplifies equations using order of operations</u> -</li> <li>• <u>Applies the order of operations to perform computations</u> -</li> </ul>	

<b>Numbers and Operations Standard:</b> Understands and applies concepts of numbers and operations				
<b>Power Benchmark 3:</b> Computes fluently and makes reasonable estimates				
<b>Grade Level Benchmark</b>	<b>Vocabulary</b>	<b>Background Knowledge/Prior Skills</b>	<b>Skills to Assess</b>	
a. <u>Uses appropriate methods to compute with fractions</u> ITBS*	<ul style="list-style-type: none"> <li>Numerator</li> <li>Denominator</li> <li>Common denominator</li> <li>Least common multiple</li> <li>Reciprocal</li> <li>Lowest terms</li> </ul>	<ul style="list-style-type: none"> <li>Knows adding and subtracting fractions requires terms with a common denominator</li> <li>Knows finding a common denominator uses the same process as finding a least common multiple</li> <li>Knows the rules for adding, subtracting, multiplying, and dividing fractions</li> <li>Knows a fraction is frequently reduced to lowest terms</li> </ul>	<ul style="list-style-type: none"> <li><u>Add, subtract, multiply and divide fractions</u> -</li> </ul>	
b. <u>Uses appropriate methods to compute with integers</u> ITBS*	<ul style="list-style-type: none"> <li>Integer</li> <li>Negative number</li> <li>Positive number</li> <li>Absolute value</li> </ul>	<ul style="list-style-type: none"> <li>Knows the absolute value of a number is its distance from zero on a number line</li> <li>Knows negative numbers are the opposite of positive numbers</li> <li>Knows the rules for adding, subtracting, multiplying and dividing integers</li> </ul>	<ul style="list-style-type: none"> <li><u>Adds, subtracts, multiplies and divides integers</u> -</li> <li>Computes expressions with absolute value symbols -</li> </ul>	

<b>Algebra Standard:</b> Understands and applies concepts of algebra and functions				
<b>Power Benchmark 1:</b> Understands patterns, relations, and functions				
<b>Grade Level Benchmark</b>	<b>Vocabulary</b>	<b>Background Knowledge/Prior Skills</b>	<b>Skills to Assess</b>	
a. <u>Recognizes patterns and relationships as linear or non-linear</u> ITBS*	<ul style="list-style-type: none"> <li>• Patterns</li> <li>• Linear</li> <li>• Non-linear</li> <li>• Rule</li> </ul>	<ul style="list-style-type: none"> <li>• Identifies and extends patterns (ITBS)</li> <li>• Uses a variety of formats to represent patterns</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Identifies patterns as linear or non-linear</u> -</li> <li>• <u>Recognizes operations used in a pattern</u> (ITBS)</li> <li>• Identifies rules that describe number patterns -</li> </ul>	
<b>Power Benchmark 2:</b> Represents and analyzes mathematical situations and structures using algebraic symbols				
a. Describes the characteristics of linear functions	<ul style="list-style-type: none"> <li>• Function</li> <li>• <u>Dependent variable</u></li> <li>• <u>Independent variable</u></li> <li>• Linear relationship</li> </ul>	<ul style="list-style-type: none"> <li>• Understands function means that the value of one variable is dependent on the other variable</li> <li>• Knows the dependent variable is usually expressed as <math>y</math> and the independent variable as <math>x</math>, but can differ</li> </ul>	<ul style="list-style-type: none"> <li>• Recognizes patterns that are linear relationships -</li> <li>• Represents linear relationships using tables, graphs, words, and symbolic expressions -</li> <li>• Understands the <math>x</math>- and <math>y</math>-intercepts are where the function crosses the <math>x</math> and <math>y</math> axes -</li> <li>• Understands the <math>x</math>- and <math>y</math>-intercepts give information about the function -</li> </ul>	

<b>Algebra Standard:</b> Understands and applies concepts of algebra and functions				
<b>Power Benchmark 3:</b> Uses mathematical models to present and understand quantitative relationships				
<b>Grade Level Benchmark</b>	<b>Vocabulary</b>	<b>Background Knowledge/Prior Skills</b>	<b>Skills to Assess</b>	
a. <u>Recognizes equivalent forms of simple algebraic expressions</u> ITBS*	<ul style="list-style-type: none"> <li>Like term</li> <li>Variable</li> <li>Expression</li> </ul>	<ul style="list-style-type: none"> <li>Knows mathematical expressions can be written in different formats</li> </ul>	<ul style="list-style-type: none"> <li><u>Writes mathematical expressions in a variety of formats</u> (ITBS)</li> <li><u>Understands like terms can be variables and numbers</u></li> </ul>	
b. <u>Uses variables and appropriate operations to write expressions</u> ITBS**	<ul style="list-style-type: none"> <li>Variable</li> <li>Equation</li> <li>Term</li> <li>Coefficient</li> <li>Equality</li> <li>Inequality</li> <li>Expression</li> <li>Constant</li> </ul>	<ul style="list-style-type: none"> <li>Knows and uses the language of algebra</li> </ul>	<ul style="list-style-type: none"> <li><u>Uses algebraic symbols correctly in a variety of problem situations</u> (ITBS)</li> <li><u>Writes mathematical expressions using variables and operations</u> (ITBS)</li> <li><u>Evaluates an expression</u> (ITBS)</li> </ul>	
c. <u>Uses rules to simplify expressions</u> ITBS*	<ul style="list-style-type: none"> <li>Variables</li> <li>Like term</li> <li>Expression</li> <li>Order of operations</li> </ul>	<ul style="list-style-type: none"> <li>Recognizes like terms</li> <li>Knows rules to simplify expressions</li> </ul>	<ul style="list-style-type: none"> <li><u>Combines like terms to simplify expressions</u> (ITBS)</li> </ul>	
<b>Power Benchmark 4:</b> Analyzes change in a variety of situations				
a. <u>Uses order of operations, including grouping symbols, to solve problems</u> ITBS*	<ul style="list-style-type: none"> <li>Like terms</li> <li>Order of operations</li> <li>Grouping</li> <li>Exponents</li> </ul>	<ul style="list-style-type: none"> <li>Recognizes like terms</li> <li>Knows rules to simplify expressions</li> <li>Knows the order of operations</li> </ul>	<ul style="list-style-type: none"> <li><u>Uses order of operations, including grouping symbols, to solve problems</u> (ITBS)</li> </ul>	
b. <u>Solves equations and inequalities involving algebraic expressions</u> ITBS**	<ul style="list-style-type: none"> <li>One step equations</li> <li>Two-step equations</li> <li>Inverse operations</li> </ul>	<ul style="list-style-type: none"> <li>Knows the inverse relationship between addition &amp; subtraction, multiplication &amp; division</li> <li>Knows how to combine like terms</li> </ul>	<ul style="list-style-type: none"> <li><u>Solves two-step equations</u> (ITBS)</li> <li><u>Solves inequalities</u> (ITBS)</li> </ul>	

<b>Geometry Standard:</b> Understands and applies concepts of geometry				
<b>Power Benchmark 1:</b> Analyzes characteristics and properties of two and three-dimensional geometric shapes and develops mathematical arguments about geometric relationships				
<b>Grade Level Benchmark</b>	<b>Vocabulary</b>	<b>Background Knowledge/Prior Skills</b>	<b>Skills to Assess</b>	
<b>a:</b> <u>Uses properties of lines to describe figures</u> ITBS *	<ul style="list-style-type: none"> <li>• Collinear</li> <li>• Non-collinear</li> <li>• Coplanar</li> <li>• Space</li> </ul>	<ul style="list-style-type: none"> <li>• Knows collinear points lie on the same line</li> <li>• Knows that coplanar points lie on the same plane</li> <li>• Understands space is boundless, three-dimensional set of all points</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Uses the coordinate plane to identify points that are collinear and non-collinear -</u></li> <li>• <u>Identifies and models points, lines, and planes -</u></li> <li>• <u>Identifies coplanar points and intersecting lines and plans (ITBS)</u></li> <li>• <u>Recognizes geometric properties in patterns (ITBS)</u></li> </ul>	
<b>b:</b> <u>Uses properties of angles and triangles to describe figures</u> ITBS *	<ul style="list-style-type: none"> <li>• Complementary angles</li> <li>• Supplementary angles</li> <li>• Vertical angles</li> <li>• Triangle</li> <li>• Equilateral triangle</li> <li>• Isosceles triangle</li> <li>• Scalene triangle</li> <li>• Right triangle</li> </ul>	<ul style="list-style-type: none"> <li>• Knows complimentary angles sum to 90 degrees</li> <li>• Knows supplementary angles sum to 180 degrees</li> <li>• Knows vertical angles are congruent</li> <li>• Understands an isosceles triangle has two sides of equal length</li> <li>• Understands all sides of an equilateral triangle are of equal length</li> <li>• Understands a right triangle contains one 90 degree angle</li> </ul>	<ul style="list-style-type: none"> <li>• Calculates the complement of an angle -</li> <li>• Calculates the supplement of an angle -</li> <li>• Uses known angles to find unknown angles in a figure -</li> <li>• <u>Recognizes properties of angles and triangles (ITBS)</u></li> </ul>	

<b>Geometry Standard:</b> Understands and applies concepts of geometry				
<b>Power Benchmark 1:</b> Analyzes characteristics and properties of two and three-dimensional geometric shapes and develops mathematical arguments about geometric relationships (cont.)				
<b>Grade Level Benchmark</b>	<b>Vocabulary</b>	<b>Background Knowledge/Prior Skills</b>	<b>Skills to Assess</b>	
<b>c:</b> <u>Uses properties of circles to describe figures</u>	<ul style="list-style-type: none"> <li>•Diameter</li> <li>•Radius</li> <li>•Center</li> <li>•Central angle</li> <li>•Major arc</li> <li>•Minor arc</li> <li>•Semicircle</li> </ul>	<ul style="list-style-type: none"> <li>•Knows the parts of a circle</li> <li>•Knows a central angle is an angle whose vertex is the center of the circle</li> <li>•Knows an angle separates a circle into two arcs: major arc and minor arc</li> <li>•Knows the measures of a major arc and minor arc sum to 360 degrees</li> <li>•Knows a semicircle is a central angle of an arc that is a straight angle</li> </ul>	<ul style="list-style-type: none"> <li>•Identifies central angles -</li> <li>•Identifies major and minor arcs -</li> <li>•Finds the measure of a minor arc if the measure of the major arc is know, vice versa -</li> <li>•<u>Identifies a semicircle -</u></li> </ul>	
<b>Power Benchmark 2:</b> Specifies locations and describes spatial relationships using coordinate geometry and other representational systems				
<b>a:</b> <u>Uses the coordinate plane to show geometric relationships</u> ITBS *	<ul style="list-style-type: none"> <li>•X-coordinate</li> <li>•Y-coordinate</li> <li>•Slope</li> <li>•Parallel lines</li> <li>•Perpendicular lines</li> <li>•Intercept</li> </ul>	<ul style="list-style-type: none"> <li>•Understands slope is the measure of a line's slant</li> <li>•Understands run is the difference in the x-coordinates (horizontal change)</li> <li>•Understands rise is the difference in the y-coordinates (vertical change)</li> </ul>	<ul style="list-style-type: none"> <li>•<u>Determines coordinates of geometric shape on the coordinate plane -</u></li> <li>•Computes and compares the slopes of line segments -</li> <li>•Explores characteristics of parallel and perpendicular lines -</li> <li>•<u>Locates specific coordinate pairs on a grid (ITBS)</u></li> </ul>	

<b>Geometry Standard:</b> Understands and applies concepts of geometry				
<b>Power Benchmark 3:</b> Applies transformations and uses symmetry to analyze mathematical situations				
<b>Grade Level Benchmark</b>	<b>Vocabulary</b>	<b>Background Knowledge/Prior Skills</b>	<b>Skills to Assess</b>	
<b>a:</b> <u>Uses transformations to determine if two figures are congruent</u>	<ul style="list-style-type: none"> <li>Transformation</li> <li>Orientation</li> <li>Position</li> <li>Congruent</li> <li>Similar</li> </ul>	<ul style="list-style-type: none"> <li>Understands the applications of transformations with congruent and similar figures</li> <li>Understands congruence does not depend on position and orientation</li> </ul>	<ul style="list-style-type: none"> <li>Sketches transformations to prove figures are congruent -</li> <li>Uses the coordinate plane to determine if figures are congruent -</li> <li><u>Distinguishes between similar and congruent figures -</u></li> </ul>	
<b>b:</b> <u>Uses rotational symmetry to describe various figures</u>	<ul style="list-style-type: none"> <li>Rotational symmetry</li> <li>Point symmetry</li> <li>Pre-image</li> <li>Image</li> <li>Vertices</li> </ul>	<ul style="list-style-type: none"> <li>Knows a figure rotated about a fixed point has rotational symmetry</li> <li>Knows point symmetry is rotational symmetry of 180 degrees</li> </ul>	<ul style="list-style-type: none"> <li>Describes characteristics of figures using rotational symmetry -</li> <li>Identifies the number of rotational symmetries of various figures -</li> </ul>	

<b>Geometry Standard:</b> Understands and applies concepts of geometry				
<b>Power Benchmark 4:</b> Uses visualization, spatial reasoning, and geometric modeling to solve problems				
<b>Grade Level Benchmark</b>	<b>Vocabulary</b>	<b>Background Knowledge/Prior Skills</b>	<b>Skills to Assess</b>	
<b>a:</b> <u>Uses geometric methods to complete basic geometric constructions</u>	<ul style="list-style-type: none"> <li>• Compass</li> <li>• Straightedge</li> <li>• Protractor</li> <li>• Line segment</li> <li>• Angle bisector</li> <li>• Parallel lines</li> </ul>	<ul style="list-style-type: none"> <li>• Understands the meaning of line and angle bisectors as guides to construction</li> <li>• Understands geometric constructions produce congruent figures</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Creates geometric constructions using geometric tools -</u></li> </ul>	
<b>b:</b> <u>Determines the circumference and area of circles</u>	<ul style="list-style-type: none"> <li>• Perimeter</li> <li>• Circumference</li> <li>• Radius</li> <li>• Diameter</li> <li>• Pi</li> </ul>	<ul style="list-style-type: none"> <li>• Knows the formula for circumference and area of a circle</li> <li>• Understands the meaning of the variable in each formula</li> <li>• Knows circumference describes the perimeter of a circle</li> <li>• Knows pi is the relationship between the radius and circumference</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Computes the circumference of circles -</u></li> <li>• <u>Computes the area of circles -</u></li> </ul>	
<b>c:</b> <u>Determines the area of complex figures</u> ITBS *	<ul style="list-style-type: none"> <li>• Area</li> </ul>	<ul style="list-style-type: none"> <li>• Knows the formulas for area of figures</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Computes the area of complex figures (ITBS)</u></li> </ul>	

<b>Measurement Standard:</b> Understands and applies concepts of measurement				
<b>Power Benchmark 1:</b> Understands measurable attributes of objects and the units, systems, and processes of measurement				
<b>Grade Level Benchmark</b>	<b>Vocabulary</b>	<b>Background Knowledge/Prior Skills</b>	<b>Skills to Assess</b>	
<b>a:</b> <u>Uses derived measures to express measures of attributes</u>	Attribute Indirect measure Derived measure Rate	<ul style="list-style-type: none"> <li>Knows some measures are derived measures</li> </ul>	<ul style="list-style-type: none"> <li>Uses rates as a measure of attributes -</li> <li>Calculates rates in various contexts -</li> </ul>	
<b>b:</b> <u>Applies the measurement process</u> ITBS **	Process Attribute Appropriate Comparison	<ul style="list-style-type: none"> <li>Understands the process to be used when measuring attributes</li> </ul>	<ul style="list-style-type: none"> <li>Identifies the attribute to be measured -</li> <li><u>Chooses an appropriate unit (ITBS)</u></li> <li>Compares the unit with the object to be measured -</li> </ul>	
<b>Power Benchmark 2:</b> Applies appropriate techniques, tools, and formulas to determine measurement				
<b>a:</b> <u>Understands the link between attribute measured and its dimension</u> ITBS *	<ul style="list-style-type: none"> <li>Dimension</li> <li>Unit</li> <li>Cubed</li> <li>Squared</li> <li>Conversion factor</li> </ul>	<ul style="list-style-type: none"> <li>Knows the dimensions of measurements</li> <li>Understands when using a conversion factor to change units, the factor may change the dimension of the units</li> <li>Knows appropriate units for perimeter, area, and volume</li> </ul>	<ul style="list-style-type: none"> <li><u>Labels perimeter with a single-dimensional unit</u> -</li> <li><u>Labels area with a two-dimensional unit</u> -</li> <li><u>Labels volume with a three-dimensional unit</u> -</li> <li><u>Classifies units by their dimension</u> -</li> <li><u>Converts measures within a system (ITBS)</u></li> </ul>	

<b>Measurement Standard:</b> Understands and applies concepts of measurement				
<b>Power Benchmark 2:</b> Applies appropriate techniques, tools, and formulas to determine measurement (cont.)				
<b>Grade Level Benchmark</b>	<b>Vocabulary</b>	<b>Background Knowledge/Prior Skills</b>	<b>Skills to Assess</b>	
<b>b:</b> <u>Measures the attributes of circles</u>	<ul style="list-style-type: none"> <li>• Protractor</li> <li>• Angle</li> <li>• Degrees</li> <li>• Circumference</li> <li>• Radius</li> <li>• Diameter</li> <li>• Pi</li> </ul>	<ul style="list-style-type: none"> <li>• Knows the formula for circumference and area of a circle</li> <li>• Understands the meaning of the variables in each formula</li> <li>• Knows circumference describes the perimeter of a circle</li> <li>• Knows pi is the relationship between the radius and circumference</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Uses a protractor to measure angles -</u></li> <li>• <u>Computes the circumference of circles -</u></li> <li>• <u>Computes the area of circles -</u></li> </ul>	
<b>c:</b> <u>Understands accuracy and precision in measuring ITBS *</u>	<ul style="list-style-type: none"> <li>• Precision</li> <li>• Degree of accuracy</li> </ul>	<ul style="list-style-type: none"> <li>• Understands accuracy is the correctness of a measure</li> <li>• Understands precision is the ability to reproduce the measure</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Uses the appropriate degree of accuracy for reporting solutions (ITBS)</u></li> </ul>	

<b>Data Analysis and Probability Standard:</b> Understands and applies concepts of data analysis and probability				
<b>Power Benchmark 1:</b> Formulates questions that can be addressed with data and collect, organizes, and displays relevant data to answer them				
<b>Grade Level Benchmark</b>	<b>Vocabulary</b>	<b>Background Knowledge/Prior Skills</b>	<b>Skills to Assess</b>	
<b>a:</b> <u>Gathers data to answer questions</u> ITBS *	<ul style="list-style-type: none"> <li>• Convenience sampling</li> <li>• Survey sampling</li> <li>• Random sampling</li> <li>• Bias</li> <li>• Sampling error</li> <li>• Certainty</li> </ul>	<ul style="list-style-type: none"> <li>• Understands the different ways to collect a sample and the inherent bias in each</li> <li>• Knows how to formulate a question that can be verified by data collection</li> <li>• Knows which factors add or detract from certainty of a data set</li> </ul>	<ul style="list-style-type: none"> <li>• Formulates a question that can be answered through data collection -</li> <li>• Collects data using a sampling technique (ITBS)</li> <li>• Compares data from two or more samples to determine how sampling can influence results -</li> <li>• Uses knowledge of sampling, certainty, and data gathering to ascertain the certainty of the data -</li> </ul>	
<b>b:</b> <u>Interprets information from graphs and tables</u> ITBS ***	<ul style="list-style-type: none"> <li>• Interpretation</li> <li>• Trends</li> <li>• Functional relationship</li> <li>• Generalization</li> </ul>	<ul style="list-style-type: none"> <li>• Knows what constitutes an obvious trend in data</li> <li>• Knows a functional relationship exists if one variable changes in a consistent way in relation to another variable</li> <li>• Knows types of conclusions that can be made about data</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Identifies trends in line graphs</u> (ITBS)</li> <li>• <u>Draws conclusions about what data represents</u> (ITBS)</li> <li>• <u>Finds functional relationships in data in graphs or tables</u> (ITBS)</li> <li>• <u>Makes generalizations based on an underlying or functional relationship in the data</u> (ITBS)</li> </ul>	

<b>Power Benchmark 3:</b> Develops and evaluates inferences and predictions that are based on data				
<b>a:</b> <u>Reads information from graphs</u> ITBS **	<ul style="list-style-type: none"> <li>Ratio</li> <li>Quantity</li> <li>Axes</li> <li>Scales</li> <li>Sector</li> </ul>	<ul style="list-style-type: none"> <li>Knows how to read quantities on a variety of graphs</li> <li>Knows how to combine sectors on a circle graph to determine a total in a larger group</li> </ul>	<ul style="list-style-type: none"> <li><u>Reads quantities on a graph using the scales, axes, labels, and title</u> (ITBS)</li> <li><u>Compares quantities on a graph using ratios</u> (ITBS)</li> <li><u>Compares quantities on a graph using sums and differences</u> (ITBS)</li> </ul>	
<b>b:</b> <u>Reads information from tables</u> ITBS **	<ul style="list-style-type: none"> <li>Tables</li> <li>Cell</li> <li>Rank</li> <li>Quantity</li> </ul>	<ul style="list-style-type: none"> <li>Knows how to read information from a cell in a table</li> </ul>	<ul style="list-style-type: none"> <li><u>Reads information from a specific cell in a table</u> (ITBS)</li> <li><u>Compares quantities in a table to determine rank of items</u> (ITBS)</li> </ul>	
<b>Grade Level Benchmark</b>	<b>Vocabulary</b>	<b>Background Knowledge/Prior Skills</b>	<b>Skills to Assess</b>	
<b>Power Benchmark 4:</b> Understands and applies concepts of probability				
<b>a:</b> <u>Determines probability of events</u> ITBS **	<ul style="list-style-type: none"> <li>Permutation</li> <li>Combination</li> <li>Counting procedures</li> <li>All possible outcomes</li> <li>Sample space</li> </ul>	<ul style="list-style-type: none"> <li>Understands permutations and combinations determine all possible outcomes</li> <li>Knows the probability of an event certain to happen is defined as 1</li> <li>Knows the probability of an event that will never happen is defined as 0</li> <li>Understands probability can be represented as a ratio, proportion, or percentage</li> </ul>	<ul style="list-style-type: none"> <li><u>Uses permutations and combinations to calculate probability</u> -</li> <li>Identifies sample spaces described by permutations and combinations -</li> <li><u>Represents probability as a fraction, a ratio, or proportion</u></li> <li><u>Finds all possible outcomes</u> (ITBS)</li> </ul>	

<b>Problem Solving Standard:</b> Understands and applies problem solving strategies				
<b>Power Benchmark 1:</b> Uses a variety of strategies to solve problems				
<b>Grade Level Benchmark</b>	<b>Vocabulary</b>	<b>Background Knowledge/Prior Skills</b>	<b>Skills to Assess</b>	
a. <u>Applies problem solving strategies</u>	<ul style="list-style-type: none"> <li>• SOLVE</li> <li>• Pertinent information</li> <li>• Irrelevant information</li> <li>• Insufficient information</li> <li>• Act it out</li> <li>• Make or use a model</li> <li>• Find or use a pattern</li> <li>• Draw a picture</li> <li>• Guess and check</li> <li>• Make a chart, table, graph, or organized list</li> <li>• Use logical reasoning</li> </ul>	<ul style="list-style-type: none"> <li>• Knows the general problem solving strategies</li> </ul>	<ul style="list-style-type: none"> <li>• <u>Extracts the main idea of a problem -</u></li> <li>• <u>Choose appropriate strategies to solve problems in the context of the problem situation -</u></li> <li>• <u>Uses previously learned strategies, skills, knowledge and concepts to solve problems -</u></li> <li>• <u>Identify pertinent and irrelevant information -</u></li> <li>• <u>Uses number sentences to represent information -</u></li> <li>• <u>Translates words to numbers to symbolic expressions -</u></li> <li>• <u>Identifies insufficient information -</u></li> </ul>	

<b>Problem Solving Standard:</b> Understands and applies problem solving strategies				
<b>Power Benchmark 2:</b> Justifies the process used to solve a numerical problem				
<b>Grade Level Benchmark</b>	<b>Vocabulary</b>	<b>Background Knowledge/Prior Skills</b>	<b>Skills to Assess</b>	
a. <u>Verifies solutions by logical argument</u>	<ul style="list-style-type: none"> <li>Logical argument</li> </ul>	<ul style="list-style-type: none"> <li>Understands the structured process of evaluating results -</li> <li>Recognizes logical statements -</li> </ul>	<ul style="list-style-type: none"> <li><u>Makes justifies logical statements</u></li> <li><u>Evaluates the arguments of others</u></li> </ul>	

<b>Communications Standard:</b> Communicates and reasons mathematically				
<b>Power Benchmark 2:</b> Uses tools (such as technology) to enhance mathematical learning				
<b>Grade Level Benchmark</b>	<b>Vocabulary</b>	<b>Background Knowledge/Prior Skills</b>	<b>Skills to Assess</b>	
a. <u>Uses tools and technology to solve problems</u>	<ul style="list-style-type: none"> <li>Spreadsheet</li> <li>Table</li> <li>Graphs</li> <li>Variety of charts</li> </ul>	<ul style="list-style-type: none"> <li>Knows basic data entry operations -</li> <li>Knows functioning of basic data display software -</li> </ul>	<ul style="list-style-type: none"> <li><u>Completes spreadsheet given data</u></li> <li><u>Displays data in a variety of ways using graphs, tables, and charts</u></li> </ul>	

Throughout the 2006-2007 school year teachers will be make note in classroom resource column of the section where topics addressing each grade level benchmark appears in the textbook.

Example: Numbers and Operations Standard: Understands and applies concepts of numbers and operations  
 Power Benchmark 3: Computes fluently and makes reasonable estimates  
 Classroom Resources: Book *Accentuate the Negative* (Integers and Rational Numbers)  
 Multiplication of Fractions 3.1  
 Division of fractions 3.3