

Appendix F

New York State Alternate Assessment

Mathematics NYSAA Frameworks

to the

**Core Curriculum
Grade Level Expectations**

and

Alternate Grade Level Indicators

for

**Students with Severe Cognitive
Disabilities**

NYSAA Test Blueprint - Mathematics Effective with 2006-07 Administration

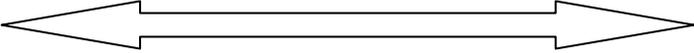
REQUIRED COMPONENT							
Two Mathematics Strands Must be Assessed at each Grade Level Required Strands Vary by Grade as Marked by an X in the Chart Below							
MATHEMATICS STRANDS	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
Number Sense & Operations	X	X	X	X	X		
Measurement	X	X					
Geometry			X			X	
Algebra				X		X	X
Statistics & Probability					X		X

CHOICE COMPONENT							
For Each Required Strand, There are Two Possible Bands From Which to Draw Allowable Choices Within Bands Vary by Grade as Marked by an X in the Chart Below For Each Required Strand, Choose 1 of the Bands Marked with an X							
Bands	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	High School
Number Sense & Operations							
Number Systems	X	X	X	X			
Number Theory					X		
Operations	X	X	X	X	X		
Measurement							
Units of Measurement	X	X					
Units/Estimation	X	X					
Geometry							
Geometric Relationships			X			X	
Transformational Geometry						X	
Coordinate Geometry			X				
Algebra							
Variables & Expressions				X		X	X
Equations & Inequalities				X			X
Patterns, Relations & Functions						X	
Statistics & Probability							
Collection of Data							
Organization & Display of Data					X		X
Analysis of Data					X		X

See [Mathematics Core Curriculum \(March 2005\)](#) for further information.

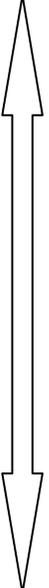
Grade 3

Strand: Number Sense and Operations		Band: Number Systems	
Math Core Curriculum (2005)	Grade-by-Grade Indicators	Essence of Indicators	
Pg. 37-38	3.N.1	Skip count by 25's, 50's, 100's, to 1,000	<ul style="list-style-type: none"> • Read and write, count, group, compare, and order whole numbers to 1,000 • Use properties of numbers • Understand unit fractions as part of a whole and compare and order unit fractions
	3.N.2	Read and write whole numbers to 1,000	
	3.N.3	Compare and order numbers to 1,000	
	3.N.4	Understand place value structure of the base ten number system: 10 ones = 1 ten 10 tens = 1 hundred 10 hundreds = 1 thousand	
	3.N.5	Use a variety of strategies to compose and decompose three-digit numbers	
	3.N.6	Use and explain the commutative property of addition and multiplication	
	3.N.7	Use 1 as the identity element for multiplication	
	3.N.8	Use the zero property of multiplication	
	3.N.9	Understand and use the associative property of addition	
	3.N.10	Develop an understanding of fractions as part of a whole unit and as parts of a collection	
	3.N.11	Use manipulatives, visual models, and illustrations to name and represent unit fractions $\left(\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \frac{1}{6}, \text{ and } \frac{1}{10}\right)$ as part of a whole or a set of objects	
	3.N.12	Understand and recognize the meaning of numerator and denominator in the symbolic form of a fraction	
	3.N.13	Recognize fractional numbers as equal parts of a whole	
	3.N.14	Explore equivalent fractions $\left(\frac{1}{2}, \frac{1}{3}, \frac{1}{4}\right)$	
	3.N.15	Compare and order unit fractions $\left(\frac{1}{2}, \frac{1}{3}, \frac{1}{4}\right)$ and find their approximate locations on a number line	

ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Number Sense and Operations			
Less Complex		More Complex	
			
Number Systems	<p>The student will:</p> <ul style="list-style-type: none"> identify the number (as a word and/or a symbol) that tells the number of objects in a set of 1 through 9 objects (11101) use concrete objects to compare quantities (equal to, greater than, and/or less than) (11102) the student will recognize and/or compare to a whole, $\frac{1}{2}$ of an object or group of objects (11103) 	<p>The student will:</p> <ul style="list-style-type: none"> identify the number (as a word and/or a symbol) that tells the number of objects in a set of 0 through 19 objects (11201) compare and/or describe quantities and/or numbers, 1 through 19, using the terms equal to, greater than, and/or less than (11202) understand that a fraction is a part of a whole and/or recognize, illustrate, and name the unit fractions, $\frac{1}{2}$, $\frac{1}{4}$, and/or $\frac{1}{3}$ (11203) 	<p>The student will:</p> <ul style="list-style-type: none"> identify the number (as a word and/or symbol) that tells the number of objects in a set of 0 through 100 objects (11301) compare and/or describe quantities and/or numbers, 0 through 100, using the terms equal to, greater than, and/or less than (11302) recognize, illustrate, and/or name the unit fractions, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$ and/or $\frac{1}{10}$ (11303)

Grade 3

Strand-Number Sense and Operations
(Band: Number Systems)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Less Complex</div>  <div style="writing-mode: vertical-rl; transform: rotate(180deg);">More Complex</div> </div>	<p>When presented with sets of objects of different quantities (1 through 9), the student will answer the question “How many (objects are in each set)?”</p>	<ul style="list-style-type: none"> • Data indicating level of accuracy in matching the quantity to the number • Sequenced captioned dated pictures showing student indicating the number that matches the quantity • Work product showing groups of objects and/or the student circling the correct number of objects in the set
	<p>Using the words equal to, greater than, or less than, the student will describe how the number of objects (0 to 19) in one set compares to the number of items in another set.</p>	<ul style="list-style-type: none"> • Videotape of student verbalizing or indicating the phrase that correctly compares the sets of objects • Sequenced captioned dated pictures showing the student indicating which pairs of sets match the comparison descriptors
	<p>The student will fold, shade, cut, or tear a paper square to show, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$ and $\frac{1}{10}$ of the square.</p>	<ul style="list-style-type: none"> • Videotape showing the student folding and/or tearing (or cutting) a paper square to form the unit fractions • Work product showing squares that have lines in them to divide them into equal parts and/or shading to indicate one of those equal parts matched to its fraction

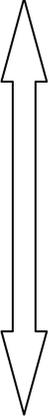
Grade 3

Strand: Number Sense and Operations		Band: Operations	
Math Core Curriculum (2005)	Grade-by-Grade Indicators		Essence of Indicators
Pg. 38	3.N.18	Use a variety of strategies to add and subtract 3-digit numbers (with and without regrouping)	<ul style="list-style-type: none"> Use a variety of strategies to add, subtract, multiply, and divide whole numbers Develop strategies for selecting the appropriate computational and operational method in problem solving situations
	3.N.19	Develop fluency with single-digit multiplication facts	
	3.N.20	Use a variety of strategies to solve multiplication problems with factors up to 12 x 12	
	3.N.21	Use the area model, tables, patterns, arrays, and doubling to provide meaning for multiplication	
	3.N.22	Demonstrate fluency and apply single-digit division facts	
	3.N.23	Use tables, patterns, halving, and manipulatives to provide meaning for division	
	3.N.24	Develop strategies for selecting the appropriate computational and operational method in problem solving situations	

ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Number Sense and Operations			
Less Complex		More Complex	
←	←	→	→
Operations	<p>The student will:</p> <ul style="list-style-type: none"> recognize the concepts of addition and/or subtraction (13101) add and/or subtract whole numbers from 1 to 9 using manipulatives and/or a calculator (13102) select the appropriate operation to use in solving problems involving addition and/or subtraction (13103) 	<p>The student will:</p> <ul style="list-style-type: none"> add and/or subtract whole numbers from 1 to 19 using a variety of strategies (13201) multiply and/or divide 1-digit whole numbers using a variety of strategies (13202) select and/or use appropriate operations to solve problems (13203) 	<p>The student will:</p> <ul style="list-style-type: none"> add and/or subtract two-digit whole numbers from 0 to 99, and/or multiply and/or divide 1-digit numbers using a variety of strategies and/or a calculator (13301) select and/or use the appropriate operation to solve problems (13302)

Grade 3

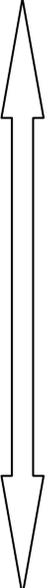
Strand-Number Sense and Operations
(Band: Operations)

Sample Assessment Tasks		
Sample Assessment Tasks:		Possible Assessment Strategies and Datafolio Products
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">Less Complex</div>  <div style="margin-top: 10px;">More Complex</div> </div>	The student will solve addition and/or subtraction word problems using 1 to 9 objects.	<ul style="list-style-type: none"> • Videotape showing manipulation of groups of objects to add and/or subtract • Data indicating method student used to solve practical problems involving addition and/or subtraction and level of accuracy in solving
	The student will add prices of groceries or other objects with or without use of a calculator using a supermarket flier or going on a shopping trip.	<ul style="list-style-type: none"> • Scrapbook showing pictures of products and their prices and the total cost of the set of products • Data indicating the level of accuracy in finding the total cost of a set of objects
	The student will create and/or solve addition and/or subtraction word problems that deal with real-life situations.	<ul style="list-style-type: none"> • Data indicating level of accuracy in completing a set of addition and/or subtraction problems • Work product showing student-created addition and/or subtraction problems and their solutions

Grade 3

Strand: Measurement		Band: Units of Measurement	
Math Core Curriculum (2005)	Grade-by-Grade Indicators		Essence of Indicators
Pg. 39-40	3.M.1	Select tools and units (customary) appropriate for the length measured	<ul style="list-style-type: none"> Measure length, weight, and capacity in standard units
	3.M.2	Use a ruler/yardstick to measure to the nearest standard unit (whole and $\frac{1}{2}$ inches, whole feet, and whole yard)	
	3.M.3	Measure objects, using ounces and pounds	
	3.M.4	Recognize capacity as an attribute that can be measured	
	3.M.5	Compare capacities (e.g., Which contains more? Which contains less?)	
	3.M.6	Measure capacity, using cups, pints, quarts, and gallons	

ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Measurement			
Less Complex		More Complex	
Units of Measurement	<p>The student will:</p> <ul style="list-style-type: none"> recognize the attributes of length (longer/shorter, taller/shorter) and compare the lengths of two objects (21101) order three or more objects according to the attributes of length (21102) recognize the attributes of weight (heavier/lighter) and compare the weights of two objects (21103) order three or more objects according to the attributes of weight (21104) identify tools for measurement (21105) use standard and non-standard tools for measurement (21106) 	<p>The student will:</p> <ul style="list-style-type: none"> use a ruler or yardstick to measure and compare lengths to the nearest whole foot or whole yard (21201) use a scale to measure the weight of objects and compare the weights of objects measured in pounds (21202) use appropriate tools to measure and compare capacities of objects measured in cups and quarts (21203) 	<p>The student will:</p> <ul style="list-style-type: none"> use a ruler or yardstick to measure and compare lengths to the nearest inch, foot or yard (21301) use a scale to measure the weight of objects and compare the weights of objects measured in pounds and ounces (21302) use appropriate tools to measure and compare capacities of objects measured in cups, pints, quarts, and gallons (21303)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Less Complex</div>  <div style="writing-mode: vertical-rl; transform: rotate(180deg);">More Complex</div> </div>	<p>The student will indicate which of two or more like, but different sized objects is longer or shorter.</p>	<ul style="list-style-type: none"> Sequenced captioned dated pictures show student comparing the lengths of two objects and/or indicating which is longer Videotape shows student using a ruler or nonstandard measurement tool to measure the lengths of the sides of objects in the classroom
	<p>The student will determine which of two or more objects is heavier after placing the objects on a scale or balance.</p>	<ul style="list-style-type: none"> Sequenced captioned dated pictures of the student selecting the heavier object after seeing two objects placed on a balance scale Data indicating the level of accuracy of a student weighing pairs of objects to the nearest pound and/or selecting the heavier object
	<p>The student will measure ingredients for a recipe using measuring spoons and/or measuring cups.</p>	<ul style="list-style-type: none"> Videotape of a student following a recipe by measuring and/or mixing specific amounts of each ingredient Work product showing the back of a pancake or muffin recipe box, and the student determining how much of each ingredient to use for the number of pancakes or muffins desired and/or measuring out these amounts

Grade 3

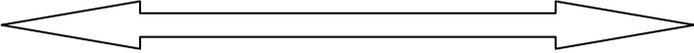
Strand: Measurement		Band: Units/Estimation	
Math Core Curriculum (2005)	Grade-by-Grade Indicators		Essence of Indicators
Pg. 40	3.M.7	Count and represent combined coins and dollars, using currency symbols (\$0.00)	<ul style="list-style-type: none"> Count money Tell time to the minute
	3.M.8	Relate unit fractions to the face of the clock: Whole = 60 minutes $\frac{1}{2}$ = 30 minutes $\frac{1}{4}$ = 15 minutes	
	3.M.9	Tell time to the minute, using digital and analog clocks	
	3.M.10	Select and use standard (customary) and non-standard units to estimate measurements	

ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Measurement			
Less Complex		More Complex	
←	←	→	→
Units/Estimation	<p>The student will:</p> <ul style="list-style-type: none"> • recognize coins (22101) • recognize the value of coins (22102) • recognize the attributes of time such as earlier, later, morning, afternoon, and/or night, and relate to activities (22103) • recognize the attributes of time such as earlier, later, morning, afternoon, and/or night, and relate to the absence or presence of daylight (22104) 	<p>The student will:</p> <ul style="list-style-type: none"> • recognize coins and/or dollar denominations (22201) • recognize the value of coins and/or dollars (22202) • indicate(write, say, or other) the amounts of money using \$ or ¢ (22203) • relate time given on digital clocks to daily activities (22204) 	<p>The student will:</p> <ul style="list-style-type: none"> • determine the value of collections of coins and/or dollars (22301) • represent the value of collections of coins and/or dollars using currency symbols (\$0.00) (22302) • tell time to the minute using an analog clock (22303) • relate and/or compare times to a schedule of activities (22304)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
 <p>Less Complex</p> <p>More Complex</p>	The student will identify coins (penny, nickel, dime, and/or quarter) using a card, picture, worksheet, or other set of coins.	<ul style="list-style-type: none"> Data indicating the level of accuracy in matching coin(s) to their name or value Work product showing correct identifications of a certain coin and/or a certain dollar denomination from a group of coins or dollars of varying denominations
	The student will match digital time to correct analog time when completing a daily schedule.	<ul style="list-style-type: none"> Work product showing a student's completed schedule and the digital time of each activity and/or a correct picture of an analog clock showing these times Given a list of activities and the time they take place, student will show the list of the activities in order from the earliest to the latest
	The student will indicate the combinations of coins and/or dollars that are required to make a purchase of one or more items.	<ul style="list-style-type: none"> Work product showing a grocery list of items, the cost of each item, and/or the student's calculation of the total cost of the purchases Data indicating the level of accuracy of the student's identification of the combinations of coins and/or dollars to be given as change when making a purchase with an amount of money greater than the amount of purchase

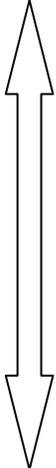
Grade 4

Strand: Number Sense and Operations		Band: Number Systems	
Math Core Curriculum (2005)	Grade-by-Grade Indicators	Essence of Indicators	
Pg. 45-46	4.N.1	Skip count by 1,000's	<ul style="list-style-type: none"> • Read and write, count, group, compare, and order whole numbers to 10,000 • Use concrete materials and visual models to compare and order unit fractions or fractions with the same denominator and generate equivalent fractions (halves, fourths, thirds, fifths, sixths, and tenths) • Understand decimals as part of a whole and compare and order decimals to hundredths in the context of money
	4.N.2	Read and write whole numbers to 10,000	
	4.N.3	Compare and order numbers to 10,000	
	4.N.4	Understand place value structure of the base ten number system: 10 ones = 1 ten 10 tens = 1 hundred 10 hundreds = 1 thousand 10 thousands = 1 ten thousand	
	4.N.5	Recognize equivalent representations for numbers up to four digits and generate them by decomposing and composing numbers	
	4.N.6	Understand, use and explain the associative property of multiplication	
	4.N.7	Develop an understanding of fractions as locations on number lines and as divisions of whole numbers	
	4.N.8	Recognize and generate equivalent fractions (halves, fourths, thirds, fifths, sixths, and tenths) using manipulatives, visual models, and illustrations	
	4.N.9	Use concrete materials and visual models to compare and order unit fractions or fractions with the same denominator (with and without the use of a number line)	
	4.N.10	Develop an understanding of decimals as part of a whole	
	4.N.11	Read and write decimals to hundredths, using money as a context	
	4.N.12	Use concrete materials and visual models to compare and order decimals (less than 1) to the hundredths place in the context of money	

ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Number Sense and Operations			
Less Complex		More Complex	
			
Number Systems	<p>The student will:</p> <ul style="list-style-type: none"> • use a number line to compare two whole numbers 0 to 19 (11101) • use a number line to order three or more whole numbers 0 to 19 (11102) • demonstrate the commutative property of addition (11103) • using manipulatives demonstrate an understanding that a decimal represents a part of a whole (11104) • with or without the use of manipulatives, read, write, and/or name decimals to the tenths place (11105) • identify numerals 0 to 19 (11106) 	<p>The student will:</p> <ul style="list-style-type: none"> • use a number line to compare two whole numbers 0 to 100 (11201) • use a number line to order three or more whole numbers 0 to 100 (11202) • use a number line to compare two unit fractions (11203) • use a number line to order three or more unit fractions (11204) • with or without the use of manipulatives read, write, and/or name decimals to the hundredths place (11205) • identify numerals 0 to 100 (11206) 	<p>The student will:</p> <ul style="list-style-type: none"> • use a number line to compare two whole numbers 0 to 1,000 (11301) • use a number line to order three or more whole numbers 0 to 1,000 (11302) • use a number line to compare two fractions with the same denominator (11303) • use a number line to order three or more fractions with the same denominator (11304) • compare two decimals to the hundredths place in the context of money (11305) • order three or more decimals to the hundredths place in the context of money (11306) • identify numerals 0 to 1,000 (11307)

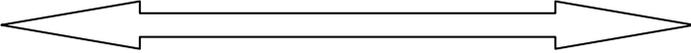
Grade 4

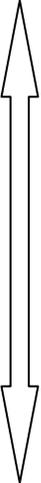
Strand-Number Sense and Operations
(Band: Number Systems)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">Less Complex</div>  <div style="margin-top: 10px;">More Complex</div> </div>	<p>The student will communicate the comparison of one student’s biographical information (number of people in family, number of pets, etc.) to another student’s information or to their own information at two different ages.</p>	<ul style="list-style-type: none"> • Work product showing a list of student’s names in order of the number of pets they have • Sequenced captioned dated pictures showing the student putting pictures in order from the families with the least number of members to the families with the greatest number of members
	<p>The student will match decimals to pictures of tenths and/or hundredths charts shaded to represent decimals less than 1.</p>	<ul style="list-style-type: none"> • Work product showing the student’s matching of decimals to the correct models • Data indicating the level of accuracy of matching a model to the correct decimal
	<p>The student will compare and/or order fractions with the same denominator by placing them on a number line or identifying where they go on a number line.</p>	<ul style="list-style-type: none"> • Sequenced captioned dated pictures showing the student working on placing the fractions on the number line • Data indicating the level of accuracy of the student placing the fractions on a number line

Grade 4

Strand: Number Sense and Operations		Band: Operations	
Math Core Curriculum (2005)	Grade-by-Grade Indicators	Essence of Indicators	
Pg. 46-47	4.N.14	Use a variety of strategies to add and subtract numbers up to 10,000	<ul style="list-style-type: none"> • Use a variety of strategies to add and subtract whole numbers to 10,000 • Multiply and divide one- and two-digit numbers • Add and subtract proper fractions with common denominators • Add and subtract decimals to tenths and hundredths using a hundreds chart
	4.N.15	Select appropriate computational and operational methods to solve problems	
	4.N.16	Understand various meanings of multiplication and division	
	4.N.17	Use multiplication and division as inverse operations to solve problems	
	4.N.18	Use a variety of strategies to multiply two-digit numbers by one-digit numbers (with and without regrouping)	
	4.N.19	Use a variety of strategies to multiply two-digit numbers by two-digit numbers (with and without regrouping)	
	4.N.20	Develop fluency in multiplying and dividing multiples of 10 and 100 up to 1,000	
	4.N.21	Use a variety of strategies to divide two-digit dividends by one-digit divisors (with and without remainders)	
	4.N.22	Interpret the meaning of remainders	
	4.N.23	Add and subtract proper fractions with common denominators	
	4.N.24	Express decimals as an equivalent form of fractions to tenths and hundredths	
	4.N.25	Add and subtract decimals to tenths and hundredths using a hundreds chart	

ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Number Sense and Operations			
Less Complex		More Complex	
			
Operations	<p>The student will:</p> <ul style="list-style-type: none"> • add and/or subtract two-digit numbers (13101) • multiply and/or divide one-digit numbers (13102) • select the appropriate operation to solve problems (13103) • use the appropriate operation to solve problems (13104) • recognize a whole and/or its parts (13105) 	<p>The student will:</p> <ul style="list-style-type: none"> • add and/or subtract, one and two-digit whole numbers (13201) • multiply and/or divide one and two-digit whole numbers (13202) • select the appropriate operation to solve problems using all four operations (13203) • use the appropriate operation to solve problems using all four operations (13204) • connect written and/or pictorial representations of fractions with denominators up to 2 (13205) 	<p>The student will:</p> <ul style="list-style-type: none"> • use a number line to add and/or subtract fractions with the same denominators (13301) • use a hundredths chart to add and/or subtract decimals to tenths and hundredths (13302)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
Less Complex 	The student will apply addition and/or subtraction facts while solving problems involving simple addition and/or subtraction.	<ul style="list-style-type: none"> Data indicating the level of accuracy of solving problems involving addition and/or subtraction with or without the use of a calculator Work product showing the total cost of 3 items when each item is given to the nearest dollar
	The student will make a list of purchases from an advertisement brochure or catalog that can be purchased with \$20 and/or find the amount of money, if any, that will remain.	<ul style="list-style-type: none"> Work product shows the items selected, their individual prices, the total cost and/or the amount remaining Data indicating the level of accuracy in determining items that can be purchased within a given limit and/or the amount of money remaining
	The student will create and/or solve word problems involving making purchases and/or one or more of the four operations, addition, subtraction, multiplication, and division.	<ul style="list-style-type: none"> Work sample of student created problems and/or their answers Videotape of student creating word problems (that involve money) and/or solving them
More Complex		

Grade 4

Strand: Measurement		Band: Units of Measurement
Math Core Curriculum (2005)	Grade-by-Grade Indicators	Essence of Indicators
Pg. 49	4.M.1	Select tools and units (customary and metric) appropriate for the length being measured
	4.M.2	Use a ruler to measure to the nearest standard unit (whole $\frac{1}{2}$ and $\frac{1}{4}$ inches, whole feet, whole yards, whole centimeters, and whole meters)
	4.M.3	Know and understand equivalent standard units of length: 12 inches = 1 foot 3 feet = 1 yard
	4.M.4	Select tools and units appropriate to the mass of the object being measured (grams and kilograms)
	4.M.5	Measure mass, using grams
	4.M.6	Select tools and units appropriate to the capacity being measured (milliliters and liters)
	4.M.7	Measure capacity, using milliliters and liters
		<ul style="list-style-type: none"> Measure length, mass, and capacity in standard and metric units

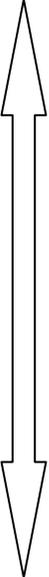
ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Measurement			
Less Complex		More Complex	
Units of Measurement	<p>The student will:</p> <ul style="list-style-type: none"> • order objects according to their lengths (21101) • recognize the difference in length between standard units of measure (21102) • recognize the attributes of mass (more mass/less mass) and compare two objects according to these attributes (21103) • recognize the attributes of mass (more mass/less mass) and/or order three or more objects according to these attributes (21104) • identify tools appropriate for measurement (21105) • use standard and non-standard tools for measurement (21106) 	<p>The student will:</p> <ul style="list-style-type: none"> • use a ruler to measure and/or compare lengths to the nearest whole centimeter (21201) • use a scale to measure the mass of objects measured in grams (21202) • use a scale to measure the mass of objects and/or compare the mass of two or more objects measured in grams (21203) • use appropriate tools to measure capacities (volume) of amounts measured in standard units (21204) • use appropriate tools to measure and/or compare the capacity of three or more amounts measured in standard units (21205) 	<p>The student will:</p> <ul style="list-style-type: none"> • use a ruler or meter stick to measure and/or compare lengths to the nearest whole standard unit (21301) • use a scale to measure the mass of objects and/or compare the masses of objects measured in grams or kilograms (21302) • recognize, name, and/or use appropriate tools to measure and/or compare capacities(volumes) of amounts measured in standard units (21303)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">Less Complex</div>  <div style="margin-top: 10px;">More Complex</div> </div>	<p>The student will use a height chart to determine who in the class is the tallest or shortest.</p>	<ul style="list-style-type: none"> Sequenced captioned dated pictures of student reading and/or recording the heights of students and/or declaring who is the tallest Work product showing the heights of students read and/or recorded and/or identifying the tallest and/or shortest person
	<p>The student will measure the lengths of the sides of classroom objects (e.g., desk, blackboard, shoe) using a meter stick, centimeter ruler, yard stick, and/or ruler.</p>	<ul style="list-style-type: none"> Sequenced captioned dated pictures of the student measuring objects and/or recording their lengths to the nearest standard unit of measure Scrapbook including pictures of objects and/or their lengths as measured by the student to the nearest standard unit of measure
	<p>The student will create a list or set of pictures of familiar objects in order according to their mass given in grams and/or kilograms.</p>	<ul style="list-style-type: none"> Scrapbook containing pictures of classroom or home objects and/or their mass measured in grams and/or kilograms and placed in order of their mass List of 5 or more objects and/or their mass in order from least to greatest

Grade 4

Strand: Measurement		Band: Units/Estimation	
Math Core Curriculum (2005)	Grade-by-Grade Indicators		Essence of Indicators
Pg. 49	4.M.8	Make change, using combined coins and dollar amounts	<ul style="list-style-type: none"> • Make change, using combined coins and dollar amounts • Calculate elapsed time in hours and half hours (not crossing A.M./P.M.) and in days and weeks, using a calendar
	4.M.9	Calculate elapsed time in hours and half hours, not crossing A.M./P.M.	
	4.M.10	Calculate elapsed time in days and weeks, using a calendar	

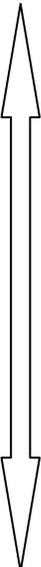
ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Measurement			
Less Complex		More Complex	
Units	<p>The student will:</p> <ul style="list-style-type: none"> Identify coins and their value (penny, nickel, dime and quarter) (22101) recognize the value of a collection of 2 or more of the same coins (22102) recognize the value of a collection of 2 or more coins of different value (22103) recognize the days of the week (22104) 	<p>The student will:</p> <ul style="list-style-type: none"> make change using coins (22201) make change using the least number of coins (22202) order the days of the week and/or relate them to an activity schedule (22203) 	<p>The student will:</p> <ul style="list-style-type: none"> make change using coins and/or dollar amounts (22301) use a monthly calendar to relate days special activities or events (22302) relate lengths of time to activity schedules using any measure of time to include seconds, minutes, hours, days, weeks, months, and/or years (22303)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Less Complex</div>  <div style="writing-mode: vertical-rl; transform: rotate(180deg);">More Complex</div> </div>	<p>The student will put the days in order from Sunday to Saturday.</p>	<ul style="list-style-type: none"> • Videotape of student sorting cards with the names of the days of the week and/or indicating the days in order from Sunday to the end of the week • Data indicating the level of accuracy when the student is asked to indicate which day comes between two given days of the week
	<p>The student will put events or activities in the order they will take place (e.g., in a day, week, month, and/or year) when given a list of times and/or dates for the events or activities.</p>	<ul style="list-style-type: none"> • Work product showing the result of the student placing pictures of activities and/or holidays on a calendar • Work product of a student's monthly schedule and/or the activities that take place during that time
	<p>The student will put a list of activities and/or holidays in order so that the activities or holidays will occur when given the dates of the activities and/or the holidays.</p>	<ul style="list-style-type: none"> • A calendar created by the student that lists the school holidays for a year • After being shown a calendar containing all of the holidays, the student will produce a list of these holidays in order, beginning at the first of the year

Grade 5

Strand: Number Sense and Operations		Band: Number Systems	
Math Core Curriculum (2005)	Grade-by-Grade Indicators	Essence of Indicators	
Pg. 55	5.N.1	Read and write whole numbers to millions	<ul style="list-style-type: none"> • Read and write, group, compare, and order whole numbers to millions • Compare and order decimals (to thousandths) and fractions (including those with unlike denominators) and create equivalent fractions • Understand the concept of ratio and express ratios in different forms • Understand that percent means part of 100, and write percents as fractions and decimals
	5.N.2	Compare and order numbers to millions	
	5.N.3	Understand place value structure of the base ten number system: 10 ones = 1 ten 10 tens = 1 hundred 10 hundreds = 1 thousand 10 thousands = 1 ten thousand 10 ten thousands = 1 hundred thousand 10 hundred thousands = 1 millions	
	5.N.4	Create equivalent fractions, given a fraction	
	5.N.5	Compare and order fractions including unlike denominators (with and without the use of a number line) <i>Note: Commonly used fractions such as those that might be indicated on ruler, measuring cup, etc.</i>	
	5.N.6	Understand the concept of ratio	
	5.N.7	Express ratios in different forms	
	5.N.8	Read, write, and order decimals to thousandths	
	5.N.9	Compare fractions using $<$, $>$, or $=$	
	5.N.10	Compare decimals using $<$, $>$, or $=$	
	5.N.11	Understand that percent means part of 100, and write percents as fractions and decimals	

ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Number Sense and Operations			
Less Complex		More Complex	
←	←	→	→
Number Systems	<p>The student will:</p> <ul style="list-style-type: none"> identify the first digit of a number already rounded to the nearest million and/or compare two of these numbers using a number line (11101) identify the first digit of a number already rounded to the nearest million and/or order three or more of these numbers (11102) use concrete objects to compare two unit fractions, $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{3}$ (11103) use concrete objects to order three or more unit fractions, $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{3}$ (11104) use a number line to compare two decimals to the nearest tenth (11105) use a number line to compare three or more decimals to the nearest tenth (11106) group objects into equal sets (11107) order whole numerals (11108) 	<p>The student will:</p> <ul style="list-style-type: none"> identify the first two digits of a 7-digit number already rounded to the nearest hundred thousand and/or compare two of these numbers using a number line (11201) identify the first two digits of a 7-digit number already rounded to the nearest hundred thousand and/or order three or more of these numbers using a number line (11202) compare two fractions that have the same denominator (11203) order three or more fractions that have the same denominator (11204) compare two decimals to the nearest hundredth with or without the use of a number line (11205) order three or more decimals to the nearest hundredth with or without the use of a number line (11206) 	<p>The student will:</p> <ul style="list-style-type: none"> identify the first three digits of a 7-digit number already rounded to the nearest ten thousand and/or compare two of these numbers with or without the use of a number line (11301) identify the first three digits of a 7-digit number already rounded to the nearest ten thousand and/or order three or more of these numbers with or without the use of a number line (11302) demonstrate the concept of ratio (11303) demonstrate an understanding that percent means part of 100 (11304) read, write and/or order percents (11305)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
Less Complex  More Complex	<p>The student will match the word or symbol of the fraction with $\frac{1}{2}$, $\frac{1}{4}$, or $\frac{1}{3}$ when presented with a circle or square that has been cut into 2, 3, or 4 equal pieces.</p>	<ul style="list-style-type: none"> • Work sample showing 3-inch paper squares cut into halves, fourths and/or thirds, labeled with their fraction • Videotape showing a student matching the fraction to the pieces of paper formed by cutting same-size paper circles into halves, thirds and/or fourths
	<p>The student will list prices (given to the nearest cent and/or written using \$0.00 format) of items from a catalog or advertisement flier in order from least to greatest cost.</p>	<ul style="list-style-type: none"> • Scrapbook of pictures of items and/or their prices put in order from the least to greatest cost • Work product showing a list of items that cost less than \$1.00 and/or their prices and/or put in order from least to greatest cost
	<p>The student will find samples of advertisements using percents and/or shade hundredths charts to represent the value of the percent.</p>	<ul style="list-style-type: none"> • Scrapbook of advertisements involving percents and/or the hundredths chart shaded to represent those percents • Work sample showing student matches between percents found in advertisements and/or their representative hundredths chart correctly shaded

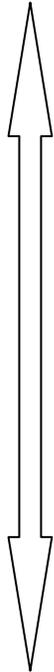
Grade 5

Strand: Number Sense and Operations		Band: Operations	
Math Core Curriculum (2005)	Grade-by-Grade Indicators	Essence of Indicators	
Pg. 56	5.N.16	Use a variety of strategies to multiply three-digit by three-digit numbers <i>Note: Multiplication by anything greater than a three-digit multiplier/multiplicand should be done using technology</i>	<ul style="list-style-type: none"> Use a variety of strategies to multiply, and divide one-, two-, and three-digit numbers Use a variety of strategies to add and subtract improper fractions and mixed numbers with like denominators and to add, subtract, multiply and divide decimals to thousandths
	5.N.17	Use a variety of strategies to divide three-digit numbers by one- and two-digit numbers <i>Note: Division by anything greater than a two-digit divisor should be done using technology</i>	
	5.N.18	Evaluate an arithmetic expression using order of operations including multiplication, division, addition, subtraction and parenthesis	
	5.N.19	Simplify fractions to lowest terms	
	5.N.20	Convert improper fractions to mixed numbers, and mixed numbers to improper fractions	
	5.N.21	Use a variety of strategies to add and subtract fractions with like denominators	
	5.N.22	Add and subtract mixed numbers with like denominators	
	5.N.23	Use a variety of strategies to add, subtract, multiply, and divide decimals to thousandths	

ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Number Sense and Operations			
Less Complex		More Complex	
←	←	→	→
Operations	<p>The student will:</p> <ul style="list-style-type: none"> • use a variety of strategies to add, subtract, and/or multiply whole numbers (13101) • use a variety of strategies to add decimals to tenths (13102) • recognize a whole and/or its parts (13103) 	<p>The student will:</p> <ul style="list-style-type: none"> • use a variety of strategies to add, subtract, multiply, and/or divide whole numbers (13201) • use a variety of strategies to add and/or subtract decimals to tenths (13202) • connect written and/or pictorial representations of fractions with denominators up to 2 (13203) 	<p>The student will:</p> <ul style="list-style-type: none"> • use a variety of strategies to add and/or subtract fractions (13301) • use a variety of strategies to add, subtract, multiply, and/or divide decimals to tenths (13302)

Grade 5

Strand-Number Sense and Operations
(Band: Operations)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
<p style="text-align: center;">Less Complex</p>  <p style="text-align: center;">More Complex</p>	The student will solve multiplication and/or division word problems using 1 to 9 objects.	<ul style="list-style-type: none"> Data indicating the level of accuracy of student using manipulatives to show simple multiplication Work sample of three objects for sale and/or their prices (to the nearest dollar) and/or the total cost to purchase 2, 3, or 4 of the given item(s)
	The student will show addition and/or subtraction of decimals to tenths on a number line.	<ul style="list-style-type: none"> Video tape of student showing addition of decimals to tenths on a number line (0.0 to 0.9) Data showing the level of accuracy of subtracting decimals to tenths using a number line (0.0 to 0.9)
	The student will use a ruler showing halves and/or fourths of an inch to add and/or subtract fractions involving halves and/or fourths.	<ul style="list-style-type: none"> Sequenced captioned dated pictures showing a student drawing line segments, such as $2\frac{1}{2}$ inches long and/or adding another segment $\frac{1}{4}$ inches long to get the segment $2\frac{3}{4}$ inches long Work sample showing student-drawn lines segments added together to form a longer segment of a given specified length

Grade 5

Strand: Geometry		Band: Geometric Relationships	
Math Core Curriculum (2005)	Grade-by-Grade Indicators	Essence of Indicators	
Pg. 57-58	5.G.2	Identify pairs of similar triangles	<ul style="list-style-type: none"> Identify pairs of similar triangles and the ratio of their corresponding sides Classify triangles and quadrilaterals by properties of their angles and sides Know that the sum of the interior angles of a triangle is 180 degrees and the sum of the angles of a quadrilateral is 360 degrees Identify pairs of congruent triangles and their corresponding part
	5.G.3	Identify the ratio of corresponding sides of similar triangles	
	5.G.4	Classify quadrilaterals by properties of their angles and sides	
	5.G.5	Know that the sum of the interior angles of a quadrilateral is 360 degrees	
	5.G.6	Classify triangles by properties of their angles and sides	
	5.G.7	Know that the sum of the interior angles of a triangle is 180 degrees	
	5.G.8	Find a missing angle when given two angles of a triangle	
	5.G.9	Identify pairs of congruent triangles	
	5.G.10	Identify corresponding parts of congruent triangles	

ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Geometry			
Less Complex		More Complex	
Geometric Relationships	<p>The student will:</p> <ul style="list-style-type: none"> • sort triangles from quadrilaterals (31101) • count the number of sides and/or angles of triangles and/or quadrilaterals (31102) • identify geometric shapes (31103) 	<p>The student will:</p> <ul style="list-style-type: none"> • classify quadrilaterals by properties of their angles and/or sides (31201) • recognize, name, draw, compare, and/or sort congruent figures (31202) • know that the sum of the interior angles of a quadrilateral is 360 degrees (31203) 	<p>The student will:</p> <ul style="list-style-type: none"> • classify triangles by properties of their angles and/or sides (31301) • classify quadrilaterals by properties of their angles and/or sides (31302) • recognize, name, draw, compare, and/or sort similar triangles and/or identify their corresponding parts (31303) • know that the sum of the angles of a triangle is 180 degrees (31304) • recognize, name, draw, compare, and/or sort congruent triangles and/or identify their corresponding parts (31305)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
Less Complex  More Complex	The student will sort non-square rectangles (rectangles that do not have all four sides congruent), squares, and/or triangles when given a variety of shapes and/or a labeled sorting tray.	<ul style="list-style-type: none"> Sequenced captioned dated pictures showing student sorting a set of six or more shapes Work product showing the results of a sort of shapes
	From a set of three or more shapes, the student will select the shape that is congruent to the given shape.	<ul style="list-style-type: none"> Work product that shows student correctly matched pairs of congruent triangles, congruent squares, and/or congruent rectangles Data indicating the level of accuracy of the student selecting from a collection of triangles, squares and/or rectangles, the shape that is congruent to one presented by the teacher
	The student will identify rectangles, squares, triangles, and/or circles found within the school and/or community (for example, triangle: yield sign, non-square; rectangle: the face of a door).	<ul style="list-style-type: none"> Scrapbook of pictures of items found within the school or community and/or the names of their geometric shapes Work sample showing pictures of common items matched with the word for their geometric shape

Grade 5

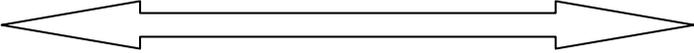
Strand: Geometry		Band: Coordinate Geometry	
Math Core Curriculum (2005)	Grade-by-Grade Indicators		Essence of Indicators
Pg. 58	5.G.12	Identify and plot points in the first quadrant	<ul style="list-style-type: none"> Identify and plot points in the first quadrant Plot points to form basic geometric shapes and calculate their perimeters (rectangles, shapes composed of rectangles having sides with integer length and parallel to the axes)
	5.G.13	Plot points to form basic geometric shapes (identify and classify)	
	5.G.14	Calculate perimeter of basic geometric shapes drawn on a coordinate plane (rectangles and shapes composed of rectangles having sides with integer lengths and parallel to the axes)	

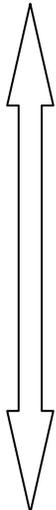
ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Geometry			
Less Complex		More Complex	
Coordinate Geometry	The student will: <ul style="list-style-type: none"> • use single-digit whole numbers to locate a position on a number line (33101) 	The student will: <ul style="list-style-type: none"> • use a letter and/or a number to locate areas on a map (33201) 	The student will: <ul style="list-style-type: none"> • identify and/or plot points in the first quadrant of a coordinate plane (33301) • locate and/or plot points on a coordinate plane to form rectangles (33302)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
<p>Less Complex</p> <p>More Complex</p>	<p>The student will identify the numbers that name the positions of objects placed on a number line.</p>	<ul style="list-style-type: none"> • Data indicating the level of accuracy of the student identifying the correct number that represents the position on a number line of objects placed on it • Sequenced captioned dated pictures of a student-made number line with 3 objects correctly placed on the number line to correspond with specific positions indicated for the placement
	<p>When given the coordinates of a position on a Battleship board or checkerboard grid, the student will place a marker to identify a given position.</p>	<ul style="list-style-type: none"> • Data indicating the level of accuracy of a student correctly locating a position on a Battleship board when given the coordinates • Data indicating the level of accuracy when asked to find an object placed on a checkerboard grid, identifies the correct coordinates of the position of that object
	<p>When given the coordinates of an object and a simple map drawn on a small grid that has scale letters along the horizontal axis and numbers along the vertical axis (e.g.,</p> <ul style="list-style-type: none"> • a 5 by 5 grid with a house at [B,1] • a bear at [A,5] • a star at [D,2]) <p>the student will place the object on the grid; and/or shown an object on a grid, the student will identify the coordinates of that object.</p>	<ul style="list-style-type: none"> • Data indicating the level of accuracy of a student correctly locating a position on a simple map when given the coordinates • Data indicating the level of accuracy when asked to find an object placed on a small grid, identifies the correct coordinates of the position of that object

Grade 6

Strand: Number Sense and Operations		Band: Number Systems	
Math Core Curriculum (2005)	Grade-by-Grade Indicators	Essence of Indicators	
Pg. 64-65	6.N.1	Read and write whole numbers to trillions	<ul style="list-style-type: none"> Define and identify properties of addition and multiplication Understand and use the concepts of rate, ratio, and proportion Read, write, and identify percents of a whole and solve percent problems Define absolute value and determine the absolute value of rational numbers (including positive and negative) Locate (on a number line) and order rational numbers (including positive and negative)
	6.N.2	Define and identify the commutative and associative properties of addition and multiplication	
	6.N.3	Define and identify the distributive property of multiplication over addition	
	6.N.4	Define and identify the identity and inverse properties of addition and multiplication	
	6.N.5	Define and identify the zero property of multiplication	
	6.N.6	Understand the concept of rate	
	6.N.7	Express equivalent ratios as a proportion	
	6.N.8	Distinguish the difference between rate and ratio	
	6.N.9	Solve proportions using equivalent fractions	
	6.N.10	Verify the proportionality using the product of the means equals the product of the extremes	
	6.N.11	Read, write, and identify percents of a whole (0% to 100%)	
	6.N.12	Solve percent problems involving percent, rate, and base	
	6.N.13	Define absolute value and determine the absolute value of rational numbers (including positive and negative)	
	6.N.14	Locate rational numbers on a number line (including positive and negative)	
	6.N.15	Order rational numbers (including positive and negative)	

ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Number Sense and Operations			
Less Complex		More Complex	
			
Number Systems	<p>The student will:</p> <ul style="list-style-type: none"> identify the first digit of a number already rounded to the nearest billion and/or compare two of these numbers using a number line (11101) identify the first digit of a number already rounded to the nearest billion and/or order three or more of these numbers (11102) use concrete objects to recognize that 50% represents the same amount as $\frac{1}{2}$ of the whole (11103) use a number line to compare and/or order integers from -10 to 10 (11104) 	<p>The student will:</p> <ul style="list-style-type: none"> identify the first two digits of a 10-digit number already rounded to the nearest hundred million and/or compare two of these numbers using a number line (11201) identify the first two digits of a 10-digit number already rounded to the nearest hundred million and/or order three or more of these numbers using a number line (11202) use a variety of strategies to compare commonly used percents and/or their fractional equivalents (0%, 10%, 25%, 50%, 100%) (11203) use a number line to compare and/or order integers from -20 to 20 and/or unit fractions (11204) 	<p>The student will:</p> <ul style="list-style-type: none"> identify the first three digits of a 10-digit number already rounded to the nearest ten million and/or compare two of these numbers with or without the use of a number line (11301) identify the first three digits of a 10-digit number already rounded to the nearest million and/or order three or more of these numbers with or without the use of a number line (11302) solve real world problems involving commonly used percents (0%, 10%, 25%, 50%, 100%) (11303) use a number line to compare and/or order integers, fractions, and/or percents (11304)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
 <p>Less Complex</p> <p>More Complex</p>	<p>The student will recognize $\frac{1}{2}$ and/or 50% of an object (sandwich or paper square, for example) when presented with a whole object and/or the object broken into two pieces.</p>	<ul style="list-style-type: none"> • Videotape of student responding when shown a whole cookie and/or a cookie broken into two pieces and/or asked to take half of a cookie • Work product of pictures of objects whole and/or those broken into two pieces and/or the student selecting the pictures of half pieces
	<p>The student will place symbols or words for integers -10 to $+10$ in the correct sequence on a number line or thermometer that already contains some of these integers.</p>	<ul style="list-style-type: none"> • Work product of a number line showing the integers -10 to $+10$ • Data indicating the level of accuracy of student filling in missing integers on a number line or thermometer containing some integers from -10 to $+10$
	<p>The student will create and/or solve real world problems involving commonly used percents.</p>	<ul style="list-style-type: none"> • Scrapbook containing 2 or 3 advertisements which contain a percent and/or the student created problem using that advertisement • Data indicating level of accuracy of the student finding the number of objects in 50% (or half) of the objects in a set

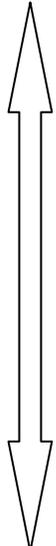
Grade 6

Strand: Number Sense and Operations		Band: Operations	
Math Core Curriculum (2005)	Grade-by-Grade Indicators	Essence of Indicators	
Pg. 65-66	6.N.16	Add and subtract fractions with unlike denominators	<ul style="list-style-type: none"> • Add, subtract, multiply, and divide fractions and mixed numbers with unlike denominators • Find multiple representations of rational numbers (fractions, decimals, and percents 0 to 100) • Evaluate numerical expressions using order of operations (may include exponents of two and three) • Represent repeated multiplication in exponential form and evaluate expressions having exponents of one, two, or three
	6.N.17	Multiply and divide fractions with unlike denominators	
	6.N.18	Add, subtract, multiply, and divide mixed numbers with unlike denominators	
	6.N.19	Identify the multiplicative inverse (reciprocal) of a number	
	6.N.20	Represent fractions as terminating or repeating decimals	
	6.N.21	Find multiple representations of rational numbers (fractions, decimals, and percents 0 to 100)	
	6.N.22	Evaluate numerical expressions using order of operations (may include exponents of two and three)	
	6.N.23	Represent repeated multiplication in exponential form	
	6.N.24	Represent exponential form as repeated multiplication	
	6.N.25	Evaluate expressions having exponents where the power is an exponent of one, two, or three	

ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Number Sense and Operations			
Less Complex		More Complex	
←	←	→	→
Operations	<p>The student will:</p> <ul style="list-style-type: none"> use a variety of strategies to add and/or subtract simple unit fractions ($\frac{1}{2}, \frac{1}{4}$) (13101) use a number line to compare and/or order 10%, 25%, 50%, and 100% and/or their decimal and/or fractional equivalents (13102) use a variety of strategies to add, subtract, multiply and/or divide integers (13103) 	<p>The student will:</p> <ul style="list-style-type: none"> use a variety of strategies to add, subtract, multiply, and/or divide fractions with a common denominator (13201) use a variety of strategies to relate fractions (as tenths) and/or their decimal and/or percent equivalents (13202) 	<p>The student will:</p> <ul style="list-style-type: none"> use a variety of strategies to add, subtract, and/or multiply fractions (13301) evaluate numerical expressions using order of operations and/or whole numbers only (13302)

Grade 6

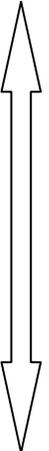
Strand-Number Sense and Operations
(Band: Operations)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">Less Complex</div>  <div style="margin-top: 10px;">More Complex</div> </div>	<p>The student will compare and/or order percents (10%, 25%, 50%, and 100%).</p>	<ul style="list-style-type: none"> Sequenced captioned dated pictures of the student making a number line segment and/or placing 10%, 25%, 50% and 100% on it Data indicating the level of accuracy of student locating the correct position on a number line segment of a percent when some percents are missing
	<p>The student will relate 100% to \$1.00 and/or use it to relate other percents (10%, 25%, 50%) to their decimal money amounts (\$0.10, \$ 0.25, \$0.50) and/or their fractions, ($\frac{10}{100} = \frac{1}{10}$, $\frac{25}{100} = \frac{1}{4}$, $\frac{50}{100} = \frac{1}{2}$).</p>	<ul style="list-style-type: none"> Videotape showing student counting, such as, 4 quarters to show one quarter is one-fourth of a dollar or 25% of a dollar and/or similar activities for the other percents Work product showing student matches percent to cent amounts to fraction
	<p>The student will evaluate numerical expressions.</p>	<ul style="list-style-type: none"> Work product showing a set of simple numeric expressions (using whole numbers less than 10 and/or up to 2 operations) and the student's answer when simplifying these expressions with or without the use of a calculator

Grade 6

Strand: Algebra		Band: Variables and Expressions	
Math Core Curriculum (2005)	Grade-by-Grade Indicators		Essence of Indicators
Pg. 66	6.A.1	Translate two-step verbal expressions into algebraic expressions	• Translate verbal expressions into algebraic expressions and evaluate algebraic expressions
	6.A.2	Use substitution to evaluate algebraic expressions (may include exponents of one, two and three)	

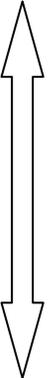
ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Algebra			
Less Complex		More Complex	
Variables and Expressions	<p>The student will:</p> <ul style="list-style-type: none"> • use whole numbers and/or the symbols + and/or – to translate verbal expressions into numerical expressions (41101) • use concrete objects to find the value of numerical expressions involving whole numbers (41102) • use concrete objects to compare using the terms equal to, greater than and/or less than (41103) 	<p>The student will:</p> <ul style="list-style-type: none"> • use numerals and/or the symbols +, –, ×, and/or ÷ to translate verbal expressions into numerical expressions (41201) • evaluate numerical expressions (41202) 	<p>The student will:</p> <ul style="list-style-type: none"> • use numerals, variables, and/or operational symbols to translate verbal expressions into algebraic expressions (41301) • evaluate and/or simplify algebraic expressions (41302)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
Less Complex  More Complex	The student will compare sets of concrete objects.	<ul style="list-style-type: none"> Work sample that shows the student matching equal sets of objects. (e.g., shown a picture of 2 pencils, the student selects another picture of a set of 2 pencils from a choice of 2 or 3 sets of different numbers of pencils)
	The student will use whole numbers and/or +, −, ×, and/or ÷ to translate verbal expressions into numerical expressions.	<ul style="list-style-type: none"> Work sample that shows the related numeric expression for a mathematical situation (e.g., I bought 2 fiction books, each costing \$4 and/or one map book costing \$2) or I had 5 pencils and/or gave away 3 of them Scrapbook containing pictures of items from a catalog and/or the algebraic expression that can be used to find the total cost of the items
	The student will use a calculator to simplify numerical expressions.	<ul style="list-style-type: none"> Work samples of student using a calculator to simplify expressions with 3 or more whole numbers and/or 2 or more operations

Grade 6

Strand: Algebra		Band: Equations and Inequalities	
Math Core Curriculum (2005)	Grade-by-Grade Indicators		Essence of Indicators
Pg. 66-67	6.A.3	Translate two-step verbal sentences into algebraic equations	<ul style="list-style-type: none"> • Translate verbal sentences into algebraic equations, solve equations (two- step) and evaluate formulas • Solve simple proportions within context
	6.A.4	Solve and explain two-step equations involving whole numbers using inverse operations	
	6.A.5	Solve simple proportions within context	
	6.A.6	Evaluate formulas for given input values (circumference, area, volume, distance, temperature, interest, etc.)	

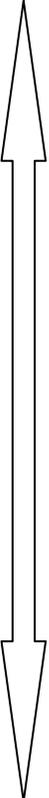
ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Algebra			
Less Complex		More Complex	
Equations and Inequalities	<p>The student will:</p> <ul style="list-style-type: none"> • use whole numbers and the symbols +, −, and = to translate verbal sentences into algebraic equations (42101) • identify correct numeric sentences (42102) • solve simple algebraic equations involving addition and/or subtraction (42103) 	<p>The student will:</p> <ul style="list-style-type: none"> • use numerals, variables, and/or the symbols +, −, ×, ÷, and/or = to translate verbal sentences into algebraic equations (42201) • solve one-step equations using any of the four operations (42202) 	<p>The student will:</p> <ul style="list-style-type: none"> • translate verbal sentences into algebraic equations (42301) • solve algebraic equations (no more than two-steps) (42302)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
Less Complex  More Complex	The student will use whole numbers and the equal sign to identify sets of equal numbers of objects.	<ul style="list-style-type: none"> Videotape showing the student identifying which whole number correctly completes a sentence. (e.g., given $3 = ?$, the student identifies the correct picture of a set with the same 3 objects)
	The student will fill in missing numbers in a number sentence (e.g., $5 - \square = 2$) with or without the use of objects as manipulatives.	<ul style="list-style-type: none"> Data indicating the level of accuracy in finding the missing numbers in simple algebraic equations Videotape of a student counting CD cases to find the missing numbers in algebraic equations
	The student will fill in missing numbers in a number sentence (e.g., $\square - 3 = 2$) with or without the use of a number line or calculator.	<ul style="list-style-type: none"> Videotape of student using a calculator to fill in the missing numbers in an algebraic equations involving $+$, $-$, \times, and/or \div and/or whole numbers Work samples of student solving one-step algebraic equations

Grade 7

Strand: Number Sense and Operations		Band: Number Theory	
Math Core Curriculum (2005)	Grade-by-Grade Indicators		Essence of Indicators
Pg. 74	7.N.8	Find the common factors and greatest common factor of two or more numbers	<ul style="list-style-type: none"> Given two or more numbers, find the common factors, greatest common factor, multiples and least common multiple Determine the prime factorization of a given number and write in exponential form
	7.N.9	Determine multiples and least common multiple of two or more numbers	
	7.N.10	Determine the prime factorization of a given number and write in exponential form	

ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Number Sense and Operations			
Less Complex		More Complex	
Number Theory	<p>The student will:</p> <ul style="list-style-type: none"> • use concrete objects to show multiplication of whole numbers less than 10 (12101) • multiply whole numbers less than 10 using a calculator or manipulatives (12102) • use concrete objects to show addition of two or more whole numbers (12103) 	<p>The student will:</p> <ul style="list-style-type: none"> • identify two whole numbers that when multiplied result in a given number (12201) • identify a missing factor when given one factor and/or the resulting product (12202) • on a number line of whole numbers from 1 to 10, identify which numbers are prime numbers (12203) 	<p>The student will:</p> <ul style="list-style-type: none"> • identify whole number factors of one or more whole numbers from 1 to 20 (12301) • identify a pair of factors of one or more whole numbers from 1 to 20 (12302)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
Less Complex  More Complex	<p>The student will use objects, pictures of objects, and/or a number line to show multiplication of 1, 2, and/or 3 by 1, 2, and/or 3.</p>	<ul style="list-style-type: none"> Sequenced captioned dated pictures showing the student manipulating the objects, pictures and/or number line to find the answer to questions, such as $1 \times 2 = ?$, $2 \times 3 = ?$, $1 \times ? = 3$ Work product showing an array of objects representing multiplication and/or the correct answer circled
	<p>With or without the use of manipulatives and/or a number line, the student will identify a pair of numbers that when multiplied result in a given number for example, $2 \times ? = 6$, $? \times ? = 6$</p>	<ul style="list-style-type: none"> Work product showing student identifying a missing factor or pair of factors in multiplication problems Data indicating the level of accuracy of the student finding a factor or pair of factors in a multiplication problem
	<p>The student will use a calculator to find all of the whole number factors for one or more whole numbers from 1 to 20.</p>	<ul style="list-style-type: none"> Work product showing all of the factors of, for example, 3 numbers from 1 to 20. For ex., factors of 6 = 1, 2, 3, and/or 6; factors of 12 = 1, 2, 3, 4, 6, 12; factors of 20 = 1, 2, 4, 5, 10, 20 Videotape of a student using a number line and/or calculator to identify all of the factors of some numbers. For example, shown a number line with numbers 1 through 10 on it, the student identifies 1, 2, 5, and/or 10 as the factors of 10

Grade 7

Strand: Number Sense and Operations		Band: Operations	
Math Core Curriculum (2005)	Grade-by-Grade Indicators	Essence of Indicators	
Pg. 75	7.N.11	Simplify expressions using order of operations. <i>Note: Expressions may include absolute value and/or integral exponents greater than 0</i>	<ul style="list-style-type: none"> • Simplify expressions using order of operations • Add, subtract, multiply, and divide integers • Determine the square root of a number • Classify irrational numbers
	7.N.12	Add, subtract, multiply, and divide integers	
	7.N.13	Add and subtract two integers (with and without the use of a number line)	
	7.N.14	Develop a conceptual understanding of negative and zero exponents with a base of ten and relate to fractions and decimals (e.g., $10^{-2} = .01 = 1/100$)	
	7.N.15	Recognize and state the value of the square root of a perfect square (up to 225)	
	7.N.16	Determine the square root of non-perfect squares using a calculator	
	7.N.17	Classify irrational numbers as non-repeating/non-terminating decimals	

ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Number Sense and Operations			
Less Complex		More Complex	
Operations	<p>The student will:</p> <ul style="list-style-type: none"> • use a number line to add integers from -10 to +10 (13101) • simplify a numerical expression involving three whole numbers using the same or different operations throughout (13102) 	<p>The student will:</p> <ul style="list-style-type: none"> • use a number line to add and/or subtract integers from -20 to +20 (13201) • using the order of operations, simplify numerical expressions (not including those with parentheses) of whole numbers (13202) 	<p>The student will:</p> <ul style="list-style-type: none"> • with or without the use of a number line, add, subtract, multiply, and/or divide integers (13301) • simplify expressions using order of operations (13302)

Grade 7

Strand-Number Sense and Operations
(Band: Operations)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
	<p>The student will shop (at the school store or use a catalog or advertisements) and/or select 2 of one item and/or 1 of another and/or find the total cost; for example, 2 pencils @5¢ each and/or 1 pen@50¢, $(2 \times 5) + 50 = ?$</p>	<ul style="list-style-type: none"> Scrapbook showing shopping activities where student simplified a numerical expression by finding the total cost of the items selected Data indicating level of accuracy in finding the total cost of purchases
	<p>The student will add and/or subtract integers on a number line.</p>	<ul style="list-style-type: none"> Sequenced captioned dated pictures showing student and/or teacher using a number line to add and/or subtract integers Journal of daily high and low temperatures and/or number sentences that indicate such amounts as, low temp + ? = high temp for the day; or high temp – low temp = ? degrees of difference?
	<p>With and/or without the use of a number line and/or a calculator, the student will add, subtract, and/or multiply integers.</p>	<ul style="list-style-type: none"> Videotape of a student manipulating the slider on a model of a thermometer to answer questions about the temperature outside over a certain period of time Work product showing student answers to problems involving addition, subtraction, and/or multiplication of integers

Grade 7

Strand: Statistics and Probability		Bands: Collection, Organization, and Display of Data	
Math Core Curriculum (2005)	Grade-by-Grade Indicators		Essence of Indicators
Pg. 78	7.S.1	Identify and collect data using a variety of methods	• Using a variety of methods, identify, collect, and display data in graphs
	7.S.2	Display data in a circle graph	
	7.S.3	Convert raw data into double bar graphs and double line graphs	

Strand-Statistics and Probability
(Band: Collection, Organization, and Display of Data)

ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Statistics and Probability			
Less Complex		More Complex	
Collection, Organization, and Display of Data	<p>The student will:</p> <ul style="list-style-type: none"> gather data and/or record it on a list or in a chart (51101) organize data and/or represent it using a simple pictograph (51102) 	<p>The student will:</p> <ul style="list-style-type: none"> pose a question, gather data appropriate to the question, and/or record the data in an organized way (51201) organize data and/or represent it using a pictograph and/or a bar graph (51202) 	<p>The student will:</p> <ul style="list-style-type: none"> pose a question, gather data appropriate to the question, and/or record the data using a table or frequency chart (51301) organize data and/or represent it using a frequency chart and/or a pictograph or bar graph (51302)

Grade 7

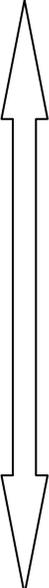
Strand-Statistics and Probability
(Band: Collection, Organization, and Display of Data)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
	The student will gather data in response to a question posed by the teacher or another student and/or record it.	<ul style="list-style-type: none"> • A picture board of pictures of peers that are in school on a certain day • A chart that shows how many boys and/or many girls are in a class or a chart of the weather for one week
	The student will create a question that could be used to collect information on a given topic, ask the question and/or represent the data using a pictograph.	<ul style="list-style-type: none"> • A work product that shows the question asked, (e.g. How many pockets do you have? or, What did you eat for breakfast?) with the data collected and/or the pictograph representing that data • A videotape of the student collecting data and/or completing the pictograph
	The student will select a topic of interest, create a question to ask, collect responses, and/or organize the responses on a table or frequency chart and/or represent the data in a pictograph or bar graph.	<ul style="list-style-type: none"> • A diary of the student's project in which the student posed a question, collected information, recorded the information on a table or frequency chart, and/or represented the data in a pictograph or bar graph

Grade 7

Strand: Statistics and Probability		Bands: Analysis of Data	
Math Core Curriculum (2005)	Grade-by-Grade Indicators		Essence of Indicators
Pg. 78	7.S.4	Calculate the range for a given set of data	• Read and interpret data represented graphically
	7.S.5	Select the appropriate measure of central tendency	
	7.S.6	Read and interpret data represented graphically (pictograph, bar graph, histogram, line graph, double line/bar graphs or circle graph)	

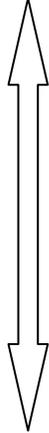
ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Statistics and Probability			
Less Complex		More Complex	
Analysis of Data	The student will: <ul style="list-style-type: none"> • read and/or interpret data displayed on simple pictographs (53101) 	The student will: <ul style="list-style-type: none"> • read and/or interpret data displayed on pictographs and/or bar graphs (53201) 	The student will: <ul style="list-style-type: none"> • read and/or interpret data displayed on pictographs, bar graphs, and/or frequency charts (53301)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
Less Complex  More Complex	The student will interpret a master activity schedule to determine which class he/she has next.	<ul style="list-style-type: none"> Sequenced captioned dated pictures showing the student with the schedule and/or a record of the accuracy of the student in identifying the next class or activity An audiotape of the student indicating what class or activity is next according to that student's master schedule
	The student will answer simple questions related to data displayed in a pictograph (for example, category with most, how many more in a category compared to another, how many all together in two categories).	<ul style="list-style-type: none"> A scrap book showing a pictograph and/or the student's answers to simple questions about the data displayed A work sample showing the pictograph, questions, and/or answers to questions related to the data
	The student will state a conclusion based on data displayed on a pictograph, bar graph, and/or frequency chart.	<ul style="list-style-type: none"> Work sample of a bar graph of a person's earnings from a job over a week, and/or the student's determination of the total weekly earnings Work sample of a pictograph and/or the student responses to questions related to the data displayed in that pictograph

Grade 8

Strand: Geometry		Band: Geometric Relationships	
Math Core Curriculum (2005)	Grade-by-Grade Indicators		Essence of Indicators
Pg. 86	8.G.1	Identify pairs of vertical angles as congruent	<ul style="list-style-type: none"> Identify pairs of vertical, supplementary, and complementary angles and calculate the missing angle measurements when given two intersecting lines and an angle Determine angle pair relations and calculate the missing angle measurement when given two parallel lines cut by a transversal
	8.G.2	Identify pairs of supplementary and complementary angles	
	8.G.3	Calculate the missing angle in a supplementary or complementary pair	
	8.G.4	Determine angle pair relationships when given two parallel lines cut by a transversal	
	8.G.5	Calculate the missing angle measurements when given two parallel lines cut by a transversal	
	8.G.6	Calculate the missing angle measurements when given two intersecting lines and an angle	

ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Geometry			
Less Complex		More Complex	
Geometric Relationships	<p>The student will:</p> <ul style="list-style-type: none"> • sort models or pictures of angles to determine which are congruent and/or which are not congruent (31101) • sort models or pictures of pairs of lines to determine which are parallel and/or which are not parallel (31102) • identify shapes that contain angles (31103) 	<p>The student will:</p> <ul style="list-style-type: none"> • identify pairs of congruent angles (31201) • identify pairs of vertical angles and/or determine if they are congruent (31202) • determine the measure of the missing angle when given the measure of one of a pair of vertical angles (31203) 	<p>The student will:</p> <ul style="list-style-type: none"> • identify pairs of supplementary angles (31301) • calculate the missing angle of a pair of supplementary angles (31302)

Sample Assessment Tasks		
Sample Assessment Tasks:		Possible Assessment Strategies and Datafolio Products
 <p>Less Complex</p> <p>More Complex</p>	The student will identify pairs of congruent angles or shapes.	<ul style="list-style-type: none"> Sequenced captioned dated pictures showing the student selecting, from a set of 3 or more shapes, the shape that is congruent to the given shape Videotape showing the student sorting models of angles when given a variety of angles and/or a labeled sorting tray
	The student will identify pairs of vertical angles.	<ul style="list-style-type: none"> Work product of student selections of pictures of vertical angles Work product of student drawn intersecting lines and/or identification of pairs of vertical angles
	The student will identify pairs of supplementary angles.	<ul style="list-style-type: none"> Work product of student selections of pictures of supplementary angles Work product of student drawn straight lines and/or rays and/or identification of pairs of supplementary angles

Grade 8

Strand: Geometry		Band: Transformational Geometry	
Math Core Curriculum (2005)	Grade-by-Grade Indicators		Essence of Indicators
Pg. 86	8.G.7	Describe and identify transformations in a plane, using proper function notation (rotations, reflections, translations, and dilations)	<ul style="list-style-type: none"> Describe, identify, and draw transformations in a plane (rotations, reflections, translations, and dilations) Identify the properties preserved and not preserved under a reflection, rotation, translation, and dilation
	8.G.8	Draw the image of a figure under rotations of 90 and 180 degrees	
	8.G.9	Draw the image of a figure under a reflection over a given line	
	8.G.10	Draw the image of a figure under a translation	
	8.G.11	Draw the image of a figure under dilation	
	8.G.12	Identify the properties preserved and not preserved under a reflection, rotation, translation, and dilation	

ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Geometry			
Less Complex		More Complex	
Transformational Geometry	<p>The student will:</p> <ul style="list-style-type: none"> use various types of models to identify, describe, name, and/or interpret images resulting from translations (slides) (32101) 	<p>The student will:</p> <ul style="list-style-type: none"> use various types of models to identify describe, name, or interpret images resulting from translations (slides) and/or reflections (flips) (32201) 	<p>The student will:</p> <ul style="list-style-type: none"> use various types of models to identify describe, name, or interpret images resulting from translations (slides), reflections (flips), rotations (turns), and/or dilations (shrinks or enlargements) (32301)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Less Complex</div>  <div style="writing-mode: vertical-rl; transform: rotate(180deg);">More Complex</div> </div>	<p>The student will use a model or manipulative to show or identify a translation (slide).</p>	<ul style="list-style-type: none"> • Videotape showing the student completing puzzles that require the student to find the correct orientation of the piece (e.g., non-interlocking, interlocking, form boards) • A journal showing the initial position of a shape and/or the results of the student sliding the shape (e.g., an L made of 4 squares) to the right, left, up, and/or down a certain number of units (e.g., slide the shape 2 units down on a small grid.)
	<p>The student will use manipulatives, and/or pictures, to show or identify translations (slides) and/or reflections (flips).</p>	<ul style="list-style-type: none"> • Data of level of accuracy of the student naming the transformation when the teacher slides and/or flips a shape on a board or grid • Sequenced captioned dated pictures of the student sliding a shape in a certain direction for a given number of units and/or flip the shape over a given line
	<p>The student will use manipulatives, and/or pictures, to show or identify translations (slides), reflections (flips), rotations (turns), and/or dilations.</p>	<ul style="list-style-type: none"> • Sequenced captioned dated pictures of the student making a repeating shape pattern by using flips and/or turns of geometric shapes • Data of level of accuracy of the student naming the transformation when the teacher slides, flips, turns, and/or dilates a shape on a board

Grade 8

Strand: Algebra		Band: Variables and Expressions	
Math Core Curriculum (2005)	Grade-by-Grade Indicators		Essence of Indicators
Pg. 84	8.A.1	Translate verbal sentences into algebraic inequalities	<ul style="list-style-type: none"> • Translate verbal sentences into algebraic inequalities • Write verbal expressions that match given mathematical expressions • Determine the relationship between a description of a situation and its graph • Use physical models to perform operations with polynomials
	8.A.2	Write verbal expressions that match given mathematical expressions	
	8.A.3	Describe a situation involving relationships that matches a given graph	
	8.A.4	Create a graph given a description or an expression for a situation involving a linear or nonlinear relationship	
	8.A.5	Use physical models to perform operations with polynomials	

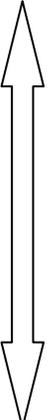
ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Algebra			
Less Complex		More Complex	
Variables and Expressions (represent and analyze)	The student will: <ul style="list-style-type: none"> • use concrete objects to compare quantities using the terms (equal to, greater than, and/or less than) (41101) • translate verbal sentences into algebraic sentences using numerals and/or the symbols $+$, $=$, and/or \neq (41102) 	The student will: <ul style="list-style-type: none"> • translate verbal sentences into algebraic sentences using the symbols $+$, $-$, \times, \div, $=$, \neq, $>$, and/or $<$ (41201) • complete and/or identify correct number sentences that use the above listed symbols (41202) 	The student will: <ul style="list-style-type: none"> • translate verbal sentences into algebraic sentences using the symbols $+$, $-$, \times, \div, $=$, \neq, $>$, $<$, \geq, and \leq (41301) • complete and/or identify correct number sentences that use the above listed symbols (41302) • write verbal expressions that match given mathematical expressions (41303)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
Less Complex  More Complex	The student will identify a set that is greater than a given set.	<ul style="list-style-type: none"> Videotape showing a student selecting a picture of a set of objects that has more objects than a given set (e.g., a student is shown a set of 2 CDs and is asked to identify which set has more CDs in it when given 2 or more sets from which to select)
	With or without the use of manipulatives and/or a calculator, the student will complete number sentences.	<ul style="list-style-type: none"> The student will identify which symbol (+ or -) to use to make simple number sentences correct (e.g., $3 _ 5 = 8$) The student will fill in missing numbers in a number sentence (e.g., $5 - \square = 3$) with or without the use of objects
	The student will use mathematical symbols to write and/or complete number sentences and/or equations.	<ul style="list-style-type: none"> Sequenced captioned dated pictures showing the student selecting the correct symbol, =, >, or <, that shows the relationship between objects Work product showing the use of one or more mathematical symbol key(s) on a calculator to write and/or complete number sentences

Grade 8

Strand: Algebra		Band: Patterns, Relations, and Functions	
Math Core Curriculum (2005)	Grade-by-Grade Indicators		Essence of Indicators
Pg. 85	8.A.15	Understand that numerical information can be represented in multiple ways, arithmetically, algebraically, and graphically	<ul style="list-style-type: none"> Understand, create, and interpret numerical information using equations, tables of values, and graphs Correctly use the terminology function, relation, domain, and range
	8.A.16	Find a set of ordered pairs to satisfy a given linear numerical pattern (expressed algebraically); then plot the ordered pairs and draw the line	
	8.A.17	Define and use correct terminology when referring to function (domain and range)	
	8.A.18	Determine if a relation is a function	
	8.A.19	Interpret multiple representations using equation, table of values, and graph	

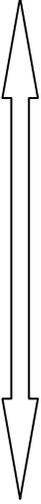
ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Algebra			
Less Complex		More Complex	
Patterns, Relations, and Functions	The student will:	The student will:	The student will:
	<ul style="list-style-type: none"> • duplicate repeating patterns in nature, art, music, or literature (43101) • extend repeating patterns in nature, art, music, or literature (43102) • when given a repeating or growing numeric pattern, duplicate the pattern (43103) • when given a repeating or growing numeric pattern, extend the pattern (43104) 	<ul style="list-style-type: none"> • when given a repeating or growing numeric and/or geometric pattern, extend the pattern (43201) • when given a repeating or growing numeric and/or geometric pattern, fill in the missing element in the pattern (43202) 	<ul style="list-style-type: none"> • when given a numeric and/or geometric pattern in the form of a list or table, extend the pattern (43301) • when given a numeric and/or geometric pattern in the form of a list or table, fill in the missing element in the pattern (43302) • create a numeric and/or geometric pattern (43303) • identify the rule for a numeric pattern (43304)

Sample Assessment Tasks		
Sample Assessment Tasks:		Possible Assessment Strategies and Datafolio Products
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">Less Complex</div>  <div style="margin-top: 10px;">More Complex</div> </div>	<p>The student will acknowledge (through facial expression, vocalization, body movement, etc.) a pattern of sensations when touching a pattern of textures (e.g., cotton/sandpaper, leaf/rock).</p>	<ul style="list-style-type: none"> Sequenced captioned dated pictures of student response when presented with a texture pattern Data indicating level of accuracy of student anticipation of a varying texture in a pattern of textures
	<p>The student will duplicate and/or extend a pattern that repeats attributes of color, size, or shape.</p>	<ul style="list-style-type: none"> Work sample of a student using shapes or stickers to extend a pattern Work product of a beaded necklace made by extending a pattern or a work product showing a pattern of nuts, washers and/or bolts that has been extended
	<p>The student will create a numeric or geometric pattern and/or extend it two or three times.</p>	<ul style="list-style-type: none"> Scrapbook of numeric patterns created and/or extended by the student Work product showing the student's use of shapes to create and/or extend a geometric pattern

High School

Strand: Algebra		Band: Variables and Expressions	
Math Core Curriculum (2005)	Grade-by-Grade Indicators		Essence of Indicators
Pg. 94	A.A.1	Translate a quantitative verbal phrase into an algebraic expression	<ul style="list-style-type: none">• Translate words into an algebraic expression.• Translate an algebraic expression into words
	A.A.2	Write a verbal expression that matches a given algebraic equation	

ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Algebra			
Less Complex		More Complex	
<p>Variables and Expressions (represent and analyze)</p>	<p>The student will:</p> <ul style="list-style-type: none"> translate verbal quantitative phrases into algebraic expressions, using numbers and/or the symbols + and/or - (41101) use concrete objects to find the value of numerical expressions involving whole numbers (41102) use concrete objects to compare using the terms equal to, greater than and/or less than (41103) 	<p>The student will:</p> <ul style="list-style-type: none"> translate verbal phrases into algebraic expressions using numbers and/or the symbols +, -, ×, and/or ÷ (41201) translate algebraic expressions that use the above listed symbols into words (41202) 	<p>The student will:</p> <ul style="list-style-type: none"> translate verbal phrases into algebraic expressions using numbers, variables, and/or the symbols +, -, ×, and/or ÷ (41301) translate algebraic expressions that use the above listed symbols into words (41302)

Sample Assessment Tasks		
Sample Assessment Tasks:		Possible Assessment Strategies and Datafolio Products
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Less Complex</div>  <div style="writing-mode: vertical-rl; transform: rotate(180deg);">More Complex</div> </div>	The student will identify the correct number to fill in an algebraic sentence.	<ul style="list-style-type: none"> A work sample showing what a student indicates is a correct fill in for simple algebraic sentences. (e.g., $1 + 2 = \square$. Which number goes in the box? Or, $\square + 2 = 3$. Which number goes in the box?)
	The student will match algebraic expressions to their related verbal phrases.	<ul style="list-style-type: none"> Journal showing word phrases and/or their matching algebraic expressions Work sample showing word phrases and/or algebraic expressions with operations missing, and/or the student's response selecting the missing operation symbol. For example, Sam has 4 forks. He takes 3 more forks from the drawer. Fill in the missing operation. $4 \ ? \ 3$
	The student will represent a real-life mathematical situation in an algebraic equation (or number sentence).	<ul style="list-style-type: none"> Journal showing descriptions of real-life situations and/or their matching algebraic equation Work sample of descriptions of real-life situations and/or the student's written equation related to that situation

High School

Strand: Algebra		Band: Equations and Inequalities	
Math Core Curriculum (2005)	Grade-by-Grade Indicators		Essence of Indicators
Pg. 94-95	A.A.3	Distinguish the difference between an algebraic expression and an algebraic equation	<ul style="list-style-type: none"> • Translate verbal sentences and situations into mathematical equations and inequalities • Analyze and solve verbal problems involving a variety of solution strategies. • Solve systems of equations
	A.A.4	Translate verbal sentences into mathematical equations or inequalities	
	A.A.5	Write algebraic equations or inequalities that represent a situation	
	A.A.6	Analyze and solve verbal problems whose solution requires solving a linear equation in one variable or linear inequality in one variable	
	A.A.7	Analyze and solve verbal problems whose solution requires solving systems of linear equations in two variables	
	A.A.8	Analyze and solve verbal problems that involve quadratic equations	
	A.A.9	Analyze and solve verbal problems that involve exponential growth and decay	
	A.A.10	Solve systems of two linear equations in two variables algebraically	
	A.A.11	Solve a system of one linear and one quadratic equation in two variables, where only factoring is required. <i>Note: The quadratic equation should represent a parabola and the solution(s) should be integers</i>	

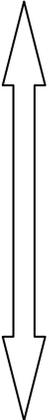
ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Algebra			
Less Complex		More Complex	
Equations and Inequalities	<p>The student will:</p> <ul style="list-style-type: none"> when given a repeating or growing numeric pattern, describe the pattern (42101) solve simple algebraic equations involving addition and/or subtraction (42102) identify correct numeric sentences (42103) 	<p>The student will:</p> <ul style="list-style-type: none"> translate verbal sentences into algebraic sentences using the symbols $+$, $-$, \times, \div, $=$, \neq, $>$, and/or $<$ (42201) solve one-step verbal problems using a variety of strategies (42202) 	<p>The student will:</p> <ul style="list-style-type: none"> translate verbal sentences into algebraic sentences using the symbols $+$, $-$, \times, \div, $=$, \neq, $>$, $<$, \geq, and/or \leq (42301) solve verbal problems using a variety of strategies (42302) solve one-step and/or two-step equations (42303)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Less Complex</div>  <div style="writing-mode: vertical-rl; transform: rotate(180deg);">More Complex</div> </div>	The student will use concrete objects to extend a repeating pattern.	<ul style="list-style-type: none"> A videotape showing the student copying a repeating pattern and/or indicating which object is next in a repeating pattern
	The student will solve a simple real-life problem using a one-step equation.	<ul style="list-style-type: none"> Videotape of student working with the teacher to solve a real-life problem with a one-step equation Work sample of student solutions to one-step real-life problems (e.g., Mary saved \$12. How much more money does she need to purchase a book that costs \$16?) $12 + x = 16; x = \\$14$
	The student will solve a real-life problem involving a one or two-step equation.	<ul style="list-style-type: none"> Journal of real-life verbal problems and/or the student's solution to these problems Data indicating level of accuracy of a student solving one- and/or two-step verbal problems (e.g., Dan bought 3 more than twice as many CDs as Jack bought. Dan bought 13 CDs. How many CDs did Jack buy?) $2x + 3 = 13; 2x = 10; x = 5$

High School

Strand: Statistics and Probability		Band: Organization and Display of Data	
Math Core Curriculum (2005)	Grade-by-Grade Indicators		Essence of Indicators
Pg. 98-99	A.S.1	Categorize data as qualitative or quantitative	<ul style="list-style-type: none"> • Categorize data as qualitative or quantitative • Categorize data as biased or non-biased • Display data in graphs
	A.S.2	Determine whether the data to be analyzed is univariate or bivariate	
	A.S.3	Determine when collected data or display of data may be biased	
	A.S.4	Compare and contrast the appropriateness of different measures of central tendency for a given data set	
	A.S.5	Construct a histogram, cumulative frequency histogram, and a box-and-whisker plot, given a set of data	
	A.S.6	Understand how the five statistical summary (minimum, maximum, and the three quartiles) is used to construct a box-and-whisker plot	
	A.S.7	Create a scatter plot of bivariate data	
	A.S.8	Construct manually a reasonable line of best fit for a scatter plot and determine the equation of that line	

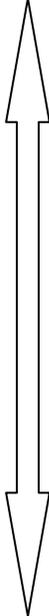
ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Organization and Display of Data			
Less Complex		More Complex	
Organization and Display of Data	The student will: <ul style="list-style-type: none"> • display data in a graph (52101) • gather data and record it on a list or in a chart (52102) 	The student will: <ul style="list-style-type: none"> • display data in a scatter plot (52201) • gather data and/or display it in a graph (52202) 	The student will: <ul style="list-style-type: none"> • identify data as qualitative or quantitative (52301) • identify data as biased or unbiased (52302) • gather data and/or display it in a bar graph or scatter plot (whichever is more appropriate) (52303)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
<p style="text-align: center;">Less Complex</p>  <p style="text-align: center;">More Complex</p>	The student will organize data that has already been collected and/or display it in a graph.	<ul style="list-style-type: none"> • A work sample that shows a graph made by the student from data already collected • Sequenced captioned dated pictures showing the student organizing data and/or displaying it in a graph
	The student will organize data that has already been collected and/or display it in a scatter plot.	<ul style="list-style-type: none"> • Videotape of student working with the teacher to create a scatter plot from data that has already been collected • Work sample of student scatter plot made using data already collected
	The student will select a question and/or gather data that can be used to make a scatter plot, and/or display the data in a scatter plot.	<ul style="list-style-type: none"> • Work sample showing the question that was asked, the data that was collected, and/or the scatter plot that represented these data • Video tape showing the student working with a teacher to select a question, gather data, and/or represent the data in a scatter plot

High School

Strand: Statistics and Probability		Band: Analysis of Data
Math Core Curriculum (2005)	Grade-by-Grade Indicators	Essence of Indicators
Pg. 99	A.S.9	Analyze and interpret a frequency distribution table or histogram, a cumulative frequency distribution table or histogram, or a box-and-whisker plot
	A.S.10	Evaluate published reports and graphs that are based on data by considering: experimental design, appropriateness of the data analysis, and the soundness of the conclusions
	A.S.11	Find the percentile rank of an item in a data set and identify the point values for first, second, and third quartiles
	A.S.12	Identify the relationship between the independent and dependent variables from a scatter plot (positive, negative, or none)
	A.S.13	Understand the difference between correlation and causation
	A.S.14	Identify variables that might have a correlation but not a causal relationship
		<ul style="list-style-type: none"> Analyze data represented graphically Interpret data represented graphically

ALTERNATE GRADE LEVEL INDICATORS			
POSSIBLE ENTRY POINTS for Analysis of Data			
Less Complex		More Complex	
Analysis of Data	<p>The student will:</p> <ul style="list-style-type: none"> • read data displayed on a simple graph (53101) 	<p>The student will:</p> <ul style="list-style-type: none"> • interpret data displayed on a simple graph (53201) 	<p>The student will:</p> <ul style="list-style-type: none"> • read data displayed on two or more different types of simple graphs (53301) • interpret data displayed on two or more different types of simple graphs (53302)

Sample Assessment Tasks		
	Sample Assessment Tasks:	Possible Assessment Strategies and Datafolio Products
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Less Complex</div>  <div style="writing-mode: vertical-rl; transform: rotate(180deg);">More Complex</div> </div>	<p>The student will answer questions about information displayed on a graph.</p>	<ul style="list-style-type: none"> • A work sample that shows student answers to questions posed about data displayed on a graph (e.g., student work schedule selecting next classroom job to be completed) • Sequenced captioned dated pictures showing the student selecting the correct answer of a question posed about information displayed on a graph (e.g., graph with large dots on it selecting the column that has more)
	<p>The student will analyze data represented on a graph.</p>	<ul style="list-style-type: none"> • Videotape of student working with the teacher to interpret data displayed on a graph • Work sample of student-made statements about information displayed on a graph
	<p>The student will read and/or interpret two different sets of data each displayed on a different type of graph. (For example, one set of data displayed on a bar graph and/or a different set of data displayed on a scatter plot.)</p>	<ul style="list-style-type: none"> • Journal of at least two different sets of data displayed on different types of graphs and/or student statements about the data • Videotape of the student working with the teacher to read and/or interpret data displayed on at least two different types of graphs

Mathematics Glossary

A Mathematics Toolkit, including curriculum guidance materials and resources is located on the SED website. Please see:

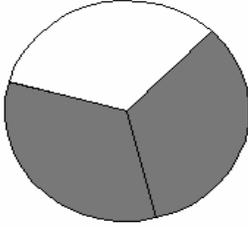
Mathematics Toolkit for Grades Prekindergarten-8:

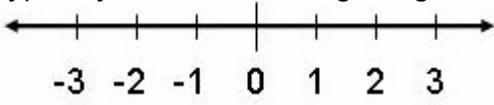
<http://www.emsc.nysed.gov/3-8/guidancecpk8.htm>

Mathematics Toolkit Grades 9-12:

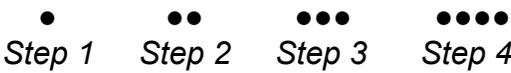
<http://www.emsc.nysed.gov/guidance912.htm>

NUMBER SENSE AND NUMERATION

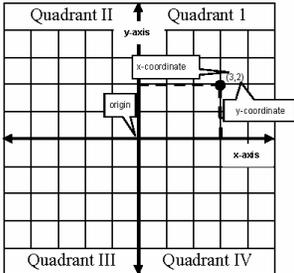
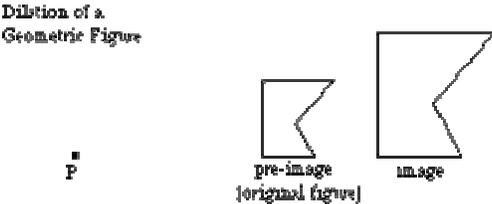
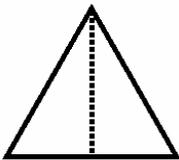
TERM	DEFINITION
Compare numbers	Given two numbers, determine which number is greater than, less than, or equal to the other number.
Fraction	<p>A number in the form $\frac{a}{b}$ or a/b where a is called the <i>numerator</i> and b is called the <i>denominator</i>. A fraction names a part of a whole or a part of a collection.</p> <p>Example: The shaded portion represents $\frac{2}{3}$ of the circle.</p>  <p>2 is the <i>numerator</i> and 3 is the <i>denominator</i>.</p>
Hundredths chart	A chart made of 100 squares, 10 squares across and 10 squares down.
Improper fraction	A fraction that has the numerator greater than or equal to the denominator. For example, $\frac{3}{2}$ and $\frac{4}{4}$ are improper fractions.
Integer	The set of numbers containing zero, the set of all natural numbers, and the negatives of all the natural numbers. For example, ..., -4, -3, -2, -1, 0, 1, 2, 3, 4, ... are integers.
Mixed number	A whole number together with a proper fraction. For example, $3\frac{1}{2}$ is a mixed number.

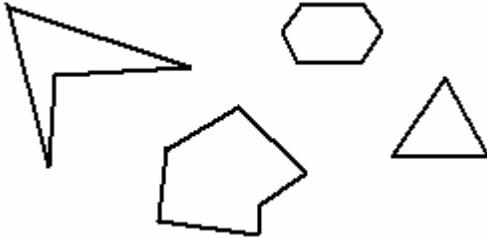
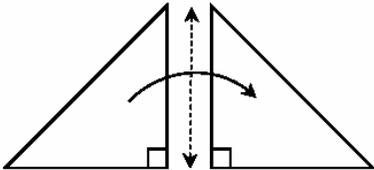
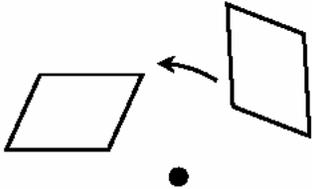
Number line	<p>A line representing the set of all real numbers. The number line is typically marked showing integer values.</p>  <p>www.mathwords.com</p>
Numeral	A symbol for a number. For example, 3 is the numeral for three.
Operation	Addition, subtraction, multiplication, division.
Order numbers	Given a list of 3 or more numbers, put the numbers in order from least to greatest or from greatest to least.
Ordinal numbers	Numbers that show place or position (first, second, third...to tenth) (e.g., identifies first person in line).
Percent	An amount that means part of 100. For example, 25% means $\frac{25}{100}$.
Proper fraction	A fraction with a smaller numerator than denominator. For example, $\frac{3}{4}$ is a proper fraction, but, $\frac{5}{2}$ is not a proper fraction.
Ratio	The result of dividing two quantities. Ratios can be written many ways, including, 3:4, 3 to 4, or $\frac{3}{4}$.
Unit fraction	A fraction with a 1 as the numerator. For example, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$ are unit fractions.
Skip count	Count by 2s, 3s, 5s, etc., skipping the numbers in between.
Whole number	The numbers 0, 1, 2, 3, 4,

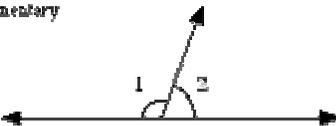
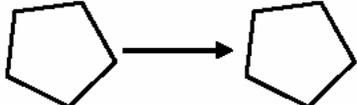
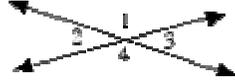
ALGEBRA

TERM	DEFINITION
Algebraic inequalities	Algebraic sentences that use the symbols, $>$, $<$, \geq , \leq . For example, $x - 3 \geq 4$ is an example of an algebraic inequality.
Common factors	Numbers that are factors of two or more numbers. For example, the factors of 12 are 1, 2, 3, 4, 6, and 12. The factors of 10 are 1, 2, 5, and 10. The common factors of 12 and 10 are 1 and 2.
Equation	A mathematical sentence where the left side of the equal sign has the same value as the right side. (e.g., $6 + 4 = 10$)
Expression	A mathematical combination made from mathematical symbols (e.g., one side of an equation is also an expression, $6 + 4$ and $3x - 10$. A verbal expression is given in words, for example, the sum of ten and a number. An algebraic expression is the translation of a verbal expression into numbers and/or letters, for example, $x + 10$ is the algebraic expression of the verbal expression given above.
Extend a pattern	To continue and lengthen a pattern.
Factor	One of two or more numbers that are multiplied together to get another number. For example, 3 and 4 are factors of 12 because $3 \times 4 = 12$.
Order of operations	To simplify an expression that includes only whole numbers and one or more operations (no parentheses), first do all multiplications and divisions in order from left to right, then do all additions and subtractions in order from left to right. For example, to simplify, $3 + 6 \div 2 - 1 + 7 \times 2$, first do the multiplications and divisions, you get $3 + 3 - 1 + 14$; then do the additions and subtractions from left to right, you get, $6 - 1 + 14 = 5 + 14 = 19$
Pattern (Repeating)	A pattern with a cyclic structure (e.g., (A, B) pattern (blue-red, blue-red) or (A, B, C) pattern (blue-red-green, blue-red-green)).
Pattern (Growing)	Patterns that involve a progression from step to step. Example: <div style="text-align: center;">  <p style="margin-left: 100px;">Step 1 Step 2 Step 3 Step 4</p> </div> This pattern is <i>growing</i> by one in each step.
Pattern (Numeric)	A pattern of numbers arranged according to a rule.
Pattern (Geometric)	A pattern of geometric shapes arranged according to a rule. Example: <div style="text-align: center;">  </div>
Prime numbers	Numbers which have only two factors, 1 and the number itself. For example, 13 is a prime number since its only factors are 1 and 13, but 9 is not a prime number since it has three factors, 1, 3, and 9.
Proportion	An equation of fractions in the form $\frac{a}{b} = \frac{c}{d}$.
Rule for a pattern	A sentence or equation that describes how to extend a pattern of how to find a certain term of a pattern.

GEOMETRY

Congruent angles	Angles that have the same measure. If you lay one angle on top of the other, they are congruent if they fit exactly.
Congruent figures	Figures that have the same shape and same size. Example: <div style="text-align: center;">  </div> <p style="text-align: center;">These two shapes are <i>congruent figures</i>.</p>
Coordinates	Coordinates are written as ordered pairs to give the exact location of a point or object on a grid, Cartesian plane, coordinate plane, or map. Example: <div style="text-align: center;">  </div> <p style="text-align: center;">The <i>coordinates of the point on the graph are (3, 2)</i>.</p>
Coordinate reference system	A system that uses coordinates to establish position.
Dilation	A transformation in which all distances are lengthened or shortened by a common factor. <div style="text-align: center;">  </div> <p style="text-align: center;">www.mathwords.com</p>
First quadrant	The quadrant located in the upper right portion of the coordinate plane. In this quadrant, both the x- and y- coordinates are positive numbers.
Image of a transformation	The figure that results after one or more transformations.
Line symmetry	Figures that match exactly when folded in half have line symmetry. Example: <div style="text-align: center;">  </div> <p style="text-align: center;">The dotted line denotes the <i>line symmetry</i> of this triangle.</p>

TERM	DEFINITION
Parallel lines	Two lines are parallel if they are in the same plane and never intersect.
Polygon	<p>A closed figure on a flat surface that is made up of line segments joined end to end. The line segments of a <i>polygon</i> may not cross.</p> <p>Examples:</p> 
Quadrilateral	A 4-sided polygon. Quadrilaterals include, rectangles, squares, parallelograms, rhombi, trapezoids, and kites.
Rectangle	A 4-sided polygon with all right angles.
Reflection (flip)	<p>A transformation in which a figure is flipped over a line.</p> <p>Example:</p> 
Rotation (turn)	<p>A transformation in which a figure is turned around a fixed point.</p> <p>Example:</p> 
Similar shapes	<p>Two figures are similar if they have the same shape; their angles are equal in size and the corresponding sides are in proportion.</p> <p>Example:</p>  <p style="text-align: center;">These two shapes are <i>similar</i>.</p>
Square	A rectangle with all sides congruent.
Supplementary angles	A pair of angles the sum of whose measures is 180° .

	<p>Supplementary Angles</p>  <p>www.mathwords.com</p> <p>In this diagram angles 1 and 2 are supplementary angles since, the measure of angle 1 + the measure of angle 2 = 180°</p>
Translation (slide)	<p>A transformation in which a figure is slid in any direction.</p> <p>Example:</p> 
Triangle	<p>A 3-sided polygon.</p>
Vertical angles	<p>A pair of opposite angles formed by the intersection of two straight lines.</p> <p>Vertical Angles</p>  <p>www.mathwords.com</p> <p>In this diagram, angles 1 and 4 are one pair of vertical angles and angles 2 and 3 are another pair of vertical angles. Vertical angles are congruent. So, angle 1 is congruent to angle 4 and angle 2 is congruent to angle 3.</p>

MEASUREMENT

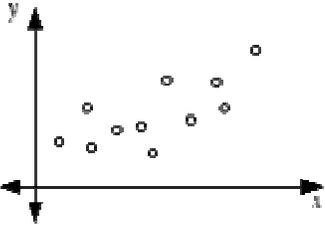
TERM	DEFINITION						
Analog clock	A clock, usually with a round face, 12 numbers, and 2 hands (one pointing to the hour and the other pointing to the minute).						
Attributes	<p>A characteristic (e.g., sorting by color; <i>sorting game</i>).</p> <p>Example:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Shape</th> <th style="text-align: center;">Attributes</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">big, shaded circle</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">small, not shaded triangle</td> </tr> </tbody> </table>	Shape	Attributes		big, shaded circle		small, not shaded triangle
Shape	Attributes						
	big, shaded circle						
	small, not shaded triangle						
Customary units of length	Miles, yards, feet, and inches						
Customary units of liquid capacity	Cups, pints, quarts, and gallons.						
Customary units of weight	Pounds and ounces						
Digital clock	A clock that gives the time using numbers. For example, 3:30.						
Metric units of length	Kilometers, meters, centimeters, and millimeters.						

Metric units of mass	Kilograms and grams.
Non-standard units of measure	Such measures include paperclips, foot steps, lengths of string, etc.
Perimeter	The sum of the lengths of the sides of a polygon.
Standard units of measure	All customary and metric units of measure.
Volume	<p>The size, measure, or amount of anything in three dimensions. For example, the volume of a rectangular solid is found by</p> $\text{Volume} = \text{length} \times \text{width} \times \text{height}$ <p>If the dimensions of the rectangular solid are measured in inches, the volume of the box is given in cubic inches.</p>

DATA ANALYSIS AND PROBABILITY

TERM	DEFINITION
Axes on a graph	<p>The x-axis is the horizontal line on the coordinate plan that intersects at the origin with the y-axis. The y-axis is the vertical line on the coordinate plane that intersects the x-axis at the origin.</p> <div style="text-align: center;"> </div>
Bar graph	<p>A graph that uses horizontal or vertical bars to represent numbers in the data. Example:</p> <div style="text-align: center;"> </div>
Data	Information that has been collected; as from a survey.

TERM	DEFINITION								
Frequency chart	<p>A table that lists the categories of data collected and ticks to show how many times each category occurred.</p> <table border="1"> <thead> <tr> <th>PETS</th> <th>NUMBER OF STUDENTS</th> </tr> </thead> <tbody> <tr> <td>Cats</td> <td> </td> </tr> <tr> <td>Dogs</td> <td> / </td> </tr> <tr> <td>Rabbits</td> <td> </td> </tr> </tbody> </table>	PETS	NUMBER OF STUDENTS	Cats		Dogs	/	Rabbits	
PETS	NUMBER OF STUDENTS								
Cats									
Dogs	/								
Rabbits									
Pictograph	<p>A record of data collected which consists of categories of data and uses pictures or symbols to represent the frequency that each category occurred.</p> <table border="1"> <thead> <tr> <th>STUDENT</th> <th>NUMBER OF APPLES EATEN</th> </tr> </thead> <tbody> <tr> <td>Sally</td> <td>  </td> </tr> <tr> <td>Tom</td> <td> </td> </tr> <tr> <td>Maria</td> <td>   </td> </tr> </tbody> </table>	STUDENT	NUMBER OF APPLES EATEN	Sally	  	Tom	 	Maria	   
STUDENT	NUMBER OF APPLES EATEN								
Sally	  								
Tom	 								
Maria	   								
Probability	<p>The likelihood or chance that an event will occur. Probabilities can be described as:</p> <ul style="list-style-type: none"> • Likely if the event will most probably happen; • Certain if the event will definitely happen; • Impossible if the event cannot happen; • Unlikely if there is little chance that the event will happen. <p>A probability can also be expressed as a fraction. For example, if a spinner has on it three equal sized sections labeled A, B, and C. The probability that the spinner will land on C is $\frac{1}{3}$. Here, the numerator is 1 because only one of the sections is labeled C, and the denominator is 3 because there were only 3 sections on the spinner.</p>								

TERM	DEFINITION
Scale	The size of each interval on the axes of a graph. The sizes of the intervals on any axis must be equal. Each interval is given a number. The numbers can be consecutive or the result of skipping.
Scatter plot	<p>A graph of paired data in which the data values are plotted as (x, y) points.</p> <div style="text-align: center;"><p>Scatterplot</p></div> <p>www.mathwords.com</p>