

KINDERGARTEN Cluster/Strand	KINDERGARTEN Standard	FIM Module
Counting and Cardinality NY-K.CC		
Know number names and the count sequence.	K.CC.1 Count to 100 by ones and by tens.	<ul style="list-style-type: none"> • K2 World: Skip Game. • Bonus 1: More or Less.
	K.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	<ul style="list-style-type: none"> • K2 World: K2 Before & After; K2 Four at a Time; K2 Five at a Time; K2 Misfits Numbers. • Bonus 1: More or Less.
Count to tell the number of objects.	<p>K.CC.4 Understand the relationship between numbers and quantities; connect counting to cardinality.</p> <p>a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.</p> <p>b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.</p> <p>c. Understand that each successive number name refers to a quantity that is one larger.</p>	<ul style="list-style-type: none"> • K2 World: K2 Before & After; K2 How Many.
	<p>K.CC.5a. Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration.</p> <p>K.CC.5b. Given a number from 1–20, count out that many objects.</p>	<ul style="list-style-type: none"> • K2 World: K2 How Many; 3 to 9 Add; 3 to 9 Subtract.
Compare numbers.	K.CC.7 Compare two numbers between 1 and 10 presented as written numerals.	<ul style="list-style-type: none"> • K2 World: More or Less
Operations & Algebraic Thinking NY-K.OA		
Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.	K.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.	<ul style="list-style-type: none"> • K2 World: K2 How Many; 3 to 9 Add; 3 to 9 Subtract; Just The Facts Add; Just The Facts Subtract.
	<p>K.OA.2a Add and subtract within 10.</p> <p>K.OA.2b. Solve addition and subtraction word problems within 10.</p>	<ul style="list-style-type: none"> • K2 World: 3 to 9 Add; 3 to 9 Subtract; K2 How Many; K2 Undo.
	K.OA.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$).	<ul style="list-style-type: none"> • K2 World: 3 to 9 Add; K2 Gyms Add; K2 Undo. • Skill Set 1: Game 1. • Bonus 1: First In Tens Add.

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	K.OA.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.	<ul style="list-style-type: none"> • K2 World: 3 to 9 Add; K2 Undo. • Bonus1: First In Tens Add. • Skill Set 1: Game 1.
	K.OA.5 Fluently add and subtract within 5.	<ul style="list-style-type: none"> • K2 World: 3 to 9 Add; 3 to 9 Subtract; K2 Undo; Just The Facts Add; Just The Facts Subtract. • Skill Set 1: Games 1, 2.
Understand Simple Patterns	NY-K.OA.6 Duplicate, extend, and create simple patterns using concrete objects. (New Cluster: Understand Simple Patterns). Builds upon work started with pattern recognition in Prekindergarten with standard NY-PK.OA.2, and provides foundation for future work with arithmetic patterns.	<ul style="list-style-type: none"> • K2 World: K2 Misfits Whole Numbers; K2 Misfits; See 3; K2 Triplets. • CT World 2.0, K2CT: CT Missing Icons. • Bonus 1: Shape Shuffle.
Number & Operations in Base Ten NY-K.NBT		
Work with numbers 11–19 to gain foundations for place value.	K.NBT.1 Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.	<ul style="list-style-type: none"> • Very Important Facts: VIFs Addition.
Measurement & Data NY-K.MD		
Classify objects and count the number of objects in each category.	<p>K.MD.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.</p> <p>K.MD.4 Explore coins (pennies, nickels, dimes, and quarters) and begin identifying pennies and dimes. Recognizing coins is an expectation for Grade 1. Relate work with this standard to NY-K.OA.1, 3, and 4, NY-K.NBT.1 and NY-K.MD.3.</p>	<ul style="list-style-type: none"> • K2 World: K2 Pundi's Puzzle; K2 Misfits; K2 Jennie's Jewels. • CT World 2.0, K2CT: K2 CT Factor Wheels. • K2 World: K2MW Coins Galore.
Geometry NY-K.G		
Analyze, compare, create, and compose shapes.	KG.4 Analyze and compare two-and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	<ul style="list-style-type: none"> • K2 World: K2 Pundi's Puzzle; K2 Triplets; See 3; K2 Misfits.

End of Kindergarten

Notes:

GRADE 1 Cluster/Strand	GRADE 1 Standard	FIM Module
Operations & Algebraic Thinking NY-1.OA		
Represent and solve problems involving addition and subtraction.	1.OA.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	<ul style="list-style-type: none"> • K2 World: 3 to 9 Add; 3 to 9 Subtract. • Bonus1: First in Tens Add; First in Tens Subtract.
Understand and apply properties of operations and the relationship between addition and subtraction.	1.OA.3 Apply properties of operations as strategies to add and subtract. Examples: If $8 + 3 = 11$ is known, then $3 + 8 = 11$ is also known. (Commutative property of addition.) To add $2 + 6 + 4$, the second two numbers can be added to make a ten, so $2 + 6 + 4 = 2 + 10 = 12$. (Associative property of addition.)	<ul style="list-style-type: none"> • K2 World: Just the Facts Add; Just the Facts Subtract; K2 Gyms Add; K2 Gyms Subtract; 3 to 9 Add; 3 to 9 Subtract. • Very Important Facts: VIFs Addition; VIFs Subtraction. • Bonus 1: First In Tens Add; First In Tens Subtract; Ten Wheels. • Bonus 2: Grand Slam Add/Subtract. • Skill Set 1: Games 1, 2, 3.
	1.OA.4 Understand subtraction as an unknown-addend problem. For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8.	<ul style="list-style-type: none"> • K2 World: Just the Facts Subtract; K2 Gyms Subtract; 3 to 9 Add; 3 to 9 Subtract. • Very Important Facts: VIFs Addition; VIFs Subtraction. • Bonus 1: First in Tens Subtract; Ten Wheels. • Bonus 2: Grand Slam Add/Subtract.
Add and subtract within 20.	1.OA.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2	<ul style="list-style-type: none"> • K2 World: K2 Skip Game; K2 Undo.
	<p>1.OA.6a Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).</p> <p>1.OA.6b Fluently add and subtract within 10.</p>	<ul style="list-style-type: none"> • K2 World: Just the Facts Add; Just the Facts Subtract; K2 Gyms Add; K2 Gyms Subtract; 3 to 9 Add; 3 to 9 Subtract; K2 Undo. • Very Important Facts: VIFs Addition; VIFs Subtraction. • Bonus 1: First In Tens Add; First In Tens Subtract; Ten Wheels. • Bonus 2: Grand Slam Add/Subtract; First to 20 Add; First to 20 Subtract. • Skill Set 1: Games 1, 2, 3.
Work with addition and subtraction equations.	1.OA.8 Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $5 = _ - 3$, $6 + 6 = _$.	<ul style="list-style-type: none"> • K2 World: 3 to 9 Add; 3 to 9 Subtract. • Bonus 1: First In Tens Add; First In Tens Subtract; • Bonus 2: First to 20 Add; First to 20 Subtract. • Skill Set 1: Games 1, 2, 3.
Number & Operations in Base Ten NY-1.NBT		
Extend the counting sequence.	1.NBT.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.	<ul style="list-style-type: none"> • K2 World: K2 Before & After; K2 Five at a Time.

GRADE 1 Cluster/Strand	GRADE 1 Standard	FIM Module
Understand place value.	<p>1.NBT.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:</p> <p>a. 10 thought of as a bundle of ten ones — called a “ten.”</p> <p>b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.</p> <p>c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones)</p>	<ul style="list-style-type: none"> • Very Important Facts: VIFs Addition; VIFs Subtraction.
	<p>1.NBT.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.</p>	<ul style="list-style-type: none"> • Bonus 1: More or Less.
Use place value understanding and properties of operations to add and subtract.	<p>1.NBT.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.</p>	<ul style="list-style-type: none"> • K2 World: Skip Game; Just The Facts Add, Just The Facts Subtract; K2 Gyms Add; K2 Gyms Subtract. • Very Important Facts: VIFs Addition; VIFs Subtraction.
	<p>1.NBT.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.</p>	<ul style="list-style-type: none"> • K2 World: Skip Game. • Very Important Facts: VIFs Addition; VIFs Sub.
	<p>1.NBT.6 Subtract multiples of 10 in range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method, explain reasoning used.</p>	<ul style="list-style-type: none"> • K2 World: Skip Game. Very Important Facts: • VIFs Addition; VIFs Subtraction.
Measurement & Data NY-1.MD		
Tell and write time.	<p>1.MD.3a Tell and write time in hours and half-hours using analog and digital clocks. Develop an understanding of common terms, such as, but not limited to, <i>o'clock</i> and <i>half past</i>.</p> <p>1.MD.3b Recognize and identify coins (penny, nickel, dime and quarter) and their value and use the cent symbol (¢) appropriately.</p> <p>1.MD.3c Count a mixed collection of coins of dimes and pennies and determine the cent value (not to exceed 100 cents).</p>	<ul style="list-style-type: none"> • Measurement World: Equal Time. • K2 World: K2MW Counting Coins. • K2 World: K2MW Counting Coins.
Geometry NY-1.G		
Reason with shapes and their attributes.	<p>1.GA.1 Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.</p>	<ul style="list-style-type: none"> • K2 World: Pundi’s Puzzle; K2 Triplets; See 3; K2 Misfit; K2 Jennie’s Jewels. • CT World 2.0, K2CT; CT Missing Icons. • Know & Show: K&S 1, You Rule.

End of First Grade

Notes:

GRADE 2 Cluster/Strand	GRADE 2 Standard	FIM Module
Operations & Algebraic Thinking NY-2.OA		
Represent and solve problems involving addition and subtraction.	<p>2.OA.2a Fluently add and subtract within 20 using mental strategies.</p> <p>2.OA.2b Know from memory all sums of two one-digit numbers.</p>	<ul style="list-style-type: none"> • K2 World: Just the Facts Add; Just the Facts Subtract; K2 Gyms Add; K2 Gyms Subtract; 3 to 9 Add; 3 to 9 Subtract; K2 Undo; Just the Facts: JTF Add; JTF Subtract; Gyms: WN Add; WN Subtract. • Very Important Facts: VIFs Addition; VIFs Subtraction. • Bonus 1: First In Tens Add; First In Tens Subtract; Ten Wheels. • Bonus 2: First to 20 Add; First to 20 Subtract; Go to 100 Add; Go to 100 Subtract; Grand Slam Add/Subtract; Deep Sea-quence. • Skill Set 1: Games 1, 2, 3.
Number & Operations in Base Ten NY-2.NBT		
Understand place value.	<p>2.NBT.1 Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones.</p> <p>Understand the following as special cases:</p> <p>a. 100 can be thought of as a bundle of ten tens — called a “hundred.”</p> <p>b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).</p>	<ul style="list-style-type: none"> • Very Important Facts: VIFs Addition; VIFs Subtraction. • Bonus 1: More Or Less.
	2.NBT.2 Count within 1000; skip-count by 5s, 10s, and 100s.	<ul style="list-style-type: none"> • K2 World: Skip Game. • Bonus 3: Skip Game.
	2.NBT.4 Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.	<ul style="list-style-type: none"> • Bonus 1: More Or Less.
Use place value understanding and properties of operations to add and subtract.	2.NBT.5 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.	<ul style="list-style-type: none"> • K2 World: Just the Facts Add; Just the Facts Subtract; K2 Gyms Add; K2 Gyms Subtract; 3 to 9 Add; 3 to 9 Subtract. • Just the Facts: JTF Add; JTF Subtract. • Gyms: WN Add; WN Subtract. • Very Important Facts: VIFs Addition; VIFs Subtraction. • Bonus 1: First In Tens Add; First In Tens Subtract; Ten Wheels. • Bonus 2: First to 20 Add; First to 20 Subtract; Go to 100 Add; Go to 100 Subtract; Grand Slam Add/Subtract; Deep Sea-quence. • Skill Set 1: Games 1, 2, 3. • Skill Set 2: Games 1, 2.

GRADE 2 Cluster/Strand	GRADE 2 Standard	FIM Module
	2.NBT.6 Add up to four two-digit numbers using strategies based on place value and properties of operations.	<ul style="list-style-type: none"> • Very Important Facts: VIFs Addition; VIFs Subtraction.
	<p>2.NBT.7a Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method.</p> <p>2.NBT.7b Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.</p>	<ul style="list-style-type: none"> • Very Important Facts: VIFs Addition; VIFs Subtraction.
	2.NBT.8 Mentally add 10 or 100 to a given number 100- 900, and mentally subtract 10 or 100 from a given number 100-900.	<ul style="list-style-type: none"> • Very Important Facts: VIFs Addition; VIFs Subtraction. • Bonus 3: Skip Game.
Measurement and Data NY-2.MD		
Work with time and money.	2.MD.7 Tell and write time from analog and digital clocks to the nearest five minutes. Develop an understanding of common terms, such as. But not limited to <i>o'clock</i> and <i>half past</i> .	<ul style="list-style-type: none"> • Measurement World: Equal Time.
	2.MD.8b Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately.	<ul style="list-style-type: none"> • Measurement World: Equal Pay.

End of Grade 2
Notes:

GRADE 3 Cluster/Strand	GRADE 3 Standard	FIM Module
Operations & Algebraic Thinking NY-3.OA		
Represent and solve problems involving multiplication and division.	3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations $8 \times ? = 48$, $5 = _ \div 3$, $6 \times 6 = ?$	<ul style="list-style-type: none"> • Just the Facts: JTF Multiply; JTF Divide. • Very Important Facts: VIFs Multiplication; VIFs Division. • Gyms: WN Multiply; WN Divide. • Skill Set 3: Games 1, 2, 3. • Skill Set 4: Games 1, 2, 3. • Bonus 3: Grand Slam Multiply/Divide. • Bonus 4: Hex Factor.
Understand properties of multiplication and the relationship between multiplication and division.	3.OA.5 Apply properties of operations as strategies to multiply and divide. Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.)	<ul style="list-style-type: none"> • Very Important Facts: VIFs Multiplication; VIFs Division.
	3.OA.6 Understand division as an unknown-factor problem. For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8.	<ul style="list-style-type: none"> • Just the Facts: JTF Multiply; JTF Divide. • Very Important Facts: VIFs Multiplication; VIFs Division. • Gyms: WN Multiply; WN Divide. • Skill Set 3: Games 1, 2, 3. • Skill Set 4: Games 1, 2, 3. • Bonus 3: Grand Slam Multiply/Divide.
Multiply and divide within 100.	<p>3.OA.7a Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations.</p> <p>3.OA.7b Know from memory all products of two one-digit numbers.</p>	<ul style="list-style-type: none"> • Just the Facts: JTF Multiply; JTF Divide. • Very Important Facts: VIFs Multiplication; VIFs Division. • Gyms: WN Multiply; WN Divide. • Skill Set 3: Games 1, 2, 3. • Skill Set 4: Games 1, 2, 3. • Bonus 3: Grand Slam Multiply/Divide.
Number & Operations in Base Ten NY-3.NBT		
Use place value understanding & properties of operations to perform multi-digit arithmetic	3.NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100.	<ul style="list-style-type: none"> • Bonus 3: Estimation.
	3.NBT.2 Fluently add & subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or relationship between addition & subtraction.	<ul style="list-style-type: none"> • Very Important Facts: VIFs Addition; VIFs Subtraction. • Bonus 3: Skip Game. • Bonus 4: Monu's Path.
	3.NBT.3 Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9×80 , 5×60) using strategies based on place value and properties of operations.	<ul style="list-style-type: none"> • Very Important Facts: VIFs Multiplication.

GRADE 3 Cluster/Strand	GRADE 3 Standard	FIM Module
Number & Operations in Base Ten NY-3.NBT		
Develop understanding of fractions as numbers	<p>3.NBT.4a Understand that the digits of a four-digit number represent amounts of thousands, hundreds, tens and ones.</p> <p>3.NBT.4b Read and write four-digit numbers using base-ten numerals, number names and expanded form.</p>	<ul style="list-style-type: none"> • Know & Show: K&S 3, Number Zoo. • Bonus 1: More or Less. • Know & Show: K&S 3, Number Zoo. • Bonus 3: Estimation.
Numbers and Operations – Fractions NY-3.NF		
Develop understanding of fractions as numbers	3.NF.2 Understand a fraction as a number on the number line; represent fractions on a number line diagram.	• Bonus 4: Fractions More or Less.
	<p>3.NF.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.</p> <p>a. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.</p>	• Bonus 4: Fractions More or Less.
Measurement & Data NY-3.MD		
Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.	3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.	• Measurement World: Equal Time; Passing Time.
Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.	<p>3.MD.8a Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length</p> <p>3.MD.8b Identify rectangles with the same perimeter and different areas or with the same area and different perimeters.</p>	• Measurement World: Area/Perimeter.
Geometry NY-3.G		
	3.G.1 Recognize and classify polygons based on the number of sides and vertices, not types of angles and parallel/perpendicular lines.	• Know & Show: K&S 3, Get In Shape.

End of Grade 3
Notes:

GRADE 4 Cluster/Strand	GRADE 4 Standard	FIM Module
Operations & Algebraic Thinking NY-4.OA		
Gain familiarity with factors and multiples.	4.OA.4 Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.	<ul style="list-style-type: none"> • Bonus 3: Factor Wheels.
Generate and analyze patterns.	<p>4.OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.</p> <p>For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.</p>	<ul style="list-style-type: none"> • Bonus 3: XYZ Shuffle; Skip Game. • Bonus 4: The Hex Factor.
Number & Operations in Base Ten NY-4.NBT		
Generalize place value understanding for multi-digit whole numbers.	4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place.	<ul style="list-style-type: none"> • Bonus 3: Estimation.
Use place value understanding and properties of operations to perform multi-digit arithmetic.	4.NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.	<ul style="list-style-type: none"> • Very Important Facts: VIFs Addition; VIFs Subtraction. • Skill Set 2: Games 1, 2, 3. • Skill Set 5: Game 2. • Bonus 2: Grand Slam Add/Subtract. • Bonus 5: 3 Moves to 0.
	4.NBT.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	<ul style="list-style-type: none"> • Very Important Facts: VIFs Multiplication. • Bonus 3: Grand Slam Multiply/Divide. • Bonus 4: Hex Factor. • Bonus 5: 3 Moves to 0.
	4.NBT.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	<ul style="list-style-type: none"> • Very Important Facts: VIFs Multiplication. • Bonus 4: Hex Factor. • Bonus 5: 3 Moves to 0.
Number & Operations Fractions NY-4.NF		
Extend understanding of fraction equivalence and ordering.	4.NF.2 Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.	<ul style="list-style-type: none"> • Bonus 4: Fractions More or Less.

GRADE 4 Cluster/Strand	GRADE 4 Standard	FIM Module
Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	4.NF.3 Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$. c. Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.	<ul style="list-style-type: none"> • Bonus 5: Fraction Wheels. • Bonus 7: Grand Slam Fractions Add/ Subtract.
	4.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. a. Understand a fraction a/b as a multiple of $1/b$. For example, use a visual fraction model to represent $5/4$ as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.	<ul style="list-style-type: none"> • Skill Set 6: Game 3. • Skill Set 7: Game 1.
Understand decimal notation for fractions, and compare decimal fractions.	4.NF.6 Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as $62/100$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.	<ul style="list-style-type: none"> • Bonus 3: Decimals More or Less. • Bonus 5: Equivalents.
	4.NF.7 Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model.	<ul style="list-style-type: none"> • Bonus 3: Decimals More or Less.
Measurement & Data NY-4.MD		
Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	4.MD.1a Know relative sizes of measurement units: ft., in.; km, m, cm. Know the conversion factor and use it to convert measurements to a larger unit in terms of a smaller unit; ft., in.; km, m, cm; hr, min, sec. Given the conversion factor, convert all other measurements within a single system of measurement from a larger unit to a smaller unit. Record measurement equivalents in a two-column table.	<ul style="list-style-type: none"> • Measurement World: Equal Time; Passing Time; Equal Length; Equal Weight.
	4.MD.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems.	<ul style="list-style-type: none"> • Measurement World: Area/Perimeter – Rectangle, Square.

End of Grade 4
Notes:

GRADE 5 Cluster/Strand	GRADE 5 Standard	FIM Module
Operations & Algebraic Thinking NY-5.OA		
Analyze patterns and relationships.	5.OA.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.	<ul style="list-style-type: none"> • Bonus 3: Skip Game.
Number & Operations in Base Ten NY-5.NBT		
Understand the place value system.	<p>5.NBT.3 Read, write, and compare decimals to thousandths.</p> <p>a. Read & write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.</p> <p>a. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.</p>	<ul style="list-style-type: none"> • Bonus 3: Decimals More or Less. • Bonus 5: Equivalents.
	5.NBT.4 Use place value understanding to round decimals to any place.	<ul style="list-style-type: none"> • Bonus 6: Estimation Decimals.
Perform operations with multi-digit whole numbers and with decimals to hundredths.	5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	<ul style="list-style-type: none"> • Very Important Facts: VIFs Multiplication. • Bonus 3: Grand Slam Multiply/Divide. • Bonus 5: 3 Moves to 0.
	5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	<ul style="list-style-type: none"> • Very Important Facts: VIFs Division. • Bonus 3: Grand Slam Multiply/Divide. • Bonus 5: 3 Moves to 0.
	5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	<ul style="list-style-type: none"> • Just the Facts: Decimals. • Gyms: Decimals. • Skill Set 5: Game 3. • Skill Set 6: Game 1. • Bonus 6: Grand Slam Decimals. • Bonus 8: Quantum Zeros.

GRADE 5 Cluster/Strand	GRADE 5 Standard	FIM Module
Number and Operations Fractions NY-5.NF		
Use equivalent fractions as a strategy to add and subtract fractions.	5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, $\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}$. (In general, $\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$.)	<ul style="list-style-type: none"> • Just the Facts: JTF Fractions Add; JTF Fractions Subtract. • Gyms: Fractions Add; Fractions Subtract. • Bonus 5: Fraction Wheels; Equivalentents. • Bonus 7: Grand Slam Fractions. • Bonus 8: Quantum Zeros. • Skill Set 5: Game 1.
Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	5.NF.3 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.	<ul style="list-style-type: none"> • Just the Facts: JTF Fractions Multiply. • Gyms: Fractions Multiply. • Bonus 7: Grand Slam Fractions.
Measurement and Data NY-5.D		
Convert like measurement units within a given measurement system.	5.MD.1 Convert among different-sized standard measurement units within a given measurement system (e.g. convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.	<ul style="list-style-type: none"> • Measurement World: Equal Length; Equal Weight.

End of Grade 5

Notes:

GRADE 6 Cluster/Strand	GRADE 6 Standard	FIM Module
Ratio and Proportional Reasoning NY-6.RP		
Understand ratio concepts and use ratio reasoning to solve problems.	NY-6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.	• Know and Show 6: Yakity Yak.
	NY-6.RP.2 Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$ (b not equal to zero), and use rate language in the context of a ratio relationship.	• Know and Show 6: Yakity Yak.
	NY-6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems.	• Know and Show 6: Yakity Yak.
	NY-6.RP.3a Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.	• Know and Show 6: Number Zoo.
	NY-6.RP.3b Solve unit rate problems.	• Know and Show 6: Yakity Yak.
	NY-6.RP.3c Find a percent of a quantity as a rate per 100. Solve problems that involve finding the whole given a part and the percent, and finding a part of a whole given the percent.	• Know and Show 6: Yakity Yak, Number Zoo. • Bonus 5: Equivalents. • Bonus 8: Into the Vortex.
	NY-6.RP.3d Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.	• Know and Show 6: You Rule. • Measurement World: Equal Length. • Measurement World: Equal Weight.
The Number System. NY-6.NS		
Apply and extend previous understandings of multiplication and division to divide fractions by fractions.	NY-6.NS.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions.	• Know and Show 6 :Yakity Yak, Number Zoo. • JTF: Fractions Division. • Gyms: Fractions Division. • Skill Set 6: Game 3. • Skill Set 7: Game 1. • Bonus 7: Grand Slam Fractions Multiply/Div. • Bonus 7: Fraction Tiles.
Compute fluently with multi-digit numbers and find common factors and multiples.	NY-6.NS.2 Fluently divide multi-digit numbers using a standard algorithm.	• Know and Show 6: Yakity Yak, Number Zoo. • Bonus 5: 3 Moves to Zero.
	NY-6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using a standard algorithm for each operation.	• JTF: Decimals (all operations). • Gyms: Decimals (all operations). • Skill Set 5: Game 3. • Skill Set 6: Game 1. • Bonus 6: Grand Slam Decimals (all operations). • Bonus 6: Decimal Tiles.
	NY-6.NS.4 Find the greatest common factor of two whole numbers less than or equal to 100. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor other than 1. Find the least common multiple of two whole numbers less than or equal to 12.	Know and Show 6: Yakity Yak, Number Zoo.

GRADE 6 Cluster/Strand	GRADE 6 Standard	FIM Module
	<p>NY-6.NS.5 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values. Use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.</p>	<ul style="list-style-type: none"> • Know and Show 6: Number Zoo, Get A Clue.
	<p>NY-6.NS.6 Understand a rational number as a point on the number line. Use number lines and coordinate axes to represent points on a number line and in the coordinate plane with negative number coordinates.</p>	<ul style="list-style-type: none"> • Know and Show 6: Number Zoo, Picture This.
	<p>NY-6.NS.6a Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line. Recognize that the opposite of the opposite of a number is the number itself, and that 0 is its own opposite.</p> <p>NY-6.NS.6b Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane. Recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.</p> <p>NY-6.NS.6c Find and position integers and other rational numbers on a horizontal or vertical number line. Find and position pairs of integers and other rational numbers on a coordinate plane.</p>	<ul style="list-style-type: none"> • Know and Show 6: Number Zoo, Picture This, Get a Clue, Missing Links.
	<p>NY-6.NS.7 Understand ordering and absolute value of rational numbers.</p> <p>NY-6.NS.7a Interpret statements of inequality as statements about the relative position of two numbers on a number line.</p> <p>NY-6.NS.7b Write, interpret, and explain statements of order for rational numbers in real-world contexts.</p> <p>NY-6.NS.7c Understand the absolute value of a rational number as its distance from 0 on the number line. Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.</p> <p>NY-6.NS.7d Distinguish comparisons of absolute value from statements about order.</p>	<ul style="list-style-type: none"> • Know and Show 6: Number Zoo, Picture This, Get a Clue, Missing Links.
	<p>NY-6.NS.8 Solve real-world and mathematical problems by graphing points on a coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.</p>	<ul style="list-style-type: none"> • Know and Show 6: Picture This.

GRADE 6 Cluster/Strand	GRADE 6 Standard	FIM Module
Equations and Expressions (Inequalities) NY-6.EE		
Apply and extend previous understandings of arithmetic to algebraic expressions.	NY-6.EE.1 Write and evaluate numerical expressions involving whole- number exponents.	<ul style="list-style-type: none"> • Know and Show 6: Number Zoo, Missing Links. • Skill Set 8: Game 1. • Bonus 6: Exponent Tiles.
	<p>NY-6.EE.2 Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>NY-6.EE.2a Write expressions that record operations with numbers and with letters standing for numbers.</p> <p>NY-6.EE.2b Identify parts of an expression using mathematical terms (term, coefficient, sum, difference, product, factor, and quotient); view one or more parts of an expression as a single entity.</p> <p>NY-6.EE.2c Evaluate expressions given specific values for their variables. Include expressions that arise from formulas in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order (Order of Operations).</p>	<ul style="list-style-type: none"> • Know and Show 6: Missing Links. • Skill Set 6: Game 2. • Bonus 4: The Hex Factor.
	NY-6.EE.3 Apply the properties of operations to generate equivalent expressions.	<ul style="list-style-type: none"> • Know and Show 6: Missing Links.
	NY-6.EE.4 Identify when two expressions are equivalent.	<ul style="list-style-type: none"> • Know and Show 6: Missing Links. • Bonus 8: Into the Vortex.
	Reason about and solve one-variable equations and inequalities.	NY-6.EE.5 Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
	NY-6.EE.6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem. Understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	<ul style="list-style-type: none"> • Know and Show 6: Missing Links. • Skill Set 6: Game 2.
	NY-6.EE.7 Solve real-world and mathematical problems by writing and solving equations in the form $x+p=q$, $x-p=q$, $px=q$; and $x/p=q$ for cases in which p , q and x are all nonnegative.	<ul style="list-style-type: none"> • Know and Show 6: Missing Links.
	NY-6.EE.8 Write an inequality of the form $x > c$, $x \geq c$, $x \leq c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of these forms have infinitely many solutions; represent solutions of such inequalities on a number line.	<ul style="list-style-type: none"> • Know and Show 6: Missing Links.

GRADE 6 Cluster/Strand	GRADE 6 Standard	FIM Module
<p>Represent and analyze quantitative relationships between dependent and independent variables</p>	<p>NY-6.EE.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another.</p> <p>Given a verbal context and an equation, identify the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.</p>	<ul style="list-style-type: none"> • Know and Show 6: Missing Links.
<p>Geometry NY-6.G</p>		
	<p>NY-6.G.1 Find area of triangles, trapezoids, and other polygons by composing into rectangles or decomposing into triangles and quadrilaterals. Apply these techniques in the context of solving real-world and mathematical problems.</p>	<ul style="list-style-type: none"> • Know and Show 6: You Rule. • Measurement World Area/Perimeter.
	<p>NY-6.G.2 Find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.</p>	<ul style="list-style-type: none"> • Know and Show 6: Get in Shape, You Rule.
	<p>NY-6.G.3 Draw polygons in the coordinate plane given coordinates for the vertices. Use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.</p>	<ul style="list-style-type: none"> • Know and Show 6: Picture This.
	<p>NY-6.G.4 Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.</p>	<ul style="list-style-type: none"> • Know and Show 6: Get in Shape, You Rule.
	<p>NY-6.G.5 Use area and volume models to explain perfect squares and perfect cubes.</p>	<ul style="list-style-type: none"> • Know and Show 6: Picture This.
<p>Statistics and Probability. NY-6.SP</p>		
<p>Develop an understanding of statistical variability.</p>	<p>NY-6. SP.1a Recognize that a statistical question is one that anticipates variability in the data related to the question and accounts for it in the answers.</p> <p>NY-6. SP.1b Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population.</p> <p>NY-6. SP.1c Understand that the method and sample size used to collect data for a particular question is intended to reduce the difference between a population and a sample taken from the population so valid inferences can be drawn about the population. Generate multiple samples (or simulated samples) of the same size to recognize the variation in estimates or predictions.</p>	<ul style="list-style-type: none"> • Know and Show 6: Picture This.

GRADE 6 Cluster/Strand	GRADE 6 Standard	FIM Module
	NY-6. SP.2 Understand that a set of quantitative data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.	• Know and Show 6: Picture This.
	NY-6. SP.3 Recognize that a measure of center for a quantitative data set summarizes all of its values with a single number while a measure of variation describes how its values vary with a single number.	• Know and Show 6: Picture This.
Summarize and describe distributions.	NY-6. SP.4 Display quantitative data in plots on a number line, including dot plots and histograms.	• Know and Show 6: Picture This.
	NY-6. SP.5 Summarize quantitative data sets in relation to their context. NY-6. SP.5a Report the number of observations. NY-6. SP.5b Describe the nature of the attribute under investigation, including how it was measured and its units of measurement. NY-6. SP.5c Calculate range and measures of center, as well as describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. NY-6. SP.5d Relate the range and the choice of measures of center to the shape of the data distribution and the context in which the data were gathered.	• Know and Show 6: Picture This.
Investigate chance processes and develop, use and evaluate probability models.	NY-6. SP.6 Understand that the probability of a chance event is a number between 0 and 1 inclusive, that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event..	• Know and Show 6: Chances Are.
	NY-6. SP.7 Approximate the probability of a simple event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.	• Know and Show 6: Chances Are.
	NY-6. SP.8 Develop a probability model and use it to find probabilities of simple events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. NY-6. SP.8a Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of simple events. NY-6. SP.8b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process..	• Know and Show 6: Chances Are.

End of Grade 6 Notes:

GRADE 7 Cluster/Strand	GRADE 7 Standard	FIM Module
Ratio and Proportional Reasoning. NY-7.RP		
Analyze proportional relationships and use them to solve real-world and mathematical problems.	NY-7.RP.1 Compute unit rates associated with ratios of fractions.	<ul style="list-style-type: none"> • Know and Show 7: Yakity Yak, Get a Clue.
Develop understanding of fractions as numbers.	<p>NY-7.RP.2 Recognize and represent proportional relationships between quantities.</p> <p>NY-7.RP.2a Decide whether two quantities are in a proportional relationship.</p> <p>NY-7.RP.2b Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</p> <p>NY-7.RP.2c Represent a proportional relationship using an equation.</p> <p>NY-7.RP.2d Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.</p>	<ul style="list-style-type: none"> • Know and Show 7: Yakity Yak.
	NY-7.RP.3 Use proportional relationships to solve multistep ratio and percent problems.	<ul style="list-style-type: none"> • Know and Show 7 – Missing Links.
The Number System NY-7 NS		
Apply and extend previous understandings of operations with fractions to add, subtract, multiply and divide rational numbers.	<p>NY-7.NS.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers. Represent addition and subtraction on a horizontal or vertical number line.</p> <p>NY-7.NS.1a Describe situations in which opposite quantities combine to make 0.</p> <p>NY-7.NS.1b Understand addition of rational numbers; $p + q$ is the number located a distance q from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.</p> <p>NY-7.NS.1c Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.</p> <p>NY-7.NS.1d Apply properties of operations as strategies to add and subtract rational numbers.</p>	<ul style="list-style-type: none"> • Know and Show 7: Number Zoo. • JTF: Integers Add and Subtract. • Gyms: Integers Add and Subtract. • Bonus 6: Integer Tiles. • Bonus 8: Quantum Zeroes . • CT World: Zero Sum.

GRADE 7 Cluster/Strand	GRADE 7 Standard	FIM Module
	<p>NY-7.NS.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.</p> <p>NY-7.NS.2a Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.</p> <p>NY-7.NS.2b Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number.</p> <p>NY-7.NS.2c Apply properties of operations as strategies to multiply and divide rational numbers.</p> <p>NY-7.NS.2d Convert a fraction to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.</p>	<ul style="list-style-type: none"> • Know and Show 7: Number Zoo. • JTF: Integers Multiply and Divide. • Gyms: Integers Multiply and Divide. • Bonus 6: Integer Tiles. • Bonus 8: Quantum Zeroes. • CT World: Zero Sum.
	<p>NY-7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers.</p>	<ul style="list-style-type: none"> • Know and Show 7: Yakity Yak.
<p>Expressions and Equations (Inequalities)</p>		
<p>Use properties of operations to generate equivalent expressions.</p>	<p>NY-7.EE.1 Add, subtract, factor, and expand linear expressions with rational coefficients by applying the properties of operations.</p>	<ul style="list-style-type: none"> • Know and Show 7: Missing Links. • Bonus 7: Xtreme Algebra. • Bonus 7: More or Less Algebra. • Bonus 7: Algebra Tiles. • Bonus 8: Grand Slam – Algebra. • Bonus 8: Into the Vortex.
	<p>NY-7.EE.2 Understand that rewriting an expression in different forms in real-world and mathematical problems can reveal and explain how the quantities are related.</p>	<ul style="list-style-type: none"> • Know and Show 7: Missing Links.
<p>Solve real-life and mathematical problems using numerical and algebraic expressions, equations and inequalities.</p>	<p>NY-7.EE.3 Solve multi-step real-world and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate. Assess the reasonableness of answers using mental computation and estimation strategies.</p>	<ul style="list-style-type: none"> • Know and Show 7: Number Zoo, Missing Links. • Skill Set 5. • Skill Set 6: Games 1, 3 • Skill Set 7: Games 1, 2 • Skill Set 8: Game 1 • Bonus 5: Equivalents. • Bonus 6: Grand Slam – Integers (all operations). • Bonus 6: Monuji's Path. • Bonus 6: Grand Slam – Decimals (all operations).

GRADE 7 Cluster/Strand	GRADE 7 Standard	FIM Module
	<p>NY-7.EE.4 Use variables to represent quantities in a real-world or mathematical problem and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p> <p>NY-7.EE.4a Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.</p> <p>NY-7.EE.4b Solve word problems leading to inequalities of the form $px + q > r$, $px + q \geq r$, $px + q \leq r$, or $px + q < r$, where p, q, and r are rational numbers. Graph the solution set of the inequality on the number line and interpret it in the context of the problem.</p>	<ul style="list-style-type: none"> • Know and Show 7. • Skill Set 6: Game 2. • Skill Set 7: Game 3. • Bonus 7: Xtreme Algebra. • Bonus 7: Algebra More or Less. • Bonus 8: Grand Slam Algebra.
<p>Geometry NY-7.G</p>		
<p>Draw, construct and describe geometrical figures and describe the relationships.</p>	<p>NY-7.G.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.</p>	<ul style="list-style-type: none"> • Know & Show 7: Get In Shape, You Rule.
	<p>NY-7.G.2 Draw triangles when given measures of angles and/or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.</p>	<ul style="list-style-type: none"> • Know & Show 7: What's My Angle.
	<p>NY-7.G.3 Describe the two-dimensional shapes that result from slicing three-dimensional solids parallel or perpendicular to the base.</p>	<ul style="list-style-type: none"> • Know & Show 7: Get In Shape.
	<p>NY-7.G.4 Apply the formulas for the area and circumference of a circle to solve problems.</p>	<ul style="list-style-type: none"> • Know & Show 7: Get In Shape, You Rule. • Measurement World: Area/Perimeter Circle.
	<p>NY-7.G.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.</p>	<ul style="list-style-type: none"> • Know & Show 7: What's My Angle, You Rule.
	<p>NY-7.G.6 Solve real-world and mathematical problems involving area of two-dimensional objects composed of triangles and trapezoids.</p> <p>Solve surface area problems involving right prisms and right pyramids composed of triangles and trapezoids.</p> <p>Find the volume of right triangular prisms, and solve volume problems involving three-dimensional objects composed of right rectangular prisms.</p>	<ul style="list-style-type: none"> • Know & Show 7: Get In Shape, You Rule. • Measurement World: Area/Perimeter.

GRADE 7 Cluster/Strand	GRADE 7 Standard	FIM Module
Statistics and Probability NY-7.SP		
Draw informal comparative inferences about two populations.	NY-7.SP.1 Construct and interpret box-plots, find the interquartile range, and determine if a data point is an outlier.	• Know & Show 7: Picture This.
	NY-7.SP.3 Informally assess the degree of visual overlap of two quantitative data distributions.	• Know & Show 7: Picture This.
	NY-7.SP.4 Use measures of center and measures of variability for quantitative data from random samples or populations to draw informal comparative inferences about the populations.	• Know & Show 7: Picture This.
Investigate chance processes and develop, use and evaluate probability models .	<p>NY-7.SP.8 Find probabilities of compound events using organized list, sample space tables, tree diagrams, and simulation.</p> <p>NY-7.SP.8a Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.</p> <p>NY-7.SP.8b Represent sample spaces for compound events using methods such as organized lists, sample space tables, and tree diagrams. For an event described in everyday language, identify the outcomes in the sample space which compose the event.</p> <p>NY-7.SP.8c Design and use a simulation to generate frequencies for compound events.</p>	• Know & Show 7: Chances Are.

End of Grade 7

Notes:

GRADE 8 Cluster/Strand	GRADE 8 Standard	FIM Module
Number System NY-8.NS		
Know that there are numbers that are not rational and approximate them by rational numbers.	NY-8.NS.1 Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion eventually repeats. Know that other numbers that are not rational are called irrational.	<ul style="list-style-type: none"> • Know and Show 8: Yakity Yalk, Number Zoo. • Bonus 5: Equivalents. • Bonus 8: Into the Vortex.
	NY-8.NS.2 Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line, and estimate the value of expressions.	<ul style="list-style-type: none"> • Know and Show 8: Yakity Yalk, Number Zoo.
Expressions and Equations (Inequalities) NY-8.EE		
Work with radicals and integer exponents.	NY-8.EE.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions.	<ul style="list-style-type: none"> • Know & Show 8: Yakity Yak, Number Zoo, Get a Clue, Missing Links.
	NY-8.EE.2 Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Know square roots of perfect squares up to 225 and cube roots of perfect cubes up to 125. Know that the square root of a non-perfect square is irrational.	<ul style="list-style-type: none"> • Know & Show 8: Yakity Yak, Number Zoo, You Rule, Missing Links. • Skill Set 8: Game 1. • Bonus 6: Exponent Tiles. • Bonus 7: Order of Operations Tiles.
	NY-8.EE.3 Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other.	<ul style="list-style-type: none"> • Know & Show 8: Yakity Yak, You Rule.
	NY-8.EE.4 Perform multiplication and division with numbers expressed in scientific notation, including problems where both standard decimal form and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities. Interpret scientific notation that has been generated by technology.	<ul style="list-style-type: none"> • Know & Show 8: Yakity Yak, Number Zoo, You Rule, Missing Links.
Understand the connections between proportional relationships, lines and linear equations.	NY-8.EE.5 Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.	<ul style="list-style-type: none"> • Know & Show 8: Get a Clue, Missing Links.
	NY-8.EE.6 Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y=mx$ for a line through the origin and the equation $y=mx+b$ for a line intercepting the vertical axis at b .	<ul style="list-style-type: none"> • Know & Show 7: Missing Links.

GRADE 8 Cluster/Strand	GRADE 8 Standard	FIM Module
<p>Analyze and solve linear equations and pairs of simultaneous linear equations.</p>	<p>NY-8.EE.7 Solve linear equations in one variable.</p> <p>NY-8.EE.7a Recognize when linear equations in one variable have one solution, infinitely many solutions, or no solutions. Give examples and show which of these possibilities is the case by successively transforming the given equation into simpler forms.</p> <p>NY-8.EE.7b Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and combining like terms.</p>	<ul style="list-style-type: none"> • Know & Show 8: Get a Clue, Yakity Yak. • Skill Set 7: Game 3. • Skill Set 8: Games 2, 3. • Bonus 7: Algebra More or Less. • Bonus 7: Xtreme Algebra. • Bonus 8: Grand Slam Algebra. • Bonus 8: Into the Vortex.
	<p>NY-8.EE.8 Analyze and solve pairs of simultaneous linear equations.</p> <p>NY-8.EE.8a Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. Recognize when the system has one solution, no solution, or infinitely many solutions.</p> <p>NY-8.EE.8b Solve systems of two linear equations in two variables with integer coefficients: graphically, numerically using a table, and algebraically. Solve simple cases by inspection.</p> <p>NY-8.EE.8c Solve real-world and mathematical problems involving systems of two linear equations in two variables with integer coefficients.</p>	<ul style="list-style-type: none"> • Know & Show 8: Yakity Yak, Missing Links, Picture This.
<p>Functions NY-8.F</p>		
<p>Define, evaluate and compare functions.</p>	<p>NY-8.F.1 Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.</p>	<ul style="list-style-type: none"> • Know & Show 8: Missing Links.
	<p>NY-8.F.2 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).</p>	<ul style="list-style-type: none"> • Know & Show 8: Missing Links.
	<p>NY-8.F.3 Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line. Recognize examples of functions that are linear and non-linear.</p>	<ul style="list-style-type: none"> • Know & Show 8: Missing Links.
<p>Use functions to model relationships between quantities.</p>	<p>NY-8.F.4 Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.</p>	<ul style="list-style-type: none"> • Know & Show 8: Get in Shape, Get a Clue, Picture This, Number Zoo.
	<p>NY-8.F.5 Describe qualitatively the functional relationship between two quantities by analyzing a graph.</p>	<ul style="list-style-type: none"> • Know & Show 8: Get A Clue, Picture This.

GRADE 8 Cluster/Strand	GRADE 8 Standard	FIM Module
Geometry NY-8.G		
Understand congruence and similarity using physical models, transparencies or geometry software.	<p>NY-8.G.1 Verify experimentally the properties of rotations, reflections, and translations.</p> <p>NY-8.G.1a Verify experimentally lines are mapped to lines, and line segments to line segments of the same length.</p> <p>NY-8.G.1b Verify experimentally angles are mapped to angles of the same measure.</p> <p>NY-8.G.1c Verify experimentally parallel lines are mapped to parallel lines.</p>	<ul style="list-style-type: none"> • Know & Show 8: Get In Shape.
	<p>NY-8.G.2 Know that a two-dimensional figure is congruent to another if the corresponding angles are congruent and the corresponding sides are congruent. Equivalently, two two-dimensional figures are congruent if one is the image of the other after a sequence of rotations, reflections, and translations. Given two congruent figures, describe a sequence that maps the congruence between them on the coordinate plane.</p>	<ul style="list-style-type: none"> • Know & Show 8: Get In Shape.
	<p>NY-8.G.3 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.</p>	<ul style="list-style-type: none"> • Know & Show 8: Get In Shape.
	<p>NY-8.G.4 Know that a two-dimensional figure is similar to another if the corresponding angles are congruent and the corresponding sides are in proportion. Equivalently, two two-dimensional figures are similar if one is the image of the other after a sequence of rotations, reflections, translations, and dilations. Given two similar two-dimensional figures, describe a sequence that maps the similarity between them on the coordinate plane.</p>	<ul style="list-style-type: none"> • Know & Show 8: Get In Shape.
	<p>NY-8.G.5 Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.</p>	<ul style="list-style-type: none"> • Know & Show 8: Get In Shape.
	Understand and apply the Pythagorean Theorem.	<p>NY-8.G.6 Understand a proof of the Pythagorean Theorem.</p>
<p>NY-8.G.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.</p>		<ul style="list-style-type: none"> • Know & Show 8: Yakity Yak, You Rule, Get A Clue, What's My Angle.
<p>NY-8.G.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.</p>		<ul style="list-style-type: none"> • Know & Show 8: You Rule, What's My Angle.
Solve real-world and mathematical problems involving volume of cylinders, cones and spheres.	<p>NY-8.G.9 Given the formulas for the volume of cones, cylinders, and spheres, solve mathematical and real-world problems.</p>	<ul style="list-style-type: none"> • Know & Show 8: You Rule, Get In Shape.

GRADE 8 Cluster/Strand	GRADE 8 Standard	FIM Module
Statistics and Probability NY-8.SP		
Investigate patterns of association in bivariate data.	NY-8.SP.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	• Know & Show 8: Picture This.
	NY-8.SP.2 Understand that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.	NA.
	NY-8.SP.3 Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.	• Know & Show 8: Picture This.

End of Grade 8

Notes: