

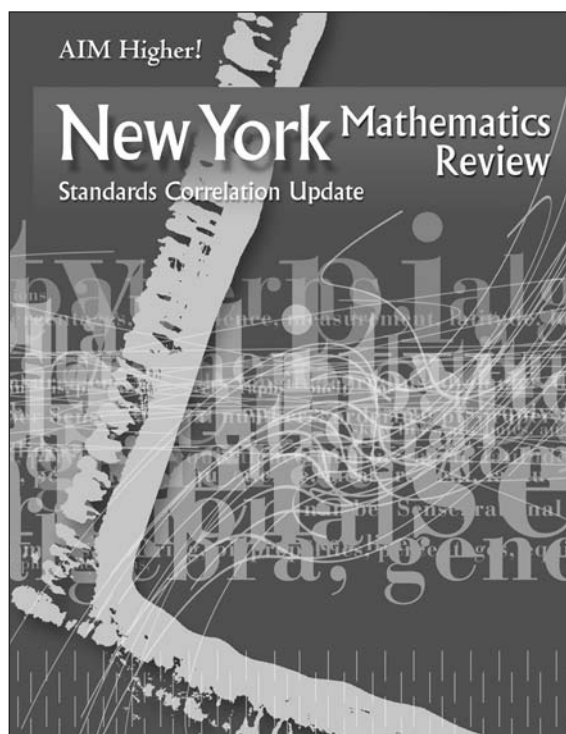




AIM Higher!

# New York Mathematics Review

Standards Correlation Update



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# A NOTE TO THE TEACHER

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In July of 1996, the New York State Board of Regents approved the statewide Learning Standards in seven subject areas, including mathematics. The NYS Mathematics Core Curriculum was designed around seven key ideas: Mathematical Reasoning, Number and Numeration, Operations, Modeling and Multiple Representation, Measurement, Uncertainty, and Patterns/Functions. The accompanying Performance Indicators specified what students should know and be able to do at each grade-level block: PK–K, 1–2, 3–4, 5–6, 7–8, and Commencement. State tests were given at the elementary, intermediate, and commencement levels to assess how well New York students were meeting these expectations.

In response to No Child Left Behind and the urgent need to bring students up to higher levels of mathematical competency, the state has completely revamped its mathematics standard. Rather than being organized into seven Key Ideas, the math expectations are divided into Content Strands and Process Strands, each with its own Performance Indicators. The content strands (Number Sense and Operations, Algebra, Geometry, Measurement, and Statistics and Probability) describe the specific skills that students should learn at each level. The process strands (Problem Solving, Reasoning and Proof, Communication, Connections, and Representation) show how the content knowledge can be integrated and applied. These new content and process strands align very closely with the recommendations of the National Council of Teachers of Mathematics (*Principles and Standards for School Mathematics*, NCTM, 2000).

First published in 2004, the *AIM Higher! New York Mathematics Review* series for grades 3–8 has extensive correlations to the New York Key Ideas (the standard at that time), but the content and pedagogy of the lessons are aligned with the NCTM standards. This means that the books in the *AIM Higher!* series already match the *new* math standards for New York State very closely.

Specific correlations of the *AIM Higher!* series to the Content Strands of the new state standards for mathematics are provided in this booklet. For each grade level, there are three sets of correlations: 1) the lessons that treat each Performance Indicator, 2) the Performance Indicators addressed in each lesson, and 3) the Performance Indicators assessed by each question in the Pretest and Posttest.

Unlike the old Key Ideas, which were organized by grade band (3–4, 5–6, etc.), the new standards are grade-specific; each individual grade (PK–8) has its own set of Performance Indicators. This new system specifies what is to be taught at each level and clarifies the progression of skills to be introduced.

The *AIM Higher!* books follow the sequence of both the NCTM standards and the revised New York standards. However, some lessons cover topics that previously were included in the corresponding grade band but are not assessed in that particular grade now. As explained in the note that accompanies the correlations charts, these lessons can be used for enrichment, for more advanced students, and/or to prepare for the following year. Or you may choose to skip those lessons entirely. Consider them a free bonus—just another opportunity to do much more than just teaching to the test!

*Notes: Occasionally, lessons or questions will deal with concepts and skills that students should have mastered in an earlier grade. In that case, the lessons or questions are correlated to Performance Indicators for the previous grade. Use this material for review, as necessary. Keep in mind that students may be tested on skills they have learned in earlier grades.*

*Virtually all of mathematics involves problem solving in some sense, so correlations to the Problem Solving strand are given only when a lesson or a question focuses specifically on problem-solving strategies.*

**CORRELATIONS OF NEW YORK STATE MATHEMATICS  
PERFORMANCE INDICATORS TO AIM HIGHER! LESSONS: GRADE 3**

<b>NUMBER SENSE AND OPERATIONS STRAND</b>	
<b>Performance Indicator</b>	<b>Lessons</b>
<b>Students will understand numbers, multiple ways of representing numbers, relationships among numbers, and number systems.</b>	
<b>Number Systems</b>	
3.N.1 Skip count by 25's, 50's, 100's to 1,000	3.1
3.N.2 Read and write whole numbers to 1,000	2.1, 2.2
3.N.3 Compare and order numbers to 1,000	2.1, 2.2
3.N.4 Understand the place value structure of the base ten number system: 10 ones = 1 ten 10 tens = 1 hundred 10 hundreds = 1 thousand	2.1
3.N.5 Use a variety of strategies to compose and decompose three-digit numbers	2.3–2.5
3.N.6 Use and explain the commutative property of addition and multiplication	2.3
3.N.7 Use 1 as the identity element for multiplication	2.6
3.N.8 Use the zero property of multiplication	2.6
3.N.9 Understand and use the associative property of addition	2.3
3.N.10 Develop an understanding of fractions as part of a whole unit and as parts of a collection	2.11
3.N.11 Use manipulatives, visual models, and illustrations to name and represent unit fractions ( $\frac{1}{2}$ , $\frac{1}{3}$ , $\frac{1}{4}$ , $\frac{1}{5}$ , $\frac{1}{6}$ , and $\frac{1}{10}$ ) as part of a whole or a set of objects	2.11
3.N.12 Understand and recognize the meaning of numerator and denominator in the symbolic form of a fraction	2.11
3.N.13 Recognize fractional numbers as equal parts of a whole	2.11
3.N.14 Explore equivalent fractions	2.11
3.N.15 Compare and order unit fractions ( $\frac{1}{2}$ , $\frac{1}{3}$ , $\frac{1}{4}$ ) and find their approximate locations on a number line	2.11
<b>Number Theory</b>	
3.N.16 Identify odd and even numbers	2.8
3.N.17 Develop an understanding of the properties of odd/even numbers as a result of addition or subtraction	2.3, 2.8
<b>Students will understand meanings of operations and procedures, and how they relate to one another.</b>	
<b>Operations</b>	
3.N.18 Use a variety of strategies to add and subtract 3-digit numbers (with and without regrouping)	2.4, 2.5
3.N.19 Develop fluency with single-digit multiplication facts	2.7
3.N.20 Use a variety of strategies to solve multiplication problems with factors up to $12 \times 12$	2.6, 2.7, 3.4

*continued*

<b>NUMBER SENSE AND OPERATIONS STRAND, <i>cont.</i></b>		
3.N.21	Use the area model, tables, patterns, arrays, and doubling to provide meaning for multiplication	2.6, 3.4, 5.4
3.N.22	Demonstrate fluency and apply single-digit division facts	2.8
3.N.23	Use tables, patterns, halving, and manipulatives to provide meaning for division	2.8, 3.4
3.N.24	Develop strategies for selecting the appropriate computational and operational method in problem solving situations	1.2
<b>Students will compute accurately and make reasonable estimates.</b>		
<b>Estimation</b>		
3.N.25	Estimate numbers up to 500	2.9, 2.10
3.N.26	Recognize real world situations in which an estimate (rounding) is more appropriate	2.9, 2.10, 6.6
3.N.27	Check reasonableness of an answer by using estimation	2.9, 2.10

<b>ALGEBRA STRAND</b>		
<b>Performance Indicator</b>		<b>Lessons</b>
<b>Students will perform algebraic procedures accurately.</b>		
<b>Equations and Inequalities</b>		
3.A.1	Use the symbols $<$ , $>$ , $=$ (with and without the use of a number line) to compare whole numbers and unit fractions ( $1/2$ , $1/3$ , $1/4$ , $1/5$ , $1/6$ , and $1/10$ )	2.1, 2.11
<b>Students will recognize, use, and represent algebraically patterns, relations, and functions.</b>		
<b>Patterns, Relations, and Functions</b>		
3.A.2	Describe and extend numeric (+, -) and geometric patterns	3.1, 3.2

<b>GEOMETRY STRAND</b>		
<b>Performance Indicator</b>		<b>Lessons</b>
<b>Students will use visualization and spatial reasoning to analyze characteristics and properties of geometric shapes.</b>		
<b>Shapes</b>		
3.G.1	Define and use correct terminology when referring to shapes (circle, triangle, square, rectangle, rhombus, trapezoid, and hexagon)	4.1, 4.2
3.G.2	Identify congruent and similar figures	4.1, 4.4, 4.5
3.G.3	Name, describe, compare, and sort three-dimensional shapes: cube, cylinder, sphere, prism, and cone	4.1, 4.3
3.G.4	Identify the faces on a three-dimensional shape as two-dimensional shapes	4.1, 4.3
<b>Students will apply transformations and symmetry to analyze problem solving situations.</b>		
<b>Transformational Geometry</b>		
3.G.5	Identify and construct lines of symmetry	4.5

*continued*

<b>MEASUREMENT STRAND</b>		
<b>Performance Indicator</b>		<b>Lessons</b>
<b>Students will determine what can be measured and how, using appropriate methods and formulas.</b>		
<b>Units of Measurement</b>		
3.M.1	Select tools and units (customary) appropriate for the length measured	5.1, 6.6
3.M.2	Use a ruler/yardstick to measure to the nearest standard unit (whole and 1/2 inches, whole feet, and whole yards)	5.1, 5.3
3.M.3	Measure objects, using ounces and pounds	5.7
3.M.4	Recognize capacity as an attribute that can be measured	5.6
3.M.5	Compare capacities (i.e., Which contains more? Which contains less?)	5.6
3.M.6	Measure capacity, using cups, pints, quarts, and gallons	5.6
<b>Students will use units to give meaning to measurements.</b>		
<b>Units</b>		
3.M.7	Count and represent combined coins and dollars, using currency symbols (\$0.00)	5.10
3.M.8	Relate unit fractions to the face of the clock: Whole = 60 minutes; 1/2 = 30 minutes; 1/4 = 15 minutes	5.8
<b>Students will develop strategies for estimating measurements.</b>		
<b>Estimation</b>		
3.M.9	Tell time to the minute, using digital and analog clocks	5.8
3.M.10	Select and use standard (customary) and non-standard units to estimate measurements	5.1, 5.2, 6.6

<b>STATISTICS AND PROBABILITY STRAND</b>		
<b>Performance Indicator</b>		<b>Lessons</b>
<b>Students will collect, organize, display, and analyze data.</b>		
<b>Collection of Data</b>		
3.S.1	Formulate questions about themselves and their surroundings	6.1, 6.2, 6.3
3.S.2	Collect data using observation and surveys, and record appropriately	3.3
<b>Organization and Display of Data</b>		
3.S.3	Construct a frequency table to represent a collection of data	3.3
3.S.4	Identify the parts of pictographs and bar graphs	6.1, 6.2
3.S.5	Display data in pictographs and bar graphs	6.1, 6.2
3.S.6	State the relationships between pictographs and bar graphs	6.1, 6.2
<b>Analysis of Data</b>		
3.S.7	Read and interpret data in bar graphs and pictographs	6.1, 6.2
<b>Students will make predictions that are based upon data analysis.</b>		
<b>Predictions from Data</b>		
3.S.8	Formulate conclusions and make predictions from graphs	6.1, 6.2, 6.3

## CORRELATIONS OF AIM HIGHER! LESSONS TO NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS

<b>GRADE 3: PERFORMANCE INDICATORS ADDRESSED</b>	
<b>Lesson</b>	<b>Performance Indicators</b>
1.1 Word Problems	Problem Solving
1.2 Strategies for Solving Problems	Problem Solving, 3.N.24
1.3 Words with Special Math Meanings	Problem Solving
2.1 Place Value	3.N.1–N.4, 3.A.1
2.2 Comparing and Ordering Numbers	3.N.2, 3.N.3
2.3 The Meaning of Addition and Subtraction	3.N.5, 3.N.6, 3.N.9, 3.N.17
2.4 Adding Whole Numbers	3.N.5, 3.N.18
2.5 Subtracting Whole Numbers	3.N.6, 3.N.18
2.6 The Meaning of Multiplication	3.N.7, 3.N.8, 3.N.20, 3.N.21
2.7 Multiplying Whole Numbers	3.N.19, 3.N.20
2.8 The Meaning of Division	3.N.16, 3.N.17, 3.N.22, 3.N.23
2.9 Rounding Whole Numbers	3.N.25, 3.N.26, 3.N.27
2.10 Estimating Sums and Differences	3.N.25, 3.N.26, 3.N.27
2.11 Fractions	3.N.10–3.N.15, 3.A.1
3.1 Identifying Patterns	3.A.2
3.2 Patterns with Paired Numbers	3.A.2
3.3 Change over Time	3.S.2, 3.S.3
3.4 Solving Number Sentences	3.N.20, 3.N.21
4.1 Basic Geometric Figures	3.G.1–3.G.4
4.2 Two-Dimensional Shapes	3.G.1
4.3 Three-Dimensional Shapes	3.G.3, 3.G.4
4.4 Congruent Shapes	3.G.2
4.5 Symmetry	3.G.5
4.6 Plotting Points	*See note.
4.7 Transforming Shapes	2.G.5
5.1 Measuring Length: Customary Units	3.M.1, 3.M.2, 3.M.10
5.2 Measuring Length: Metric Units	*See note.
5.3 Measuring Perimeter	3.M.2
5.4 Measuring Area	3.N.21
5.5 Measuring Volume	*See note.

*continued*

\*Optional: The concepts and skills in this lesson are not assessed in grade 3. This material may be used for enrichment, to challenge more advanced students, and/or as preparation for grade 4.

## CORRELATIONS OF AIM HIGHER! LESSONS TO NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS (CONT.)

<b>GRADE 3: PERFORMANCE INDICATORS ADDRESSED</b>	
<b>Lesson</b>	<b>Performance Indicators</b>
5.6 Measuring Capacity	3.M.4–3.M.6
5.7 Measuring Mass and Weight	3.M.3
5.8 Measuring Time	3.M.8, 3.M.9
5.9 Measuring Temperature	*See note.
5.10 Counting Money	3.M.7
6.1 Organizing Data: Bar Graphs	3.S.4–3.S.8
6.2 Organizing Data: Pictographs	3.S.4–3.S.8
6.3 Organizing Data: Line Graphs	*See note.
6.4 Range, Median, and Mode	*See note.
6.5 Probability	*See note.
6.6 Uncertainty	3.N.26, 3.M.1, 3.M.10

\*Optional: The concepts and skills in this lesson are not assessed in grade 3. This material may be used for enrichment, to challenge more advanced students, and/or as preparation for grade 4.

## CORRELATIONS OF AIM HIGHER! TEST QUESTIONS TO NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS

GRADE 3: PRETEST			
This question on the Pretest	corresponds to this Performance Indicator:	This question on the Pretest	corresponds to this Performance Indicator:
<b>Session 1</b>		26	3.N.11
1	Problem Solving, 3.N.24	27	3.M.9
2	3.N.10–N.12	28	3.N.22, 3.S.7, 3.S.8
3	3.N.20	29	3.S.8
4	3.G.4	30	3.M.7
5	3.N.3	<b>Session 2</b>	
6	5.G.12	31	3.G.4
7	3.M.1, 3.M.2	32	3.N.22, 3.N.24
8	3.S.8	33	3.M.10
9	3.M.10	34	3.N.22
10	3.G.2	35	3.N.20, 3.N.24
11	3.N.3	36	3.A.2
12	3.S.7	37	3.G.1
13	2.G.5	38	3.N.25, 3.N.26
14	3.N.4	39	3.N.20, 3.A.2
15	3.S.7	<b>Session 3</b>	
16	3.N.24	40	3.N.24
17	3.N.15	41	3.N.20
18	3.N.11	42	3.M.1, 3.M.2
19	3.M.1, 3.M.10	43	3.A.2
20	5.G.12	44	3.N.18, 3.N.25
21	3.A.1	45	3.N.23
22	3.N.24	46	3.N.20, 3.N.24
23	3.A.2	47	3.N.11, 3.N.24
24	3.N.19, 3.N.20, 3.N.22, 3.N.23	48	3.G.12, 5.G.12
25	3.G.2		

## CORRELATIONS OF AIM HIGHER! TEST QUESTIONS TO NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS

<b>GRADE 3: POSTTEST</b>			
<b>This question on the Pretest</b>	<b>corresponds to this Performance Indicator:</b>	<b>This question on the Posttest</b>	<b>corresponds to this Performance Indicator:</b>
<b>Session 1</b>		26	3.N.22
1	3.G.5	27	3.S.7, 3.S.8
2	3.N.19	28	3.N.11
3	3.N.24	29	3.M.10
4	3.G.4	30	3.S.7, 3.S.8
5	3.S.8	<b>Session 2</b>	
6	3.A.2	31	3.G.5
7	3.N.22	32	3.N.27
8	3.M.3	33	S.M.1, S.M.2
9	3.N.18	34	S.N.11
10	3.A.2	35	3.N.4, 3.N.5
11	3.N.11	36	3.N.24
12	2.G.5	37	3.N.11, 3.N.15, 3.A.1
13	3.M.7	38	3.A.2, 3.S.2, 3.S.8
14	3.M.1	39	3.S.2
15	3.N.3	<b>Session 3</b>	
16	3.S.7, 3.S.8	40	3.N.9
17	3.A.2	41	3.N.25
18	3.S.7, S.S.8	42	3.G.5
19	3.N.22	43	3.N.22, 3.N.24
20	3.N.18, 3.N.24	44	3.M.7
21	5.G.12	45	3.S.8
22	3.G.2	46	3.N.19, 3.N.22, 3.N.24
23	3.N.3, 3.A.1	47	3.N.20, 3.N.24, 3.M.2
24	3.M.3	48	3.N.24, 3.M.6
25	2.G.5		

**CORRELATIONS OF NEW YORK STATE MATHEMATICS  
PERFORMANCE INDICATORS TO AIM HIGHER! LESSONS: GRADE 4**

<b>NUMBER SENSE AND OPERATIONS STRAND</b>	
<b>Performance Indicator</b>	<b>Lessons</b>
<b>Students will understand numbers, multiple ways of representing numbers, relationships among numbers, and number systems.</b>	
<b>Number Systems</b>	
4.N.1 Skip count by 1,000's	2.1
4.N.2 Read and write whole numbers to 10,000	2.1
4.N.3 Compare and order numbers to 10,000	2.1
4.N.4 Understand the 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	2.1
4.N.5 Recognize equivalent representations for numbers up to four digits and generate them by decomposing and composing numbers	2.1
4.N.6 Understand, use, and explain the associative property of multiplication	2.4
4.N.7 Develop an understanding of fractions as locations on number lines and as divisions of whole numbers	2.11, 2.13
4.N.8 Recognize and generate equivalent fractions (halves, fourths, thirds, fifths, sixths, and tenths) using manipulatives, visual models, and illustrations	2.11–2.13
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)	2.11
4.N.10 Develop an understanding of decimals as part of a whole	2.8
4.N.11 Read and write decimals to hundredths, using money as a context	2.10
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	2.10
<b>Number Theory</b>	
4.N.13 Develop an understanding of the properties of odd/even numbers as a result of multiplication	3.1
<b>Students will understand meanings of operations and procedures, and how they relate to one another.</b>	
<b>Operations</b>	
4.N.14 Use a variety of strategies to add and subtract numbers up to 10,000	2.2, 2.3
4.N.15 Select appropriate computational and operational methods to solve problems	1.2
4.N.16 Understand various meanings of multiplication and division	2.4, 3.4
4.N.17 Use multiplication and division as inverse operations to solve problems	2.5–2.7
4.N.18 Use a variety of strategies to multiply two-digit numbers by one-digit numbers (with and without regrouping)	2.5

*continued*

<b>NUMBER SENSE AND OPERATIONS STRAND, <i>cont.</i></b>		
4.N.19	Use a variety of strategies to multiply two-digit numbers by two-digit numbers (with and without regrouping)	2.5, 3.1
4.N.20	Develop fluency in multiplying and dividing multiples of 10 and 100 up to 1,000	3.1
4.N.21	Use a variety of strategies to divide two-digit dividends by one-digit divisors (with and without remainders)	2.6, 2.7
4.N.22	Interpret the meaning of remainders	2.7
4.N.23	Add and subtract proper fractions with common denominators	2.11, 2.12
4.N.24	Express decimals as an equivalent form of fractions to tenths and hundredths	2.8, 2.13
4.N.25	Add and subtract decimals to tenths and hundredths using a hundreds chart	2.9, 2.10
<b>Students will compute accurately and make reasonable estimates.</b>		
<b>Estimation</b>		
4.N.26	Round numbers less than 1,000 to the nearest tens and hundreds	2.14, 2.15, 6.5
4.N.27	Check reasonableness of an answer by using estimation	2.14, 2.15

<b>ALGEBRA STRAND</b>		
<b>Performance Indicator</b>		<b>Lessons</b>
<b>Students will represent and analyze algebraically a wide variety of problem solving situations.</b>		
<b>Variables and Expressions</b>		
4.A.1	Evaluate and express relationships using open sentences with one operation	2.2–2.4, 2.6
<b>Students will perform algebraic procedures accurately.</b>		
<b>Equations and Inequalities</b>		
4.A.2	Use the symbols $<$ , $>$ , $=$ , and $\neq$ (with and without the use of a number line) to compare whole numbers and unit fractions and decimals (up to hundredths)	2.8
4.A.3	Find the value or values that will make an open sentence true, if it contains $<$ or $>$	2.2–2.4, 2.6
<b>Students will recognize, use, and represent algebraically patterns, relations, and functions.</b>		
<b>Patterns, Relations, and Functions</b>		
4.A.4	Describe, extend, and make generalizations about numeric (+, −, ×, ÷) and geometric patterns	3.1–3.3
4.A.5	Analyze a pattern or a whole-number function and state the rule, given a table or an input/output box	3.2, 3.3

*continued*

<b>GEOMETRY STRAND</b>	
<b>Performance Indicator</b>	<b>Lessons</b>
<b>Students will use visualization and spatial reasoning to analyze characteristics and properties of geometric shapes.</b>	
<b>Shapes</b>	
4.G.1 Identify and name polygons, recognizing that their names are related to the number of sides and angles (triangle, quadrilateral, pentagon, hexagon, and octagon)	4.1–4.3
4.G.2 Identify points and line segments when drawing a plane figure	4.1
4.G.3 Find perimeter of polygons by adding sides	5.2
4.G.4 Find the area of a rectangle by counting the number of squares needed to cover the rectangle	5.3
4.G.5 Define and identify vertices, faces, and edges of three-dimensional shapes	4.1, 4.4
<b>Students will identify and justify geometric relationships, formally and informally.</b>	
<b>Geometric Relationships</b>	
4.G.6 Draw and identify intersecting, perpendicular, and parallel lines	4.1
4.G.7 Identify points and rays when drawing angles	4.1
4.G.8 Classify angles as acute, obtuse, right, and straight	4.1, 4.2

<b>MEASUREMENT STRAND</b>	
<b>Performance Indicator</b>	<b>Lessons</b>
<b>Students will determine what can be measured and how, using appropriate methods and formulas.</b>	
<b>Units of Measurement</b>	
4.M.1 Select tools and units (customary and metric) appropriate for the length being measured	5.1
4.M.2 Use a ruler to measure to the nearest standard unit (whole, 1/2 and 1/4 inches, whole feet, whole yards, whole centimeters, and whole meters)	5.1, 6.5
4.M.3 Know and understand equivalent standard units of length: 12 inches = 1 foot; 3 feet = 1 yard	5.1
4.M.4 Select tools and units appropriate to the mass of the object being measured (grams and kilograms)	5.6
4.M.5 Measure mass, using grams	5.6
4.M.6 Select tools and units appropriate to the capacity being measured (milliliters and liters)	5.5
4.M.7 Measure capacity, using milliliters and liters	5.5
<b>Students will use units to give meaning to measurements.</b>	
<b>Units</b>	
4.M.8 Make change, using combined coins and dollar amounts	2.10
4.M.9 Calculate elapsed time in hours and half hours, not crossing A.M./P.M.	5.8
4.M.10 Calculate elapsed time in days and weeks, using a calendar	5.8

*continued*

<b>STATISTICS AND PROBABILITY STRAND</b>	
<b>Performance Indicator</b>	<b>Lessons</b>
<b>Students will collect, organize, display, and analyze data.</b>	
<b>Collection of Data</b>	
4.S.1 Design investigations to address a question from given data	6.1
4.S.2 Collect data using observations, surveys, and experiments and record appropriately	6.1
<b>Organization and Display of Data</b>	
4.S.3 Represent data using tables, bar graphs, and pictographs	6.1
<b>Analysis of Data</b>	
4.S.4 Read and interpret line graphs	6.2
<b>Students will make predictions that are based upon data analysis.</b>	
<b>Predictions from Data</b>	
4.S.5 Develop and make predictions that are based on data	6.1, 6.2
4.S.6 Formulate conclusions and make predictions from graphs	6.1, 6.2

## CORRELATIONS OF AIM HIGHER! LESSONS TO NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS

<b>GRADE 4 PERFORMANCE INDICATORS ADDRESSED</b>	
<b>Lesson</b>	<b>Performance Indicators</b>
1.1 Reasoning about Word Problems	Problem Solving
1.2 Problem-Solving Strategies	Problem Solving, 4.N.15
1.3 Understanding Mathematical Language	Problem Solving
2.1 Place Value	4.N.2–4.N.5
2.2 Adding Whole Numbers	4.N.14, 4.A.1, 4.A.3
2.3 Subtracting Whole Numbers	4.N.14, 4.A.1, 4.A.2
2.4 The Meaning of Multiplication	4.N.6, 4.N.16, 4.A.1, 4.A.3
2.5 Multiplying Whole Numbers	4.N.17, 4.N.18, 4.N.19
2.6 The Meaning of Division	4.N.17, 4.L.N.21, 4.A.1, 4.A.3
2.7 Dividing Whole Numbers	4.N.17, 4.N.21, 4.N.22
2.8 Decimal Place Value	4.N.10, 4.N.24, 4.A.3
2.9 Adding and Subtracting Decimals	4.N.25
2.10 Decimals and Money	4.N.11, 4.N.12, 4.N.25, 4.M.8
2.11 Fractions and Mixed Numbers	4.N.7–4.N.9, 4.N.23
2.12 Operations with Fractions	4.N.8, 4.N.23
2.13 Uses of Fractions	4.N.7, 4.N.8, 4.N.24
2.14 Estimating Sums and Differences	4.N.14, 4.N.26, 4.N.27
2.15 Estimating Products and Quotients	4.N.21, 4.N.26, 4.N.27
3.1 Multiplication Patterns	4.N.13, 4.N.19, 4.N.20, 4.A.4
3.2 Ordered Pairs	4.A.4, 4.A.5
3.3 Sequences	4.A.4, 4.A.5
3.4 Variables, Properties, and Equations	4.N.16
4.1 The Building Blocks of Shapes	4.G.1, 4.G.2, 4.G.6–4.G.8
4.2 Two-Dimensional Shapes: Basic Forms	4.G.1, 4.G.8
4.3 Two-Dimensional Shapes: Other Polygons	4.G.1
4.4 Three-Dimensional Shapes	4.G.5
4.5 Transformations	*See note.
4.6 Congruent and Similar Shapes	3.G.2
4.7 Symmetry	3.G.5

*continued*

\*Optional: The concepts and skills in this lesson are not assessed in grade 4. This material may be used for enrichment, to challenge more advanced students, and/or as preparation for grade 5.

**CORRELATIONS OF AIM HIGHER! LESSONS TO  
NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS (CONT.)**

<b>GRADE 4 PERFORMANCE INDICATORS ADDRESSED</b>	
<b>Lesson</b>	<b>Performance Indicators</b>
5.1 Measuring Length	4.M.1, 4.M.2, 4.M.3
5.2 Measuring Perimeter	4.G.3
5.3 Measuring Area	4.G.4
5.4 Measuring Volume	*See note.
5.5 Measuring Capacity	4.M.6, 4.M.7
5.6 Measuring Weight and Mass	4.M.4, 4.M.5
5.7 Measuring Circles and Angles	*See note.
5.8 Measuring Time	4.M.9, 4.M.10
5.9 Measuring Temperature	*See note.
6.1 Organizing Data: Bar Graphs	4.S.1–4.S.3, 4.S.5, 4.S.6
6.2 Organizing Data: Line Graphs	4.S.4–4.S.6
6.3 Range, Median, Mode, and Mean	*See note.
6.4 Probability	*See note.
6.5 Uncertainty	4.N.26, 4.M.2

\*Optional: The concepts and skills in this lesson are not assessed in grade 4. This material may be used for enrichment, to challenge more advanced students, and/or as preparation for grade 5.

**CORRELATIONS OF AIM HIGHER! TEST QUESTIONS TO  
NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS**

<b>GRADE 4: PRETEST</b>			
<b>This question on the Pretest</b>	<b>corresponds to this Performance Indicator:</b>	<b>This question on the Pretest</b>	<b>corresponds to this Performance Indicator:</b>
<b>Session 1</b>		26	4.N.7
1	4.N.14	27	5.S.6, 5.S.7
2	4.N.18	28	4.N.13, 4.N.15
3	4.A.3	29	4.M.8
4	2.G.5	30	4.M.18
5	4.M.9	<b>Session 2</b>	
6	4.M.1	31	Problem Solving
7	4.N.12	32	4.G.1
8	4.M.8	33	4.N.1, 4.N.2, 4.G.3
9	4.N.26	34	4.N.21
10	5.S.6, 5.S.7	35	4.M.9
11	4.A.4	36	Problem Solving
12	4.N.7	37	5.S.6, 5.S.7
13	4.G.1	38	4.S.3
14	4.N.5	39	4.G.4
15	4.N.4	<b>Session 3</b>	
16	4.G.3	40	4.A.1
17	4.S.5, 4.S.6	41	5.S.3
18	4.M.2	42	3.G.5
19	5.N.11	43	4.A.1
20	4.N.8	44	4.N.8, 5.N.11
21	4.G.4	45	2.G.5, 5.G.12
22	4.A.1	46	5.N.12
23	4.N.14	47	4.M.9
24	4.M.3	48	4.A.5
25	4.S.6		

## CORRELATIONS OF AIM HIGHER! TEST QUESTIONS TO NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS

GRADE 4: POSTTEST			
This question on the Pretest	corresponds to this Performance Indicator:	This question on the Posttest	corresponds to this Performance Indicator:
<b>Session 1</b>		26	4.N.9, 4.N.12
1	4.N.21	27	5.S.6, 5.S.7
2	4.M.2	28	4.N.26, 4.S.5, 4.S.6
3	4.N.26	29	4.N.7–4.N.9
4	4.S.4	30	4.N.9
5	4.N.18	<b>Session 2</b>	
6	4.A.4	31	3.G.5
7	2.G.5	32	4.N.14, 4.N.15
8	4.A.1	33	4.A.5
9	4.N.18	34	4.N.14, 4.N.15
10	4.G.4	35	4.G.3
11	4.S.6	36	4.N.15
12	5.S.6, 5.S.7	37	4.N.14, 4.N.15
13	4.N.18	38	4.S.1, 4.S.3, 4.S.5, 4.S.6
14	4.M.9	39	4.G.4
15	4.N.4	<b>Session 3</b>	
16	Problem Solving	40	4.N.14, 4.N.15
17	4.G.3	41	4.S.5, 4.S.6
18	4.N.26	42	4.A.1
19	4.A.4	43	4.N.14, 4.N.15, 4.N.18
20	5.S.6, 5.S.7	44	4.N.26, 4.N.27
21	4.N.9	45	
22	4.N.8, 4.N.18	46	4.S.3
23	4.N.8	47	4.N.7–4.N.9
24	4.A.1	48	4.A.4, 4.A.5
25	Problem Solving		

**CORRELATIONS OF NEW YORK STATE MATHEMATICS  
PERFORMANCE INDICATORS TO AIM HIGHER! LESSONS: GRADE 5**

<b>NUMBER SENSE AND OPERATIONS STRAND</b>	
<b>Performance Indicator</b>	<b>Lessons</b>
<b>Students will understand numbers, multiple ways of representing numbers, relationships among numbers and number systems.</b>	
<b>Number Systems</b>	
5.N.1 Read and write whole numbers to millions	2.1
5.N.2 Compare and order numbers to millions	2.1, 2.3
5.N.3 Understand the 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 million	2.2
5.N.4 Create equivalent fractions, given a fraction	2.14
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>	2.12
5.N.6 Understand the concept of ratio	2.11, 4.5
5.N.7 Express ratios in different forms	2.11, 4.5
5.N.8 Read, write, and order decimals to thousandths	2.7, 2.8
5.N.9 Compare fractions using $<$ , $>$ , or $=$	2.12
5.N.10 Compare decimals using $<$ , $>$ , or $=$	2.7, 2.8
5.N.11 Understand that percent means part of 100, and write percents as fractions and decimals	2.11
<b>Number Theory</b>	
5.N.12 Recognize that some numbers are only divisible by one and themselves (prime) and others have multiple divisors (composite)	2.6
5.N.13 Calculate multiples of a whole number and the least common multiple of two numbers	2.6
5.N.14 Identify the factors of a given number	2.14
5.N.15 Find the common factors and the greatest common factor of two numbers	2.14
<b>Students will understand meanings of operations and procedures, and how they relate to one another.</b>	
<b>Operations</b>	
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>	2.10
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>	2.5

*continued*

<b>NUMBER SENSE AND OPERATIONS STRAND, <i>cont.</i></b>		
<b>Performance Indicator</b>		<b>Lessons</b>
5.N.18	Evaluate an arithmetic expression using order of operations including multiplication, division, addition, subtraction and parentheses	3.1
5.N.19	Simplify fractions to lowest terms	2.16
5.N.20	Convert improper fractions to mixed numbers, and mixed numbers to improper fractions	2.12
5.N.21	Use a variety of strategies to add and subtract fractions with like denominators	2.15
5.N.22	Add and subtract mixed numbers with like denominators	2.15
5.N.23	Use a variety of strategies to add, subtract, multiply, and divide decimals to thousandths	2.9, 2.10
<b>Students will compute accurately and make reasonable estimates.</b>		
<b>Estimation</b>		
5.N.24	Round numbers to the nearest hundredth and up to 10,000	2.18
5.N.25	Estimate sums and differences of fractions with like denominators	2.19
5.N.26	Estimate sums differences, products, and quotients of decimals	2.19
5.N.27	Justify the reasonableness of answers using estimation	2.19

<b>ALGEBRA STRAND</b>		
<b>Performance Indicator</b>		<b>Lessons</b>
<b>Students will represent and analyze algebraically a wide variety of problem solving situations.</b>		
<b>Variables and Expressions</b>		
5.A.1	Define and use appropriate terminology when referring to constants, variables, and algebraic expressions	3.3, 3.4
5.A.2	Translate simple verbal expressions into algebraic expressions	3.3, 3.4
<b>Students will perform algebraic procedures accurately.</b>		
<b>Variables and Expressions</b>		
5.A.3	Substitute assigned values into variable expressions and evaluate using order of operations	2.4
<b>Equations and Inequalities</b>		
5.A.4	Solve simple one-step equations using basic whole-number facts	2.4
5.A.5	Solve and explain simple one-step equations using inverse operations involving whole numbers	2.4
5.A.6	Evaluate the perimeter formula for given input values	5.3
<b>Students will recognize, use, and represent algebraically patterns, relations, and functions.</b>		
<b>Patterns, Functions, and Relations</b>		
5.A.7	Create and explain patterns and algebraic relationships (i.e., 2, 4, 6, 8...) algebraically: $2n$ (doubling)	3.2
5.A.8	Create algebraic or geometric patterns using concrete objects or visual drawings (i.e., rotate and shade geometric shapes)	3.2

*continued*

<b>GEOMETRY STRAND</b>	
<b>Performance Indicator</b>	<b>Lessons</b>
<b>Students will use visualization and spatial reasoning to analyze characteristics and properties of geometric shapes.</b>	
<b>Shapes</b>	
5.G.1 Calculate the perimeter of regular and irregular polygons	5.3
<b>Students will identify and justify geometric relationships, formally and informally.</b>	
<b>Geometric Relationships</b>	
5.G.2 Identify pairs of similar triangles	4.5
5.G.3 Identify the ratio of corresponding sides of similar triangles	4.5
5.G.4 Classify quadrilaterals by properties of their angles and sides	4.2
5.G.5 Know that the sum of the interior angles of a quadrilateral is 360 degrees	4.2
5.G.6 Classify triangles by properties of their angles and sides	4.2
5.G.7 Know that the sum of the interior angles of a triangle is 180 degrees	4.2
5.G.8 Find a missing angle when given two angles of a triangle	4.2
5.G.9 Identify pairs of congruent triangles	4.5
5.G.10 Identify corresponding parts of congruent triangles	4.5
<b>Students will apply transformations and symmetry to analyze problem solving situations.</b>	
<b>Transformational Geometry</b>	
5.G.11 Identify and draw lines of symmetry of basic geometric shapes	4.6
<b>Students will apply coordinate geometry to analyze problem solving situations.</b>	
<b>Coordinate Geometry</b>	
5.G.12 Identify and plot points in the first quadrant	4.6
5.G.13 Plot points to form basic geometric shapes (identify and classify)	4.6
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)	5.3

*continued*

<b>MEASUREMENT STRAND</b>	
<b>Performance Indicator</b>	<b>Lessons</b>
<b>Students will determine what can be measured and how, using appropriate methods and formulas.</b>	
<b>Units of Measurement</b>	
5.M.1 Use a ruler to measure to the nearest inch, 1/2, 1/4, and 1/8 inch	5.2
5.M.2 Identify customary equivalent units of length	5.2
5.M.3 Measure to the nearest centimeter	5.2
5.M.4 Identify equivalent metric units of length	5.2
5.M.5 Convert measurement within a given system	5.2
<b>Tools and Methods</b>	
5.M.6 Determine the tool and technique to measure with an appropriate level of precision: lengths and angles	4.1
<b>Students will use units to give meaning to measurements.</b>	
<b>Units</b>	
5.M.7 Calculate elapsed time in hours and minutes	5.9, 5.10
5.M.8 Measure and draw angles using a protractor	4.1
<b>Students will develop strategies for estimating measurements.</b>	
<b>Estimation</b>	
5.M.9 Determine personal references for customary units of length (i.e., your pace is approximately 3 feet, your height is approximately 5 feet, etc.)	5.1, 5.2
5.M.10 Determine personal references for metric units of length	5.1, 5.2
5.M.11 Justify the reasonableness of estimates	2.19

*continued*

<b>STATISTICS AND PROBABILITY STRAND</b>	
<b>Performance Indicator</b>	<b>Lessons</b>
<b>Students will collect, organize, display, and analyze data.</b>	
<b>Collection of Data</b>	
5.S.1 Collect and record data from a variety of sources (i.e., newspapers, magazines, polls, charts, and surveys)	6.1
<b>Organization and Display of Data</b>	
5.S.2 Display data in a line graph to show an increase or decrease over time	6.3
<b>Analysis of Data</b>	
5.S.3 Calculate the mean for a given set of data and use to describe a set of data	6.4
<b>Students will make predictions that are based upon data analysis.</b>	
<b>Predictions from Data</b>	
5.S.4 Formulate conclusions and make predictions from graphs	2.3
<b>Students will understand and apply concepts of probability.</b>	
<b>Probability</b>	
5.S.5 List the possible outcomes for a single-event experiment	6.5, 6.8
5.S.6 Record experiment results using fractions/ratios	6.6, 6.8
5.S.7 Create a sample space and determine the probability of a single event, given a simple experiment (i.e., rolling a number cube)	6.7, 6.8

## CORRELATIONS OF AIM HIGHER! LESSONS TO NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS

<b>GRADE 5 PERFORMANCE INDICATORS ADDRESSED</b>	
<b>Lesson</b>	<b>Performance Indicators</b>
1.1 Reasoning about Word Problems	Problem Solving
1.2 Problem-Solving Strategies	Problem Solving
1.3 Understanding Mathematical Language	Problem Solving
2.1 Digits and Place Value	5.N.1, 5.N.2
2.2 Powers of 10 and Expanded Notation	5.N.3
2.3 Number Lines and Ordering Integers	5.N.2
2.4 Basic Operations with Integers	5.A.3–5
2.5 Divisibility Rules	5.N.17
2.6 Prime and Composite Numbers	5.N.12, 5.N.13
2.7 Place Values Less Than One	5.N.8, 5.N.10
2.8 Number Lines and Ordering Decimal Numbers	5.N.8, 5.N.10
2.9 Addition and Subtraction of Decimals	5.N.23, 5.M.8
2.10 Multiplication and Division of Decimals	5.N.23
2.11 Percents	5.N.6, 5.N.7, 5.N.11
2.12 Fractions and Mixed Numbers	5.N.5, 5.N.9, 5.N.20
2.13 Multiplying and Dividing Fractions	*See note.
2.14 Simplifying Fractions/Equivalent Fractions	5.N.4, 5.N.14, 5.N.15
2.15 Adding and Subtracting Fractions with Like Denominators	5.N.21, 5.N.22
2.16 Least Common Denominators	5.N.19
2.17 Adding and Subtracting Fractions with Unlike Denominators	*See note.
2.18 Rounding	5.N.18
2.19 Estimation	5.M.11
3.1 Processing Order	5.A.7, 5.A.8
3.2 Recognizing Patterns	5.A.1, 5.A.2
3.3 Variables and Equations	5.A.1, 5.A.2
3.4 Algebraic Equations in Word Problems	5.A.1, 5.A.2

*continued*

\*Optional: The concepts and skills in this lesson are not assessed in grade 5. This material may be used for enrichment, to challenge more advanced students, and/or as preparation for grade 6.

**CORRELATIONS OF AIM HIGHER! LESSONS  
TO NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS (CONT.)**

<b>GRADE 5 PERFORMANCE INDICATORS ADDRESSED</b>	
<b>Lesson</b>	<b>Performance Indicators</b>
4.1 The Building Blocks of Shapes	5.G.1–10
4.2 Two-Dimensional Shapes: Basic Forms	5.G.4–8
4.3 Two-Dimensional Shapes: Other Polygons	4.G.1
4.4 Three-Dimensional Shapes	4.G.5
4.5 Transformations	5.N.6, 5.N.7, 5.G.2, 5.G.3, 5.G.9, 5.G.10
4.6 Graphing	5.G.11–13
5.1 Estimation and Nonstandard Measurement of Length	5.M.1, 5.M.9, 5.M.10
5.2 Measuring Length	5.M.2, 5.M.3, 5.M.9, 5.M.10
5.3 Measuring Perimeter and Circumference	5.A.6, 5.G.1, 5.G.14
5.4 Measuring Area: Rectangles	4.G.4
5.5 Measuring Volume: Rectangular Prisms	*See note.
5.6 Measuring Weight	3.M.3
5.7 Measuring Mass	4.M.4, 4.M.5
5.8 Measuring Capacity	4.M.6, 4.M.7
5.9 Measuring Time	5.M.7
5.10 Measuring Elapsed Time	5.M.7
5.11 Measuring Temperature	*See note.
6.1 Displaying Data: Bar Graphs and Histograms	5.S.1
6.2 Displaying Data: Circle Graphs	*See note.
6.3 Displaying Data: Line Graphs and Venn Diagrams	5.S.2
6.4 Statistical Measures and Stem-and-Leaf Plots	5.S.3
6.5 Finding Outcomes	5.S.5
6.6 Probability and Prediction	5.S.6
6.7 Predicting from a Sample	5.S.7
6.8 Uncertainty	5.S.5–7

\*Optional: The concepts and skills in this lesson are not assessed in grade 5. This material may be used for enrichment, to challenge more advanced students, and/or as preparation for grade 6.

## CORRELATIONS OF AIM HIGHER! TEST QUESTIONS TO NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS

GRADE 5: PRETEST			
This question on the Pretest	corresponds to this Performance Indicator:	This question on the Pretest	corresponds to this Performance Indicator:
<b>Session 1, Part 1</b>		25	5.N.17
1	5.N.1, 5.N.3	26	4.G.4, 5.G.1
2	5.M.2	27	5.S.1, 5.S.4
3	5.G.2		
4	5.A.1, 5.A.2	<b>Session 1, Part 2</b>	
5	2.G.5	28	5.G.12, 5.G.13
6	5.A.4	29	5.G.6, 5.G.7
7	5.M.6	30	5.A.7
8	5.S.1	31	5.N.23
9	5.S.7	32	5.A.4
10	5.A.5, 5.N.23	33	5.N.1
11	5.N.5, 5.N.9	34	5.N.24, 5.N.27
12	5.N.21	35	5.N.6, 5.S.4
13	5.N.4, 5.N.21, 5.N.22	36	4.G.4
14	5.A.1, 5.N.18		
15	5.N.6	<b>Session 2</b>	
16	5.A.2	37	5.A.4, 5.A.5
17	5.N.3, 5.N.23	38	2.G.5
18	5.N.3	39	5.N.4
19	2.G.5	40	5.N.27
20	5.N.12	41	5.N.27
21	5.S.3	42	5.G.4, 5.G.11
22	5.A.2	43	5.M.5
23	5.N.23	44	5.G.4, 5.G.6
24	5.N.19	45	5.N.9, 5.N.10, 5.N.12, 5.N.14, 5.N.15

## CORRELATIONS OF AIM HIGHER! TEST QUESTIONS TO NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS

<b>GRADE 5: POSTTEST</b>			
This question on the Posttest	corresponds to this Performance Indicator:	This question on the Posttest	corresponds to this Performance Indicator:
<b>Session 1, Part 1</b>		25	5.A.4
1	5.N.24, 5.N.27	26	5.S.2
2	5.N.2	27	5.S.1
3	5.G.9		
4	5.A.6	<b>Session 1, Part 2</b>	
5	5.N.6, 5.N.7	28	5.G.12
6	5.S.4	29	5.N.6
7	5.N.7	30	5.A.7
8	5.A.1, 5.A.2	31	5.N.23
9	5.S.7	32	5.A.4
10	5.A.3	33	5.N.6, 5.N.7, 5.N.11
11	5.S.3	34	Problem Solving
12	5.M.6	35	5.A.4
13	5.N.5, 5.N.7, 5.N.9	36	5.S.1, 5.N.11
14	2.G.5		
15	5.N.24	<b>Session 2</b>	
16	5.N.5	37	5.G.4
17	5.A.2	38	5.A.4
18	5.A.2	39	5.S.3
19	5.M.7	40	5.A.2
20	5.S.1	41	5.N.12
21	5.G.2, 5.G.3, 5.G.9	42	5.A.4
22	5.N.12	43	5.M.5
23	5.G.12	44	Problem Solving, 5.N.7, 5.S.7
24	5.A.4	45	5.G.12, 5.S.2, 5.N.2

**CORRELATIONS OF NEW YORK STATE MATHEMATICS  
PERFORMANCE INDICATORS TO AIM HIGHER! LESSONS: GRADE 6**

<b>NUMBER SENSE AND OPERATIONS STRAND</b>	
<b>Performance Indicator</b>	<b>Lessons</b>
<b>Students will understand numbers, multiple ways of representing numbers, relationships among numbers, and number systems.</b>	
<b>Number Systems</b>	
6.N.1 Read and write whole numbers to trillions	2.1
6.N.2 Define and identify the commutative and associative properties of addition and multiplication	2.2
6.N.3 Define and identify the distributive property of multiplication over addition	2.2
6.N.4 Define and identify the identity and inverse properties of addition and multiplication	2.2
6.N.5 Define and identify the zero property of multiplication	2.2
6.N.6 Understand the concept of rate	
6.N.7 Express equivalent ratios as a proportion	2.17
6.N.8 Distinguish the difference between rate and ratio	
6.N.9 Solve proportions using equivalent fractions	5.2
6.N.10 Verify the proportionality using the product of the means equals the product of the extremes	5.2
6.N.11 Read, write, and identify percents of a whole (0% to 100%)	2.17
6.N.12 Solve percent problems involving percent, rate, and base	2.18
6.N.13 Define absolute value and determine the absolute value of rational numbers (including positive and negative)	2.4, 2.5
6.N.14 Locate rational numbers on a number line (including positive and negative)	2.4, 2.5
6.N.15 Order rational numbers (including positive and negative)	2.4, 2.5
<b>Students will understand meanings of operations and procedures, and how they relate to one another.</b>	
<b>Operations</b>	
6.N.16 Add and subtract fractions with unlike denominators	2.9, 2.10, 2.12
6.N.17 Multiply and divide fractions with unlike denominators	2.9, 2.10, 2.13
6.N.18 Multiply and divide mixed numbers with unlike denominators	2.11, 2.13
6.N.19 Identify the multiplicative inverse (reciprocal) of a number	2.13
6.N.20 Represent fractions as terminating or repeating decimals	2.14–2.16
6.N.21 Find multiple representations of rational numbers (fractions, decimals, and percents 0 to 100)	2.14

*continued*

<b>NUMBER SENSE AND OPERATIONS STRAND, <i>cont.</i></b>		
<b>Performance Indicator</b>		<b>Lessons</b>
6.N.22	Evaluate numerical expressions using order of operations (may include exponents of two and three)	2.7
6.N.23	Represent repeated multiplication in exponential form	2.6
6.N.24	Represent exponential form as repeated multiplication	2.6
6.N.25	Evaluate expressions having exponents where the power is an exponent of one, two, or three	2.6
<b>Students will compute accurately and make reasonable estimates.</b>		
<b>Estimation</b>		
6.N.26	Estimate a percent of quantity (0% to 100%)	2.17, 2.18
6.N.27	Justify the reasonableness of answers using estimation (including rounding)	2.3, 6.9

<b>ALGEBRA STRAND</b>		
<b>Performance Indicator</b>		<b>Lessons</b>
<b>Students will represent and analyze algebraically a wide variety of problem solving situations.</b>		
<b>Variables and Expressions</b>		
6.A.1	Translate two-step verbal expressions into algebraic expressions	3.1, 3.3
<b>Students will perform algebraic procedures accurately.</b>		
<b>Variables and Expressions</b>		
6.A.2	Use substitution to evaluate algebraic expressions (may include exponents of one, two, and three)	2.6, 3.1, 3.3
<b>Equations and Inequalities</b>		
6.A.3	Translate two-step verbal equations into algebraic equations	3.2
6.A.4	Solve and explain two-step equations involving whole numbers using inverse operations	3.2
6.A.5	Solve simple proportions within context	2.14, 2.16
6.A.6	Evaluate formulas for given input values (circumference, area, volume, distance, temperature, interest, etc.)	5.5

*continued*

<b>GEOMETRY STRAND</b>		
<b>Performance Indicator</b>		<b>Lessons</b>
<b>Students will use visualization and spatial reasoning to analyze characteristics and properties of geometric shapes.</b>		
<b>Shapes</b>		
6.G.1	Calculate the length of corresponding sides of similar triangles, using proportional reasoning	4.1–4.3
6.G.2	Determine the area of triangles and quadrilaterals (squares, rectangles, rhombi, and trapezoids) and develop formulas	4.1–4.3, 5.3
6.G.3	Use a variety of strategies to find the area of regular and irregular polygons	4.1–4.3, 5.3
6.G.4	Determine the volume of rectangular prisms by counting cubes and develop the formula	4.4, 5.6
6.G.5	Identify radius, diameter, chords and central angles of a circle	5.5
6.G.6	Understand the relationship between the diameter and radius of a circle	5.5
6.G.7	Determine the area and circumference of a circle, using the appropriate formula	5.5
6.G.8	Calculate the area of a sector of a circle, given the measure of a central angle and the radius of the circle	5.5
6.G.9	Understand the relationship between the circumference and the diameter of a circle	5.5
<b>Students will apply coordinate geometry to analyze problem solving situations.</b>		
<b>Coordinate Geometry</b>		
6.G.10	Identify and plot points in all four quadrants	4.5
6.G.11	Calculate the area of basic polygons drawn on a coordinate plane (rectangles and shapes composed of rectangles having sides with integer lengths)	4.5

*continued*

<b>MEASUREMENT STRAND</b>	
<b>Performance Indicator</b>	<b>Lessons</b>
<b>Students will determine what can be measured and how, using appropriate methods and formulas.</b>	
<b>Units of Measurement</b>	
6.M.1 Measure capacity and calculate volume of a rectangular prism	5.6
6.M.2 Identify customary units of capacity (cups, pints, quarts, and gallons)	5.1
6.M.3 Identify equivalent customary units of capacity (cups to pints, pints to quarts, and quarts to gallons)	5.1
6.M.4 Identify metric units of capacity (liter and milliliter)	5.1
6.M.5 Identify equivalent metric units of capacity (milliliter to liter and liter to milliliter)	5.1
<b>Tools and Methods</b>	
6.M.6 Determine the tool and technique to measure with an appropriate level of precision: capacity	4.8
<b>Students will develop strategies for estimating measurements.</b>	
<b>Estimation</b>	
6.M.7 Estimate volume, area, and circumference (see figures identified in geometry strand)	4.1–4.4, 5.5, 5.6
6.M.8 Justify the reasonableness of estimates	4.1–4.4, 5.5, 5.6
6.M.9 Determine personal references for capacity	4.1–4.4, 5.5, 5.6

*continued*

<b>STATISTICS AND PROBABILITY STRAND</b>	
<b>Performance Indicator</b>	<b>Lessons</b>
<b>Students will collect, organize, display, and analyze data.</b>	
<b>Collection of Data</b>	
6.S.1     Develop the concept of sampling when collecting data from a population and decide the best method to collect data for a particular question	6.1–6.5
<b>Organization and Display of Data</b>	
6.S.2     Record data in a frequency table	6.6
6.S.3     Construct Venn diagrams to sort data	6.8
6.S.4     Determine and justify the most appropriate graph to display a given set of data (pictograph, bar graph, line graph, histogram, or circle graph)	6.1–6.5
<b>Analysis of Data</b>	
6.S.5     Determine the mean, mode and median for a given set of data	6.6
6.S.6     Determine the range for a given set of data	6.6
6.S.7     Read and interpret graphs	6.1–6.5
<b>Students will make predictions that are based upon data analysis.</b>	
<b>Predictions from Data</b>	
6.S.8     Justify predictions made from data	6.1–6.5
<b>Students will understand and apply concepts of probability.</b>	
<b>Probability</b>	
6.S.9     List possible outcomes for compound events	6.7
6.S.10    Determine the probability of dependent events	6.7, 6.9
6.S.11    Determine the number of possible outcomes for a compound event by using the fundamental counting principle and use this to determine the probabilities of events when the outcomes have equal probability	6.7, 6.9

**CORRELATIONS OF AIM HIGHER! LESSONS  
TO NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS**

<b>GRADE 6 PERFORMANCE INDICATORS ADDRESSED</b>	
<b>Lesson</b>	<b>Performance Indicators</b>
1.1 Reasoning about Word Problems	Problem Solving
1.2 Problem-Solving Strategies	Problem Solving
1.3 Understanding Mathematical Language	Problem Solving
2.1 Place Value	6.N.1
2.2 Operating with Whole Numbers	6.N.2–6.N.5
2.3 Estimating with Whole Numbers	6.N.27
2.4 Integers	6.N.13–6.N.15
2.5 Adding and Subtracting Integers	6.N.13–6.N.15
2.6 Exponents	6.N.23–6.N.25
2.7 The Order of Operations	6.N.22
2.8 Prime Numbers	5.N.12
2.9 Finding the Greatest Common Factor	6.N.16
2.10 Finding the Least Common Multiple	6.N.16
2.11 Fractions and Mixed Numbers	6.N.18
2.12 Adding and Subtracting Fractions	6.N.16
2.13 Multiplying and Dividing Fractions	6.N.17–6.N.19
2.14 Decimal Place Value	6.N.20, 6.N.21
2.15 Adding and Subtracting Decimals	6.N.20, 6.A.5
2.16 Multiplying and Dividing Decimals	6.N.20, 6.A.5
2.17 Percent	6.N.11, 6.N.26
2.18 Solving Percent Problems	6.N.12, 6.N.26
3.1 Variables and Expressions	6.N.23–6.N.25, 6.A.1, 6.A.2
3.2 Solving Equations	6.A.3, 6.A.4
3.3 Patterns	6.A.1, 6.A.2
4.1 Plane Geometry	6.G.1, 6.G.2, 6.M.7–6.M.9
4.2 Polygons	6.G.1, 6.G.2, 6.M.7–6.M.9
4.3 Triangles and Quadrilaterals	6.G.1, 6.G.2, 6.M.7–6.M.9
4.4 Three-Dimensional Shapes	6.G.4, 6.M.7–6.M.9

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**CORRELATIONS OF AIM HIGHER! LESSONS  
TO NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS (CONT.)**

<b>GRADE 6: PERFORMANCE INDICATORS ADDRESSED</b>	
<b>Lesson</b>	<b>Performance Indicators</b>
4.5 The Coordinate Plane	6.G.10, 6.G.11
4.6 Congruence and Transformations	5.G.9, *See note.
4.7 Symmetry	5.G.11
4.8 Geometric Constructions	6.M.6
5.1 Converting Customary and Metric Units	6.M.2–6.M.5
5.2 Similar Figures and Scale Models	6.N.9, 6.N.10
5.3 Measuring Perimeter of Polygons	6.N.2, G.N.3
5.4 Measuring Area of Polygons	6.N.2, G.N.3
5.5 Measuring Circumference and Area of Circles	6.N.5–6.N.9, 6.M.7–6.M.9
5.6 Measuring Volume of Rectangular Prisms	6.M.4, 6.M.7–6.M.9
6.1 Displaying Data: Bar and Column Graphs	6.S.1, 6.S.4, 6.S.7, 6.S.8
6.2 Displaying Data: Line Graphs	6.S.1, 6.S.4, 6.S.7, 6.S.8
6.3 Displaying Data: Line Plots and Stem-and-Leaf Plots	6.S.1, 6.S.4, 6.S.7, 6.S.8
6.4 Displaying Data: Circle Graphs	6.S.1, 6.S.4, 6.S.7, 6.S.8
6.5 Displaying Data: Histograms and Pictographs	6.S.1, 6.S.4, 6.S.7, 6.S.8
6.6 Statistical Measures	6.S.2, 6.S.5, 6.S.6
6.7 Probability	6.S.9–6.S.11
6.8 Set Theory	6.S.3
6.9 Uncertainty	6.N.10, 6.N.27, 6.S.11

\*Transformations are introduced in grade 2 but not covered in depth until grade 8. This material may be used for enrichment, to challenge more advanced students, and/or as preparation for grade 8.

**CORRELATIONS OF AIM HIGHER! TEST QUESTIONS TO  
NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS**

<b>GRADE 6: PRETEST</b>			
<b>This question on the Pretest</b>	<b>corresponds to this Performance Indicator:</b>	<b>This question on the Pretest</b>	<b>corresponds to this Performance Indicator:</b>
<b>Session 1, Part 1</b>		25	6.S.11
1	2.G.5, 8.G.7	26	6.G.2, 6.G.3
2	6.A.5, 6.A.5	27	6.A.2
3	6.A.6, 6.G.5		
4	6.N.27	<b>Session 1, Part 2</b>	
5	6.N.12, 6.S.7	28	6.A.1, 6.A.2
6	6.S.9–6.S.11	29	5.N.12
7	6.N.12	30	6.N.16, 6.N.17
8	5.G.11	31	6.N.2–6.N.4
9	6.G.2, 6.G.3	32	6.N.14
10	6.N.21, 6.A.5	33	6.S.5
11	6.N.9, 6.N.10	34	6.A.1, 6.A.3
12	6.N.25	35	6.G.1, 6.G.3
13	6.G.1	36	6.G.10, 6.G.11
14	6.N.6		
15	6.N.6	<b>Session 2</b>	
16	5.A.8	37	5.N.13
17	6.S.7	38	6.A.3, 6.A.4
18	6.A.3	39	5.A.7
19	6.N.18	40	6.N.27, 6.S.11
20	6.G.3	41	6.N.17, 6.N.18
21	6.N.2, 6.N.3, 6.N.9, 6.N.21	42	6.N.7, 6.N.21
22	6.N.3	43	6.S.5, 6.S.7
23	5.M.6	44	6.A.1, 6.A.2, 6.S.1
24	6.S.7	45	6.N.12, 6.G.4, 6.M.1

## CORRELATIONS OF AIM HIGHER! TEST QUESTIONS TO NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS

GRADE 6: POSTTEST			
This question on the Posttest	corresponds to this Performance Indicator:	This question on the Posttest	corresponds to this Performance Indicator:
<b>Session 1, Part 1</b>		25	2.G.5, 8.G.7
1	2.G.5, 8.G.7	26	6.A.2, 6.N.14
2	6.G.8	27	6.N.27, 6.G.3
3	6.N.3		
4	6.S.5	<b>Session 1, Part 2</b>	
5	6.N.27	28	5.G.4
6	6.A.1, 6.A.2	29	6.A.2
7	6.N.21, 6.N.25	30	6.S.8
8	6.N.11, 6.N.12	31	6.A.5
9	6.N.25	32	5.M.7
10	6.A.1, 6.A.2	33	Problem Solving
11	6.S.11	34	6.G.2
12	5.G.6	35	6.S.5, 6.S.6
13	6.G.9	36	6.G.2, 6.G.3
14	6.N.12, 6.S.7		
15	Problem Solving	<b>Session 2</b>	
16	6.N.18, 6.N.19	37	6.N.9
17	6.N.27	38	6.G.10
18	6.S.11	39	6.N.6, 6.N.9
19	6.N.7, 6.N.12	40	6.A.2
20	5.G.11	41	6.A.3, 6.A.4
21	6.S.4	42	6.S.7
22	6.S.7	43	5.G.1
23	6.N.12, 6.N.26	44	6.G.2, 6.G.3
24		45	6.S.9, 6.S.11

**CORRELATIONS OF NEW YORK STATE MATHEMATICS  
PERFORMANCE INDICATORS TO AIM HIGHER! LESSONS: GRADE 7**

<b>NUMBER SENSE AND OPERATIONS STRAND</b>	
<b>Performance Indicator</b>	<b>Lessons</b>
<b>Students will understand numbers, multiple ways of representing numbers, relationships among numbers, and number systems.</b>	
<b>Number Systems</b>	
7.N.1 Distinguish between the various subsets of real numbers (counting/natural numbers, whole numbers, integers, rational numbers, and irrational numbers)	2.1–2.9
7.N.2 Recognize the difference between rational and irrational numbers (i.e., explore different approximations of $\pi$ )	2.9
7.N.3 Place rational and irrational numbers (approximations) on a number line and justify the placement of the numbers	2.9
7.N.4 Develop the laws of exponents for multiplication and division	2.7
7.N.5 Write numbers in scientific notation	2.7
7.N.6 Translate numbers from scientific notation into standard form	2.7
7.N.7 Compare numbers written in scientific notation	2.7
<b>Number Theory</b>	
7.N.8 Find the common factors and greatest common factor of two or more numbers	2.1
7.N.9 Determine multiples and least common multiple of two or more numbers	2.1
7.N.10 Determine the prime factorization of a given number and write in exponential form	2.1
<b>Students will understand meanings of operations and procedures, and how they relate to one another.</b>	
<b>Operations</b>	
7.N.11 Simplify expressions using order of operations <i>Note: Expressions may include absolute value and/or integral exponents greater than 0.</i>	2.10
7.N.12 Add, subtract, multiply, and divide integers	2.2
7.N.13 Add and subtract two integers (with and without the use of a number line)	2.2
7.N.14 Develop a conceptual understanding of negative and zero exponents with a base of ten and relate to fractions and decimals (i.e., $10^{-2} = .01 = 1/100$ )	2.7
7.N.15 Recognize and state the value of the square root of a perfect square (up to 225)	2.8
7.N.16 Determine the square root of non-perfect squares using a calculator	2.8
7.N.17 Classify irrational numbers as non-repeating/non-terminating decimals	2.9
<b>Students will compute accurately and make reasonable estimates.</b>	
<b>Estimation</b>	
7.N.18 Identify the two consecutive whole numbers between which the square root of a non-perfect square whole number less than 225 lies (with and without the use of a number line)	2.8
7.N.19 Justify the reasonableness of answers using estimation	2.13

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<b>ALGEBRA STRAND</b>	
<b>Performance Indicator</b>	<b>Lessons</b>
<b>Students will represent and analyze algebraically a wide variety of problem solving situations.</b>	
<b>Variables and Expressions</b>	
7.A.1 Translate two-step verbal expressions into algebraic expressions	2.2
7.A.2 Add and subtract monomials with exponents of one	2.2, 2.7
7.A.3 Identify a polynomial as an algebraic expression containing one or more terms	2.10
<b>Students will perform algebraic procedures accurately.</b>	
<b>Equations and Inequalities</b>	
7.A.4 Solve multi-step equations by combining like terms, using the distributive property, or moving variables to one side of the equation	2.10, 3.2, 3.4
7.A.5 Solve one-step inequalities (positive coefficients only) and graph the solution set on a number line	3.2
7.A.6 Evaluate formulas for given input values (surface area, rate, and density problems)	5.2–5.4
<b>Students will recognize, use, and represent algebraically patterns, relations, and functions.</b>	
<b>Patterns, Relations, and Functions</b>	
7.A.7 Draw the graphic representation of a pattern from an equation or from a table of data	3.3
7.A.8 Create algebraic patterns using charts/tables, graphs, equations, and expressions	3.3
7.A.9 Build a pattern to develop a rule for determining the sum of the interior angles of polygons	3.1
7.A.10 Write an equation to represent a function from a table of values	3.1

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<b>GEOMETRY STRAND</b>		
<b>Performance Indicator</b>		<b>Lessons</b>
<b>Students will use visualization and spatial reasoning to analyze characteristics and properties of geometric shapes.</b>		
<b>Shapes</b>		
7.G.1	Calculate the radius or diameter, given the circumference or area of a circle	4.1, 5.2
7.G.2	Calculate the volume of prisms and cylinders, using a given formula and a calculator	4.3
7.G.3	Identify the two-dimensional shapes that make up the faces and bases of three-dimensional shapes (prisms, cylinders, cones, and pyramids)	4.1–4.3
7.G.4	Determine the surface area of prisms and cylinders, using a calculator and a variety of methods	5.3, 5.4
<b>Students will identify and justify geometric relationships, formally and informally.</b>		
<b>Geometric Relationships</b>		
7.G.5	Identify the right angle, hypotenuse, and legs of a right triangle	4.10
7.G.6	Explore the relationship between the lengths of the three sides of a right triangle to develop the Pythagorean Theorem	4.10
7.G.7	Find a missing angle when given angles of a quadrilateral	4.10
7.G.8	Use the Pythagorean Theorem to determine the unknown length of a side of a right triangle	4.10
7.G.9	Determine whether a given triangle is a right triangle by applying the Pythagorean Theorem and using a calculator	4.10

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<b>MEASUREMENT STRAND</b>	
<b>Performance Indicator</b>	<b>Lessons</b>
<b>Students will determine what can be measured and how, using appropriate methods and formulas.</b>	
<b>Units of Measurement</b>	
7.M.1 Calculate distance using a map scale	5.6
7.M.2 Convert capacities and volumes within a given system	5.1, 5.5
7.M.3 Identify customary and metric units of mass	5.1
7.M.4 Convert mass within a given system	5.1
7.M.5 Calculate unit price using proportions	2.11
7.M.6 Compare unit prices	2.11
7.M.7 Convert money between different currencies with the use of an exchange rate table and a calculator	5.1
7.M.8 Draw central angles in a given circle using a protractor (circle graphs)	4.9
<b>Tools and Methods</b>	
7.M.9 Determine the tool and technique to measure with an appropriate level of precision: mass	4.9
<b>Students will develop strategies for estimating measurements.</b>	
<b>Estimation</b>	
7.M.10 Identify the relationships between relative error and magnitude when dealing with large numbers (i.e., money, population)	6.7
7.M.11 Estimate surface area	5.2–5.4
7.M.12 Determine personal references for customary/metric units of mass	5.2
7.M.13 Justify the reasonableness of the mass of an object	5.1

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<b>STATISTICS AND PROBABILITY STRAND</b>	
<b>Performance Indicator</b>	<b>Lessons</b>
<b>Students will collect, organize, display, and analyze data.</b>	
<b>Collection of Data</b>	
7.S.1 Identify and collect data using a variety of methods	6.1
<b>Organization and Display of Data</b>	
7.S.2 Display data in a circle graph	6.3
<b>Analysis of Data</b>	
7.S.3 Convert raw data into double bar graphs and double line graphs	6.1
7.S.4 Calculate the range for a given set of data	6.6
7.S.5 Select the appropriate measure of central tendency	6.6
7.S.6 Read and interpret data represented graphically (pictograph, bar graph, histogram, line graph, double line/bar graphs or circle graph). Students will make predictions that are based upon data analysis.	6.1–6.5
<b>Predictions from Data</b>	
7.S.7 Identify and explain misleading statistics and graphs. Students will understand and apply concepts of probability.	6.1–6.5
<b>Probability</b>	
7.S.8 Interpret data to provide the basis for predictions and to establish experimental probabilities	6.7–6.9
7.S.9 Determine the validity of sampling methods to predict outcomes	6.7–6.9
7.S.10 Predict the outcome of experiments	6.7–6.9
7.S.11 Design and conduct an experiment to test predictions	6.7
7.S.12 Compare actual results to predicted results	6.7–6.9

## CORRELATIONS OF AIM HIGHER! LESSONS TO NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS

<b>GRADE 7: PERFORMANCE INDICATORS ADDRESSED</b>	
<b>Lesson</b>	<b>Performance Indicators</b>
1.1 Reasoning about Word Problems	Problem Solving
1.2 Problem-Solving Strategies	Problem Solving
1.3 Understanding Mathematical Language	Problem Solving
2.1 Properties of Whole Numbers	7.N.1, 7.N.8–7.N.10
2.2 Integers	7.N.12, 7.N.13
2.3 Fractions and Mixed Numbers	5.N.5, 5.N.9, 5.N.20, 6.N.21
2.4 Operations with Fractions	6.N.7, 6.N.16–6.N.19
2.5 Decimals	6.N.20, 6.N.21
2.6 Operations with Decimals	6.N.20, 6.N.21
2.7 Exponents and Scientific Notation	7.N.4–7.N.7, 7.N.14
2.8 Roots	7.N.15, 7.N.16, 7.N.18
2.9 Irrational Numbers	7.N.2, 7.N.3, 7.N.17
2.10 Properties of Real Numbers	7.N.11, 7.A.4
2.11 Ratio and Proportion	7.M.5, 7.M.6
2.12 Percent	6.N.11, 6.N.12, 6.N.21, 6.N.26
2.13 Estimation	7.N.19
3.1 Patterns	7.N.9, 7.N.10
3.2 Equations and Inequalities	7.A.4–7.A.6
3.3 Graphing Linear Equations	7.N.7, 7.N.8
3.4 Rates of Change	7.A.1, 7.A.4
4.1 Points, Lines, and Angles	7.G.1–7.G.9
4.2 Classifying Shapes	7.G.3
4.3 Three-Dimensional Solids	7.G.2, 7.G.3
4.4 Similarity	6.G.1
4.5 The Coordinate Plane	6.G.10
4.6 Translations	*See note.
4.7 Locus and Transformation	*See note.
4.8 Tessellations	*See note.
4.9 Geometric Constructions	7.M.8, 7.M.9
4.10 The Pythagorean Theorem	7.G.5–7.G.9

*continued*

\*Optional: The concepts and skills in this lesson are not assessed in grade 7. This material may be used for enrichment, to challenge more advanced students, and/or as preparation for grade 8.

**CORRELATIONS OF AIM HIGHER! LESSONS  
TO NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS (CONT.)**

<b>GRADE 7: PERFORMANCE INDICATORS ADDRESSED</b>	
<b>Lesson</b>	<b>Performance Indicators</b>
5.1 Systems of Measurement	7.M.2–7.M.4
5.2 Measuring Perimeter and Circumference	7.G.1
5.3 Measuring Area	7.G.4, 7.M.11
5.4 Measuring Surface Area of Rectangular Prisms	7.G.4, 7.M.11
5.5 Measuring Volume	7.M.2
5.6 Scale Drawings	7.M.1, 7.R.9
6.1 Bar Graphs	7.S.1, 7.S.3, 7.S.6, 7.S.7
6.2 Line Graphs	7.S.1, 7.S.6
6.3 Circle Graphs	7.S.3, 7.S.6
6.4 Other Graphs	7.S.6, 7.S.7
6.5 Graphing Relationships	7.S.6, 7.S.7
6.6 Basic Statistical Measures	7.S.4, 7.S.5
6.7 Counting Strategies	7.S.8–7.S.12
6.8 Probability	7.S.8–7.S.10, 7.S.12
6.9 Uncertainty	7.S.8–7.S.10, 7.S.12

## CORRELATIONS OF AIM HIGHER! TEST QUESTIONS TO NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS

GRADE 7: PRETEST			
This question on the Pretest	corresponds to this Performance Indicator:	This question on the Pretest	corresponds to this Performance Indicator:
<b>Session 1, Part 1</b>		25	7.N.2, 7.N.4
1	7.A.7	26	7.N.1, 7.N.8–7.N.10
2	7.G.4	27	6.G.10
3	7.S.8–7.S.12		
4	7.G.5–7.G.9	<b>Session 1, Part 2</b>	
5	7.M.1	28	7.N.12, 7.M.9
6	7.N.11, 7.A.4	29	7.N.10
7	7.A.4, 7.A.7	30	7.A.1
8	7.G.3	31	7.A.1
9	7.G.3	32	7.G.3, 7.G.5
10	7.S.2, 7.S.7	33	7.N.15, 7.N.18
11	7.N.19	34	7.A.12
12	7.N.1, 7.N.12, 7.N.13	35	7.S.4, 7.S.5
13	7.N.11	36	7.G.5, 7.G.7, 7.G.8
14	7.G.8		
15	7.N.12	<b>Session 2</b>	
16	7.N.19	37	7.G.1
17	7.N.12, 7.N.19	38	7.A.1, 7.A.4
18	7.A.5, 7.A.7, 7.A.8	39	7.A.4
19	7.A.8, 7.A.10	40	7.N.12
20	7.A.1, 7.A.2	41	6.N.7, 6.G.1
21	7.S.10	42	7.G.7
22	7.M.1	43	7.S.5, 7.S.6
23	7.N.12, 7.A.2	44	7.G.8
24	7.A.5	45	7.S.1, 7.S.5, 7.S.6

## CORRELATIONS OF AIM HIGHER! TEST QUESTIONS TO NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS

GRADE 7: POSTTEST			
This question on the Posttest	corresponds to this Performance Indicator:	This question on the Posttest	corresponds to this Performance Indicator:
<b>Session 1, Part 1</b>		25	7.N.12
1	7.N.19, 7.M.11	26	7.M.1
2	7.S.8, 7.S.10	27	6.G.10
3	7.S.2, 7.S.6		
4	7.S.10	<b>Session 1, Part 2</b>	
5	7.N.19	28	6.G.2
6	6.G.10	29	7.N.9
7	7.N.5	30	7.S.5
8	6.N.18	31	7.M.11
9	7.N.3, 7.N.12	32	6.N.11, 7.N.12
10	7.N.12	33	7.A.5
11	7.A.1	34	7.A.1
12	7.N.2	35	5.N.12, 7.N.4, 7.N.8
13	7.A.9	36	7.N.12, 7.G.7
14	7.S.5		
15	7.N.8, 7.N.9	<b>Session 2</b>	
16	7.G.7	37	7.S.2, 7.S.6
17	5.G.4	38	7.N.12, 7.A.9
18	7.N.19	39	5.N.12, 7.N.4, 7.N.8, 7.N.9
19	7.A.6	40	7.M.1
20	7.A.4	41	7.S.8, 7.S.10
21	7.N.12	42	7.M.1
22	7.S.5	43	7.S.6
23	6.G.10	44	7.G.7
24	7.A.4	45	6.G.2, 7.M.11, 7.S.10

**CORRELATIONS OF NEW YORK STATE MATHEMATICS  
PERFORMANCE INDICATORS TO AIM HIGHER! LESSONS: GRADE 8**

<b>NUMBER SENSE AND OPERATIONS STRAND</b>		
<b>Performance Indicator</b>		<b>Lessons</b>
<b>Students will understand meanings of operations and procedures, and how they relate to one another.</b>		
<b>Operations</b>		
8.N.1	Develop and apply the laws of exponents for multiplication and division	2.1, 2.3, 2.4, 2.8, 2.9
8.N.2	Evaluate expressions with integral exponents	2.2, 2.8, 2.9
8.N.3	Read, write, and identify percents less than 1% and greater than 100%	2.5–2.7
8.N.4	Apply percents to: Tax Percent increase/decrease Simple interest Sale price Commission Interest rates Gratuities	2.5–2.7
<b>Students will compute accurately and make reasonable estimates.</b>		
<b>Estimation</b>		
8.N.5	Estimate a percent of quantity, given an application	2.5–2.7, 2.11
8.N.6	Justify the reasonableness of answers using estimation	2.11

<b>ALGEBRA STRAND</b>		
<b>Performance Indicator</b>		<b>Lessons</b>
<b>Students will represent and analyze algebraically a wide variety of problem solving situations.</b>		
<b>Variables and Expressions</b>		
8.A.1	Translate verbal sentences into algebraic inequalities	3.1, 3.2, 3.5
8.A.2	Write verbal expressions that match given mathematical expressions	3.1, 3.2
8.A.3	Describe a situation involving relationships that matches a given graph	3.1, 3.2
8.A.4	Create a graph given a description or an expression for a situation involving a linear or nonlinear relationship	3.7, 3.8
8.A.5	Use physical models to perform operations with polynomials	

*continued*

<b>ALGEBRA STRAND, <i>cont.</i></b>	
<b>Performance Indicator</b>	<b>Lessons</b>
<b>Students will perform algebraic procedures accurately.</b>	
<b>Variables and Expressions</b>	
8.A.6 Multiply and divide monomials	3.3, 3.4
8.A.7 Add and subtract polynomials (integer coefficients)	3.3, 3.4
8.A.8 Multiply a binomial by a monomial or a binomial (integer coefficients)	3.1–3.5
8.A.9 Divide a polynomial by a monomial (integer coefficients) <i>Note: The degree of the denominator is less than or equal to the degree of the numerator for all variables.</i>	3.1–3.5
8.A.10 Factor algebraic expressions using the GCF	3.2
8.A.11 Factor a trinomial in the form $ax^2 + bx + c$ ; $a = 1$ and $c$ having no more than three sets of factors	3.2
<b>Equations and Inequalities</b>	
8.A.12 Apply algebra to determine the measure of angles formed by or contained in parallel lines cut by a transversal and by intersecting lines	4.1
8.A.13 Solve multi-step inequalities and graph the solution set on a number line	3.6
8.A.14 Solve linear inequalities by combining like terms, using the distributive property, or moving variables to one side of the inequality (include multiplication or division of inequalities by a negative number)	3.1, 3.3, 3.5
<b>Students will recognize, use, and represent algebraically patterns, relations, and functions.</b>	
<b>Patterns, Relations, and Functions</b>	
8.A.15 Understand that a data set can be represented in multiple ways: arithmetically, algebraically, and graphically	3.6, 3.9, 6.1–6.5
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	3.6–3.9
8.A.17 Define and use correct terminology when referring to function (domain and range)	3.6
8.A.18 Determine if a relation is a function	3.6
8.A.19 Interpret multiple representations using equation, table of values, and graph	3.9, 3.11, 6.1–6.5
<b>Coordinate Geometry</b>	
8.A.20 Solve systems of equations graphically (only linear, integral solutions, $y = mx + b$ format, no vertical/horizontal lines)	3.10, 3.11
8.A.21 Graph the solution set of an inequality on a number line	3.10
8.A.22 Distinguish between linear and nonlinear equations $ax^2 + bx + c$ ; $a = 1$ (only graphically)	3.11
8.A.23 Recognize the characteristics of quadratics in tables, graphs, equations, and situations	3.11

*continued*

<b>GEOMETRY STRAND</b>	
<b>Performance Indicator</b>	<b>Lessons</b>
<b>Students will identify and justify geometric relationships, formally and informally.</b>	
<b>Geometric Relationships</b>	
8.G.1 Identify pairs of vertical angles as congruent	4.1, 4.2
8.G.2 Identify pairs of supplementary and complementary angles	4.1, 4.2
8.G.3 Calculate the missing angle in a supplementary or complementary pair	4.1, 4.2
8.G.4 Determine angle pair relationships when given two parallel lines cut by a transversal	4.1, 4.2
8.G.5 Calculate the missing angle measurements when given two parallel lines cut by a transversal	4.1, 4.2, 4.7
8.G.6 Calculate the missing angle measurements when given two intersecting lines and an angle	4.1, 4.2, 4.6, 4.7
<b>Students will apply transformations and symmetry to analyze problem solving situations.</b>	
<b>Transformational Geometry</b>	
8.G.7 Describe and identify transformations in the plane, using proper function notation (rotations, reflections, translations, and dilations)	4.5
8.G.8 Draw the image of a figure under rotations of 90 and 180 degrees	4.5
8.G.9 Draw the image of a figure under a reflection over a given line	4.5
8.G.10 Draw the image of a figure under a translation	4.5
8.G.11 Draw the image of a figure under a dilation	4.5
8.G.12 Identify the properties preserved and not preserved under a reflection, rotation, translation, and dilation	4.5
<b>Students will apply coordinate geometry to analyze problem solving situations.</b>	
<b>Coordinate Geometry</b>	
8.G.13 Determine the slope of a line from a graph and explain the meaning of slope as a constant rate of change	3.9
8.G.14 Determine the $y$ -intercept of a line from a graph and be able to explain the $y$ -intercept	3.9
8.G.15 Graph a line using a table of values	3.9
8.G.16 Determine the equation of a line given the slope and the $y$ -intercept	3.9
8.G.17 Graph a line from an equation in slope-intercept form ( $y = mx + b$ )	3.9
8.G.18 Construct the following using a straight edge and compass: Segment congruent to a segment Angle congruent to an angle Perpendicular bisector Angle bisector	4.4

*continued*

<b>MEASUREMENT STRAND</b>	
<b>Performance Indicator</b>	<b>Lessons</b>
<b>Students will determine what can be measured and how, using appropriate methods and formulas.</b>	
<b>Units of Measurement</b>	
8.M.1     Solve equations/proportions to convert to equivalent measurements within metric and customary measurement systems (also allow Fahrenheit to Celsius and vice versa)	5.1–5.3, 5.9

Note: The eighth-grade standards end with the first Performance Indicator of the Measurement Strand. There is no Statistics and Probability Strand.

**CORRELATIONS OF AIM HIGHER! LESSONS  
TO NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS**

<b>GRADE 8: PERFORMANCE INDICATORS ADDRESSED</b>	
<b>Lesson</b>	<b>Performance Indicators</b>
1.1 Reasoning about Word Problems	Problem Solving
1.2 Problem-Solving Strategies	Problem Solving
1.3 Understanding Mathematical Language	8.PS.6 , 8.PS.12, 8.PS.13
2.1 Discovering Numbers	8.N.1–8.N.4
2.2 Ways to Express Numbers	8.N.1–8.N.4
2.3 Prime and Composite Numbers	5.N.12–5.N.15
2.4 Properties and Identities	8.N.1
2.5 Performing Operations	8.N.3, 8.N.4
2.6 Operations with Fractions, Ratios, and Proportions	8.N.3, 8.N.4
2.7 Operations with Decimals and Percents	8.N.3–8.N.5
2.8 Operations with Exponents and Radicals	8.N.1, 8.N.2
2.9 Operations with Scientific Notation	8.N.1, 8.N.2
2.10 Operations with Absolute Value	6.N.13
2.11 Forming Estimates	8.N.5, 8.N.6
3.1 Variables, Expressions, and Equations	8.A.1–8.A.3, 8.A.8, 8.A.9, 8.A.14
3.2 Simplifying Algebraic Expressions	8.A.1–8.A.3, 8.A.8, 8.A.9, 8.A.11
3.3 Solving Equations with One Variable	8.A.6, 8.A.7, 8.A.8, 8.A.9, 8.A.14
3.4 Solving Equations with Two Variables	8.A.6, 8.A.7
3.5 Solving Inequalities	8.A.1, 8.A.14
3.6 Sets, Relations, Functions, and Sequences	8.A.13, 8.A.15, 8.A.16
3.7 Positive, Negative, and Mixed Ordered Pairs	8.A.4, 8.A.16
3.8 Graphing Linear Equations	8.A.4, 8.A.16
3.9 Interpreting Graphs	8.A.15, 8.A.16, 8.A.19
3.10 Graphing Inequalities	8.A.20, 8.A.21
3.11 Linear, Quadratic, and Exponential Growth	8.A.20, 8.A.22, 8.A.23
4.1 Points, Lines, and Angles	8.A.12, 8.G.1–8.G.6
4.2 Two- and Three-Dimensional Shapes	8.G.1–8.G.6
4.3 Circles	7.G.1, 7.M.8
4.4 Geometric Constructions	8.G.18
4.5 Symmetry, Transformations, and Tessellations	8.G.7–8.G.12
4.6 The Pythagorean Theorem	8.G.6
4.7 Right Triangle Trigonometry	8.A.12, 8.G.5, 8.G.6

*continued*

**CORRELATIONS OF AIM HIGHER! LESSONS  
TO NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS (CONT.)**

<b>GRADE 8: PERFORMANCE INDICATORS ADDRESSED</b>	
<b>Lesson</b>	<b>Performance Indicators</b>
5.1 Estimating Measurements	8.M.1
5.2 Precision, Accuracy, and Significant Digits	8.M.1
5.3 Converting Customary and Metric Units	8.M.1
5.4 Measuring Length, Perimeter, and Circumference	7.G.1
5.5 Measuring Area	6.G.2, 6.G.7
5.6 Measuring Volume and Capacity	7.G.2, 7.M.2
5.7 Measuring Surface Area	7.G.4, 7.M.11
5.8 Effects of Changing Dimensions	6.A.6, 7.G.1, 7.G.2, 7.G.4
5.9 Measuring Weight, Mass, and Density	8.M.1
5.10 Measuring Rate and Velocity	6.N.6, 7.A.6
6.1 Data Collection: Sampling	7.S.1
6.2 Displaying Data: Simple Graphs	7.S.2, 7.S.3, 7.S.6
6.3 Displaying Data: Line Graphs and Scatter Plots	7.S.3, 7.S.6
6.4 Displaying Data: Histograms and Related Graphs	7.S.6
6.5 Central Tendencies and Box-and-Whisker Plots	7.S.4, 7.S.5
6.6 Introduction to Probability and Odds	7.S.7–7.S.12
6.7 Counting Strategies	*See note.
6.8 Uncertainty and Misuse of Statistics	7.S.7

\*Optional: The concepts and skills in this lesson are not assessed in grade 8. This material may be used for enrichment, to challenge more advanced students, and/or as preparation for high school.

## CORRELATIONS OF AIM HIGHER! TEST QUESTIONS TO NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS

GRADE 8: PRETEST			
This question on the Pretest	corresponds to this Performance Indicator:	This question on the Pretest	corresponds to this Performance Indicator:
<b>Session 1, Part 1</b>		25	8.G.7
1	5.A.8	26	8.A.1
2	8.A.14	27	8.A.8
3	Problem Solving		
4	8.N.1	<b>Session 1, Part 2</b>	
5	7.G.1	28	8.A.9
6	5.A.8	29	8.N.6
7	8.N.3	30	8.A.19
8	N.G.2	31	8.N.4
9	7.S.1	32	8.A.1, 8.A.14
10	8.A.14	33	8.N.4
11	8.A.1	34	8.G.6
12	8.G.3	35	7.S.5
13	8.M.1	36	8.A.16
14	8.A.1		
15	8.A.2	<b>Session 2</b>	
16	8.N.5	37	7.G.1
17	8.N.4	38	8.A.2
18	8.M.1	39	8.PS.6
19	8.A.1, 8.A.2	40	6.G.2, 7.G.1
20	7.A.6, 7.G.4	41	6.G.2, 7.G.8
21	8.N.2	42	8.N.4
22	8.N.1	43	7.S.10, 8.N.4
23	8.M.1	44	8.A.1
24	8.G.16	45	8.G.15

## CORRELATIONS OF AIM HIGHER! TEST QUESTIONS TO NEW YORK STATE MATHEMATICS PERFORMANCE INDICATORS

<b>GRADE 8: POSTTEST</b>			
<b>This question on the Posttest</b>	<b>corresponds to this Performance Indicator:</b>	<b>This question on the Posttest</b>	<b>corresponds to this Performance Indicator:</b>
<b>Session 1, Part 1</b>		25	8.N.4
1	8.G.7	26	7.A.8
2	8.A.2	27	8.M.1
3	6.G.2		
4	8.M.1	<b>Session 1, Part 2</b>	
5	8.G.17	28	8.A.4
6	Problem Solving	29	7.G.1
7	Problem, Solving, 8.A.19	30	7.S.5
8	8.A.6	31	8.M.1
9	8.G.3	32	8.A.14
10	7.S.1, 7.S.9	33	6.A.6, 6.M.1
11	8.G.3	34	7.A.6, 7.G.4
12	8.N.6	35	8.G.6
13	8.N.1, 8.N.2	36	8.A.7
14	7.S.10		
15	7.M.1	<b>Session 2</b>	
16	8.A.6	37	6.A.6, 6.G.2
17	7.G.1	38	8.M.1
18	8.A.19	39	5.G.11, 7.G.8
19	8.A.14	40	7.S.1, 7.S.3, 7.S.6
20	7.S.1	41	8.N.4
21	8.N.5, 8.A.19	42	7.S.8, 7.S.10
22	7.N.2	43	8.G.16, 8.G.17
23	Problem Solving, 7.N.2	44	6.G.7, 7.G.1
24	8.M.1	45	8.A.12, 8.G.3

