CORRELATION
SUNSHINE STATE STANDARDS
& GRADE LEVEL EXPECTATIONS

SUBJECT: M/J Mathematics Series 1, 2, 3

SUBMISSION TITLE: Mathematics: Applications and Concepts – Course 3 © 2004

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GRADE: 8

STRAND A: Number Sense, Concepts, and Operations

STANDARD 1: The student understands the different ways numbers are represented and used in the real world.

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.A.1.3.1: The student associates verbal names, written word names, and standard numerals with integers, fractions, decimals; numbers expressed as percents; numbers with exponents; numbers in scientific notation; radicals; absolute value; and ratios. The student:	1. knows word names and standard numerals for integers, fractions, decimals, numbers expressed as percents, numbers with exponents, numbers expressed in scientific notation, absolute value, radicals, and ratios.	SE: 17–21, 98, 104, 106, 108, 116–119, 125–126, 128, 130, 146, 147, 149, 156, 206–209 TWE: 17–21, 98, 104, 106, 108, 116–119, 125–126, 128, 130, 146, 147, 149, 156, 206–209	**I**

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.A.1.3.2: The student understands the relative size of integers, fractions, and decimals; numbers expressed as percents; numbers with exponents; numbers in scientific notation; radicals; absolute value; and ratios. The student:	1. compares and orders fractions, decimals, integers, and radicals using graphic models, number lines, and symbols.	SE: 18–19, 55, 68, 127 TWE: 18–19, 55, 68, 127	**I**
	2. compares and orders numbers expressed in absolute value, scientific notation, integers, percents, numbers with exponents, fractions, decimals, radicals, and ratios.	SE: 18–21, 27, 32, 33, 55, 57, 67–70, 75, 86, 105, 106, 109, 127, 128, 129, 213, 222 TWE: 18–21, 27, 32, 33, 55, 57, 67–70, 75, 86, 105, 106, 109, 127, 128, 129, 213, 222	**I**
Benchmark MA.A.1.3.3: The student understands concrete and symbolic representations of rational numbers and irrational numbers in real-world situations. The student:	1. knows examples of rational and irrational numbers in real-world situations.	SE: 62, 125, 127, 129, 149 TWE: 62, 125, 127, 129, 149	**I**
	2. describes the meanings of rational and irrational numbers using physical or graphical displays.	SE: 141 TWE: 141	**I**
	3. constructs models to represent rational and irrational numbers.	The opportunity to address this objective is available. See the following: SE: 62–66, 125–126, 128, 130, 146 TWE: 62–66, 125–126, 128, 130, 146	**M**

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.A.1.3.4: The student understands that numbers can be represented in a variety of equivalent forms, including integers, fractions, decimals, percents, scientific notation, exponents, radicals, and absolute value. **The student:**	1. knows the relationships among fractions, decimals, and percents given a real-world context.	SE: 63–66, 108, 111, 206–209, 210–214, 224, 232–235, 246, 247, 249 TWE: 63–66, 108, 111, 206–209, 210–214, 224, 232–235, 246, 247, 249	**I**
	2. simplifies expressions using integers, exponents, and radicals.	SE: 27, 55, 116, 117, 118, 130, 146, 149 TWE: 27, 55, 116, 117, 118, 130, 146, 149	**I**
	3. knows equivalent forms of large and small numbers in scientific and standard notation.	SE: 104–107, 110, 111 TWE: 104–107, 110, 111	**I**
	4. identifies and explains the absolute value of a number.	SE: 19–21, 55 TWE: 19–21, 55	**I**

*Indepth/Mentioned

STANDARD 2: The student understands number systems.

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.A.2.3.1: The student understands and uses exponential and scientific notation. **The student:**	1. expresses rational numbers in exponential notation including negative exponents (for example, $2^{-3} = 1/2^3 = 1/8$).	SE: 100, 101, 110, 111 TWE: 100, 101, 110, 111	**I**
	2. expresses numbers in scientific or standard notation including decimals between 0 and 1.	SE: 104–107, 110 TWE: 104–107, 110	**I**
	3. evaluates numerical or algebraic expressions that contain exponential notation.	SE: 21, 99, 100, 119, 129 TWE: 21, 99, 100, 119, 129	**I**

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.A.2.3.2: The student understands the structure of number systems other than the decimal number system. The student:	1. expresses base ten numbers as equivalent numbers in different bases, such as base two, base five, and base eight.	SE: 102–103 TWE: 102–103	**I**
	2. discusses the application of the binary (base two) number system in computer technology.	SE: 102–103 TWE: 102–103	**I**
	3. expresses non-base ten numbers as equivalent numbers in base ten.	SE: 102 TWE: 102	**I**

*Indepth/Mentioned

STANDARD 3: The student understands the effects of operations on numbers and the relationships among these operations, selects appropriate operations, and computes for problem solving.

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.A.3.3.1: The student understands and explains the effects of addition, subtraction, multiplication, and division on whole numbers, fractions, including mixed numbers, and decimals, including the inverse relationships of positive and negative numbers. The student:	1. knows the effects of the four basic operations on whole numbers, fractions, mixed numbers, decimals, and integers.	SE: 23–26, 28–30, 34–37, 38, 45–49, 50–53, 55, 56, 57, 71–72, 76–78, 82–85, 88–91, 109, 110, 111 TWE: 23–26, 28–30, 34–37, 38, 45–49, 50–53, 55, 56, 57, 71–72, 76–78, 82–85, 88–91, 109, 110, 111	**I**
	2. knows the inverse relationship of positive and negative numbers.	SE: 25–26, 28–30 TWE: 25–26, 28–30	**I**
	3. applies the properties of real numbers to solve problems (commutative, associative, distributive, identity, equality, inverse, and closure).	SE: 13, 14, 15, 31, 32, 45–49, 50–53, 76–80, 126 TWE: 13, 14, 15, 31, 32, 45–49, 50–53, 76–80, 126	**I**

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.A.3.3.2: The student selects the appropriate operation to solve problems involving addition, subtraction, multiplication, and division of rational numbers, ratios, proportions, and percents, including the appropriate application of the algebraic order of operations. **The student:**	1. knows the appropriate operations to solve real-world problems involving integers, ratios, rates, proportions, numbers expressed as percents, decimals, and fractions.	SE: 8, 9, 10, 26, 44, 49, 93, 97, 124, 159, 177, 215, 227, 277, 379, 419, 489, 538, 589 TWE: 8, 9, 10, 26, 44, 49, 93, 97, 124, 159, 177, 215, 227, 277, 379, 419, 489, 538, 589	**I**
	2. solves real-world problems involving integers, ratios, proportions, numbers expressed as percents, decimals, and fractions in two- or three-step problems.	SE: 8, 9, 10, 26, 44, 49, 93, 97, 124, 159, 186, 215, 227, 234, 318, 323, 329, 379, 419, 489, 538, 589 TWE: 8, 9, 10, 26, 44, 49, 93, 97, 124, 159, 186, 215, 227, 234, 318, 323, 329, 379, 419, 489, 538, 589	**I**
	3. solves real-world problems involving percents including percents greater than 100% (for example percent of change, commission).	SE: 216–219, 220–223, 224, 227, 233, 234, 236–240, 241–244, 245, 247, 248, 328, 379, 419, 489 TWE: 216–219, 220–223, 224, 227, 233, 234, 236–240, 241–244, 245, 247, 248, 328, 379, 419, 489	**I**
	4. writes and simplifies expressions from real-world situations using the order of operations.	The opportunity to address this objective is available. See the following: SE: 11–12, 14, 15 TWE: 11–12, 14, 15	**M**

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.A.3.3.3: The student adds, subtracts, multiplies, and divides whole numbers, decimals, and fractions, including mixed numbers, to solve real-world problems, using appropriate methods of computing, such as mental mathematics, paper and pencil, and calculator. **The student:**	1. solves multi-step real-world problems involving fractions, decimals, and integers using appropriate methods of computation, such as mental computation, paper and pencil, and calculator.	SE: 8, 9, 10, 44, 49, 93, 97, 124, 159, 177, 215, 227, 234, 277, 318, 323, 325, 328–329, 379, 419, 489, 535, 589 TWE: 8, 9, 10, 44, 49, 93, 97, 124, 159, 177, 215, 227, 234, 277, 318, 323, 325, 328–329, 379, 419, 489, 535, 589	**I**

*Indepth/Mentioned

STANDARD 4: The student uses estimation in problem solving and computation.

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.A.4.3.1: The student uses estimation strategies to predict results and to check the reasonableness of results. **The student:**	1. knows appropriate estimation techniques for a given situation using real numbers.	SE: 8, 9, 14, 15, 27, 89, 120–122, 128, 130, 147, 149, 228–231, 248, 249, 600–601 TWE: 8, 9, 14, 15, 27, 89, 120–122, 128, 130, 147, 149, 228–231, 248, 249, 600–601	**I**
	2. estimates to predict results and to check reasonableness of results.	SE: 8, 9, 226, 227 TWE: 8, 9, 226, 227	**I**

*Indepth/Mentioned

STANDARD 5: The student understands and applies theories related to numbers.

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.A.5.3.1: The student uses concepts about numbers, including primes, factors, and multiples, to build number sequences. The student:	1. knows if numbers are relatively prime.	SE: 609 TWE: 609	**I**
	2. applies number theory concepts to determine the terms in a real number sequence.	SE: 512–516 TWE: 512–516	**I**
	3. applies number theory concepts, including divisibility rules, to solve real-world or mathematical problems.	SE: 608 TWE: 608	**I**

*Indepth/Mentioned

STRAND B: Measurement

STANDARD 1: The student measures quantities in the real world and uses the measures to solve problems.

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.B.1.3.1: The student uses concrete and graphic models to derive formulas for finding perimeter, area, surface area, circumference, and volume of two- and three-dimensional shapes, including rectangular solids and cylinders. The student:	1. uses concrete and graphic models to explore and derive formulas for surface area and volume of three-dimensional regular shapes, including pyramids, prisms, and cones.	SE: 335–337, 342–343, 347, 352–353 TWE: 335–337, 342–343, 347, 352–353	**I**
	2. solves and explains real-world problems involving surface area and volume of three-dimensional shapes.	SE: 335–340, 342–345, 347–351, 352–355, 356–357, 364, 365, 366, 367 TWE: 335–340, 342–345, 347–351, 352–355, 356–357, 364, 365, 366, 367	**I**

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.B.1.3.2: The student uses concrete and graphic models to derive formulas for finding rates, distance, time, and angle measures. The student:	1. applies formulas for finding rates, distance, time and angle measures.	SE: 278 TWE: 278	**I**
	2. describes and uses rates of change (for example, temperature as it changes throughout the day, or speed as the rate of change in distance over time) and other derived measures.	SE: 160–164, 165, 166–169, 174, 198, 201 TWE: 160–164, 165, 166–169, 174, 198, 201	**I**
Benchmark MA.B.1.3.3: The student understands and describes how the change of a figure in such dimensions as length, width, height, or radius affects its other measurements such as perimeter, area, surface area, and volume. The student:	1. knows how a change in a figure's dimensions affects its perimeter, area, circumference, surface area, or volume.	SE: 180, 194–197, 200, 201, 318, 322, 339, 345, 357 TWE: 180, 194–197, 200, 201, 318, 322, 339, 345, 357	**I**
	2. knows how changes in the volume, surface area, area, or perimeter of a figure affect the dimensions of the figure.	SE: 194–197, 200, 201 TWE: 194–197, 200, 201	**I**
Benchmark MA.B.1.3.4: The student constructs, interprets, and uses scale drawings such as those based on number lines and maps to solve real-world problems. The student:	1. interprets and applies various scales including those based on number lines, graphs, models, and maps. (Scale may include rational numbers.)	SE: 184–187, 200 TWE: 184–187, 200	**I**
	2. constructs and uses scale drawings to recreate a given situation.	SE: 185, 187, 362 TWE: 185, 187, 362	**I**

*Indepth/Mentioned

STANDARD 2: The student compares, contrasts, and converts within systems of measurement (both standard/nonstandard and metric/customary).

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.B.2.3.1: The student uses direct (measured) and indirect (not measured) measures to compare a given characteristic in either metric or customary units. The student:	1. finds measures of length, weight or mass, and capacity or volume using proportional relationships and properties of similar geometric figures.	SE: 356–357 TWE: 356–357	**I**
Benchmark MA.B.2.3.2: The student solves problems involving units of measure and converts answers to a larger or smaller unit within either the metric or customary system. The student:	1. solves problems using mixed units within each system, such as feet and inches, hours and minutes.	SE: 605 TWE: 605	**I**
	2. solves problems using the conversion of measurements within the customary system.	SE: 604–605 TWE: 604–605	**I**
	3. solves problems using the conversions of measurement within the metric system.	SE: 606–607 TWE: 606–607	**I**

*Indepth/Mentioned

STANDARD 3: The student estimates measurements in real-world problem situations.

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.B.3.3.1: The student solves real-world and mathematical problems involving estimates of measurements including length, time, weight/mass, temperature, money, perimeter, area, and volume, in either customary or metric units. **The student:**	1. knows a variety of strategies to estimate, describe, make comparisons, and solve real-world and mathematical problems involving measurements.	SE: 188–191, 192–193, 200, 314–318, 319–323, 326–329, 335–340, 342–345, 347–351, 352–355, 356–357, 363–366, 367 TWE: 188–191, 192–193, 200, 314–318, 319–323, 326–329, 335–340, 342–345, 347–351, 352–355, 356–357, 363–366, 367	**I**

*Indepth/Mentioned

STANDARD 4: The student selects and uses appropriate units and instruments for measurement to achieve the degree of precision and accuracy required in real-world situations.

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.B.4.3.1: The student selects appropriate units of measurement and determines and applies significant digits in a real-world context. (Significant digits should relate to both instrument precision and to the least precise unit of measurement). The student:	1. selects the appropriate unit of measure for a given situation.	The opportunity to address this objective is available. See the following: SE: 358–360 TWE: 358–360	**M**
	2. knows the precision of different measuring instruments.	SE: 358, 360 TWE: 358, 360	**I**
	3. determines the appropriate precision unit for a given situation.	SE: 359, 361, 362, 366, 367 TWE: 359, 361, 362, 366, 367	**I**
	4. identifies the number of significant digits as it relates to the least precise unit of measure.	SE: 359, 361, 362, 366, 367 TWE: 359, 361, 362, 366, 367	**I**
	5. determines the greatest possible error of a given measurement and the possible actual measurements of an object.	SE: 362 TWE: 362	**I**

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.B.4.3.2: The student selects and uses appropriate instruments, technology, and techniques to measure quantities in order to achieve specified degrees of accuracy in a problem situation. The student:	1. applies significant digits in the real-world context.	The opportunity to address this objective is available. See the following: SE: 359, 361, 362, 366, 367 TWE: 359, 361, 362, 366, 367	**M**
	2. selects and uses appropriate instruments, technology, and techniques to measure quantities and dimensions to a specified degree of accuracy.	The opportunity to address this objective is available. See the following: SE: 615 TWE: 615	**M**

*Indepth/Mentioned

STRAND C: Geometry and Spatial Sense

STANDARD 1: The student describes, draws, identifies, and analyzes two- and three-dimensional shapes.

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.C.1.3.1: The student understands the basic properties of, and relationships pertaining to, regular and irregular geometric shapes in two and three dimensions. The student:	1. determines and justifies the measures of various types of angles based upon geometric relationships in two- and three-dimensional shapes.	SE: 256–260, 261, 262–265, 272–275, 277, 278, 279–282, 284, 306, 307, 309 TWE: 256–260, 261, 262–265, 272–275, 277, 278, 279–282, 284, 306, 307, 309	**I**
	2. compares regular and irregular polygons and two- and three-dimensional shapes.	SE: 272–273, 275, 278, 279–282, 284, 295, 307, 308, 309, 331–334, 340 TWE: 272–273, 275, 278, 279–282, 284, 295, 307, 308, 309, 331–334, 340	**I**
	3. draws and builds three-dimensional figures from various perspectives (for example, flat patterns, isometric drawings, nets).	SE: 330, 333, 334, 341, 346 TWE: 330, 333, 334, 341, 346	**I**
	4. knows the properties of two- and three-dimensional figures.	SE: 178–182, 256–260, 261, 262–265, 266, 267–270, 271, 272–275, 278, 279–282, 283, 284, 285, 286–289, 290–294, 295, 296–299, 300–303, 304–305, 306, 307, 308, 309, 330, 331–334, 356–357, 364 TWE: 178–182, 256–260, 261, 262–265, 266, 267–270, 271, 272–275, 278, 279–282, 283, 284, 285, 286–289, 290–294, 295, 296–299, 300–303, 304–305, 306, 307, 308, 309, 330, 331–334, 356–357, 364	**I**

*Indepth/Mentioned

STANDARD 2: The student visualizes and illustrates ways in which shapes can be combined, subdivided, and changed.

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.C.2.3.1: The student understands the geometric concepts of symmetry, reflections, congruency, similarity, perpendicularity, parallelism, and transformations, including flips, slides, turns, and enlargements. The student:	1. use the properties of parallelism, perpendicularity, and symmetry in solving real-world problems.	SE: 258, 260, 275, 277, 284, 286, 288, 295, 308, 309 TWE: 258, 260, 275, 277, 284, 286, 288, 295, 308, 309	**I**
	2. identifies congruent and similar figures in real-world situations and justifies the identification.	SE: 178–182, 199, 201, 275, 279, 281, 282, 283, 284, 303, 307 TWE: 178–182, 199, 201, 275, 279, 281, 282, 283, 284, 303, 307	**I**
	3. identifies and performs the various transformations (reflection, translation, rotation, dilation) of a given figure on a coordinate plane.	SE: 290–294, 296–299, 300–303, 308, 309 TWE: 290–294, 296–299, 300–303, 308, 309	**I**
Benchmark MA.C.2.3.2: The student predicts and verifies patterns involving tessellations (a covering of a plane with congruent copies of the same pattern with no holes and no overlaps, like floor tiles). The student:	1. predicts and verifies patterns involving tessellations (a covering of a plane with congruent copies of the same pattern with no holes and no overlaps, like floor tiles).	SE: 304–305 TWE: 304–305	**I**

*Indepth/Mentioned

STANDARD 3: The student uses coordinate geometry to locate objects in both two and three dimensions and to describe objects algebraically.

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.C.3.3.1: The student represents and applies geometric properties and relationships to solve real-world and mathematical problems. **The student:**	1. observes, explains, makes and tests conjectures regarding geometric properties and relationships (among regular and irregular shapes of two and three dimensions).	SE: 183, 261, 265, 266, 271, 277, 278, 283, 284, 289, 295, 305, 328, 334, 357, 367 TWE: 183, 261, 265, 266, 271, 277, 278, 283, 284, 289, 295, 305, 328, 334, 357, 367	**I**
	2. applies the Pythagorean Theorem in real-world problems (for example, finds the relationship among sides in $45^o - 45^o$ and $30^o - 60^o$ right triangles).	SE: 132–136, 137–140, 142–145, 147, 148, 149 TWE: 132–136, 137–140, 142–145, 147, 148, 149	**I**
Benchmark MA.C.3.3.2: The student identifies and plots ordered pairs in all four quadrants of a rectangular coordinate system (graph) and applies simple properties of lines. **The student:**	1. given an equation or its graph, finds ordered-pair solutions (for example, y = 2x).	SE: 522–525 TWE: 522–525	**I**
	2. given the graph of a line, identifies the slope of the line (including the slope of vertical and horizontal lines).	SE: 166–169, 174, 199, 526–529, 530, 533–536, 553, 555 TWE: 166–169, 174, 199, 526–529, 530, 533–536, 553, 555	**I**
	3. given the graph of a linear relationship, determines the x and y intercepts of the line.	SE: 523, 533–536, 553 TWE: 523, 533–536, 553	**I**
	4. given the graph of a linear relationship, applies and explains the properties of lines on a graph.	SE: 532 TWE: 532	**I**

*Indepth/Mentioned

STRAND D: Algebraic Thinking

STANDARD 1: The student describes, analyzes, and generalizes a wide variety of patterns, relations, and functions.

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.D.1.3.1: The student describes a wide variety of patterns, relationships, and functions through models, such as manipulatives, tables, graphs, expressions, equations, and inequalities. The student:	1. reads, analyzes, and describes graphs of linear relationships.	SE: 522–525, 555 TWE: 522–525, 555	**I**
	2. uses variables to represent unknown quantities in real-world problems.	SE: 520 TWE: 520	**I**
	3. uses the information provided in a table, graph, or rule to determine if a function is linear and justifies reasoning.	SE: 560–563, 578, 593, 595 TWE: 560–563, 578, 593, 595	**I**
	4. finds a function rule to describe tables of related input-output variables.	SE: 520, 525 TWE: 520, 525	**I**
	5. predicts outcomes based upon function rules.	SE: 521 TWE: 521	**I**

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.D.1.3.2: The student creates and interprets tables, graphs, equations, and verbal descriptions to explain cause-and-effect relationships. The student:	1. interprets and creates tables and graphs (function tables).	SE: 518–520, 522–525, 529, 530, 532, 534–536, 553, 555, 560–563, 564, 565–568, 578, 593, 595 TWE: 518–520, 522–525, 529, 530, 532, 534–536, 553, 555, 560–563, 564, 565–568, 578, 593, 595	**I**
	2. writes equations and inequalities to express relationships.	SE: 531, 535, 536 TWE: 531, 535, 536	**I**
	3. graphs equations and inequalities to explain cause-and-effect relationships.	SE: 521, 535, 536, 564 TWE: 521, 535, 536, 564	**I**
	4. interprets the meaning of the slope of a line from a graph depicting a real-world situation.	SE: 166–169, 529, 534, 536 TWE: 166–169, 529, 534, 536	**I**

*Indepth/Mentioned

STANDARD 2: The student uses expressions, equations, inequalities, graphs, and formulas to represent and interpret situations.

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.D.2.3.1: The student represents and solves real-world problems graphically, with algebraic expressions, equations, and inequalities. The student: ***(Continued on next page)***	1. translates verbal expressions and sentences into algebraic expressions, equations, and inequalities.	SE: 11, 39–42, 51, 53, 56, 80, 93, 94, 101, 471, 478–481, 492, 494, 495, 498, 499, 504, 506 TWE: 11, 39–42, 51, 53, 56, 80, 93, 94, 101, 471, 478–481, 492, 494, 495, 498, 499, 504, 506	**I**
	2. translates algebraic expressions, equations, or inequalities representing real-world relationships into verbal expressions or sentences.	SE: 57 TWE: 57	**I**
	3. solves single- and multiple-step linear equations and inequalities in concrete or abstract form.	SE: 45–49, 50–53, 56, 57, 92–95, 110, 111, 117, 119, 468, 474–477, 479–481, 482–483, 484–487, 490, 491, 495, 496–499 TWE: 45–49, 50–53, 56, 57, 92–95, 110, 111, 117, 119, 468, 474–477, 479–481, 482–483, 484–487, 490, 491, 495, 496–499	**I**
	4. graphs linear equations on the coordinate plane using tables of values.	SE: 522–525, 553 TWE: 522–525, 553	**I**
	5. graphically displays real-world situations represented by algebraic equations or inequalities.	SE: 493, 494, 495, 497, 498, 501, 502, 503, 506, 507, 529 TWE: 493, 494, 495, 497, 498, 501, 502, 503, 506, 507, 529	**I**

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.D.2.3.1: The student represents and solves real-world problems graphically, with algebraic expressions, equations, and inequalities. The student: ***(Continued from previous page)***	6. evaluates algebraic expressions, equations, and inequalities by substituting integral values for variables and simplifying the results. 7. simplifies algebraic expressions that represent real-world situations by combining like terms and applying the properties of real numbers.	SE: 11–14, 19, 26, 27, 29, 30, 32, 36, 37, 38, 55, 57, 73, 74, 79, 89, 90 TWE: 11–14, 19, 26, 27, 29, 30, 32, 36, 37, 38, 55, 57, 73, 74, 79, 89, 90 SE: 93, 469–473, 477, 481, 490, 505, 507 TWE: 93, 469–473, 477, 481, 490, 505, 507	**I** **I**
Benchmark MA.D.2.3.2: The student uses algebraic problem-solving strategies to solve real world problems involving linear equations and inequalities. The student:	1. simplifies algebraic expressions with a maximum of two variables. 2. solves single- and multi-step linear equations and inequalities that represent real-world situations.	SE: 469–473, 477, 490, 505, 507 TWE: 469–473, 477, 490, 505, 507 SE: 474–477, 479–481, 482–483, 484–487, 490, 491, 495, 496–499, 500–504, 505, 506, 507 TWE: 474–477, 479–481, 482–483, 484–487, 490, 491, 495, 496–499, 500–504, 505, 506, 507	**I** **I**

*Indepth/Mentioned

STRAND E: Data Analysis and Probability

STANDARD 1: The student understands and uses the tools of data analysis for managing information.

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.E.1.3.1: The student collects, organizes, and displays data in a variety of forms, including tables, line graphs, charts, bar graphs, to determine how different ways of presenting data can lead to different interpretations. The student:	1. reads and interprets data displayed in a variety of forms including histograms.	SE: 420–424, 425, 426–429, 430–433, 434, 440, 446–449, 450–453, 454–457, 458–460, 461, 537, 538, 539–542, 543, 554, 602–603 TWE: 420–424, 425, 426–429, 430–433, 434, 440, 446–449, 450–453, 454–457, 458–460, 461, 537, 538, 539–542, 543, 554, 602–603	**I**
	2. constructs and interprets displays of data, (including circle, line, bar, and box-and-whisker graphs) and explains how different displays of data can lead to different interpretations.	SE: 420–421, 422, 424, 425, 427, 428, 429, 430–433, 434, 440, 445, 446, 453, 456, 539–542, 543 TWE: 420–421, 422, 424, 425, 427, 428, 429, 430–433, 434, 440, 445, 446, 453, 456, 539–542, 543	**I**
Benchmark MA.E.1.3.2: The student understands and applies the concepts of range and central tendency (mean, median, and mode). The student:	1. finds the mean, median, and mode of a set of data.	SE: 435–438, 439, 440, 444, 445, 449, 451, 453, 459, 461 TWE: 435–438, 439, 440, 444, 445, 449, 451, 453, 459, 461	**I**
	2. interprets measures of dispersion (range) and of central tendency.	SE: 435–438, 439, 440, 442–445, 446–449, 451, 459, 461 TWE: 435–438, 439, 440, 442–445, 446–449, 451, 459, 461	**I**
	3. determines appropriate measures of central tendency for a given situation or set of data.	SE: 436–438 TWE: 436–438	**I**

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.E.1.3.3: The student analyzes real-world data by applying appropriate formulas for measures of central tendency and organizing data in a quality display, using appropriate technology, including calculators and computers. **The student:**	1. determines the mean, median, mode, and range of a set of real-world data using appropriate technology. 2. organizes, graphs and analyzes a set of real-world data using appropriate technology.	SE: 435–438, 439, 451, 453 TWE: 435–438, 439, 451, 453 SE: 3, 145, 425, 439, 457, 543 TWE: 3, 145, 425, 439, 457, 543	**I** **I**

*Indepth/Mentioned

STANDARD 2: The student identifies patterns and makes predictions from an orderly display of data using concepts of probability and statistics.

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.E.2.3.1: The student compares experimental results with mathematical expectations of probabilities. **The student:**	1. compares and explains the results of an experiment with the mathematically expected outcomes. 2. calculates simple mathematical probabilities for independent and dependent events.	SE: 400–403, 404–405 TWE: 400–403, 404–405 SE: 374–377, 381, 383, 385, 386, 393, 394, 395, 396–399, 401, 402, 403, 410, 412, 413 TWE: 374–377, 381, 383, 385, 386, 393, 394, 395, 396–399, 401, 402, 403, 410, 412, 413	**I** **I**
Benchmark MA.E.2.3.2: The student determines odds for and odds against a given situation. **The student:**	1. predicts the mathematical odds for and against a specified outcome in a given real-world situation.	SE: 377 TWE: 377	**I**

*Indepth/Mentioned

STANDARD 3: The student uses statistical methods to make inferences and valid arguments about real-world situations.

BENCHMARK	GRADE LEVEL EXPECTATIONS	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
Benchmark MA.E.3.3.1: The student formulates hypotheses, designs experiments, collects and interprets data, and evaluates hypotheses by making inferences and drawing conclusions based on statistics (range, mean, median, and mode) and tables, graphs, and charts. The student:	1. formulates a hypothesis and designs an experiment.	SE: 405 TWE: 405	**I**
	2. performs the experiment and collects, organizes, and displays the data.	The opportunity to address this objective is available. See the following: SE: 405 TWE: 405	**M**
	3. evaluates the hypothesis by making inferences and drawing conclusions based on statistical results.	The opportunity to address this objective is available. See the following: SE: 405 TWE: 405	**M**
Benchmark MA.E.3.3.2: The student identifies the common uses and misuses of probability or statistical analysis in the everyday world. The student:	1. knows appropriate uses of statistics and probability in real-world situations.	SE: 374, 375, 376, 377, 381, 406–409 TWE: 374, 375, 376, 377, 381, 406–409	**I**
	2. knows when statistics and probability are used in misleading ways.	SE: 450–453, 460 TWE: 450–453, 460	**I**
	3. identifies and uses different types of sampling techniques (for example, random, systematic, stratified).	SE: 406–409, 412, 413 TWE: 406–409, 412, 413	**I**
	4. knows whether a sample is biased.	SE: 407–409, 413 TWE: 407–409, 413	**I**

*Indepth/Mentioned