



IDAHO
Mathematics Standards Grades 9 Through 12
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OBJECTIVES	PAGE REFERENCES
347. BASIC ARITHMETIC, ESTIMATION, AND ACCURATE COMPUTATIONS	
01. Understand and use numbers.	
a. Understand and use positive and negative numbers, fractions, decimals, percentages, and scientific notation.	SE: 225, 226 #13-#17, 227, 475, 601 Example 3, 602 #10-#12, 603 #40-#47 TWE: IE 225, 247, 601 <i>Reading to Learn Mathematics 477</i> <i>Skills Practice 227</i>
b. Understand properties of the real number system.	SE: 11-18, 46 #68-#70 <i>Study Guide and Review 48 1-2</i> TWE: CC 13 DI 14 H 11 IE 13 RT 12 <i>Reading to Learn Mathematics 17</i> <i>Skills Practice 17</i>
c. Understand properties of roots, exponents, and logarithms.	SE: 245-249, 257-260, 296 Example 4, 361-362 Example 3, 376 #48, 531-537 <i>Extra Practice 841 Lesson 6-2</i> <i>Study Tip 296</i> TWE: A 538 IE 372 <i>Study Guide and Intervention 248</i>
d. Use number theory concepts (e.g., divisibility rules, factors, multiples, primes) to solve problems.	SE: 239, 242-243 #15-#44, 365-370, 460 #55-#60, 619 Example 2, 643 #56-#58 TWE: H 239 <i>Skills Practice 243</i>
02. Perform computations accurately.	
a. Use the proper order of operations. Perform operations with real numbers.	SE: 6-10, 18 #78-#81, 27 #81-#82, 46 #73-#75 <i>Graphing Calculator Investigation 7</i> <i>Study Guide and Review 47 1-1, 48 #11-#17</i> TWE: GCI 7 IE 7 <i>Reading to Learn Mathematics 9</i> <i>Skills Practice 9</i> <i>Study Guide and Intervention 9</i>
b. Use graphs, matrices, and sequences to represent and solve problems.	SE: 35 Example 3, 161 Example 3, 169 Example 3, 190 Example 2, 286 Example 1, 355 Example 4, 579 Example 2, 588 <i>Graphing Calculator Investigation 36, 355-356</i>

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03. Estimate and judge reasonableness of results.	
a. Apply number sense to everyday situations.	SE: 56, 85 #13-#14, 166, 286, 386 Example 5, 485, 638, 762 <i>Graphing Calculator Investigation</i> 300, 359, 539-540
348. MATHEMATICAL REASONING AND PROBLEM SOLVING	
01. Understand and use a variety of problem-solving skills.	
a. Use a variety of methods, including common mathematical formulas, to solve problems drawn from daily life.	SE: 6, 130-131, 190 Example 2, 203 Example 2, 247 Example 3, 289 Example 4, 296 Example 5, 390, 634 Example 4 TWE: IE 131
02. Use reasoning skills to recognize problems and express them mathematically.	
a.. Use inductive and deductive reasoning to set up a problem.	SE: 23 Example 8, 36 Example 4, 89-90 Example 1, 267 #43, 289-290 Example 4, 298 #47, 537 #72, 558 #62, 564 #21, 579 Example 2
b. Use logic to make mathematical proofs.	SE: 550 #56, 618-621, 643 #46-#47, <i>Study Guide and Review</i> 626 11-8 TWE: DI 619 IE 619 <i>Enrichment</i> 621 <i>Reading to Learn Mathematics</i> 621 <i>Skills Practice</i> 621 <i>Study Guide and Intervention</i> 621
c. Make and evaluate logical arguments.	SE: 85 #19-#20, 125 #2, 142 #2, 187 #46, 193 #38, 247 #2, 267 #43, 537 #72, 767 #38 <i>Algebra Activity</i> 607
03. Apply appropriate technology and models to find solutions to problems.	
a. Understand the purpose and capabilities of appropriate technology.	SE: <i>Graphing Calculator Investigation</i> 87-88, 163, 457, 666, 740 <i>Spreadsheet Investigation</i> 159, 605 <i>Study Tip</i> 444 TWE: GCI 585, 666, 740
b. Understand the nature and use of mathematical models.	SE: 12, 28, 71, 295, 413, 740 <i>Algebra Activity</i> 252, 272, 607, 611
04. Communicate results using appropriate terminology and methods.	
a. Select the appropriate means to communicate mathematical information.	SE: 63, 129, 182, 271, 329, 433-434, 499, 606, 709-711, 762
349. CONCEPTS AND PRINCIPLES OF MEASUREMENT	
01. Understand and use U.S. customary and metric measurements.	
a. Determine length, area, capacity, weight, time, and temperature, with appropriate units.	SE: 8 Example 4, 9 #50, 32 #72-#73, 184-185 Example 4, 187 #41-#44, #49, 231 #15, 334 #43, 707 #45 <i>Algebra Activity</i> 651 TWE: IE 367 #3
02. Apply concepts of rates and other derived or indirect measurements.	
a. Understand equivalent units, comparable units, and conversions.	SE: 390, 393 #12-#13, 394 #42-#43 <i>Skills Practice</i> 393 TWE: H 390

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03. Apply the concepts of ratios and proportions.	
a. Understand and use proportions, ratios, and scaling.	SE: 181 #59-#64, 390, 490 #63-#66, 493-497, 507-508 Example 4 <i>Getting Started</i> 44 #13-#21 TWE: DI 495 IE 493-494 <i>Study Guide and Intervention</i> 496
04. Apply dimensional analysis.	
1. Understand units and their relationship to one another and to real-world applications.	SE: 292 #50, 390, 393 #12-#13, 494-495 Example 4, 496 #38-#39, 510 #34-#36, 511 #37 <i>Skills Practice</i> 393
05. Perform error analysis.	
a. Understand tolerance, precision, and their applications.	Precision and tolerance can be introduced with the following examples. SE: 664-665, 682-685, 704 Example 4, 714 #64-#68, 738 #38-#40 <i>Algebra Activity</i> 681 #4, 686 <i>Study Guide and Review</i> 690 12-6 TWE: H 682 IE 683 <i>Enrichment</i> 685
b. Understand that error accumulates in a computation when there is rounding at intermediate steps.	This objective can be taught with the following example. SE: 735 Example 3
350. CONCEPTS AND LANGUAGE OF ALGEBRA	
01. Use algebraic symbolism as a tool to represent mathematical relationships.	
a. Understand and use variables, expressions, equations, and inequalities.	SE: 8 Example 4, 20, 22 Example 6, 23 Example 8, 24 #19-#26, 25 #27-#34, #63, 36 Example 4, 38, 138, 140-141 Example 4, 348 Example 3
02. Evaluate algebraic expressions.	
a. Understand and use procedures for operating on algebraic expressions.	SE: 7 Example 2, Example 3, 14 Example 4, Example 5, 15 #28-#35, 24 #8-#9, 27 #88-#89 <i>Extra Practice</i> 828 Lesson 1-3 #5-#8 <i>Skills Practice</i> 17
03. Solve algebraic equations and inequalities.	
a. Understand and use appropriate procedures to solve linear equations and inequalities such as $3x - 4 = 2$ or $3x - 4 > 2$.	SE: 63-66, 75-80, 96-99, 189, 441 TWE: A 67, 98 IE 64-65, 77, 96-97
b. Use appropriate procedures to simplify and solve polynomial equations and inequalities such as $x^2 + 3x = 7$ or $x^2 + 3x \leq 7$.	SE: 229 Example 2, 230 Example 3, 231 #22-#33, 232 #37-#52, 329-335, 360-363 <i>Algebra Activity</i> 230 TWE: IE 330-332, 361 <i>Reading to Learn Mathematics</i> 334 <i>Skills Practice</i> 334

OBJECTIVES	PAGE REFERENCES
04. Solve simple linear systems of equations or inequalities.	
a. Understand and use appropriate procedures to solve simple linear systems of equations and inequalities such as $x + y = 7$ $2x + 3y = 21$ or $x + y < 7$ $2x + 3y > 21$.	SE: 123-127, 144 #41-#44, 158 #37-#42, 189-193, 484 #56-#57 <i>Graphing Calculator Investigation</i> 128 TWE: IE 190-191 <i>Skills Practice</i> 126, 193
351. CONCEPTS AND PRINCIPLES OF GEOMETRY	
01. Apply concepts of size, shape, and spatial relationships.	
a. Understand congruence and similarity as they apply to reflection, rotation, and translation.	SE: 175-176 Example 1, 177 Example 4, 178-179, 194 #45-#47, 770-775 <i>Graphing Calculator Investigation</i> 769 TWE: A 181 IE 176, 177 #4, 178 <i>Reading to Learn Mathematics</i> 180 <i>Skills Practice</i> 180 <i>Study Guide and Intervention</i> 180
b. Understand scaling as it relates to size variations in one, two, and three-dimensional objects, while shape is maintained.	SE: 176-177 Example 3, 188 #56-#58 <i>Study Guide and Review</i> 212 #24 TWE: A 181 IE 177 #3 <i>Skills Practice</i> 180 <i>Study Guide and Intervention</i> 180
02. Apply the geometry of right triangles.	
a. Understand the basic concepts of right triangle trigonometry (e.g., basic trigonometry ratios such as sine, cosine, and tangent).	SE: 701-706, 724 #72-#77 <i>Spreadsheet Investigation</i> 700 <i>Study Guide and Review</i> 752 13-1 TWE: DI 704 H 701 <i>Enrichment</i> 707 <i>Reading to Learn Mathematics</i> 707 <i>Study Guide and Intervention</i> 707
b. Use trigonometric ratio methods to solve problems.	SE: 701-708, 717 #64-#67, 724 #65-#67 <i>Practice Quiz 1</i> 715 #1-#4 <i>Study Guide and Review</i> 752 #10-#15 TWE: DI 704 IE 702-705 <i>Reading to Learn Mathematics</i> 707 <i>Skills Practice</i> 707 <i>Study Guide and Intervention</i> 707
c. Know and apply the Pythagorean Theorem to solve real-world problems.	SE: <i>Prerequisite Skills</i> 821 #19-#20 The following examples apply the Pythagorean Theorem to non-real world problems. SE: 720 Example 5 <i>Prerequisite Skills</i> 820-821

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03. Apply graphing in two dimensions.	
a. Understand concepts of the Cartesian Coordinate System.	SE: 56, 68, 96, 175-177 <i>Study Tips</i> 56 TWE: A 95 DI 58 GCI 70
b. Understand the characteristics and uses of vectors.	Vectors could be introduced with the following problem. SE: 714 #63
352. DATA ANALYSIS, PROBABILITY, AND STATISTICS	
01. Understand data analysis.	
a. Read and interpret tables, charts, and graphs (e.g., scatter plots, line graphs, 3-dimensional graphs, and pie charts).	SE: 81-85, 94 #23, #50 <i>Algebra Activity</i> 83 <i>Graphing Calculator Investigation</i> 88 <i>Prerequisite Skills</i> 824 TWE: H 81 IE 83
02. Collect, organize, and display data.	
b. Collect and organize data, and display the data in tables, charts, and graphs (e.g., scatter diagrams, frequency tables, bar graphs, or pie charts).	SE: 81 Example 1, 82, 84 #6-#9, 85 #15, 89-90 Example 1 <i>Algebra Activity</i> 82 <i>Graphing Calculator Investigation</i> 87-88 <i>Prerequisite Skills</i> 824 TWE: DI 82 IE 82
03. Apply simple statistical measurements.	
a. Understand basic statistical concepts including mean (average), median, mode, range, and standard deviation.	SE: 81 Example 1, 664 <i>Graphing Calculator Investigation</i> 666 <i>Prerequisite Skills</i> 822-823 TWE: A 670 IE 665 W 664
04. Understand basic concepts of probability.	
a. Understand experimental and theoretical probability.	SE: 649 #66-#69 TWE: A 650
b. Distinguish between independent and dependent events.	SE: 632, 633 Example 3, 634-636, 643 #44-#45, 651-653 <i>Extra Practice</i> 854 Lesson 12-1 TWE: A 637 IE 633-634, 652-653 <i>Skills Practice</i> 636
c. Know that probability ranges from 0% to 100%. Understand randomness and chance.	SE: 644 Example 1, 645 Example 2, 648-649 TWE: IE 645 #1-#2, 646 <i>Skills Practice</i> 649 <i>Study Guide and Intervention</i> 649
05. Make predictions or decisions based on data.	
a. Use appropriate technology to employ simulation techniques, curve fitting, correlation, and graphical models to make predictions or decisions based on data.	SE: 675 #27 <i>Graphing Calculator Investigation</i> 87, 666 TWE: GCI 666

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b. Design, conduct, and interpret results of statistical experiments.	SE: <i>Algebra Activity</i> 651, 681, 686 <i>Graphing Calculator Investigation</i> 666 TWE: A 650 DI 672
c. Analyze the effect of biased data on statistical predictions.	SE: 682-685 TWE: A 684 DI 683 H 682 IE 683 <i>Reading to Learn Mathematics</i> 685 <i>Skills Practice</i> 685 <i>Study Guide and Intervention</i> 685
353. FUNCTIONS AND MATHEMATICAL MODELS	
01. Understand the concept of functions.	
a. Solve problems that involve varying quantities with variables, expressions, equations, inequalities, and absolute values.	SE: 61, 385 Example 4, 386-387, 390, 525 Example 3 TWE: A 89 IE 90-91, 385, 525 <i>Enrichment</i> 61
02. Represent equations, inequalities, and functions in a variety of formats.	
a. Represent a set of data in a table, as a graph, and as a mathematical relationship.	SE: 56-61, 89-94, 384, 523 Example 1 TWE: A 95 IE 57-59, 90-92, 524 <i>Skills Practice</i> 61, 94 <i>Study Guide and Intervention</i> 61
03. Apply functions to a variety of problems.	
a. Model real-world phenomena using polynomial, rational, and basic exponential functions, noting restricted domains.	SE: 386 Example 5, 388 #47-#55, 525 Example 3, 529, 535 #18-#20, 537 #68-#70 <i>Graphing Calculator Investigation</i> 539-540 TWE: IE 525 #3 TT 525 <i>Skills Practice</i> 529

Codes Used for TWE Pages

A	Assess
CC	Concept Check
DI	Daily Intervention
GCI	Graphing Calculator Investigation
H	How
IE	In-Class Examples
RT	Reading Tip
TT	Teacher to Teacher
W	What