

GLENCOE CORRELATION
MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1
MASSACHUSETTS
 Revised 2000 Mathematics Curriculum Framework
 Grades 5-6

LEARNING STANDARDS	PAGE REFERENCES
Number Sense and Operations	
<i>Students engage in problem solving, communicating, reasoning, connecting, and representing as they:</i>	
6.N.1 Demonstrate an understanding of positive integer exponents, in particular, when used in powers of ten, e.g., 10^2 , 10^5 . +	SE: 18-21, 31 #57, 43 #28-#31, 131 #10, 136 ex 5 TWE: ICE 19
6.N.2 Demonstrate an understanding of place value to billions and thousandths. +	SE: 48, 102-104, 586 TWE: A 105
6.N.3 Represent and compare very large (billions) and very small (thousandths) positive numbers in various forms such as expanded notation without exponents, e.g., $9724 = 9 \times 1000 + 7 \times 100 + 2 \times 10 + 4$. +	SE: 48, 102-104, 108-110, 587, 588 TWE: A 105
6.N.4 Demonstrate an understanding of fractions as a ratio of whole numbers, as parts of unit wholes, as parts of a collection, and as locations on the number line. +	SE: 182-185, 186 <i>Web Quest</i> 3, 97 <i>Hands-on Lab</i> 181 TWE: NS 200 DI 236 TNT 203, 220
6.N.5 Identify and determine common equivalent fractions, mixed numbers, decimals, and percents. +	SE: 182-185, 202-205, 206-209, 212 #42-#57, 400-403, 404-406 <i>Web Quest</i> 377 TWE: DI 401, 404 ICE 203, 207, 405
6.N.6 Find and position integers, fractions, mixed numbers, and decimals (both positive and negative) on the number line. +	SE: 108-112, 186, 220 ex 1, 265, 266 #3, 294-298 <i>Web Quest</i> 97, 291 TWE: B 111 ICE 295 PA 221
6.N.7 Compare and order integers (including negative integers), and positive fractions, mixed numbers, decimals, and percents. +	SE: 108-110, 127 #10 & #11, 198-201, 212 #35-#41, 294-298 TWE: DI 199 ICE 199, 285
6.N.8 Apply number theory concepts—including prime and composite numbers, prime factorization, greatest common factor, least common multiple, and divisibility rules for 2, 3, 4, 5, 6, 9, and 10—to the solution of problems. +	SE: 10-13, 14-17, 21 #50-#53, 22 #10-#11, 177-180, 194-197 TWE: A 13, 17, 179 DI 11, 15, 195

LEARNING STANDARDS	PAGE REFERENCES
6.N.9 Select and use appropriate operations to solve problems involving addition, subtraction, multiplication, division, and positive integer exponents with whole numbers, and with positive fractions, mixed numbers, decimals, and percents. ●	SE: 25 ex 6, 131 #17, 138 #46, 253 #17, 275 #43 <i>Problem-Solving Strategy</i> 125-126 TWE: A 238 TNT 145
6.N.10 Use the number line to model addition and subtraction of integers, with the exception of subtracting negative integers. ●	SE: 300-303, 304-308, 313 #48-#51, 325 #18-#33 TWE: A 307 DI 301 TNT 305
6.N.11 Apply the Order of Operations for expressions involving addition, subtraction, multiplication, and division with grouping symbols (+, −, ×, ÷). ●	SE: 24-27, 28-31, 44 #32-#37, 46 #8-#9, 252 #2 TWE: A27 ICE 25
6.N.12 Demonstrate an understanding of the inverse relationship of addition and subtraction, and use that understanding to simplify computation and solve problems. ●	SE: 308 #3, 339, 344 <i>Hands-on Lab</i> 343 <i>Key Concept</i> 304 <i>Mini Lab</i> 304 TWE: B 339
6.N.13 Accurately and efficiently add, subtract, multiply, and divide (with double-digit divisors) whole numbers and positive decimals. ▲	SE: 7 ex 1, 9 #9, 94 #6, 121-124, 138 #43-#45, 142 ex 4, 145 ex 2, 153 ex 4 <i>Web Quest</i> 3, 97 TWE: A 155 DI 122
6.N.14 Accurately and efficiently add, subtract, multiply, and divide positive fractions and mixed numbers. Simplify fractions. ▲	SE: 182-185, 228-231, 240-243, 261-264, 272-275, 287 #3 <i>Hands-on Lab</i> 181, 270-271 TWE: A 185, 238 DI 266
6.N.15 Add and subtract integers, with the exception of subtracting negative integers. ▲	SE: 300-303, 304-305 <i>Web Quest</i> 291 TWE: DI 301, 305
6.N.16 Estimate results of computations with whole numbers, and with positive fractions, mixed numbers, decimals, and percents. Describe reasonableness of estimates. ▲	SE: 6-9, 41 #16-#18, 154 #37, 155 #38-#39, 216, 415-417, 472 #32-#33 <i>Problem-Solving Strategy</i> 156-157 TWE: A 258 B 116, 141 DI 415
Exploratory Concepts and Skills	
√ Explore the addition and subtraction of positive and negative fractions.	SE: 228-231, 235-238, 341 #30-#31, 346 #32, #33 TWE: ICE 229
√ Investigate the concepts of ratio and proportion.	SE: 350-383, 386-389, 391-393, 422 #5-#6 <i>Spreadsheet Investigation</i> 390 <i>The Game Zone</i> 399 TWE: B 380, 391 ICE 381

LEARNING STANDARDS	PAGE REFERENCES
√ Investigate the distributive property of multiplication over addition for double-digit multipliers, e.g., $12 \times (37) = 12 \times (40 - 3) = 12 \times 40 - 12 \times 3$.	SE: 333-336, 342 #42-#43, 373 <i>Hands-on Lab</i> 332
Patterns, Relations, and Algebra <i>Students engage in problem solving, communicating, reasoning, connecting, and representing as they:</i>	
6.P.1 Analyze and determine the rules for extending symbolic, arithmetic, and geometric patterns and progressions, e.g., ABBCCC; 1, 5, 9, 13 ...; 3, 9, 27, ✚	SE: 10-13, 282-284, 543 #19 <i>Problem-Solving Strategy</i> 157 #6, 280-281 <i>Hands-on Lab</i> 360-361 <i>Web Quest</i> 291 TWE: A 281 B 66, 194
6.P.2 Replace variables with given values and evaluate/simplify, e.g., $2(\bigcirc) + 3$ when $\bigcirc = 4$. ●	SE: 28-31, 37 #45, 44 #38-#46, 45 #19-#21, 122 ex 5, 236 ex 4 TWE: ICE 29
6.P.3 Use the properties of equality to solve problems, e.g., if $\square + 7 = 13$, then $\square = 13 - 7$, therefore $\square = 6$; if $3 \times \square = 15$, then $\frac{1}{3} \times 3 \times \square = \frac{1}{3} \times 15$, therefore $\square = 5$. ●	SE: 340, 342 #37-#39, 344-347 <i>Problem-Solving Strategy</i> 358-359 TWE: A 347
6.P.4 Represent real situations and mathematical relationships with concrete models, tables, graphs, and rules in words and with symbols, e.g., input-output tables. ▲	SE: 209 #43, 362-365, 366-369 <i>Hands-on Lab</i> 260-261, 360-361 <i>Problem-Solving Strategy</i> 280-281 TWE: B 362 DI 153, 363
6.P.5 Solve linear equations using concrete models, tables, graphs, and paper-pencil methods. ▲	SE: 339-340, 344, 350, 371 <i>Hands-on Lab</i> 337-338, 343, 354 TWE: DI 340
6.P.6 Produce and interpret graphs that represent the relationship between two variables in everyday situations. ▲	SE: 362-365, 366-369, 372, 375 #21
6.P.7 Identify and describe relationships between two variables with a constant rate of change. Contrast these with relationships where the rate of change is not constant. ■	See <i>Mathematics: Applications and Concepts Course 2</i> constant rate of change Lesson 7-2b page 296. See <i>Mathematics: Applications and Concepts Course 3</i> for the difference between constant and non-constant rates of change Lesson 12-1 pages 561-563.
Exploratory Concepts and Skills	
√ Use physical models to investigate and describe how a change in one variable affects a second variable.	SE: 362-365, 366-369 <i>Hands-on Lab</i> 360-361

LEARNING STANDARDS	PAGE REFERENCES
√ Use models to develop understanding of slope as constant rate of change.	See <i>Mathematics: Applications and Concepts Course 2</i> . SE: 182-185, 188 #63-#66, 200 #52, 206 #45, <i>Extra Practice Lesson 4-7</i> 574 <i>Hands-On Lab</i> 296 <i>Mixed Problem-Solving</i> 599 #13-#16 <i>Standardized Test Practice</i> 191 #18 TWE: DI 183 T 183
√ Model situations with proportional relationships and solve problems.	SE: 386-389, 391-393, 419 <i>Spreadsheet Investigation</i> 390 TWE: B 386 DI 391
Geometry <i>Students engage in problem solving, communicating, reasoning, connecting, and representing as they:</i>	
6.G.1 Identify polygons based on their properties, including types of interior angles, perpendicular or parallel sides, and congruence of sides, e.g., squares, rectangles, rhombuses, parallelograms, trapezoids, and isosceles, equilateral, and right triangles. +	SE: 504, 506-509, 515 ex 1, 522-525, 539 #22-#23 <i>Hands-on Lab</i> 513-514, 526-527 TWE: A 512 DI 507, 523 PC 504F, 544F
6.G.2 Identify three-dimensional shapes (e.g., cubes, prisms, spheres, cones, and pyramids) based on their properties, such as edges and faces. +	SE: 564-566 <i>Hands-on Lab</i> 567 TWE: DI 564
6.G.3 Identify relationships among points, lines, and planes, e.g., intersecting, parallel, perpendicular. +	SE: 504, 515-516, 522-525, 549 #22-#26 <i>Hands-on Lab</i> 526-527 TWE: DI 507
6.G.4 Graph points and identify coordinates of points on the Cartesian coordinate plane. ●	SE: 320-323, 328 #10, 329 #17-#19, 342 #47-#49, 375 #16 TWE: A 323 DI 321 PS 327
6.G.5 Find the distance between two points on horizontal or vertical number lines. ●	SE: 321 ex 3 TWE: PS 327
6.G.6 Predict, describe, and perform transformations on two-dimensional shapes, e.g., translations, rotations, and reflections. ▲	SE: <i>Hands-on Lab</i> 532-533, 537 TWE: T 532
6.G.7 Identify types of symmetry, including line and rotational. ▲	SE: 504, 528-531, 540 #24-#31, 542 #7-#8, 543 #18, 544 TWE: DI 529 TNT 528
6.G.8 Determine if two shapes are congruent by measuring sides or a combination of sides and angles, as necessary; or by motions or series of motions, e.g., translations, rotations, and reflections. ▲	SE: 504, 534-536, 542 #8, 544 <i>Hands-on Lab</i> 532-533 TWE: DI 534 ICE 535

LEARNING STANDARDS	PAGE REFERENCES
6.G.9 Match three-dimensional objects and their two-dimensional representations, e.g., nets, projections, and perspective drawings. ■	SE: 575, 576, 578 <i>Hands-on Lab</i> 574 TWE: A 565 TNT 576
Exploratory Concepts and Skills	
√ Use manipulatives and technology to model geometric shapes.	SE: <i>Hands-on Lab</i> 526-527, 550, 567, 574 <i>Mini Lab</i> 522, 546 TWE: A 565 B 546 DI 547, 571 PS 541, 581
√ Investigate tessellations (tilings).	SE: <i>Hands-on Lab</i> 537
√ Explore the angles formed by intersecting lines.	SE: 549 #22-#26
√ Identify and draw shapes and figures from different views/perspectives.	SE: 504, 522-525, 544, 564-566 <i>Hands-on Lab</i> 567 <i>Problem-Solving Strategy</i> 520-521 TWE: DI 507, 564
√ Recognize and apply geometric ideas and relationships in areas outside the mathematics classroom, such as art, science, and everyday life.	SE: 543 #18, 544 <i>Hands-on Lab</i> 537 TWE: DI 564 MIC 173 PS 581
Measurement <i>Students engage in problem solving, communicating, reasoning, connecting, and representing as they:</i>	
6.M.1 Apply the concepts of perimeter and area to the solution of problems. Apply formulas where appropriate. ●	SE: 39-41, 158-161, 171 #16, 351 ex 3, 359 #12 <i>Hands-on Lab</i> 464 <i>Spreadsheet Investigation</i> 469 TWE: DI 159
6.M.2 Identify, measure, describe, classify, and construct various angles, triangles, and quadrilaterals. ●	SE: 506-509, 510-512, 522-525, 538 #8-#10, 543 #16 <i>Hands-on Lab</i> 526-527 TWE: A 509 B 510 DI 510 PS 541
6.M.3 Solve problems involving proportional relationships and units of measurement, e.g., same system unit conversions, scale models, maps, and speed. ●	SE: 381, 391-393, 398 #12-#15, 423 #21 <i>Spreadsheet Investigation</i> 390 <i>Hands-on Lab</i> 394 TWE: DI 391
6.M.4 Find areas of triangles and parallelograms. Recognize that shapes with the same number of sides but different appearances can have the same area. Develop strategies to find the area of more complex shapes. ●	SE: 423 #10, 489 #6, 546-549, 551-554 <i>Hands-on Lab</i> 550 TWE: DI 547

LEARNING STANDARDS	PAGE REFERENCES
6.M.5 Identify, measure, and describe circles and the relationships of the radius, diameter, circumference, and area (e.g., $d = 2r$, $\pi = C/d$), and use the concepts to solve problems. ●	SE: 161-164, 168 TWE: A 164 TNT 162
6.M.6 Find volumes and surface areas of rectangular prisms. ●	SE: 570-573, 575-578 TWE: DI 576
6.M.7 Find the sum of the interior angles in simple polygons (up to eight sides) with and without measuring the angles. ●	SE: 504 TWE: DI 523
Exploratory Concepts and Skills	
√ Explore various models for finding the area of a triangle, parallelogram, and trapezoid, and develop strategies for more complex shapes.	SE: 489 #6, 551 <i>Hands-on Lab</i> 550, 555 <i>Mini Lab</i> 546
√ Investigate volumes and surface areas of a variety of three-dimensional objects.	SE: 570-573, 575-578 TWE: PS 581
√ Explore volume and surface areas of rectangular prisms, cylinders, and spheres.	SE: 570-573, 575-578 TWE: PS 581
Data Analysis, Statistics, and Probability <i>Students engage in problem solving, communicating, reasoning, connecting, and representing as they:</i>	
6.D.1 Describe and compare data sets using the concepts of median, mean, mode, maximum and minimum, and range. ●	SE: 76-78, 80-83, 92, 95 #13 <i>Spreadsheet Investigation</i> 79 TWE: A 78, 83 DI 145 ICE 77
6.D.2 Construct and interpret stem-and-leaf plots and line plots. ●	SE: 72-75, 92 #14-#16 TWE: A 75
6.D.3 Use tree diagrams and other models (e.g., lists and tables) to represent possible or actual outcomes of trials. Analyze the outcomes. ■	SE: 433-436, 442 #7 <i>Problem-Solving Strategy</i> 448-449 TWE: A 436 DI 433
6.D.4 Predict the probability of outcomes of simple experiments (e.g., tossing a coin, rolling a die) and test the predictions. Use appropriate ratios between 0 and 1 to represent the probability of the outcome and associate the probability with the likelihood of the event. ■	SE: 428-431, 442 #9 TWE: B 428 ICE 429
Exploratory Concepts and Skills	
√ Investigate the use of circle graphs.	SE: 62-65, 69 #28-#30, 70 #6-#7, 75 #33 <i>Hands-on Lab</i> 560-561 TWE: ICE 63
√ Set up and analyze capture-recapture experiments.	TWE: TNT 439 might be used for capture/recapture (a form of estimation)
√ Generate and group data, record the data using frequency tables and interpret the tables.	SE: 50-53 TWE: A 53 B 50 DI 51

LEARNING STANDARDS	PAGE REFERENCES
√ Select, create, and use appropriate graphical representations of data, including histograms, box plots, and scatter plots.	SE: 56-59, 74 #21-#23 <i>Hands-on Lab</i> 84-85 <i>Problem-Solving Strategy</i> 54-55 TWE: B 72 DI 57 ICE 51, 63
√ Compare different representations of the same data and evaluate how well each representation shows important aspects of the data.	SE: 59 #16, 66 <i>Mini Lab</i> 62 <i>Spreadsheet Investigation</i> 60-61 TWE: A 59 B 56

Codes Used for TWE Pages

A	Assess
B	Bellringer
DI	Daily Intervention
ICE	In-class Examples
MIC	More Interdisciplinary Connections
NS	Number Sense
PA	Practice/Apply
PC	Project Criss Study Skill
PS	Portfolio Suggestion
T	Teach
TNT	Tips for New Teachers