

Correlation

Texas Essential Knowledge and Skills Grades 7 Mathematics with *Bridges to Algebra and Geometry, 2nd edition*

Number, Operation, and Quantitative Reasoning

7.1 Essential Knowledge and Skills

The student represents and uses numbers in a variety of forms.

Performance Descriptions

- A. compare and order integers and positive rational numbers;

Student Edition pages 4-10, 128-139, 247-253, 541

Teacher's Edition pages 4-10, 128-139, 247-253, 541

Teacher's Resource Book pages 1-6, 113-118, 213-218, 477

- B. convert between fractions, decimals, whole numbers, and percents mentally, on paper, or with a calculator; and

Student Edition pages 241-246, 348-353

Teacher's Edition pages 241-246, 348-353

Teacher's Resource Book pages 207-212, 313-318

- C. represent squares and square roots using geometric models.

Student Edition pages 551-556, 582

Teacher's Edition pages 551-556, 582

Teacher's Resource Book pages 487-492

7.2 Essential Knowledge and Skills

The student adds, subtracts, multiplies, and divides to solve problems and justify solutions.

Performance Descriptions

- A. represent multiplication and division situations involving fractions and decimals with concrete models, pictures, words, and numbers;

Student Edition pages 261-265, 266-272, 287-288

Teacher's Edition pages 261-265, 266-272, 287-288

Teacher's Resource Book pages 225-230, 231-236

- B. use addition, subtraction, multiplication, and division to solve problems involving fractions and decimals;

Student Edition	pages 254-260, 261-265, 266-272
Teacher's Edition	pages 254-260, 261-265, 266-272
Teacher's Resource Book	pages 219-224, 225-230, 231-236

C. use models to add, subtract, multiply, and divide integers and connect the actions to algorithms;

Student Edition	pages 140-147, 148-153, 162-167, 168-175, 176-178, 178-180, 180-181
Teacher's Edition	pages 140-147, 148-153, 162-167, 168-175, 176-178, 178-180, 180-181
Teacher's Resource Book	pages 119-124, 125-130, 137-142, 143-148

D. use division to find unit rates and ratios in proportional relationships such as speed, density, price, recipes, and student-teacher ratio;

Student Edition	pages 299-303, 304-310, 338-339
Teacher's Edition	pages 299-303, 304-310, 338-339
Teacher's Resource Book	pages 263-268, 269-274

E. simplify numerical expressions involving order of operations and exponents;

Student Edition	pages 16-23, 524-529, 530-535
Teacher's Edition	pages 16-23, 524-529, 530-535
Teacher's Resource Book	pages 13-18, 463-468, 469-474

F. select and use appropriate operations to solve problems and justify the selections; and

Student Edition	pages throughout; see especially <ul style="list-style-type: none"> • Activities within lessons; • Think and Discuss in Lesson Assessments; • Cumulative Problem Solving on pages 21-23, 33-35, 56-58, 97-99, 114-116, 146-147, 160-161, 174-175, 196, 197, 208-210, 222-223, 271-272, 283-284, 309-310, 320-321, 336-337, 360-361, 372-373, 386-388, 410-412, 426-427, 447-448, 478-479, 511-512, 535, 549-550, 564-565, 591-592, 603-604, 628-629, 662-663, 678-679; • Problem Solving: Using the Four-Step Plan on pages 49-58, 103, 165, 200, 258, 304-310, 377, 422, 476, 546, 609, 652-653
Teacher's Edition	pages throughout; see especially <ul style="list-style-type: none"> • Activities within lessons; • Think and Discuss in Lesson Assessments; • Cumulative Problem Solving on pages 21-23, 33-35, 56-58, 97-99, 114-116, 146-147, 160-161, 174-175, 196, 197, 208-210, 222-223, 271-272, 283-284, 309-310, 320-321, 336-337, 360-361, 372-373, 386-388, 410-412, 426-427, 447-448, 478-479, 511-512, 535, 549-550, 564-565, 591-592, 603-604, 628-629, 662-663, 678-679;

- Problem Solving: Using the Four-Step Plan on pages 49-58, 103, 165, 200, 258, 304-310, 377, 422, 476, 546, 609, 652-653

Teacher's Resource Book pages 43-48

G. determine the reasonableness of a solution to a problem.

Student Edition pages throughout; see especially Problem Solving: Using the Four-Step Plan on pages 49-58, 103, 165, 200, 258, 304-310, 377, 422, 476, 546, 609, 652-653

Teacher's Edition pages throughout; see especially Problem Solving: Using the Four-Step Plan on pages 49-58, 103, 165, 200, 258, 304-310, 377, 422, 476, 546, 609, 652-653

Teacher's Resource Book pages 43-48

Patterns, Relationships, and Algebraic Thinking

7.3 Essential Knowledge and Skills

The student solves problems involving proportional relationships

Performance Descriptions

A. estimate and find solutions to application problems involving percent; and

Student Edition pages 348-353, 354-361, 362-366, 367-373, 374-380, 381-388, 389-390, 391-392, 393-395

Teacher's Edition pages 348-353, 354-361, 362-366, 367-373, 374-380, 381-388, 389-390, 391-392, 393-395

Teacher's Resource Book pages 313-318, 319-324, 325-330, 331-336, 337-342, 343-348

B. estimate and find solutions to application problems involving proportional relationships such as similarity, scaling, unit costs, and related measurement units.

Student Edition pages 294-298, 299-303, 304-310, 311-315, 316-321, 322-326, 327-332, 333-337, 338-339, 338-341, 341-343, 543-550, 568-570, 570-573, 584-592, 593-598, 599-604, 615-621, 630-631, 635-637, 680-686, 689-690

Teacher's Edition pages 294-298, 299-303, 304-310, 311-315, 316-321, 322-326, 327-332, 333-337, 338-339, 338-341, 341-343, 543-550, 568-570, 570-573, 584-592, 593-598, 599-604, 615-621, 630-631, 635-637, 680-686, 689-690

Teacher's Resource Book pages 257-262, 263-268, 269-274, 275-280, 281-286, 287-292, 293-298, 299-304, 481-486, 513-518, 519-524, 525-530, 537-542, 587-592

7.4 Essential Knowledge and Skills

The student represents a relationship in numerical, geometric, verbal, and symbolic form.

Performance Descriptions

A. generate formulas involving conversions, perimeter, area, circumference, volume, and scaling;

Student Edition	pages 224-225, 226-228, 338-339, 393-395, 480-487, 557-558, 599-604, 605-614, 615-621, 622-629, 650-656, 657-663, 664-670, 671-679, 680-684, 689-690, 691-692
Teacher's Edition	pages 224-225, 226-228, 338-339, 393-395, 480-487, 557-558, 599-604, 605-614, 615-621, 622-629, 650-656, 657-663, 664-670, 671-679, 680-684, 689-690, 691-692
Teacher's Resource Book	pages 425-430, 493-498, 531-536, 537-542, 543-548, 563-568, 569-574, 575-580, 581-586, 587-592

- B. graph data to demonstrate relationships in familiar concepts such as conversions, perimeter, area, circumference, volume, and scaling; and

Student Edition	pages 449-450, 635-637
Teacher's Edition	pages 449-450, 635-637
Teacher's Resource Book	pages

- C. describe the relationship between the terms in a sequence and their positions in the sequence.

Student Edition	pages 578-583
Teacher's Edition	pages 578-583
Teacher's Resource Book	pages 507-512

7.5 Essential Knowledge and Skills

The student uses equations to solve problems.

Performance Descriptions

- A. use concrete models to solve equations and use symbols to record the actions; and

Student Edition	pages 186-191, 192-197, 203-210, 224-226, 228-231
Teacher's Edition	pages 186-191, 192-197, 203-210, 224-226, 228-231
Teacher's Resource Book	pages 157-162, 163-168, 175-180

- B. formulate a possible problem situation when given a simple equation.

Geometry and Spatial Reasoning

7.6 Essential Knowledge and Skills

The student compares and classifies shapes and solids using geometric vocabulary and properties.

Performance Descriptions

- A. use angle measurements to classify pairs of angles as complementary or supplementary;

Student Edition	pages 466-472
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Teacher's Edition pages 466-472
Teacher's Resource Book pages 413-418

B. use properties to classify shapes including triangles, quadrilaterals, pentagons, and circles;

Student Edition pages 473-479, 480-487, 622-629
Teacher's Edition pages 473-479, 480-487, 622-629
Teacher's Resource Book pages 419-424, 425-430, 543-548

C. use properties to classify solids, including pyramids, cones, prisms, and cylinders; and

Student Edition pages 642-649, 650-656, 657-663, 664-670, 671-679, 680-686
Teacher's Edition pages 642-649, 650-656, 657-663, 664-670, 671-679, 680-686
Teacher's Resource Book pages 557-562, 563-568, 569-574, 575-580, 581-586, 587-592

D. use critical attributes to define similarity.

Student Edition pages 584-592, 593-598, 599-604, 680-686
Teacher's Edition pages 584-592, 593-598, 599-604, 680-686
Teacher's Resource Book pages 513-518, 519-524, 525-530, 587-592

7.7 Essential Knowledge and Skills

The student uses coordinate geometry to describe location on a plane.

Performance Descriptions

A. locate and name points on a coordinate plane using ordered pairs of integers; and

Student Edition pages 400-404, 405-412, 413-418, 419-427, 428-432, 433-438, 439-448, 449-450, 451-453, 453-455
Teacher's Edition pages 400-404, 405-412, 413-418, 419-427, 428-432, 433-438, 439-448, 449-450, 451-453, 453-455
Teacher's Resource Book pages 357-362, 363-368, 369-374, 375-380, 381-386, 387-392, 393-398

B. graph translations on a coordinate plane.

Student Edition pages 495-500
Teacher's Edition pages 495-500
Teacher's Resource Book pages 437-442

7.8 Essential Knowledge and Skills

The student uses geometry to model and describe the physical world.

Performance Descriptions

A. sketch a solid when given the top, side, and front views;

Student Edition pages 642-649

Teacher's Edition pages 642-649

Teacher's Resource Book pages 557-562

B. make a net (two-dimensional model) of the surface area of a solid; and

Student Edition pages 650-656, 657-663, 671-677, 687-689

Teacher's Edition pages 650-656, 657-663, 671-677, 687-689

Teacher's Resource Book pages 563-568, 569-574

C. use geometric concepts and properties to solve problems in fields such as art and architecture.

Student Edition pages 466-472, 473-479, 480-487, 488-494, 495-500, 501-505, 506-512, 513-514, 515-517, 518-519, 543-550, 551-556, 557-565, 566-568, 568-570, 571-573, 578-583, 584-592, 593-598, 599-604, 605-614, 615-621, 622-629, 630-631, 631-634, 635-637, 642-649, 650-656, 657-663, 664-670, 671-679, 680-686, 687-689, 689-690, 691-692

Teacher's Edition pages 466-472, 473-479, 480-487, 488-494, 495-500, 501-505, 506-512, 513-514, 515-517, 518-519, 543-550, 551-556, 557-565, 566-568, 568-570, 571-573, 578-583, 584-592, 593-598, 599-604, 605-614, 615-621, 622-629, 630-631, 631-634, 635-637, 642-649, 650-656, 657-663, 664-670, 671-679, 680-686, 687-689, 689-690, 691-692

Teacher's Resource Book pages 481-486, 493-498, 515, 521, 525-530, 557-562, 563-568, 569-574, 575-580, 581-586, 587-592

Measurement

7.9 Essential Knowledge and Skills

The student solves application problems involving estimation and measurement.

Performance Descriptions

The student is expected to estimate measurements and solve application problems involving length (including perimeter and circumference), area, and volume.

Student Edition pages 49-58, 59-60, 61-63, 63-65, 178-180, 217-223, 224-226, 228-231, 389-390, 391-392, 449-450, 480-488, 557-565, 566-568, 568-570, 570-573, 584-592, 593-598, 599-604, 605-614, 615-621, 622-629, 630-631, 635-637, 650-656, 657-663, 664-670, 671-679, 680-686, 687-689, 689-690, 691-697

Teacher's Edition pages 49-58, 59-60, 61-63, 63-65, 178-180, 217-223, 224-226, 228-231, 389-390, 391-392, 449-450, 480-488, 557-565, 566-568, 568-570, 570-573, 584-592, 593-598, 599-604, 605-614, 615-621, 622-629, 630-631, 635-637, 650-656,

657-663, 664-670, 671-679, 680-686, 687-689, 689-690,
691-697

Teacher's Resource Book pages 43, 187-190, 427-430, 493-498, 513-518, 519-524,
525-530, 531-536, 537-542, 543-548, 563-568, 569-574,
575-580, 581-586, 587-592

Probability and Statistics

7.10 Essential Knowledge and Skills

The student recognizes that a physical or mathematical model can be used to describe the probability of real-life events.

Performance Descriptions

A. construct sample spaces for compound events (dependent and independent); and

Student Edition pages 316-321, 322-326

Teacher's Edition pages 316-321, 322-326

Teacher's Resource Book pages xx281-286, 287-292

B. find the approximate probability of a compound event through experimentation.

Student Edition pages 322-326, 327-332, 333-337, 339-341, 341-343

Teacher's Edition pages 322-326, 327-332, 333-337, 339-341, 341-343

Teacher's Resource Book pages 287-292, 293-298, 299-304

7.11 Essential Knowledge and Skills

The student understands that the way a set of data is displayed influences interpretation.

Performance Descriptions

A. select and use an appropriate representation for presenting collected data and justify the selection; and

Student Edition pages 76-79, 80-84, 85-90, 91-99, 100-107, 108-116, 117-118,
120-121, 470

Teacher's Edition pages 76-79, 80-84, 85-90, 91-99, 100-107, 108-116, 117-118,
120-121, 470

Teacher's Resource Book pages 63-68, 69-74, 75-80, 81-86, 87-92, 93-98, 415

B. make inferences and convincing arguments based on an analysis of given or collected data.

Student Edition pages 70-75, 76-79, 80-84, 85-90, 91-99, 100-107, 108-116,
117-118, 118-120, 120-121

Teacher's Edition pages 70-75, 76-79, 80-84, 85-90, 91-99, 100-107, 108-116,
117-118, 118-120, 120-121

Teacher's Resource Book pages 57-62, 63-68, 69-74, 75-80, 81-86, 87-92, 93-98

7.12 Essential Knowledge and Skills

The student uses measures of central tendency and range to describe a set of data.

Performance Descriptions

- A. describe a set of data using mean, median, mode, and range; and
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|-------------------------|-------------|
| Student Edition | pages 70-75 |
| Teacher’s Edition | pages 70-75 |
| Teacher’s Resource Book | pages 57-62 |
- B. choose among mean, median, mode, or range to describe a set of data and justify the choice for a particular situation.
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| Student Edition | pages 70-75 |
| Teacher’s Edition | pages 70-75 |
| Teacher’s Resource Book | pages 57-62 |

Underlying Processes and Mathematical Tools

7.13 Essential Knowledge and Skills

The student applies Grade 7 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school.

Performance Descriptions

- A. identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics;
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|-------------------|--|
| Student Edition | pages throughout; see especially <ul style="list-style-type: none">• Activities within lessons;• Cumulative Problem Solving on pages 21-23, 33-35, 56-58, 97-99, 114-116, 146-147, 160-161, 174-175, 196, 197, 208-210, 222-223, 271-272, 283-284, 309-310, 320-321, 336-337, 360-361, 372-373, 386-388, 410-412, 426-427, 447-448, 478-479, 511-512, 535, 549-550, 564-565, 591-592, 603-604, 628-629, 662-663, 678-679;• Problem Solving: Using the Four-Step Plan on pages 49-58, 103, 165, 200, 258, 304-310, 377, 422, 476, 546, 609, 652-653 |
| Teacher’s Edition | pages throughout; see especially <ul style="list-style-type: none">• Activities within lessons;• Cumulative Problem Solving on pages 21-23, 33-35, 56-58, 97-99, 114-116, 146-147, 160-161, 174-175, 196, 197, 208-210, 222-223, 271-272, 283-284, 309-310, 320-321, 336-337, 360-361, 372-373, 386-388, 410-412, 426-427, 447-448, 478-479, 511-512, 535, 549-550, 564-565, 591-592, 603-604, 628-629, 662-663, 678-679;• Problem Solving: Using the Four-Step Plan on pages 49-58, 103, 165, 200, 258, 304-310, 377, 422, 476, 546, 609, 652-653 |
- B. use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;

Student Edition	See Problem Solving: Using the Four-Step Plan on pages 49-58, 103, 165, 200, 258, 304-310, 377, 422, 476, 546, 609, 652-653; and Cumulative Problem Solving on pages 21-23, 33-35, 56-58, 97-99, 114-116, 146-147, 160-161, 174-175, 196, 197, 208-210, 222-223, 271-272, 283-284, 309-310, 320-321, 336-337, 360-361, 372-373, 386-388, 410-412, 426-427, 447-448, 478-479, 511-512, 535, 549-550, 564-565, 591-592, 603-604, 628-629, 662-663, 678-679
Teacher's Edition	See Problem Solving: Using the Four-Step Plan on pages 49-58, 103, 165, 200, 258, 304-310, 377, 422, 476, 546, 609, 652-653; and Cumulative Problem Solving on pages 21-23, 33-35, 56-58, 97-99, 114-116, 146-147, 160-161, 174-175, 196, 197, 208-210, 222-223, 271-272, 283-284, 309-310, 320-321, 336-337, 360-361, 372-373, 386-388, 410-412, 426-427, 447-448, 478-479, 511-512, 535, 549-550, 564-565, 591-592, 603-604, 628-629, 662-663, 678-679
Teacher's Resource Book	pages 43-48

- C. select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and

Student Edition	See Problem Solving: Using the Four-Step Plan on pages 49-58, 103, 165, 200, 258, 304-310, 377, 422, 476, 546, 609, 652-653
Teacher's Edition	See Problem Solving: Using the Four-Step Plan on pages 49-58, 103, 165, 200, 258, 304-310, 377, 422, 476, 546, 609, 652-653
Teacher's Resource Book	pages 47-48

- D. select tools such as real objects, manipulatives, paper/pencil, and technology or techniques such as mental math, estimation, and number sense to solve problems.

Student Edition	See Activities in lessons throughout; and Math Labs on pages 59-60, 61-63, 63-65, 117-118, 118-120, 120-121, 176-178, 180-181, 224-226, 226-228, 228-231, 285-286, 287-288, 288-289, 338-339, 339-341, 3431-343, 389-390, 391-392, 393-395, 449-450, 451-453, 453-455, 513-514, 515-517, 518-519, 566-569, 568-570, 570-573, 630-631, 631-634, 635-637, 687-689, 689-690, 691-692
Teacher's Edition	See Activities in lessons throughout; and Math Labs on pages 59-60, 61-63, 63-65, 117-118, 118-120, 120-121, 176-178, 180-181, 224-226, 226-228, 228-231, 285-286, 287-288, 288-289, 338-339, 339-341, 3431-343, 389-390, 391-392, 393-395, 449-450, 451-453, 453-455, 513-514, 515-517, 518-519, 566-569, 568-570, 570-573, 630-631, 631-634, 635-637, 687-689, 689-690, 691-692

7.14 Essential Knowledge and Skills

The student communicates about Grade 7 mathematics through informal and mathematical language, representations, and models.

Performance Descriptions

A. communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models; and

Student Edition	Throughout, including: <ul style="list-style-type: none"> • every Lesson Assessment asks students to “Think and Discuss;” • Algeblocks are used to model addition of integers, addition and subtraction of expressions, perfect squares and square roots, and polynomials; • every Math Lab Activity asks students to Discuss their findings
Teacher’s Edition	Throughout, including: <ul style="list-style-type: none"> • every Lesson Assessment asks students to “Think and Discuss;” • Algeblocks are used to model addition of integers, addition and subtraction of expressions, perfect squares and square roots, and polynomials; • every Math Lab Activity asks students to Discuss their findings
Teacher’s Resource Book	Throughout

B. evaluate the effectiveness of different representations to communicate ideas.

Student Edition	Throughout; for examples see <ul style="list-style-type: none"> • “Think and Discuss” in Lesson Assessments, pp 31, 73, 82, 89, 94, 104, and so on; • Lesson 2.7, “Misuses of Statistics,” pp. 108-116; • Math Lab Activities, pp. 226-228, 288-289, 341-343, 453-455.
Teacher’s Edition	Throughout; for examples see <ul style="list-style-type: none"> • “Think and Discuss” in Lesson Assessments, pp 31, 73, 82, 89, 94, 104, and so on; • Lesson 2.7, “Misuses of Statistics,” pp. 108-116; • Math Lab Activities, pp. 226-228, 288-289, 341-343, 453-455.

7.15 Essential Knowledge and Skills

The student uses logical reasoning to make conjectures and verify conclusions.

Performance Descriptions

A. make conjectures from patterns or sets of examples and nonexamples; and

Student Edition	Throughout; for examples, see <ul style="list-style-type: none"> • Lesson Activities; • Critical Thinking questions in lessons; • “Think and Discuss” in Lesson Assessments; • “Discussion” questions in each Math Lab Activity.
Teacher’s Edition	Throughout; for examples, see <ul style="list-style-type: none"> • Lesson Activities;

- Critical Thinking questions in lessons;
- “Think and Discuss” in Lesson Assessments;
- “Discussion” questions in each Math Lab Activity.

B. validate his/her conclusions using mathematical properties and relationships.

Student Edition

Throughout; for examples, see

- Lesson Activities;
- Critical Thinking questions in lessons;
- “Think and Discuss” in Lesson Assessments;
- “Discussion” questions in each Math Lab Activity.

Teacher’s Edition

Throughout; for examples, see

- Lesson Activities;
- Critical Thinking questions in lessons;
- “Think and Discuss” in Lesson Assessments;
- “Discussion” questions in each Math Lab Activity.