

A Correlation of

enVision[®] Mathematics

**South Carolina, ©2021
Grade 7**

To the

**South Carolina
College- and Career-Ready Standards
for Mathematics
Grade 7**

SAVVAS

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South Carolina College- and Career-Ready Standards for Mathematics Grade 7	enVision Mathematics South Carolina, ©2021 Grade 7
1. Make sense of problems and persevere in solving them.	enVision Mathematics provides students with opportunities to make sense of problems and persevere in solving them throughout the series in Practice and Problem Solving exercises for each lesson. Students relate problems to prior lessons and prior knowledge as indicated in the TE by suggesting connections to previously learned content and strategies and previously encountered problems and examples. The SE portrays different strategies for solving the same problem, and the TE presents opportunities for teachers to ask students about alternative approaches. Mathematical Modeling lessons ask students to evaluate their solution models and suggest changes, if necessary. Problem-based learning, including strategy choices, is the focus of Solve and Discuss It! activities and includes all phases of the problem-solving process.
a. Relate a problem to prior knowledge.	SE/TE: 5, 54, 83, 135, 187, 251, 309, 353, 367, 413
b. Recognize there may be multiple entry points to a problem and more than one path to a solution.	SE/TE: 7, 25, 45, 63, 97, 121, 149, 173, 201, 225
c. Analyze what is given, what is not given, what is being asked, and what strategies are needed, and make an initial attempt to solve a problem.	SE/TE: 259, 265, 273, 279, 289, 295, 311, 319, 329, 335
d. Evaluate the success of an approach to solve a problem and refine it if necessary.	SE/TE: 71, 113, 139, 145, 165, 223, 287, 343, 383, 457

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2. Reason both contextually and abstractly.	enVision Mathematics provides students with opportunities to practice and apply reasoning in both real-world contexts and also pure mathematical problems through Fluency activities as well as problems featured in Solve and Discuss It, Explore It, Do You Understand, and Practice and Problem Solving. The TE provides guiding questions to help teachers direct students to Use and Connect Mathematical Representations.
a. Make sense of quantities and their relationships in mathematical and real-world situations.	SE/TE: 7, 10, 18, 25, 31, 61-62, 72, 137, 173, 213
b. Describe a given situation using multiple mathematical representations.	SE/TE: 20, 32, 46, 58, 86, 98, 115, 122, 143, 189
c. Translate among multiple mathematical representations and compare the meanings each representation conveys about the situation.	SE/TE: 14, 26, 40, 52, 64, 92, 104, 121, 138, 173
d. Connect the meaning of mathematical operations to the context of a given situation.	SE/TE: 24, 30, 35-36, 39, 57, 64, 103, 137, 255, 267

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3. Use critical thinking skills to justify mathematical reasoning and critique the reasoning of others.	enVision Mathematics develops higher order thinking skills in students through thoughtfully constructed multi-level problems as openers, examples, and problems accompanying each lesson. Additionally, problems which explicitly or implicitly require students to construct an argument and/or evaluate the reasoning of others are interspersed throughout the textbook. Features like Explain It, Explore It, Solve and Discuss It, and Convince Me require students to make conjectures and explain their reasoning.
a. Construct and justify a solution to a problem.	SE/TE: 46, 85, 92, 142, 146, 162, 225, 273, 355, 373
b. Compare and discuss the validity of various reasoning strategies.	SE/TE: 13, 31, 51, 85, 103, 137, 157, 189, 207, 237
c. Make conjectures and explore their validity.	SE/TE: 20, 26, 40, 116, 138, 158, 174, 177, 208, 282
d. Reflect on and provide thoughtful responses to the reasoning of others.	SE/TE: 19, 39, 57, 91, 115, 143, 167, 195, 213, 253

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4. Connect mathematical ideas and real-world situations through modeling.	enVision Mathematics encourages students to devise and employ mathematical models throughout the course. Every topic includes a 3-Act Mathematical Modeling lesson that requires students to reflect on a problem, construct a model, and propose and refine a solution. Each topic opens with a STEM project that requires students to construct a model employing Science, Technology, Engineering, and Mathematics to solve a problem.
a. Identify relevant quantities and develop a model to describe their relationships.	SE/TE: 69-70, 111-112, 163-164, 167, 207, 221-222, 285-286, 341-342, 381-382, 455-456
b. Interpret mathematical models in the context of the situation.	SE/TE: 13, 40, 45, 107, 149, 207, 214, 239, 265, 320
c. Make assumptions and estimates to simplify complicated situations.	SE/TE: 69-70, 111-112, 163-164, 221-222, 285-286, 341-342, 369, 375, 381-382, 455-456
d. Evaluate the reasonableness of a model and refine if necessary.	SE/TE: 71-72, 113-114, 145, 165-166, 223-224, 266, 287-288, 343-344, 383-384, 457-458
5. Use a variety of mathematical tools effectively and strategically.	Students use a variety of tools in conjunction with enVision Math, including pan balances for solving equations and determining whether expressions are equivalent; measuring instruments (e.g., thermometer, ruler, protractor); drawings (e.g., area models and number lines); and technology in the form of computers or calculators and software relevant to math (including statistics).
a. Select and use appropriate tools when solving a mathematical problem.	SE/TE: 13, 19, 23, 105, 124, 397, 413, 416, 422-424, 441
b. Use technological tools and other external mathematical resources to explore and deepen understanding of concepts.	SE/TE: 70, 112, 164, 222, 150, 315, 400, 423, 426, 428

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6. Communicate mathematically and approach mathematical situations with precision.	enVision Mathematics models precision in computational accuracy and technical vocabulary and encourages students to communicate precisely and to represent quantities with appropriate precision and labels.
a. Express numerical answers with the degree of precision appropriate for the context of a situation.	SE/TE: 13, 39, 91, 131, 157, 176, 273, 305, 377, 452
b. Represent numbers in an appropriate form according to the context of the situation.	SE/TE: 39, 45, 89, 91, 149, 151, 162, 194, 225, 247
c. Use appropriate and precise mathematical language.	SE/TE: 16, 18, 166, 189, 228, 274, 279, 298, 384, 463
d. Use appropriate units, scales, and labels.	SE/TE: 39, 45, 93, 103, 413, 416, 418, 443, 450, 472
7. Identify and utilize structure and patterns.	Within the TE margin and the SE text, enVision Mathematics highlights activities and problems that demonstrate the use of structure to solve problems efficiently and effectively and the identification of patterns to recognize and utilize relationships to develop solution strategies. Structure is also related to repetitive algorithms for computational fluency and the application of measurement formulas for area, surface area, and volume.
a. Recognize complex mathematical objects as being composed of more than one simple object.	SE/TE: 51, 192, 201, 207, 259, 415, 427, 449, 465, 471
b. Recognize mathematical repetition in order to make generalizations.	SE/TE: 39, 46, 52, 131, 183, 237, 259, 265, 391, 441
c. Look for structures to interpret meaning and develop solution strategies.	SE/TE: 19, 31, 91, 121, 143, 201, 225, 231, 253, 361

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The Number System	
7.NS.1 Extend prior knowledge of operations with positive rational numbers to add and to subtract all rational numbers and represent the sum or difference on a number line.	SE/TE: 7-12, 19-24, 25-30, 31-36, 73-78
a. Understand that the additive inverse of a number is its opposite and their sum is equal to zero.	SE/TE: 7-12, 73-78
b. Understand that the sum of two rational numbers $(p+q)$ represents a distance from p on the number line equal to $ q $ where the direction is indicated by the sign of q .	SE/TE: 25-30, 73-78
c. Translate between the subtraction of rational numbers and addition using the additive inverse, $p-q=p+(-q)$.	SE/TE: 19-24, 31-36, 73-78
d. Demonstrate that the distance between two rational numbers on the number line is the absolute value of their difference.	SE/TE: 25-30, 31-36, 73-78
e. Apply mathematical properties (e.g., commutative, associative, distributive, or the properties of identity and inverse elements) to add and subtract rational numbers.	SE/TE: 19-24, 25-30, 25-30, 73-78
7.NS.2 Extend prior knowledge of operations with positive rational numbers to multiply and to divide all rational numbers.	SE/TE: 13-18, 39-44, 45-50, 51-56, 57-62, 73-78
a. Understand that the multiplicative inverse of a number is its reciprocal and their product is equal to one.	SE/TE: 45-50, 51-56, 73-78
b. Understand sign rules for multiplying rational numbers.	SE/TE: 39-44, 45-50, 73-78
c. Understand sign rules for dividing rational numbers and that a quotient of integers (with a non-zero divisor) is a rational number.	SE/TE: 51-56, 57-62, 73-78

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d. Apply mathematical properties (e.g., commutative, associative, distributive, or the properties of identity and inverse elements) to multiply and divide rational numbers.	SE/TE: 39-44, 45-50, 51-56, 57-62, 73-78
e. Understand that some rational numbers can be written as integers and all rational numbers can be written as fractions or decimal numbers that terminate or repeat.	SE/TE: 13-18, 73-78
7.NS.3 Apply the concepts of all four operations with rational numbers to solve real-world and mathematical problems.	SE/TE: 63-68, 73-78, 465-470, 471-476, 477-482
7.NS.4 Understand and apply the concepts of comparing and ordering to rational numbers.	SE/TE: 273-278, 301-304
a. Interpret statements using less than ($<$), greater than ($>$), less than or equal to (\leq), greater than or equal to (\geq), and equal to ($=$) as relative locations on the number line.	SE/TE: 273-278, 301-304
b. Use concepts of equality and inequality to write and explain real-world and mathematical situations.	SE/TE: 273-278, 301-304
7.NS.5 Extend prior knowledge to translate among multiple representations of rational numbers (fractions, decimal numbers, percentages). Exclude the conversion of repeating decimal numbers to fractions.	SE/TE: 13-18, 73-78

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Ratios and Proportional Relationships	
7.RP.1 Compute unit rates, including those involving complex fractions, with like or different units.	SE/TE: 85-90, 91-96, 127-130
7.RP.2 Identify and model proportional relationships given multiple representations, including tables, graphs, equations, diagrams, verbal descriptions, and real-world situations.	SE/TE: 97-102, 103-108, 115-120, 121-126, 127-130, 143-148, 149-154, 179-182, 319-326, 345-348, 361-366, 403-408
a. Determine when two quantities are in a proportional relationship.	SE/TE: 97-102, 115-120, 121-126, 127-130
b. Recognize or compute the constant of proportionality.	SE/TE: 103-108, 115-120, 121-126, 127-130
c. Understand that the constant of proportionality is the unit rate.	SE/TE: 103-108, 115-120, 121-126, 127-130
d. Use equations to model proportional relationships.	SE/TE: 103-108, 121-126, 127-130, 143-148, 149-154, 179-182, 319-326, 345-348, 361-366, 403-408
e. Investigate the graph of a proportional relationship and explain the meaning of specific points (e.g., origin, unit rate) in the context of the situation.	SE/TE: 115-120, 121-126, 127-130
7.RP.3 Solve real-world and mathematical problems involving ratios and percentages using proportional reasoning (e.g., multi-step dimensional analysis, percent increase/decrease, tax).	SE/TE: 85-90, 91-96, 121-126, 127-130, 137-142, 143-148, 149-154, 157-162, 167-172, 173-178, 179-182

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Expressions, Equations, and Inequalities	
7.EE.1 Apply mathematical properties (e.g., commutative, associative, distributive) to simplify and to factor linear algebraic expressions with rational coefficients.	SE/TE: 195-200, 201-206, 207-212, 213-218, 225-230, 231-236, 243-246
7.EE.2 Recognize that algebraic expressions may have a variety of equivalent forms and determine an appropriate form for a given real-world situation.	SE/TE: 207-212, 213-218, 225-230, 231-236, 237-242, 243-246
7.EE.3 Extend previous understanding of Order of Operations to solve multi-step real-world and mathematical problems involving rational numbers. Include fraction bars as a grouping symbol.	SE/TE: 63-68, 73-78, 189-194; , 243-246, 259-264, 265-270, 301-304, 319-326, 345-348, 355-360, 373-378, 403-408, 449-454, 465-470, 471-476, 477-482
7.EE.4 Apply the concepts of linear equations and inequalities in one variable to real-world and mathematical situations.	SE/TE: 189-194, 243-246, 253-258, 259-264, 265-270, 273-278, 279-284, 289-294, 295-300, 301-304, 441-446, 449-454, 459-464, 465-470, 471-476, 477-482
a. Write and fluently solve linear equations of the form $ax+b=c$ and $(x+b)=c$ where a , b , and c are rational numbers.	SE/TE: 189-194, 243-246, 253-258, 259-264, 265-270, 301-304, 441-446, 449-454, 459-464, 465-470, 471-476, 477-482
b. Write and solve multi-step linear equations that include the use of the distributive property and combining like terms. Exclude equations that contain variables on both sides.	SE/TE: 189-194, 243-246, 253-258, 259-264, 265-270, 301-304, 441-446, 449-454, 459-464, 465-470, 471-476, 477-482
c. Write and solve two-step linear inequalities. Graph the solution set on a number line and interpret its meaning.	SE/TE: 189-194, 243-246, 253-258, 273-278, 279-284, 289-294, 295-300, 301-304
d. Identify and justify the steps for solving multi-step linear equations and two-step linear inequalities.	SE/TE: 189-194, 243-246, 253-258, 259-264, 265-270, 273-278, 279-284, 289-294, 295-300, 301-304, 441-446, 449-454, 459-464, 465-470, 471-476, 477-482

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7.EE.5 Understand and apply the laws of exponents (i.e., product rule, quotient rule, power to a power, product to a power, quotient to a power, zero power property) to simplify numerical expressions that include whole-number exponents.	SE/TE: South Carolina Lesson: 1 South Carolina Lesson: 2
Geometry and Measurement	
7.GM.1 Determine the scale factor and translate between scale models and actual measurements (e.g., lengths, area) of real-world objects and geometric figures using proportional reasoning.	SE/TE: 415-420, 477-482
7.GM.2 Construct triangles and special quadrilaterals using a variety of tools (e.g., freehand, ruler and protractor, technology).	SE/TE: 421-426, 427-434, 477-482
a. Construct triangles given all measurements of either angles or sides.	SE/TE: 421-426, 427-434, 477-482
b. Decide if the measurements determine a unique triangle, more than one triangle, or no triangle.	SE/TE: 421-426, 427-434, 477-482
c. Construct special quadrilaterals (i.e., kite, trapezoid, isosceles trapezoid, rhombus, parallelogram, rectangle) given specific parameters about angles or sides.	SE/TE: 421-426, 477-482
7.GM.3 Describe two-dimensional cross-sections of three-dimensional figures, specifically right rectangular prisms and right rectangular pyramids.	SE/TE: 459-464, 477-482
7.GM.4 Investigate the concept of circles.	SE/TE: 441-446, 449-454, 477-482
a. Demonstrate an understanding of the proportional relationships between diameter, radius, and circumference of a circle.	SE/TE: 441-446, 449-454, 477-482
b. Understand that the constant of proportionality between the circumference and diameter is equivalent to π .	SE/TE: 441-446, 449-454, 477-482

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c. Explore the relationship between circumference and area using a visual model.	SE/TE: 441-446, 449-454, 477-482
d. Use the formulas for circumference and area of circles appropriately to solve real-world and mathematical problems.	SE/TE: 441-446, 449-454, 477-482
7.GM.5 Write equations to solve problems involving the relationships between angles formed by two intersecting lines, including supplementary, complementary, vertical, and adjacent.	SE/TE: 435-440, 477-482
7.GM.6 Apply the concepts of two- and three-dimensional figures to real-world and mathematical situations.	SE/TE: 465-470, 471-476, 477-482
a. Understand that the concept of area is applied to two-dimensional figures such as triangles, quadrilaterals, and polygons.	SE/TE: 465-470, 471-476, 477-482
b. Understand that the concepts of volume and surface area are applied to three-dimensional figures such as cubes, right rectangular prisms, and right triangular prisms.	SE/TE: 465-470, 471-476, 477-482
c. Decompose cubes, right rectangular prisms, and right triangular prisms into rectangles and triangles to derive the formulas for volume and surface area.	SE/TE: 465-470, 471-476, 477-482
d. Use the formulas for area, volume, and surface area appropriately.	SE/TE: 465-470, 471-476, 477-482

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Data Analysis, Statistics, and Probability	
7.DSP.1 Investigate concepts of random sampling.	SE/TE: 311-318, 319-326, 345-348
a. Understand that a sample is a subset of a population and both possess the same characteristics.	SE/TE: 311-318, 319-326, 345-348
b. Differentiate between random and non-random sampling.	SE/TE: 311-318, 319-326, 345-348
c. Understand that generalizations from a sample are valid only if the sample is representative of the population.	SE/TE: 311-318, 319-326, 345-348
d. Understand that random sampling is used to gather a representative sample and supports valid inferences about the population.	SE/TE: 311-318, 319-326, 345-348
7.DSP.2 Draw inferences about a population by collecting multiple random samples of the same size to investigate variability in estimates of the characteristic of interest.	SE/TE: 319-326, 345-348
7.DSP.3 Visually compare the centers, spreads, and overlap of two displays of data (i.e., dot plots, histograms, box plots) that are graphed on the same scale and draw inferences about this data.	SE/TE: 329-334, 335-340, 345-348
7.DSP.4 Compare the numerical measures of center (mean, median, mode) and variability (range, interquartile range, mean absolute deviation) from two random samples to draw inferences about the populations.	SE/TE: 329-334, 335-340, 345-348
7.DSP.5 Investigate the concept of probability of chance events.	SE/TE: 355-360, 403-408
a. Determine probabilities of simple events.	SE/TE: 355-360, 403-408
b. Understand that probability measures likelihood of a chance event occurring.	SE/TE: 355-360, 403-408

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c. Understand that the probability of a chance event is a number between 0 and 1.	SE/TE: 355-360, 403-408
d. Understand that a probability closer to 1 indicates a likely chance event.	SE/TE: 355-360, 403-408
e. Investigate the concept of probability of chance events. Understand that a probability close to 1/2 indicates that a chance event is neither likely nor unlikely.	SE/TE: 355-360, 403-408
f. Investigate the concept of probability of chance events. Understand that a probability closer to 0 indicates an unlikely chance event.	SE/TE: 355-360, 403-408
7.DSP.6 Investigate the relationship between theoretical and experimental probabilities for simple events.	SE/TE: 361-366, 367-372, 403-408
a. Determine approximate outcomes using theoretical probability.	SE/TE: 361-366, 367-372, 403-408
b. Perform experiments that model theoretical probability.	SE/TE: 361-366, 367-372, 403-408
c. Compare theoretical and experimental probabilities.	SE/TE: 361-366, 367-372, 403-408
7.DSP.7 Apply the concepts of theoretical and experimental probabilities for simple events.	SE/TE: 367-372, 373-378, 403-408 South Carolina Lesson 3
a. Differentiate between uniform and non-uniform probability models (distributions).	SE/TE: 373-378 South Carolina Lesson 3
b. Develop both uniform and non-uniform probability models.	SE/TE: 367-372, 373-378, 403-408

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c. Perform experiments to test the validity of probability models.	SE/TE: 367-372, 373-378, 403-408
7.DSP.8 Extend the concepts of simple events to investigate compound events.	SE/TE: 385-390, 391-396, 397-402, 403-408
a. Understand that the probability of a compound event is between 0 and 1.	SE/TE: 391-396, 403-408
b. Identify the outcomes in a sample space using organized lists, tables, and tree diagrams.	SE/TE: 385-390, 403-408
c. Determine probabilities of compound events using organized lists, tables, and tree diagrams.	SE/TE: 385-390, 403-408
d. Design and use simulations to collect data and determine probabilities.	SE/TE: 397-402, 403-408
e. Compare theoretical and experimental probabilities for compound events.	SE/TE: 397-402, 403-408