

**A Correlation of enVision Integrated Mathematics, ©2019
to the North Carolina Standard Course of Study - North Carolina Math 2**

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North Carolina Standard Course of Study 2019 North Carolina Math 2	enVision Integrated Mathematics, ©2019
Standards for Mathematical Practice	
1. Make sense of problems and persevere in solving them.	<p>Mathematical practices are referenced throughout the enVision Integrated Mathematics series. The following citations are sample references.</p> <p>Mathematics I SE/TE: 8, 31, 47, 57, 68, 72, 76, 88, 111, 152 TE: 24A-24B, 32, 37A, 59, 84, 137B, 147, 158B, 191B, 200</p> <p>Mathematics II SE/TE: 5, 10, 17, 25, 33, 54, 62, 68, 73-74, 81 TE: 18A, 34B, 55A, 75B, 83B, 111, 120, 151B, 164B, 191B</p>
2. Reason abstractly and quantitatively.	<p>Mathematical practices are referenced throughout the enVision Integrated Mathematics series. The following citations are sample references.</p> <p>Mathematics I SE/TE: 23, 27, 63, 86, 105, 111, 118, 131-133, 141, 145 TE: 12A, 63A, 83A, 104A, 112A, 137A, 144A, 151B, 219A, 236A</p> <p>Mathematics II SE/TE: 10, 31, 54, 62, 86, 88, 99, 109, 301, 352 TE: 47A, 83A, 89A, 205B, 212A, 229A-229B, 297A, 311A-311B, 319B, 328</p>
3. Construct viable arguments and critique the reasoning of others.	<p>Mathematical practices are referenced throughout the enVision Integrated Mathematics series. The following citations are sample references.</p> <p>Mathematics I SE/TE: 11, 17, 28, 56, 67, 102, 116, 120, 170, 182 TE: 12, 18B, 24A, 53, 57A, 63A, 89B, 177A, 184A, 195</p> <p>Mathematics II SE/TE: 9, 15-16, 23-24, 31, 38, 52-53, 60, 66, 341, 482 TE: 5B, 11A, 47A, 69B, 117A, 145A, 191B, 205A, 374A, 391A</p>

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<p>4. Model with mathematics.</p>	<p>Mathematical practices are referenced throughout the enVision Integrated Mathematics series. The following citations are sample references.</p> <p>Mathematics I SE/TE: 44, 62, 68, 77, 88, 91, 128, 133, 157, 171-172 TE: 30, 51A, 69-69B, 89A, 96A, 103-103B, 164-164B, 165A, 191A, 212-212B</p> <p>Mathematics II SE/TE: 26, 82, 131, 176, 190, 236, 327, 364, 444, 498 TE: 26-26B, 82-82B, 131-131B, 176-176B, 190-190B, 236-236B, 327-327B, 364-364B, 444-444B, 498-498B</p>
<p>5. Use appropriate tools strategically.</p>	<p>Mathematical practices are referenced throughout the enVision Integrated Mathematics series. The following citations are sample references.</p> <p>Mathematics I SE/TE: 23, 144, 148, 156, 168, 183, 197, 204, 210, 234 TE: 85, 98, 112B, 120A, 139, 160, 185, 224, 228A, 236B</p> <p>Mathematics II SE/TE: 17, 30, 32, 39, 60-61, 65, 76, 80, 147, 168 TE: 27A, 37, 64, 70, 75A, 84, 118, 170B, 237B, 283</p>
<p>6. Attend to precision.</p>	<p>Mathematical practices are referenced throughout the enVision Integrated Mathematics series. The following citations are sample references.</p> <p>Mathematics I SE/TE: 10-11, 21, 54, 66, 87, 93, 109, 117, 142, 412-413 TE: 31A, 33, 57A, 89A, 104A, 250A, 319A, 335A, 363A, 396A</p> <p>Mathematics II SE/TE: 8, 15, 23-24, 33, 40, 43, 52, 79, 107, 121 TE: 13, 27A, 28, 51, 55B, 65, 89B, 126, 132B, 146</p>

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7. Look for and make use of structure.	<p>Mathematical practices are referenced throughout the enVision Integrated Mathematics series. The following citations are sample references.</p> <p>Mathematics I SE/TE: 42, 46, 55, 66-67, 75-76, 83, 89, 95, 100, 104 TE: 19, 26, 51A, 70A, 96A, 187, 207, 265B, 319B, 329</p> <p>Mathematics II SE/TE: 17, 51, 123, 125, 135, 174, 218, 267, 352, 363 TE: 47B, 69A, 83A, 89A, 103A, 120, 216, 330, 383, 521B</p>
8. Look for and express regularity in repeated reasoning.	<p>Mathematical practices are referenced throughout the enVision Integrated Mathematics series. The following citations are sample references.</p> <p>Mathematics I SE/TE: 16, 35, 60, 62, 127, 156, 162, 172, 197, 202-203 TE: 31A, 70A, 83A, 120A, 151A, 158A, 177A, 199A, 242A, 285A</p> <p>Mathematics II SE/TE: 11, 35, 57, 63, 67, 108, 137, 149, 155, 188 TE: 18B-18, 20, 22, 34A, 63A, 103A, 132A, 183A, 304A, 422A</p>
Number and Quantity	
The Real Number System	
Extend the properties of exponents to rational exponents.	
NC.M2.N-RN.1 Explain how expressions with rational exponents can be rewritten as radical expressions.	<p>Mathematics I SE: 177-183 TE: 177A-183B</p> <p>Mathematics II SE: 11-17 TE: 11A-17B</p>
NC.M2.N-RN.2 Rewrite expressions with radicals and rational exponents into equivalent expressions using the properties of exponents.	<p>Mathematics I SE: 177-183 TE: 177A-183B</p> <p>Mathematics II SE: 11-17 TE: 11A-17B</p>

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The Real Number System	
Use properties of rational and irrational numbers.	
NC.M2.N-RN.3 Use the properties of rational and irrational numbers to explain why: <ul style="list-style-type: none"> • the sum or product of two rational numbers is rational; • the sum of a rational number and an irrational number is irrational; • the product of a nonzero rational number and an irrational number is irrational. 	Mathematics I TE: 2B, 2G, 180, 219A, 277B Mathematics II SE: 5-10 TE: 5A-10B
The Complex Number System	
Defining complex numbers.	
NC.M2.N-CN.1 Know there is a complex number i such that $i^2 = -1$, and every complex number has the form $a + bi$ where a and b are real numbers.	Mathematics II SE: 183-189, 192, 200, 221-222 TE: 183A-189B, 192, 198A-198B, 204B
Algebra	
Seeing Structure in Expressions	
Interpret the structure of expressions.	
NC.M2.A-SSE.1 Interpret expressions that represent a quantity in terms of its context.	Mathematics I SE/TE: 6-8, 14, 19, 22-23, 26, 29, 30, 31, 33, 38, 69, 103 TE: 7, 18B, 20, 24B, 30-30B, 31, 37B, 69-69B, 103-103B Mathematics II SE/TE: 51, 54, 59, 61, 74, 81, 88, 105, 109, 113 TE: 83B, 88B, 130A, 132B, 170B, 175B, 197B, 204A, 255A, 262A
NC.M2.A-SSE.1a Identify and interpret parts of a quadratic, square root, inverse variation, or right triangle trigonometric expression, including terms, factors, coefficients, radicands, and exponents.	Mathematics I SE/TE: 9, 13-15, 19, 25, 27, 51, 53-54, 74, 99-102, 130 TE: 18A, 23B, 31A, 51-51B, 70, 102B, 157A, 184, 198B, 272B Mathematics II SE/TE: 30, 47, 49, 52, 71, 75, 195, 199, 203, 215 TE: 47B, 54B, 55B, 69A, 83B, 89A-89B, 151B, 158A, 170A-170B, 249A

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NC.M2.A-SSE.1b Interpret quadratic and square root expressions made of multiple parts as a combination of single entities to give meaning in terms of a context.	<p>Mathematics I SE: 191-198 TE: 191A-198B</p> <p>Mathematics II SE: 18-25, 27-33, 47-54, 55-62, 63-68, 110-116, 117-123, 229-235, 237-242, 275-280 TE: 18A-25B, 27A-33B, 47A-54B, 55A-62B, 63A-68B, 110A-116B, 117A-123B, 229A-235B, 237A-242B, 275A-280B</p>
NC.M2.A-SSE.3 Write an equivalent form of a quadratic expression by completing the square, where a is an integer of a quadratic expression, ax^2+bx+c , to reveal the maximum or minimum value of the function the expression defines.	<p>Mathematics II SE: 69-74, 75-81, 83-88, 89-94, 151-157, 191-197 TE: 69A-74B, 75A-81B, 83A-88B, 89A-94B, 151A-157B, 191A-191B</p>
Arithmetic with Polynomial and Rational Expressions	
Perform arithmetic operations on polynomials	
NC.M2.A-APR.1 Extend the understanding that operations with polynomials are comparable to operations with integers by adding, subtracting, and multiplying polynomials.	<p>Mathematics II SE: 47-54, 55-62, 63-68 TE: 47A-54B, 55A-62B, 63A-68B</p>
Creating Equations	
Create equations that describe numbers or relationships.	
NC.M2.A-CED.1 Create equations and inequalities in one variable that represent quadratic, square root, inverse variation, and right triangle trigonometric relationships and use them to solve problems.	<p>Mathematics I SE/TE: 5-11, 12-17, 24-29, 31-36, 89-95, 184-190, 191-198 TE: 5A-11B, 12A-17B, 24A-29B, 31A-36B, 89A-95B, 184A-190B, 191A-198B</p> <p>Mathematics II SE: 145-150, 151-157, 164-169, 191-197, 198-204 TE: 145A-150B, 151A-157B, 164A-169B, 191A-197B, 198A-204B</p>

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<p>NC.M2.A-CED.2 Create and graph equations in two variables to represent quadratic, square root and inverse variation relationships between quantities.</p>	<p>Mathematics I SE: 18-23, 51-56, 57-62, 63-68, 70-76, 89-95, 96-102, 184-190, 191-198, 206-211 TE: 18A-23B, 51A-56B, 57A-62B, 63A-68B, 70A-76B, 89A-95B, 96A-102B, 184A-190B, 191A-198B, 206A-211B</p> <p>Mathematics II SE: 18-25, 27-33, 34-40, 103-109, 110-116, 117-123, 124-130, 229-235, 237-242, 243-248 TE: 18A-25B, 27A-33B, 34A-40B, 103A-109B, 110A-116B, 117A-123B, 124A-130B, 229A-235B, 237A-242B, 243A-248B</p>
<p>NC.M2.A-CED.3 Create systems of linear, quadratic, square root, and inverse variation equations to model situations in context.</p>	<p>Mathematics I SE: 5-11, 12-17, 24-29, 31-36, 37-43, 137-143, 144-150, 151-157, 158-163, 165-170 TE: 5A-11B, 12A-17B, 24A-29B, 31A-36B, 37A-43B, 137A-143B, 144A-150B, 151A-157B, 158A-163B, 165A-170B</p> <p>Mathematics II SE: 145-150, 151-157, 164-169, 170-175, 191-197, 198-204, 205-211 TE: 145A-150B, 151A-157B, 164A-169B, 170A-175B, 191A-197B, 198A-204B, 205A-211B</p>
<p>Reasoning with Equations and Inequalities</p>	
<p>Understand solving equations as a process of reasoning and explain the reasoning.</p>	
<p>NC.M2.A-REI.1 Justify a chosen solution method and each step of the solving process for quadratic, square root and inverse variation equations using mathematical reasoning.</p>	<p>Mathematics I SE: 5-11, 12-17, 37-39, 41-42, 178-183 TE: 5A-11B, 12A-17B, 37A-39, 43A-43B, 178-183B</p> <p>Mathematics II SE: 145-150, 151-157, 164-169, 183, 186-189, 191-197, 198-204 TE: 145A-150B, 151A-157B, 164A-169B, 183A-189B, 191A-197B, 198A-204B</p>
<p>NC.M2.A-REI.2 Solve and interpret one variable inverse variation and square root equations arising from a context, and explain how extraneous solutions may be produced.</p>	<p>Mathematics II SE/TE: 164-169, 183, 186-189, 191-197 TE: 164A-169B, 183A-189B</p>

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Reasoning with Equations and Inequalities	
Solve equations and inequalities in one variable.	
NC.M2.A-REI.4 Solve for all solutions of quadratic equations in one variable.	Mathematics II SE: 145-150, 151-157, 164-169, 191-197, 198-204 TE: 145A-150B, 151A-157B, 164A-169B, 191A-197B, 198A-204B
NC.M2.A-REI.4a Understand that the quadratic formula is the generalization of solving ax^2+bx+c by using the process of completing the square.	Mathematics II SE: 191-197, 198-204 TE: 191A-197B, 198A-204B
NC.M2.A-REI.4b Explain when quadratic equations will have non-real solutions and express complex solutions as $a\pm bi$ for real numbers a and b .	Mathematics II SE: 145-150, 151-157, 164-169, 191-197, 198-204 TE: 145A-150B, 151A-157B, 164A-169B, 191A-197B, 198A-204B
Reasoning with Equations and Inequalities	
Solve systems of equations.	
NC.M2.A-REI.7 Use tables, graphs, and algebraic methods to approximate or find exact solutions of systems of linear and quadratic equations, and interpret the solutions in terms of a context.	Mathematics II SE: 170-175, 205-211 TE: 170A-175B, 205A-211B
Reasoning with Equations and Inequalities	
Represent and solve equations and inequalities graphically.	
NC.M2.A-REI.11 Extend the understanding that the x -coordinates of the points where the graphs of two square root and/or inverse variation equations $y=(x)$ and $y=g(x)$ intersect are the solutions of the equation $f(x)=g(x)$ and approximate solutions using graphing technology or successive approximations with a table of values.	Mathematics I SE: 137-143 TE: 137A-143B Mathematics II SE: 170-175 TE: 170A-175B

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Functions	
Interpreting Functions	
Understand the concept of a function and use function notation.	
NC.M2.F-IF.1 Extend the concept of a function to include geometric transformations in the plane by recognizing that: <ul style="list-style-type: none"> • the domain and range of a transformation function f are sets of points in the plane; • the image of a transformation is a function of its pre-image. 	Mathematics I SE: 83-88, 89-95, 184-190 TE: 83A-88B, 89A-95B, 184A-190B Mathematics II SE: 18-25, 27-33, 34-40, 103-109, 110-116, 117-123, 124-130, 229-235, 237-242, 243-248, 249-255, 263-268 TE: 18A-25B, 27A-33B, 34A-40B, 103A-109B, 110A-116B, 117A-123B, 124A-130B, 229A-235B, 237A-242B, 243A-248B, 249A-255B, 263A-268B
NC.M2.F-IF.2 Extend the use of function notation to express the image of a geometric figure in the plane resulting from a translation, rotation by multiples of 90 degrees about the origin, reflection across an axis, or dilation as a function of its pre-image.	Mathematics I SE: 83-88, 89-95, 96-102, 184-190, 206-211 TE: 83A-88B, 89A-95B, 96A-102B, 184A-190B, 206A-211B Mathematics II SE: 249-255, 263-268, 422-428 TE: 249A-255B, 263A-268B, 422A-428B
Interpreting Functions	
Interpret functions that arise in applications in terms of the context.	
NC.M2.F-IF.4 Interpret key features of graphs, tables, and verbal descriptions in context to describe functions that arise in applications relating two quantities, including: domain and range, rate of change, symmetries, and end behavior.	Mathematics I SE: 83-88, 89-95, 96-102, 184-190, 206-211 TE: 83A-88B, 89A-95B, 96A-102B, 184A-190B, 206A-211B Mathematics II SE: 18-25, 27-33, 34-40, 103-109, 110-116, 117-123, 124-130, 229-235, 237-242, 243-248 TE: 18A-25B, 27A-33B, 34A-40B, 103A-109B, 110A-116B, 117A-123B, 124A-130B, 229A-235B, 237A-242B, 243A-248B

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Interpreting Functions	
Analyze functions using different representations.	
NC.M2.F-IF.7 Analyze quadratic, square root, and inverse variation functions by generating different representations, by hand in simple cases and using technology for more complicated cases, to show key features, including: domain and range; intercepts; intervals where the function is increasing, decreasing, positive, or negative; rate of change; maximums and minimums; symmetries; and end behavior.	<p>Mathematics I SE: 83-88, 89-95, 96-102, 184-190, 206-211 TE: 83A-88B, 89A-95B, 96A-102B, 184A-190B, 206A-211B</p> <p>Mathematics II SE: 18-25, 27-33, 34-40, 103-109, 110-116, 117-123, 124-130, 229-235, 237-242, 243-248 TE: 18A-25B, 27A-33B, 34A-40B, 103A-109B, 110A-116B, 117A-123B, 124A-130B, 229A-235B, 237A-242B, 243A-248B</p>
NC.M2.F-IF.8 Use equivalent expressions to reveal and explain different properties of a function by developing and using the process of completing the square to identify the zeros, extreme values, and symmetry in graphs and tables representing quadratic functions, and interpret these in terms of a context.	<p>Mathematics I SE: 51-56, 57-62, 63-68, 70-76 TE: 51A-56B, 57A-62B, 63A-68B, 70A-76B</p> <p>Mathematics II SE: 18-25, 76-83, 92-99, 103-109, 110-116, 117-123 TE: 18A-25B, 76A-83B, 92A-99B, 103A-109B, 110A-116B, 117A-123B</p>
NC.M2.F-IF.9 Compare key features of two functions (linear, quadratic, square root, or inverse variation functions) each with a different representation (symbolically, graphically, numerically in tables, or by verbal descriptions).	<p>Mathematics I SE/TE: 186, 209, 211 TE: 174F, 206A</p> <p>Mathematics II SE/TE: 30 TE: 124B, 131-131B</p>
Building Functions	
Build a function that models a relationship between two quantities.	
NC.M2.F-BF.1 Write a function that describes a relationship between two quantities by building quadratic functions with real solution(s) and inverse variation functions given a graph, a description of a relationship, or ordered pairs (include reading these from a table).	<p>Mathematics I SE: 89-95, 96-102, 103, 104-111, 112-119, 120-128, 184-190, 191-198, 206-211, 212 TE: 89A-95B, 96A-102B, 103-103B, 104A-111B, 112A-119B, 120A-128B, 184A-190B, 191A-198B, 206A-211B, 212-212B</p> <p>Mathematics II SE: 18-25, 27-33, 34-40, 103-109, 110-116, 117-123, 124-130, 229-235, 237-242, 243-248 TE: 18A-25B, 27A-33B, 34A-40B, 103A-109B, 110A-116B, 117A-123B, 124A-130B, 229A-235B, 237A-242B, 243A-248B</p>

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Building Functions	
Build new functions from existing functions.	
NC.M2.F-BF.3 Understand the effects of the graphical and tabular representations of a linear, quadratic, square root, and inverse variation function f with $k \cdot f(x)$, $f(x)+k$, $f(x+k)$ for specific values of k (both positive and negative).	<p>Mathematics I SE: 96-102, 206-211 TE: 96A-102B, 206A-211B</p> <p>Mathematics II SE: 256-262, 263-268, 269-274 TE: 256A-262B, 263A-268B, 269A-274B</p>
Geometry	
Congruence	
Experiment with transformations in the plane.	
NC.M2.G-CO.2 Experiment with transformations in the plane. <ul style="list-style-type: none"> • Represent transformations in the plane. • Compare rigid motions that preserve distance and angle measure (translations, reflections, rotations) to transformations that do not preserve both distance and angle measure (e.g. stretches, dilations). • Understand that rigid motions produce congruent figures while dilations produce similar figures. 	<p>Mathematics I SE: 319-326, 327-334, 335-342, 343-349, 350-355 TE: 319A-326B, 327A-334B, 335A-342B, 343A-349B, 350A-355B</p> <p>Mathematics II SE: 413-421, 422-428 TE: 413A-421B, 422A-428B</p>
NC.M2.G-CO.3 Given a triangle, quadrilateral, or regular polygon, describe any reflection or rotation symmetry i.e., actions that carry the figure onto itself. Identify center and angle(s) of rotation symmetry. Identify line(s) of reflection symmetry.	<p>Mathematics I SE 350-355, 356 TE: 350A-355B, 356-356B</p>
NC.M2.G-CO.4 Verify experimentally properties of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.	<p>Mathematics I SE: 319-326, 327-334, 335-342, 343-349, 350-355 TE: 319A-326B, 327A-334B, 335A-342B, 343A-349B, 350A-355B</p>
NC.M2.G-CO.5 Given a geometric figure and a rigid motion, find the image of the figure. Given a geometric figure and its image, specify a rigid motion or sequence of rigid motions that will transform the pre-image to its image.	<p>Mathematics I SE: 319-326, 327-334, 335-342, 343-349, 350-355 TE: 319A-326B, 327A-334B, 335A-342B, 343A-349B, 350A-355B</p>

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Congruence	
Understand congruence in terms of rigid motions.	
NC.M2.G-CO.6 Determine whether two figures are congruent by specifying a rigid motion or sequence of rigid motions that will transform one figure onto the other.	Mathematics I SE: 343-349, 363-370 TE: 343A-349B, 363A-370B
NC.M2.G-CO.7 Use the properties of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.	Mathematics I SE: 363-370, 381-387, 388-395, 396-401, 402-407 TE: 363A-370B, 381A-387B, 388A-395B, 396A-401B, 402A-407B
NC.M2.G-CO.8 Use congruence in terms of rigid motion. Justify the ASA, SAS, and SSS criteria for triangle congruence. Use criteria for triangle congruence (ASA, SAS, SSS, HL) to determine whether two triangles are congruent.	Mathematics I SE: 363-370, 381-387, 388-395, 396-401, 402-407 TE: 363A-370B, 381A-387B, 388A-395B, 396A-401B, 402A-407B
Congruence	
Prove geometric theorems.	
NC.M2.G-CO.9 Prove theorems about lines and angles and use them to prove relationships in geometric figures including: <ul style="list-style-type: none"> • Vertical angles are congruent. • When a transversal crosses parallel lines, alternate interior angles are congruent. • When a transversal crosses parallel lines, corresponding angles are congruent. • Points are on a perpendicular bisector of a line segment if and only if they are equidistant from the endpoints of the segment. • Use congruent triangles to justify why the bisector of an angle is equidistant from the sides of the angle. 	Mathematics I SE: 232, 265-271, 285-291, 292-298, 299-305, 306-312, 320, 324, 413 TE: 232, 265A-271B, 285A-291B, 292A-298B, 299A-305B, 306A-312B, 320, 324, 413 Mathematics II SE: 304-310, 311-318 TE: 304A-310B, 311A-318B
NC.M2.G-CO.10 Prove theorems about triangles and use them to prove relationships in geometric figures including: <ul style="list-style-type: none"> • The sum of the measures of the interior angles of a triangle is 180°. • An exterior angle of a triangle is equal to the sum of its remote interior angles. • The base angles of an isosceles triangle are congruent. • The segment joining the midpoints of two sides of a triangle is parallel to the third side and half the length. 	Mathematics I SE: 71, 292, 299-305, 371-379 TE: 71, 292, 298B, 299A-305B, 371A-379B Mathematics II SE: 319-326, 328-335, 336-342, 343-348, 357, 359, 367, 445-451 TE: 319A-326B, 328A-335B, 336A-342B, 343A-348B, 445A-451B

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Similarity, Right Triangles, and Trigonometry	
Understand similarity in terms of similarity transformations.	
NC.M2.G-SRT.1 Verify experimentally the properties of dilations with given center and scale factor:	Mathematics II SE: 413-421, 422-428 TE: 413A-421B, 422A-428B
NC.M2.G-SRT.1a When a line segment passes through the center of dilation, the line segment and its image lie on the same line. When a line segment does not pass through the center of dilation, the line segment and its image are parallel.	Mathematics II SE: 413-421 TE: 413A-421B
NC.M2.G-SRT.1b The length of the image of a line segment is equal to the length of the line segment multiplied by the scale factor.	Mathematics II SE: 413-421 TE: 413A-421B
NC.M2.G-SRT.1c The distance between the center of a dilation and any point on the image is equal to the scale factor multiplied by the distance between the dilation center and the corresponding point on the pre-image.	Mathematics II SE: 413-421 TE: 413A-421B
NC.M2.G-SRT.1d Dilations preserve angle measure.	Mathematics II SE: 413-421 TE: 413A-421B
NC.M2.G-SRT.2 Understand similarity in terms of transformations.	Mathematics II SE: 422-428 TE: 422A-428B
NC.M2.G-SRT.2a Determine whether two figures are similar by specifying a sequence of transformations that will transform one figure into the other.	Mathematics II SE: 422-428 TE: 422A-428B
NC.M2.G-SRT.2b Use the properties of dilations to show that two triangles are similar when all corresponding pairs of sides are proportional and all corresponding pairs of angles are congruent.	Mathematics II SE: 422-428 TE: 422A-428B
NC.M2.G-SRT.3 Use transformations (rigid motions and dilations) to justify the AA criterion for triangle similarity.	Mathematics II SE: 422-428, 429-435 TE: 422A-428B, 429A-435B

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Similarity, Right Triangles, and Trigonometry	
Prove theorems involving similarity.	
NC.M2.G-SRT.4 Use similarity to solve problems and to prove theorems about triangles. Use theorems about triangles to prove relationships in geometric figures. <ul style="list-style-type: none"> • A line parallel to one side of a triangle divides the other two sides proportionally and its converse. • The Pythagorean Theorem 	Mathematics II SE: 436-443, 445-451, 452-460, 461-470 TE: 436A-443B, 445A-451B, 452A-460B, 461A-467B, 468-470
Similarity, Right Triangles, and Trigonometry	
Define trigonometric ratios and solve problems involving right triangles.	
NC.M2.G-SRT.6 Verify experimentally that the side ratios in similar right triangles are properties of the angle measures in the triangle, due to the preservation of angle measure in similarity. Use this discovery to develop definitions of the trigonometric ratios for acute angles.	Mathematics II SE: 436-443, 452-460, 461-470 TE: 436A-443B, 452A-460B, 461A-467B, 468-470
NC.M2.G-SRT.8 Use trigonometric ratios and the Pythagorean Theorem to solve problems involving right triangles in terms of a context	Mathematics II SE: 452-460, 461-470 TE: 452A-460B, 461A-467B, 468-470
NC.M2.G-SRT.12 Develop properties of special right triangles (45-45-90 and 30-60-90) and use them to solve problems.	Mathematics II SE: 455-460 TE: 452A-460B
Statistics and Probability	
Making Inference and Justifying Conclusions	
Understand and evaluate random processes underlying statistical experiments.	
NC.M2.S-IC.2 Use simulation to determine whether the experimental probability generated by sample data is consistent with the theoretical probability based on known information about the population.	Mathematics II SE/TE: 476 TE: 483A
Conditional Probability and the Rules for Probability	
Understand independence and conditional probability and use them to interpret data.	
NC.M2.S-CP.1 Describe events as subsets of the outcomes in a sample space using characteristics of the outcomes or as unions, intersections and complements of other events.	Mathematics II SE: 483-490 TE: 483A-490B

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NC.M2.S-CP.3 Develop and understand independence and conditional probability.	Mathematics II SE: 491-497 TE: 491A-497B
NC.M2.S-CP.3a Use a 2-way table to develop understanding of the conditional probability of A given B (written $P(A B)$) as the likelihood that A will occur given that B has occurred. That is, $P(A B)$ is the fraction of event B's outcomes that also belong to event A.	Mathematics II SE: 491-497 TE: 491A-497B
NC.M2.S-CP.3b Understand that event A is independent from event B if the probability of event A does not change in response to the occurrence of event B. That is $P(A B)=P(A)$.	Mathematics II SE: 491-497 TE: 491A-497B
NC.M2.S-CP.4 Represent data on two categorical variables by constructing a two-way frequency table of data. Interpret the two-way table as a sample space to calculate conditional, joint and marginal probabilities. Use the table to decide if events are independent.	Mathematics I SE: 461-466 TE: 461A-466B Mathematics II SE: 477-482, 483-490, 491-497 TE: 477A-482B, 483A-490B, 491A-497B
NC.M2.S-CP.5 Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations.	Mathematics II SE: 483-490, 491-497 TE: 483A-490B, 491A-497B
Conditional Probability and the Rules for Probability	
Use the rules of probability to compute probabilities of compound events in a uniform probability model.	
NC.M2.S-CP.6 Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in context.	Mathematics II SE: 491-497 TE: 491A-497B
NC.M2.S-CP.7 Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in context.	Mathematics II SE: 483-490 TE: 483A-490B
NC.M2.S-CP.8 Apply the general Multiplication Rule $P(A \text{ and } B) = P(A)P(B A) = P(B)P(A B)$, and interpret the answer in context. Include the case where A and B are independent: $P(A \text{ and } B) = P(A) P(B)$.	Mathematics II SE: 483-490 TE: 483A-490B

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