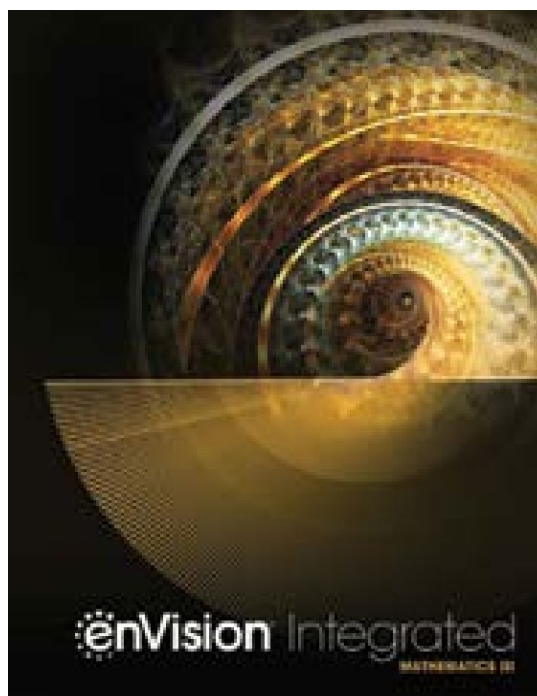
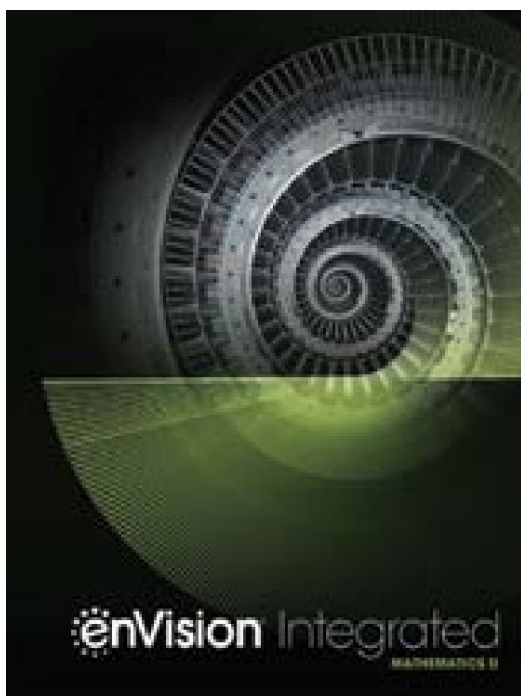


A Correlation of



**Integrated North Carolina  
Mathematics III, ©2022**



To the  
**North Carolina  
Standard Course of Study  
North Carolina Math 3**

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<b>Standards for Mathematical Practice</b>	
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><b>Mathematics II</b>  <b>SE/TE:</b> 5, 10, 17, 25, 33, 54, 62, 68, 73-74, 81  <b>TE:</b> 18A, 34B, 55A, 75B, 83B, 111, 120, 151B, 164B, 191B</p> <p><b>Mathematics III</b>  <b>SE/TE:</b> 39, 50, 52, 56, 67-68, 97, 99, 108, 119, 139  <b>TE:</b> 27, 36, 40A-40B, 47A-47B, 48, 88, 95, 111, 123A, 135</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><b>Mathematics II</b>  <b>SE/TE:</b> 10, 31, 54, 62, 86, 88, 99, 109, 301, 352  <b>TE:</b> 47A, 83A, 89A, 205B, 212A, 229A-229B, 297A, 311A-311B, 319B, 328</p> <p><b>Mathematics III</b>  <b>SE/TE:</b> 52, 108, 153, 164, 219, 245, 251, 260, 304, 313  <b>TE:</b> 47A, 69A, 84A, 131A, 136, 140B, 155, 177A, 181, 185A</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><b>Mathematics II</b>  <b>SE/TE:</b> 9, 15-16, 23-24, 31, 38, 52-53, 60, 66, 341, 482  <b>TE:</b> 5B, 11A, 47A, 69B, 117A, 145A, 191B, 205A, 374A, 391A</p> <p><b>Mathematics III</b>  <b>SE/TE:</b> 10-11, 21, 28, 37, 44, 51, 66, 73, 82, 245  <b>TE:</b> 5A, 102, 109A, 113, 141, 154, 180, 355, 379A, 456</p>

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<p align="center"><b>North Carolina Standard Course of Study North Carolina Math 3</b></p>	<p align="center"><b>enVision Integrated North Carolina Mathematics III, ©2022</b></p>
<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><b>Mathematics II</b>  <b>SE/TE:</b> 26, 82, 131, 176, 190, 236, 327, 364, 444, 498  <b>TE:</b> 26-26B, 82-82B, 131-131B, 176-176B, 190-190B, 236-236B, 327-327B, 364-364B, 444-444B, 498-498B</p> <p><b>Mathematics III</b>  <b>SE/TE:</b> 53, 100, 162, 202, 246, 332, 363, 439, 480, 527  <b>TE:</b> 53A-53B, 100A-100B, 162A-162B, 202A-202B, 246A-246B, 332A-332B, 363A-363B, 439A-439B, 480A-480B, 527A-527B</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><b>Mathematics III</b>  <b>SE/TE:</b> 18, 43, 63, 111, 126, 145, 149, 171, 200, 276  <b>TE:</b> 13A, 34, 61A, 65, 101A, 147A, 169A, 270, 283, 369</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><b>Mathematics II</b>  <b>SE/TE:</b> 17, 30, 32, 39, 60-61, 65, 76, 80, 147, 168  <b>TE:</b> 27A, 37, 64, 70, 75A, 84, 118, 170B, 237B, 283</p> <p><b>Mathematics III</b>  <b>SE/TE:</b> 12, 28-29, 37, 44, 50-51, 54, 73, 136, 138, 144  <b>TE:</b> 23A-23B, 47B, 62, 85, 127, 129, 136, 157, 173, 185B</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><b>Mathematics II</b>  <b>SE/TE:</b> 8, 15, 23-24, 33, 40, 43, 52, 79, 107, 121  <b>TE:</b> 13, 27A, 28, 51, 55B, 65, 89B, 126, 132B, 146</p> <p><b>Mathematics III</b>  <b>SE/TE:</b> 33, 55, 82, 86, 147, 184, 189, 201, 250, 254  <b>TE:</b> 42, 80, 96, 143, 230, 336, 367, 409, 417, 443</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><b>Mathematics II</b>  <b>SE/TE:</b> 17, 51, 123, 125, 135, 174, 218, 267, 352, 363  <b>TE:</b> 47B, 69A, 83A, 89A, 103A, 120, 216, 330, 383, 521B</p> <p><b>Mathematics III</b>  <b>SE/TE:</b> 56, 74, 85, 98, 116, 129, 145, 152, 160, 287  <b>TE:</b> 49, 92A, 101A, 142, 161, 247A, 297A, 340A, 393A, 423A</p>
<b>Number and Quantity</b>	
<b>The Complex Number System</b>	
<b>Use complex numbers in polynomial identities and equations.</b>	
NC.M3.N-CN.9 Use the Fundamental Theorem of Algebra to determine the number and potential types of solutions for polynomial functions.	<p><b>Mathematics II</b>  <b>SE/TE:</b> 220-221  <b>TE:</b> 222</p> <p><b>Mathematics III</b>  <b>SE/TE:</b> 103, 105-107  <b>TE:</b> 100B, 101A, 108B</p>

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<b>Algebra</b>	
<b>Seeing Structure in Expressions</b>	
<b>Interpret the structure of expressions.</b>	
NC.M3.A-SSE.1 Interpret expressions that represent a quantity in terms of its context.	<p><b>Mathematics II</b>  <b>SE/TE:</b> 51, 54, 59, 61, 74, 81, 88, 105, 109, 113  <b>TE:</b> 83B, 88B, 130A, 132B, 170B, 175B, 197B, 204A, 255A, 262A</p> <p><b>Mathematics III</b>  <b>SE/TE:</b> 19, 30, 65, 67, 71, 73, 95, 99, 115, 125  <b>TE:</b> 91B, 92B, 139B, 146B, 153B, 161B, 201B, 210A, 219B, 234A</p>
NC.M3.A-SSE.1a Identify and interpret parts of a piecewise, absolute value, polynomial, exponential and rational expressions including terms, factors, coefficients, and exponents.	<p><b>Mathematics II</b>  <b>SE/TE:</b> 30, 47, 49, 52, 71, 75, 195, 199, 203, 215  <b>TE:</b> 47B, 54B, 55B, 69A, 83B, 89A-89B, 151B, 158A, 170A-170B, 249A</p> <p><b>Mathematics III</b>  <b>SE/TE:</b> 17, 20, 71, 74, 81, 83, 85, 102, 149, 230  <b>TE:</b> 61A-61B, 68B, 69A-69B, 75A, 84A-84B, 91B, 92B, 100A-100B, 131A, 140A</p>
NC.M3.A-SSE.1b Interpret expressions composed of multiple parts by viewing one or more of their parts as a single entity to give meaning in terms of a context.	<p><b>Mathematics II</b>  <b>SE:</b> 18-25, 27-33, 47-54, 55-62, 63-68, 110-116, 117-123, 229-235, 237-242, 275-280  <b>TE:</b> 18A-25B, 27A-33B, 47A-54B, 55A-62B, 63A-68B, 110A-116B, 117A-123B, 229A-235B, 237A-242B, 275A-280B</p> <p><b>Mathematics III</b>  <b>SE:</b> 13-22, 23-30, 69-75, 109-116, 131-139, 140-146, 147-153, 185-192, 203-210, 227-234  <b>TE:</b> 13A-22B, 23A-30B, 69A-75B, 109A-116B, 131A-139B, 140A-146B, 147A-153B, 185A-192B, 203A-210B, 227A-234B</p>

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NC.M3.A-SSE.2 Use the structure of an expression to identify ways to write equivalent expressions	<p><b>Mathematics II</b> SE: 63-68, 69-74, 75-81, 83-88, 89-94, 110-116, 117-123, 151-157, 158-163, 212-222 TE: 63A-68B, 69A-74B, 75A-81B, 83A-88B, 89A-94B, 110A-116B, 117A-123B, 151A-157B, 158A-163B, 212A-222B</p> <p><b>Mathematics III</b> SE: 76-83, 84-91, 92-99, 169-176, 177-184, 267-272, 379-386 TE: 76A-83B, 84A-91B, 92A-99B, 169A-176B, 177A-184B, 267A-272B, 379A-386B</p>
<b>Seeing Structure in Expressions</b>	
<b>Write expressions in equivalent forms to solve problems.</b>	
NC.M3.A-SSE.3 Write an equivalent form of an exponential expression by using the properties of exponents to transform expressions to reveal rates based on different intervals of the domain.	<p><b>Mathematics II</b> 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> <p><b>Mathematics III</b> SE: 76-83, 84-91, 92-99, 169-176, 177-184, 267-272, 379-386 TE: 76A-83B, 84A-91B, 92A-99B, 169A-176B, 177A-184B, 267A-272B, 379A-386B</p>
<b>Arithmetic with Polynomial and Rational Expressions</b>	
<b>Understand the relationship between zeros and factors of polynomials.</b>	
NC.M3.A-APR.2 Understand and apply the Remainder Theorem.	<p><b>Mathematics III</b> SE: 84-91 TE: 84A-91B</p>
NC.M3.A-APR.3 Understand the relationship among factors of a polynomial expression, the solutions of a polynomial equation and the zeros of a polynomial function.	<p><b>Mathematics II</b> SE: 69-74, 75-81, 83-88, 89-94, 103-109, 110-116, 117-123, 145-150, 151-157 TE: 69A-74B, 75A-81B, 83A-88B, 89A-94B, 103A-109B, 110A-116B, 117A-123B, 145A-150B, 151A-157B</p> <p><b>Mathematics III</b> SE: 92-99 TE: 92A-99B</p>

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<b>Arithmetic with Polynomial and Rational Expressions</b>	
<b>Rewrite rational expressions.</b>	
NC.M3.A-APR.6 Rewrite simple rational expressions in different forms; write $a(x)/b(x)$ in the form $q(x)+r(x)/b(x)$ , where $a(x), b(x), q(x)$ , and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$ .	<b>Mathematics III</b> <b>SE:</b> 131-139, 140-146, 147-153 <b>TE:</b> 131A-139B, 140A-146B, 147A-153B
NC.M3.A-APR.7 Understand the similarities between arithmetic with rational expressions and arithmetic with rational numbers.	<b>Mathematics III</b> <b>SE:</b> 140-146, 147-153 <b>TE:</b> 140A-146B, 147A-153B
NC.M3.A-APR.7a Add and subtract two rational expressions, $(x)$ and $(x)$ , where the denominators of both $(x)$ and $b(x)$ are linear expressions.	<b>Mathematics III</b> <b>SE:</b> 147-153 <b>TE:</b> 147A-153B
NC.M3.A-APR.7b Multiply and divide two rational expressions.	<b>Mathematics III</b> <b>SE:</b> 140-146 <b>TE:</b> 140A-146B
<b>Creating Equations</b>	
<b>Create equations that describe numbers or relationships.</b>	
NC.M3.A-CED.1 Create equations and inequalities in one variable that represent absolute value, polynomial, exponential, and rational relationships and use them to solve problems algebraically and graphically.	<b>Mathematics II</b> <b>SE:</b> 145-150, 151-157, 164-169, 191-197, 198-204 <b>TE:</b> 145A-150B, 151A-157B, 164A-169B, 191A-197B, 198A-204B  <b>Mathematics III</b> <b>SE:</b> 40-46, 101-108, 154-161, 193-201, 273-279 <b>TE:</b> 40A-46B, 101A-108B, 154A-161B, 193A-201B, 273A-279B
NC.M3.A-CED.2 Create and graph equations in two variables to represent absolute value, polynomial, exponential and rational relationships between quantities.	<b>Mathematics II</b> <b>SE:</b> 18-25, 27-33, 34-40, 103-109, 110-116, 117-123, 124-130, 229-235, 237-242, 243-248 <b>TE:</b> 18A-25B, 27A-33B, 34A-40B, 103A-109B, 110A-116B, 117A-123B, 124A-130B, 229A-235B, 237A-242B, 243A-248B  <b>Mathematics III</b> <b>SE:</b> 23-30, 61-68, 131-139, 185-192, 227-234, 235-245, 247-253, 261-266, 323-331, 333-339 <b>TE:</b> 23A-30B, 61A-68B, 131A-139B, 185A-192B, 227A-234B, 235A-245B, 247A-253B, 261A-266B, 323A-331B, 333A-339B



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NC.M3.A-CED.3 Create systems of equations and/or inequalities to model situations in context.	<p><b>Mathematics II</b> 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><b>Mathematics III</b> SE: 40-46, 47-52, 101-108, 154-161, 193-201, 273-279, 355-362 TE: 40A-46B, 47A-52B, 101A-108B, 154A-161B, 193A-201B, 273A-279B, 355A-362B</p>
<b>Reasoning with Equations and Inequalities</b>	
<b>Understand solving equations as a process of reasoning and explain the reasoning.</b>	
NC.M3.A-REI.1 Justify a solution method for equations and explain each step of the solving process using mathematical reasoning.	<p><b>Mathematics II</b> 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><b>Mathematics III</b> SE: 40-46, 101-108, 154-161, 193-201, 273-279, 355-362 TE: 40A-46B, 101A-108B, 154A-161B, 193A-201B, 273A-279B, 355A-362B</p>
NC.M3.A-REI.2 Solve and interpret one variable rational equations arising from a context, and explain how extraneous solutions may be produced.	<p><b>Mathematics II</b> SE: 164-169, 183, 186-189, 191-197 TE: 164A-169B, 183A-189B</p> <p><b>Mathematics III</b> SE: 154-161, 193-201 TE: 154A-161B, 193A-201B</p>
<b>Reasoning with Equations and Inequalities</b>	
<b>Represent and solve equations and inequalities graphically.</b>	
NC.M3.A-REI.11 Extend an understanding that the $x$ -coordinates of the points where the graphs of two equations $y=f(x)$ and $y=g(x)$ intersect are the solutions of the equation $f(x)=g(x)$ and approximate solutions using a graphing technology or successive approximations with a table of values.	<p><b>Mathematics II</b> SE: 170-175 TE: 170A-175B</p> <p><b>Mathematics III</b> SE: 40-46 TE: 40A-46B</p>

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<b>Functions</b>	
<b>Interpreting Functions</b>	
<b>Understand the concept of a function and use function notation.</b>	
NC.M3.F-IF.1 Extend the concept of a function by recognizing that trigonometric ratios are functions of angle measure.	<p><b>Mathematics II</b>  <b>SE:</b> 18-25, 27-33, 34-40, 103-109, 110-116, 117-123, 124-130, 229-235, 237-242, 243-248, 249-255, 263-268  <b>TE:</b> 18A-25B, 27A-33B, 34A-40B, 103A-109B, 110A-116B, 117A-123B, 124A-130B, 229A-235B, 237A-242B, 243A-248B, 249A-255B, 263A-268B</p> <p><b>Mathematics III</b>  <b>SE:</b> 297-304  <b>TE:</b> 297A-304B</p>
NC.M3.F-IF.2 Use function notation to evaluate piecewise defined functions for inputs in their domains, and interpret statements that use function notation in terms of a context.	<p><b>Mathematics II</b>  <b>SE:</b> 249-255, 263-268, 422-428  <b>TE:</b> 249A-255B, 263A-268B, 422A-428B</p> <p><b>Mathematics III</b>  <b>SE:</b> 23-30  <b>TE:</b> 23A-30B</p>
<b>Interpreting Functions</b>	
<b>Interpret functions that arise in applications in terms of the context.</b>	
NC.M3.F-IF.4 Interpret key features of graphs, tables, and verbal descriptions in context to describe functions that arise in applications relating two quantities to include periodicity and discontinuities.	<p><b>Mathematics II</b>  <b>SE:</b> 18-25, 27-33, 34-40, 103-109, 110-116, 117-123, 124-130, 229-235, 237-242, 243-248  <b>TE:</b> 18A-25B, 27A-33B, 34A-40B, 103A-109B, 110A-116B, 117A-123B, 124A-130B, 229A-235B, 237A-242B, 243A-248B</p> <p><b>Mathematics III</b>  <b>SE:</b> 5-12, 13-22, 23-30, 61-68, 109-116, 123-130, 131-139, 185-192, 227-234, 261-266  <b>TE:</b> 5A-12B, 13A-22B, 23A-30B, 61A-68B, 109A-116B, 123A-130B, 131A-139B, 185A-192B, 227A-234B, 261A-266B</p>

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<b>Interpreting Functions</b>	
<b>Analyze functions using different representations.</b>	
NC.M3.F-IF.7 Analyze piecewise, absolute value, polynomials, exponential, rational, and trigonometric functions (sine and cosine) using different representations to show key features of the graph, by hand in simple cases and using technology for more complicated cases, including: domain and range; intercepts; intervals where the function is increasing, decreasing, positive, or negative; rate of change; relative maximums and minimums; symmetries; end behavior; period; and discontinuities.	<p><b>Mathematics II</b>  <b>SE:</b> 18-25, 27-33, 34-40, 103-109, 110-116, 117-123, 124-130, 229-235, 237-242, 243-248  <b>TE:</b> 18A-25B, 27A-33B, 34A-40B, 103A-109B, 110A-116B, 117A-123B, 124A-130B, 229A-235B, 237A-242B, 243A-248B</p> <p><b>Mathematics III</b>  <b>SE:</b> 5-12, 13-22, 23-30, 61-68, 109-116, 123-130, 131-139, 185-192, 227-234, 261-266  <b>TE:</b> 5A-12B, 13A-22B, 23A-30B, 61A-68B, 109A-116B, 123A-130B, 131A-139B, 185A-192B, 227A-234B, 261A-266B</p>
NC.M3.F-IF.9 Compare key features of two functions using different representations by comparing properties of two different functions, each with a different representation (symbolically, graphically, numerically in tables, or by verbal descriptions).	<p><b>Mathematics II</b>  <b>SE/TE:</b> 30  <b>TE:</b> 124B, 131-131B</p> <p><b>Mathematics III</b>  <b>SE/TE:</b> 72  <b>TE:</b> 69A</p>
<b>Building Functions</b>	
<b>Build a function that models a relationship between two quantities.</b>	
NC.M3.F-BF.1 Write a function that describes a relationship between two quantities.	<p><b>Mathematics II</b>  <b>SE:</b> 18-25, 27-33, 34-40, 103-109, 110-116, 117-123, 124-130, 229-235, 237-242, 243-248  <b>TE:</b> 18A-25B, 27A-33B, 34A-40B, 103A-109B, 110A-116B, 117A-123B, 124A-130B, 229A-235B, 237A-242B, 243A-248B</p> <p><b>Mathematics III</b>  <b>SE:</b> 5-12, 13-22, 23-30, 61-68, 109-116, 123-130, 131-139, 185-192, 227-234, 261-266  <b>TE:</b> 5A-12B, 13A-22B, 23A-30B, 61A-68B, 109A-116B, 123A-130B, 131A-139B, 185A-192B, 227A-234B, 261A-266B</p>
NC.M3.F-BF.1a Build polynomial and exponential functions with real solution(s) given a graph, a description of a relationship, or ordered pairs (include reading these from a table).	<p><b>Mathematics III</b>  <b>SE:</b> 61-68, 71, 74-75, 227-234  <b>TE:</b> 61A-68B, 227A-234B</p>

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NC.M3.F-BF.1b Build a new function, in terms of a context, by combining standard function types using arithmetic operations.	<b>Mathematics III</b> <b>SE:</b> 203-210 <b>TE:</b> 203A-210B
<b>Building Functions</b>	
<b>Build new functions from existing functions.</b>	
NC.M3.F-BF.3 Extend an understanding of the effects on the graphical and tabular representations of a function when replacing $f(x)$ with $k \cdot f(x)$ , $f(x)+k$ , $f(x+k)$ to include $f(k \cdot x)$ for specific values of $k$ (both positive and negative).	<b>Mathematics II</b> <b>SE:</b> 256-262, 263-268, 269-274 <b>TE:</b> 256A-262B, 263A-268B, 269A-274B  <b>Mathematics III</b> <b>SE:</b> 13-22, 109-116, 131-139, 185-192, 227-234, 262, 265, 340-347 <b>TE:</b> 13A-22B, 109A-116B, 131A-139B, 185A-192B, 227A-234B, 340A-347B
NC.M3.F-BF.4 Find an inverse function.	<b>Mathematics II</b> <b>SE:</b> 281-286 <b>TE:</b> 281A-286B  <b>Mathematics III</b> <b>SE:</b> 211-219, 355-362 <b>TE:</b> 211A-219B, 355A-362B
NC.M3.F-BF.4a Understand the inverse relationship between exponential and logarithmic, quadratic and square root, and linear to linear functions and use this relationship to solve problems using tables, graphs, and equations.	<b>Mathematics III</b> <b>SE:</b> 254-260, 261-266, 267-272, 273-279 <b>TE:</b> 254A-260B, 261A-266B, 267A-272B, 273A-279B
NC.M3.F-BF.4b Determine if an inverse function exists by analyzing tables, graphs, and equations.	<b>Mathematics III</b> <b>SE:</b> 211-219 <b>TE:</b> 211A-219B
NC.M3.F-BF.4c If an inverse function exists for a linear, quadratic and/or exponential function, $f$ , represent the inverse function, $f^{-1}$ , with a table, graph, or equation and use it to solve problems in terms of a context.	<b>Mathematics III</b> <b>SE:</b> 211-219, 355-362 <b>TE:</b> 211A-219B, 355A-362B

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<b>Linear, Quadratic, and Exponential Models</b>	
<b>Construct and compare linear and exponential models and solve problems.</b>	
NC.M3.F-LE.3 Compare the end behavior of functions using their rates of change over intervals of the same length to show that a quantity increasing exponentially eventually exceeds a quantity increasing as a polynomial function.	<b>Mathematics III</b> <b>SE:</b> 227-234, 235-245, 247-253 <b>TE:</b> 227A-234B, 235A-245B, 247A-253B
NC.M3.F-LE.4 Use logarithms to express the solution to $ab^{ct}=d$ where $a$ , $b$ , $c$ , and $d$ are numbers and evaluate the logarithm using technology.	<b>Mathematics III</b> <b>SE:</b> 273-279 <b>TE:</b> 273A-279B
<b>Trigonometric Functions</b>	
<b>Extend the domain of trigonometric functions using the unit circle.</b>	
NC.M3.F-TF.1 Understand radian measure of an angle as: <ul style="list-style-type: none"> <li>• The ratio of the length of an arc on a circle subtended by the angle to its radius.</li> <li>• A dimensionless measure of length defined by the quotient of arc length and radius that is a real number.</li> <li>• The domain for trigonometric functions.</li> </ul>	<b>Mathematics II</b> <b>SE:</b> 569-576 <b>TE:</b> 569A-576B  <b>Mathematics III</b> <b>SE:</b> 305-315 <b>TE:</b> 305A-315B
NC.M3.F-TF.2 Build an understanding of trigonometric functions by using tables, graphs and technology to represent the cosine and sine functions.	<b>Mathematics III</b> <b>SE:</b> 316-322, 323-331, 333-339 <b>TE:</b> 316A-322B, 323A-331B, 333A-339B
NC.M3.F-TF.2a Interpret the sine function as the relationship between the radian measure of an angle formed by the horizontal axis and a terminal ray on the unit circle and its y coordinate.	<b>Mathematics III</b> <b>SE:</b> 316-317 <b>TE:</b> 316A-322B
NC.M3.F-TF.2b Interpret the cosine function as the relationship between the radian measure of an angle formed by the horizontal axis and a terminal ray on the unit circle and its x coordinate.	<b>Mathematics III</b> <b>SE:</b> 316-317 <b>TE:</b> 316A-322B
<b>Trigonometric Functions</b>	
<b>Model periodic phenomena with trigonometric functions.</b>	
NC.M3.F-TF.5 Use technology to investigate the parameters, $a$ , $b$ , and $h$ of a sine function, $(x)=a \sin(b \cdot x)+h$ , to represent periodic phenomena and interpret key features in terms of a context.	<b>Mathematics III</b> <b>SE:</b> 323-331, 333-339 <b>TE:</b> 323A-331B, 333A-339B

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<b>Geometry</b>	
<b>Congruence</b>	
<b>Prove geometric theorems.</b>	
NC.M3.G-CO.10 Verify experimentally properties of the centers of triangles (centroid, in center, and circumcenter).	<b>Mathematics II</b> <b>SE:</b> 319-326, 328-335, 336-342, 343-348, 445-451 <b>TE:</b> 319A-326B, 328A-335B, 336A-342B, 343A-348B, 445A-451B
NC.M3.G-CO.11 Prove theorems about parallelograms. <ul style="list-style-type: none"> <li>• Opposite sides of a parallelogram are congruent.</li> <li>• Opposite angles of a parallelogram are congruent.</li> <li>• Diagonals of a parallelogram bisect each other.</li> <li>• If the diagonals of a parallelogram are congruent, then the parallelogram is a rectangle.</li> </ul>	<b>Mathematics II</b> <b>SE:</b> 374-382, 383-390, 391-397, 398-405 <b>TE:</b> 374A-382B, 383A-390B, 391A-397B, 398A-405B
NC.M3.G-CO.14 Apply properties, definitions, and theorems of two-dimensional figures to prove geometric theorems and solve problems.	<b>Mathematics II</b> <b>SE:</b> 357-363, 365-373, 374-382, 383-390, 391-397, 398-405 <b>TE:</b> 357A-363B, 365A-373B, 374A-382B, 383A-390B, 391A-397B, 398A-405B
<b>Circles</b>	
<b>Understand and apply theorems about circles.</b>	
NC.M3.G-C.2 Understand and apply theorems about circles. <ul style="list-style-type: none"> <li>• Understand and apply theorems about relationships with angles and circles, including central, inscribed and circumscribed angles.</li> <li>• Understand and apply theorems about relationships with line segments and circles including, radii, diameter, secants, tangents and chords.</li> </ul>	<b>Mathematics III</b> <b>SE:</b> 519-526, 528-535, 536-542, 543-550 <b>TE:</b> 519A-526B, 528A-535B, 536A-542B, 543A-550B
NC.M3.G-C.5 Using similarity, demonstrate that the length of an arc, $s$ , for a given central angle is proportional to the radius, $r$ , of the circle. Define radian measure of the central angle as the ratio of the length of the arc to the radius of the circle, $s/r$ . Find arc lengths and areas of sectors of circles.	<b>Mathematics III</b> <b>SE:</b> 511-518 <b>TE:</b> 511A-518B
<b>Expressing Geometric Properties with Equations</b>	
<b>Translate between the geometric description and the equation for a conic section.</b>	
NC.M3.G-GPE.1 Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.	<b>Mathematics III</b> <b>SE:</b> 491-496 <b>TE:</b> 491A-496B

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<b>Geometric Measurement &amp; Dimension</b>	
<b>Explain volume formulas and use them to solve problems.</b>	
NC.M3.G-GMD.3 Use the volume formulas for prisms, cylinders, pyramids, cones, and spheres to solve problems.	<b>Mathematics III</b> <b>SE:</b> 557-562, 563-570, 572-578, 579-584 <b>TE:</b> 557A-562B, 563A-570B, 572A-578B, 579A-584B
<b>Geometric Measurement &amp; Dimension</b>	
<b>Visualize relationships between two-dimensional and three-dimensional objects.</b>	
NC.M3.G-GMD.4 Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.	<b>Mathematics III</b> <b>SE:</b> 557-562 <b>TE:</b> 557A-562B
<b>Modeling with Geometry</b>	
<b>Apply geometric concepts in modeling situations.</b>	
NC.M3.G-MG.1 Apply geometric concepts in modeling situations <ul style="list-style-type: none"> <li>• Use geometric and algebraic concepts to solve problems in modeling situations:</li> <li>• Use geometric shapes, their measures, and their properties, to model real-life objects.</li> <li>• Use geometric formulas and algebraic functions to model relationships.</li> <li>• Apply concepts of density based on area and volume.</li> <li>• Apply geometric concepts to solve design and optimization problems.</li> </ul>	<b>Mathematics III</b> <b>SE/TE:</b> 459, 462, 465, 472, 487, 489-490, 496, 562, 564-567, 570 <b>TE:</b> 466B, 472B, 571A-571B
<b>Statistics and Probability</b>	
<b>Making Inference and Justifying Conclusions</b>	
<b>Understand and evaluate random processes underlying statistical experiments.</b>	
NC.M3.S-IC.1 Understand the process of making inferences about a population based on a random sample from that population.	<b>Mathematics III</b> <b>SE:</b> 393-399, 400-406 <b>TE:</b> 393A-399B, 400A-406B
<b>Making Inference and Justifying Conclusions</b>	
<b>Make inferences and justify conclusions from sample surveys, experiments, and observational studies.</b>	
NC.M3.S-IC.3 Recognize the purposes of and differences between sample surveys, experiments, and observational studies and understand how randomization should be used in each.	<b>Mathematics III</b> <b>SE:</b> 400-406 <b>TE:</b> 400A-406B

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<p>NC.M3.S-IC.4 Use simulation to understand how samples can be used to estimate a population mean or proportion and how to determine a margin of error for the estimate.</p>	<p><b>Mathematics III</b>  <b>SE:</b> 407-414, 415-422, 423-430  <b>TE:</b> 407A-414B, 415A-422B, 423A-430B</p>
<p>NC.M3.S-IC.5 Use simulation to determine whether observed differences between samples from two distinct populations indicate that the two populations are actually different in terms of a parameter of interest.</p>	<p><b>Mathematics III</b>  <b>SE:</b> 431-438  <b>TE:</b> 431A-438B</p>
<p>NC.M3.S-IC.6 Evaluate articles and websites that report data by identifying the source of the data, the design of the study, and the way the data are graphically displayed.</p>	<p><b>Mathematics III</b>  <b>SE:</b> 431-438  <b>TE:</b> 431A-438B</p>

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