



East Carter Co. R-II School District  
Course Scope and Sequence  
**Course: Algebra 2**

# OF DAYS	TOPICS
11	Chapter 1: Linear Functions Major Topic: Linear Functions Concepts: Identify parent functions and transformations. Describe transformations of parent functions. Model with linear functions. Solve linear systems.
12	Chapter 2: Quadratic Functions Major Topic: Understanding Quadratic Functions Concepts: Describe transformations of quadratic functions. Identify characteristics of quadratic functions. Write equations of parabolas. Model with quadratic functions.
16	Chapter 3: Quadratic Functions and Complex Numbers Major Topic: Understanding Quadratic Functions and Complex Numbers Concepts: Perform operations with complex numbers. Solve quadratic equations by completing the square. Describe how to use the Quadratic Formula. Solve nonlinear systems and quadratic inequalities.
18	Chapter 4: Polynomial Major Topic: Understanding Polynomial Concepts: Graph Polynomial functions. Add, subtract, multiply, divide, and factor polynomials. Solve polynomial equations. Model with and analyze graphs of polynomial functions.

15	<p>Chapter 5: Rational Exponents and Radical Functions</p> <p>Major Topic: Understanding Rational Exponents and Radical Functions</p> <p>Concepts: Represent roots using rational exponents.</p> <p>Describe the properties of rational exponents and radicals.</p> <p>Solve radical equations and inequalities.</p> <p>Find compositions and inverses of functions.</p>
15	<p>Chapter 6: Exponential and Logarithmic Functions</p> <p>Major Topic: Understanding Exponential and Logarithmic Functions</p> <p>Concepts: Determine whether a function represents exponential growth or decay.</p> <p>Simplify exponential and logarithmic expressions.</p> <p>Solve exponential and logarithmic equations.</p> <p>Model exponential and logarithmic functions.</p>
12	<p>Chapter 7: Rational Functions</p> <p>Major Topic: Understanding Rational Functions</p> <p>Concepts: Determine whether an equation represents direct or inverse variation.</p> <p>Graph rational functions.</p> <p>Add, subtract, multiply, and divide rational expressions.</p> <p>Solve rational equations.</p>
16	<p>Chapter 8: Probability</p> <p>Major Topic: Understanding Probability</p> <p>Concepts: Define theoretical and experimental probability.</p> <p>Use two-way tables to find probabilities.</p> <p>Compare independent and dependent events.</p> <p>Construct and interpret probability and binomial distributions.</p>
13	<p>Chapter 9: Data Analysis and Statistics</p> <p>Major Topic: Understanding Data Analysis and Statistics</p> <p>Concepts: Find probabilities in normal distributions.</p> <p>Identify populations and samples.</p> <p>Explain different methods for collecting data.</p> <p>Make inferences from sample surveys and experiments.</p>
18	<p>Chapter 10: Trigonometric Ratios and Functions</p> <p>Major Topic: Understanding Trigonometric Ratios and Functions</p> <p>Concepts: Define right triangle trigonometric functions.</p> <p>Evaluate trigonometric functions of any angle.</p> <p>Graph trigonometric functions.</p> <p>Model using trigonometric functions.</p>

13	<p>Chapter 11: Sequences and Series</p> <p>Major Topic: Understanding Sequences and Series</p> <p>Concepts: Define and use sequences and series.</p> <p>Describe how to find sums of infinite geometric series.</p> <p>Analyze arithmetic and geometric sequences and series.</p> <p>Explain how to write recursive rules for sequences.</p>
8	<p>Chapter 12: Matrices</p> <p>Major Topic: Understanding Matrices</p> <p>Concepts: Perform operations with matrices.</p> <p>Determine when a product of matrices is defined.</p> <p>Evaluate determinants of matrices.</p> <p>Use inverse matrices to solve problems.</p>

### **Course Description**

In this course, students will be taught the Missouri Learning Standards for Mathematics. We will use a balance of procedural fluency, conceptual understanding, and real-life applications. Students develop conceptual understanding through exploration (inquiry-based learning), continue that development in lessons while gaining procedural fluency during concept and skills practice, and tie it all together with real-life examples. Every lesson set reflects this balance, giving students the rigorous practice they need to be college- and career-ready.