

Course Syllabus

Course Name: M/J Grade 7 Mathematics

Description: Have you ever wondered, “When will I use this in real life?” Grade 7 Mathematics has great news! There are hundreds of ways that math is used in the real world, and this course is designed to help you think critically as you explore a few of those applications. With hands-on activities and interactive lessons, students will have the opportunity to apply what they learn in relevant ways. Key foundational concepts like proportional relationships, probability, and geometry will help prepare students for the next level of learning.

Instructional time for **Grade 7 Mathematics** will emphasize five areas:

1. recognizing that fractions, decimals, and percentages are different representations of rational numbers and performing all four operations with rational numbers with procedural fluency
2. creating equivalent expressions and solving equations and inequalities
3. developing understanding of and applying proportional relationships in two variables
4. extending analysis of two- and three-dimensional figures to include circles and cylinders
5. representing and comparing categorical and numerical data and developing understanding of probability

Access the link below to view the standards from the Florida Department of Education:

[Course standards](#)

Credits: 1

Estimated Completion Time: 2 Segments / 32–36 weeks

Segment One

- Solve problems by rewriting rational numbers in different but equivalent forms including fractions, mixed numbers, repeating decimals, and percentages
- Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions, limited to whole number exponents and rational number bases, with procedural fluency
- Add, subtract, multiply, and divide rational numbers
- Solve real-world problems involving any of the four operations with rational numbers
- Solve mathematical problems using multi-step order of operations with rational numbers including grouping symbols, whole-number exponents, and absolute value
- Apply properties of operations to add and subtract linear expressions with rational coefficients
- Determine whether two linear expressions are equivalent
- Write and solve one-step inequalities in one variable within a mathematical context and represent solutions algebraically or graphically
- Write and solve two-step equations in one variable, where all terms are rational numbers
- Determine whether two quantities have a proportional relationship by examining a table, graph, or written description
- Translate any representation of a proportional relationship to a written description, table, or equation
- Determine the constant of proportionality given a table, graph, or written description of a proportional relationship
- Graph proportional relationships from a table, equation, or a written description
- Solve problems involving proportional relationships
- Solve problems involving the conversion of units across different measurement systems
- Solve multi-step, real-world percent problems
- Apply ratios to solve real-world problems involving proportions

Segment Two

- Construct, display, and interpret data in circle graphs
- Choose and create an appropriate graphical representation given a real-world numerical or categorical data set
- Determine an appropriate measure of center or measure of variation to summarize numerical data, represented numerically or graphically, taking into consideration the context and any outliers
- Use the measure(s) of center and measure(s) of variability to make comparisons, interpret results, and draw conclusions about two populations given two numerical or graphical representations of data
- Use proportional relationships to make predictions about a population given categorical data from a random sample

- Solve problems involving dimensions and areas of geometric figures, including scale drawings and scale factors
- Apply a formula for the circumference of a circle to solve problems
- Apply a formula to find the area of a circle to solve problems
- Find the surface area of a right circular cylinder using the figure's net
- Solve problems involving surface area of right circular cylinders
- Solve problems involving volume of right circular cylinders
- Apply formulas to find the areas of trapezoids, parallelograms, and rhombi
- Solve mathematical or real-world problems involving the area of polygons or composite figures by decomposing them into triangles or quadrilaterals
- Determine the sample space for a simple experiment
- Find the theoretical probability of an event related to a simple experiment
- Interpret the likelihood of a chance event occurring and compare the probabilities of chance events
- Find experimental probabilities and compare them to theoretical probabilities

Course Grading: Besides engaging students in challenging curriculum, the course guides students to reflect on their learning and evaluate their progress through a variety of assessments. Assessments can be in the form of practice lessons, multiple-choice questions, writing assignments, projects, research papers, oral assessments, and discussions. This course will use the state-approved grading scale. Each course contains a mandatory final exam or culminating project that will be weighted at 20% of the student's overall grade.

Course Assessment and Participation Requirements: To achieve success, students are expected to submit work in each course weekly. Students can learn at their own pace; however, "any pace" still means that students must make progress in the course every week. To measure learning, students complete self-checks, practice lessons, multiple choice questions, projects, discussion-based assessments, and discussions.