

MAT0600_202338_Staging_EMBR_TEM

MAT-600

2023 05/01/2023 to 04/30/2024 Modified 03/22/2023

Course Description

This year-long course promotes problem-solving skills by teaching students how to make real-world connections with mathematics through the teaching of number theory, graphing and statistics, estimation, and solving real-world problems. Students will study the mathematical concepts of order of operations, integers, decimals, fractions, ratios and probability, measurement, geometry, and beginning algebra. Students will have access to engaging multimedia video lectures, notes pages for each lesson summarizing the video content, practice problems, and assessments. All video lessons include a transcript and closed captioning in English and Spanish.

Rationale

This math course is a transition from elementary math, where the emphasis is placed on whole number arithmetic, to the foundations of algebra, ratios, fractions, multi-step problem solving, and a foundation in understanding integers. Students will understand that God created all things with order, and math is a way to help us to understand the order of things.

Course Learning Outcomes

- A. The student will compare and order whole numbers and rational numbers, and estimate whole numbers and write numbers as exponents.
- B. The student will evaluate expressions using order of operations.
- C. The student will solve one-step and two-step equations and inequalities.
- D. The student will represent, compare, and order decimals and add, subtract, multiply and divide decimals.
- E. The student will apply exponents by converting numbers to scientific notation and numbers in scientific form to standard form.
- F. The student will compare and order fractions, and add, subtract, multiply, and divide fractions and mixed numbers.
- G. The student will solve real-world problems with whole numbers, integers, fractions, and decimals.
- H. The student will solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division of decimals.
- I. The student will solve measures of central tendency problems and interpret the solutions.
- J. The student will make observations and inferences about data represented in histograms, stem-and-leaf plots, line plots, and circle graphs.
- K. The student will write rates and ratios, and learn how to use them to solve proportions.
- L. The student will learn how to solve percent problems in real-life situations.
- M. The student will define basic geometric terms and classify angles, lines, and triangles.
- N. The student will describe polygons, calculate angle measures, and transform them on the coordinate axis.

- O. The student will make ballpark comparisons and convert between measurements in the U.S. Customary System of measurement and measurements in the metric system.
- P. The student will define π (pi) as the ratio of the circumference of a circle to its diameter; solve practical problems involving circumference and area of a circle, given the diameter or radius; solve practical problems involving area and perimeter; and describe and determine the volume and surface area of rectangular prisms and cylinders.
- Q. The student will identify the coordinates of a point in a coordinate plane, and graph ordered pairs in a coordinate plane.
- R. The student will add, subtract, multiply, and divide integers.
- S. The student will solve integer equations and two-step equations and inequalities.
- T. The student will identify slope and graph equations.
- U. The student will distinguish between experimental and theoretical probability, and calculate their probabilities as well as those of compound events.
- V. The student will determine congruence of segments, angles, and polygons.

Course Resources

See Ember's [Systems Requirements](#) for computer specifications necessary to operate this curriculum.

- Note: Embedded YouTube videos may be utilized to supplement Ember's YouTube videos are the property of the respective content creator, licensed to YouTube for distribution and user access. As a non-profit educational institution, Ember is able to use YouTube video content under the YouTube Terms of Service. For additional information on copyright, please contact the [Jerry Falwell Library](#)

* Course Policies

Types of Assessments

To simplify and clearly identify which policies apply to which assessment, each assessment has been categorized into one of four categories: Lesson, Assignment, Quiz, or Test. Each applicable item on the course Modules page has been designated with an identifier chosen from among these categories. Thus, a Quiz on the American Revolution may be designated by the title, "1.2.W Quiz: The American Revolution."

- **Lesson:** *Any item on the Modules page designated as a "Lesson"*

These include instructional content and sometimes an assessment of that content. Typically, a Lesson will be the day-to-day work that a student completes.

- **Assignment:** *Any item on the Modules page designated as an "Assignment"*

Typical examples of Assignments include, but are not limited to, papers, book reports, projects, labs, and speeches. Assignments are usually something that the student should do his or her best work on the first time.

- **Quiz:** *Any item on the Modules page designated as a "Quiz"*

This usually takes the form of a traditional assessment where the student will answer questions to demonstrate knowledge of the subject. Quizzes cover a smaller amount of material than Tests.

- **Test:** *Any item on the Modules page designated as a "Test"*

This usually takes the form of a traditional assessment where the student will answer questions to demonstrate knowledge of the subject. Tests cover a larger amount of material than Quizzes.

Materials Selection Policy

Ember curates educational materials that are consistent with the school's philosophy; however, the fallen human condition depicted in literature (as in Scripture itself) is not always pleasant. Valuable works sometimes have objectionable or profane elements. Good books provide four (4) recognized values.

- They build godly attitudes and character traits.
- They deepen our social and cultural awareness.
- They strengthen our use of written language.
- They provide a lifelong source of enjoyment and relaxation.

In order to instill these values in students and fulfill the stated objectives of the school, all Ember students are expected to read and study good books on a regular basis. Recognizing that materials designed for one level may not be appropriate for another, three (3) levels of criteria are applied:

- Elementary materials must contain no objectionable material,
- Objectionable elements in sixth through eighth-grade materials must be limited and must serve a specific educational purpose, and
- Objectionable content may be included in high school materials but must be outweighed by positive literary, curricular, and/or Christian values.

The curriculum department has approved required educational materials for students.

Resubmission Policy

Students are expected to submit their best work on the first submission for every Lesson, Assignment, Quiz, and Test. However, resubmissions may be permitted in the following circumstances:

- **Lesson:** Students are automatically permitted two attempts on a lesson. Students may freely resubmit for their first two attempts without the need for teacher approval.

If a student feels that he or she deserves a resubmission on a Lesson, Assignment, Quiz, or Test due to a technical issue such as a computer malfunction, the student should message his or her teacher to make the request. With Ember, the teacher may be a physical school teacher or the student's parent/guardian. The teacher can give another attempt from his or her Canvas account. For more information on how to do this, please review the Ember orientation course.

Schedule

Module 1: Whole Numbers & Patterns

- Week 1: Whole Numbers and Exponents
- Week 2: Using Whole Numbers and Module 1 Assessment

Module 2: Introduction to Algebra

- Week 3: Variables and Expressions
- Week 4: Introduction to Equations & Module 2 Assessment

Module 3: Decimals

- Week 5: Introduction to Decimals
- Week 6: More Decimals and Module 3 Assessment

Module 4: Number Theory & Fractions

- Week 7: Number Theory
- Week 8: Operations with Fractions
- Week 9: Module 4 and Quarter 1 Assessment

Module 5 Operations with Fractions

- Week 10: Adding and Subtracting Fractions

- Week 11: Multiplying Fractions
- Week 12: More Fractions and Module 5 Assessment

Module 6 Data Displays

- Week 13: Organizing and Displaying Data
- Week 14: Assessing Displays and Module 6 Assessment

Module 7: Proportional Relationships

- Week 15: Ratios and Proportions
- Week 16: Applications of Proportions
- Week 17: Percent
- Week 18: Module 7 and Quarter 2 Assessment

Module 8: Geometric Relationships

- Week 19: Lines and Angles
- Week 20: Polygons
- Week 21: Polygon Relationships and Module 8 Assessment

Module 9: Measurement

- Week 22: Customary and Metric Measurement
- Week 23: Measuring
- Week 24: Circles & Module 9 Assessment

Module 10: Area & Volume

- Week 25: Area
- Week 26: Volume and Surface Area
- Week 27: Module 10 and Quarter 3 Assessment

Module 11: Integers & the Coordinate Plane

- Week 28: Introduction to Integers
- Week 29: Operations with Integers
- Week 30: More Operations with Integers & Module 11 Assessment

Module 12: Functions, Equations, & Inequalities

- Week 31: Functions
- Week 32: Solving Equations and Inequalities
- Week 33: More Solving Inequalities and Module 12 Assessment

Module 13: Probability

- Week 34: Understanding Probability
- Week 35: Finding Probabilities
- Week 36: Module 13 and Quarter 4 Assessment