

MAT0700_202338_Staging_EMBR_TEM

MAT-700

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

Course Description

This year-long course will review and expand on the basic concepts and operations students learned in Math 6, and will help students with problem-solving in future mathematics courses. Students will learn how to use math skills for real-world applications and also learn how to think abstractly, investigating problems that exist in an imaginary environment. Students will practice using math to solve problems using a variety of strategies, including diagrams, equations, probability, factoring, and algebraic expressions. 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

Math is an important subject that prepares a student for real life. Math is used in a variety of courses and disciplines. Skills learned by solving problems and using logical mathematical formulas and principles help to prepare students for future courses and activities. God has given us a mind that is created in His image, and we are to use our abilities to bring honor and glory to His name.

Course Learning Outcomes

- A. The student will explore exponents and apply them to writing numbers in scientific notation.
- B. The student will translate a number sentence into words and simplify Algebraic Expressions.
- C. The student will solve one-step, two-step, and multi-step equations and inequalities using whole numbers, integers, fractions and decimals.
- D. The student will order and compare rational numbers and perform operations with decimals.
- E. The student will perform operations with fractions and mixed numbers and solve real world problems.
- F. The student will use ratios and rates to solve proportions to find unknown lengths with similar figures.
- G. The student will convert customary units, metric units and interpret the results.
- H. The student will graph points on the coordinate plane, make tables of values of equations and graph linear functions.
- I. The student will understand slope and how it relates to the slope-intercept equation; $y = mx + b$.
- J. The student will solve real world problems using direct and inverse variations.
- K. The student will convert fractions and decimals to percents and find the percent increase and decrease of two numbers.
- L. The student will calculate from a data set the basic measures of central tendency.
- M. The student will display and interpret data with bar graphs, histograms, box-and-whisker plots, scatter plots and line graphs.
- N. The student will classify lines, angles, and planes and explore relationships among them.
- O. The student will classify polygons, triangles, and quadrilaterals.

- P. The student will identify congruent figures and translate, reflect, and rotate these figures.
- Q. The student will calculate perimeter and circumference of circles and the area of polygons.
- R. The student will calculate the volume and surface area of prisms and cylinders.
- S. The student will evaluate square roots and apply them to using the Pythagorean Theorem.
- T. The student will determine the theoretical and experimental probabilities of an event and describe the difference between the two.
- U. The student will interpret and evaluate problems using combinations or permutations.

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: Algebraic Reasoning

- Week 1: Patterns, Operations, and Properties
- Week 2: Algebraic Expressions
- Week 3: Algebraic Equations
- Week 4: More Equations and Module 1 Assessment

Module 2: Integers & Rational Numbers

- Week 5: Integers
- Week 6: More Integers
- Week 7: Factors and Multiples
- Week 8: Rational Numbers
- Week 9: Module 2 and Quarter 1 Assessments

Module 3: Operations with Rational Numbers

- Week 10: Operations with Decimals
- Week 11: Operations with Fractions
- Week 12: More Operations with Fractions and Module 3 Assessment

Module 4: Proportional Relationships

- Week 13: Ratios, Rates, and Proportions
- Week 14: Measurement
- Week 15: Similar Figures and Module 4 Assessment

Module 5: Graphs & Functions

- Week 16: Functions, Tables, and Graphs
- Week 17: Linear Functions
- Week 18: Module 5 and Quarter 2 Assessments

Module 6: Percents

- Week 19: Proportions and Percent
- Week 20: Applying Percents

Module 7: Data

- Week 21: Organizing and Displaying Data
- Week 22: Representing and Analyzing Data
- Week 23: Data Displays and Module 7 Assessment

Module 8: Geometric Figures

- Week 24: Lines and Angles
- Week 25: Circles and Polygons
- Week 26: Transformations
- Week 27: Module 8 and Quarter 3 Assessments

Module 9: Measurement: Two- Dimensional Figures

- Week 28: Perimeter, Circumference, and Area
- Week 29: Square Roots and the Pythagorean Theorem & Module 9 Assessment

Module 10: Measurement: Three- Dimensional Figures

- Week 30: Volume and Surface Area
- Week 31: More Surface Area and Module 10 Assessment

Module 11: Probability

- Week 32: Introduction to Probability
- Week 33: Applications of Probability and Module 11 Assessment

Module 12: Multi-Step Equations & Inequalities

- Week 34: Multi-Step Equations
- Week 35: Inequalities
- Week 36: Module 12 and Quarter 4 Assessments