

7th Grade Math

MAT-700

2022 07/01/2022 to 06/30/2023 Modified 04/22/2022

Course Description

Math 7 covers a variety of subject matter from the world of mathematics. This course will review the basic concepts and operations that you learned in Math 6, and it will help you in future mathematics courses. You will learn how to use math skills for real-world application, and you will also learn how to think abstractly as you investigate problems that exist in an imaginary environment. Math 7 will teach you how to use math to solve problems using a variety of strategies including diagrams, equations, factoring, and algebraic expressions. Some additional features are: Engaging multimedia video lectures by award winning teacher, Edward Burger, who is funny and has a passion to teach math; helps pages for each lesson containing practice problems, notes pages, and assessments; closed captioning for all video lessons 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.

Prerequisite

6th Grade Math or administrator permission

Measurable 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 LUOA's [Systems Requirements](#) for computer specifications necessary to operate LUOA curriculum. Also view [Digital Literacy Requirements](#) for LUOA's expectation of users' digital literacy.

This course makes use of third-party digital resources to enhance the learning experience. LUOA staff and faculty have curated these resources. Students can safely access them to complete coursework. Please ensure that internet browser settings, pop-up blockers, and other filtering tools allow for these resources to be accessed. See Technologies and Resources Used in this Course below for a specific list.

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

Materials Required for Purchase

The following materials are required in this course:

- Calculator
- Paper for working out problems
- Graph paper for graphing equations and other solutions to problems

Scripture Attribution

All Scripture quotations, unless otherwise indicated, are from the ESV® Bible (The Holy Bible, English Standard Version®), copyright © 2001 by Crossway, a publishing ministry of Good News Publishers. Used by permission. All rights reserved. May not copy or download more than 500 consecutive verses of the ESV Bible or more than one half of any book of the ESV Bible."

Technologies and Resources Used in this Course

The following resource(s) are used throughout this course:

- Thinkwell

Policies

Students are accountable for all information in the [Student Handbook \(https://www.liberty.edu/online-academy/wp-content/uploads/2021/11/LUOA-Student-Handbook.pdf\)](https://www.liberty.edu/online-academy/wp-content/uploads/2021/11/LUOA-Student-Handbook.pdf). Below are a few policies that have been highlighted from the Student Handbook.

Course Grading Policies

The student's grades will be determined according to the following grading scale and assignment weights. The final letter grade for the course is determined by a 10-point scale. Assignments are weighted according to a tier system, which can be referenced

on the Grades page in Canvas. Each tier is weighted according to the table below. Items that do not affect the student's grade are found in Tier 0.

Grading Scale		Assignment Weights	
A	90-100%	Tier 0	0%
B	80-89%	Tier 1	25%
C	70-79%	Tier 2	35%
D	60-69%	Tier 3	40%
F	0-59%		

In order for students to receive credit for a course, the following conditions have to be met:

- All semester exams and module tests have to be completed.
- All Tier 3 projects or papers have to be completed.
- Fewer than 10 zeros exist in the gradebook for blank submissions in a full credit course and 5 zeros for blank submissions in a semester course.

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." These identifiers were placed on the Modules page to help students understand which Resubmission and Honor Code policies apply to that assessment (see the Resubmission Policy and Honor Code Policy below for further details).

- **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.

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.
- **Assignment:** Students should do their best work the first time on all Assignments. However, any resubmissions must be completed before the student moves more than one module ahead of that Assignment. For example, a student may resubmit

an Assignment from Module 3 while in Module 4, but not an Assignment from Modules 1 or 2. High School students may not resubmit an Assignment without expressed written permission from the teacher in a comment.

- **Quiz:** Students may NOT resubmit for an increased grade.
- **Test:** Students may NOT resubmit for an increased grade.

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.

Honor Code Policy

Every time a student violates the Honor Code, the teacher will submit an Honor Code Incident Report. The Student Support Coordinator will review the incident and allocate the appropriate consequences. Consequences, which are determined by the number of student offenses, are outlined below:

- **Warning:** This ONLY applies to high school Lessons and elementary/middle school Assignments and Lessons. Students should view these actions as learning opportunities.
 - **Lessons:** A zero will be assigned for the question only.
 - **Elementary/Middle School Assignment:** The student must redo his or her work; however, the student may retain his or her original grade.
- **1st Offense:**
 - **Lesson, Quiz, or Test:** The student will receive a 0% on the entire assessment.
 - **Assignment:** The student will either:
 - Receive a 0% on the original assignment
 - Complete the Plagiarism Workshop
 - Retry the assignment for a maximum grade of 80%
- **2nd Offense:** The student will receive a 0% and be placed on academic probation.
- **3rd Offense:** The student will receive a 0% and the Director of Faculty will determine the consequences that should follow, possibly including withdrawal from the course or expulsion from the academy.

Materials Selection Policy

LUOA 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 LUOA 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.

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