



# Mathematics, Grade 8 (MATH) 8A Syllabus

## Course Name

MATH 8A

Mathematics, Grade 8 – Semester A

## Course Information

MATH 8A is the first semester of this two-semester course.

Welcome to MATH 8A! This course will provide you with basic real-world mathematical concepts and prepare you for Algebra I. Each lesson contains examples that you will commonly use in your scholastic and everyday lives. Math is exciting because it's all around us and sometimes we're not even aware of it. Did you realize that math is used for making clothes, building bridges, constructing homes, flying planes, making medicine, and cooking food? I will help you make connections between math and your life.

Before beginning the lessons, take the time to read and study the design of your textbook. There are 7 Units and 16 Modules in this textbook. This course will cover Units 1-3 and Modules 1-10. Be sure to read pages TX10 and TX11. These two pages will help you navigate through the sections in the book and know where to find extra help when needed. (One source of help is [Holt McDougal Online](#); be sure to bookmark it in your web browser.) In the back of the book, you will also find sections labeled Selected Answers, Glossary, and Index.

Also, read through and study the Problem Solving Model on page TX12. Throughout this course you will be encouraged to use the four-step problem-solving plan outlined in this section. This will give you a simple, yet effective framework for organizing your work in the process of solving a problem. It is vital to remember the following key phrases:

- Analyze Information,
- Formulate a Plan,
- Solve, and
- Justify and Evaluate.

You may use a graphing calculator throughout this course and on the final exam. You may use any type of calculator that is accepted for testing on the Texas STARR test. You will find this information on the [Texas Education Agency website](#). Most graphing calculators are acceptable, with the exception of those with a QWERTY keyboard and/or CAS system.

**You will need to be familiar with your own calculator.** Key-stroke instructions will not be provided because there are so many different kinds of calculators that can be used.

Keep in mind that you need to have a positive attitude, study hard, read all the assignments in your textbook and in this course, and never be afraid to ask for help or clarification. Also, some of the lessons in the textbook have a reference for online help. The online tutorials are a very helpful tool that you may want to use. My goal for this course is to empower each student with the knowledge and skills necessary to be successful in their high-school career. I believe that a strong mathematical background is one of the most powerful assets you can possess.

## Course Delivery Method

Online

## Contacting Your Instructor

You may contact your instructor through the Blackboard messaging system. Technical support is available 24/7 at [www.k12.ttu.edu](http://www.k12.ttu.edu).

## Course TEKS and Objectives

The objectives for MATH 8 are in the Texas Essential Knowledge and Skills (TEKS) as mandated by the Texas Education Agency. Each lesson has stated objectives.

After completing this course, you should be able to:

1. express a rational number as a decimal;
2. approximate the value of an irrational number;
3. describe the relationship between sets of real numbers;
4. order a set of real numbers arising from mathematical and real-world contexts;
5. convert between large and small numbers in standard decimal notation and scientific notation;
6. represent linear proportional situations with tables, graphs, and equations in the form of  $y = kx$ ;
7. use data from a table or graph to determine the rate of change or slope and  $y$ -intercept in mathematical and real-world problems;
8. graph proportional relationships, interpreting the unit rate as the slope of the line that models the relationship;
9. solve problems involving direct variation;

10. represent linear nonproportional situations with tables, graphs, and equations in the form of  $y = mx + b$  when  $b \neq 0$ .
11. use data from a table or graph to determine the rate of change or slope and  $y$ -intercept in real-world problems;
12. distinguish between proportional and nonproportional situations using tables, graphs, and equations in the form  $y = kx$  and  $y = mx + b$  when  $b \neq 0$ .
13. identify and verify the values of  $x$  and  $y$  that simultaneously satisfy two linear equations in the form  $y = mx + b$  from the intersections of the graphed equations;
14. write an equation in the form  $y = mx + b$  to model a linear relationship between two quantities using verbal, numerical, tabular, and graphical representations;
15. contrast bivariate sets of data that suggest a linear relationship with bivariate sets of data that do not suggest a linear relationship from a graphical representation;
16. identify functions using sets of ordered pairs, tables, mappings, and graphs;
17. identify examples of proportional and nonproportional functions that arise from mathematical and real-world problems;
18. represent and determine angle relationships with angles formed by parallel lines that are cut by a transversal;
19. represent and determine angle relationships with the sum of the measures of the angles of a triangle;
20. represent and determine angle relationships in similar triangles;
21. use models and diagrams to explain the Pythagorean Theorem;
22. use the Pythagorean Theorem and its converse to solve problems;
23. determine the distance between two points on a coordinate plane using the Pythagorean Theorem;
24. describe the volume formula  $V = Bh$  of a cylinder in terms of its base and area and height;
25. model the relationship between the volume of a cylinder and a cone having both congruent bases and height and connect that relationship to their volume formulas;
26. solve problems involving the volume of cylinders, cones, and spheres;
27. make connections to the formulas for lateral and total surface area and determine solutions for problems involving rectangular prisms and triangular prisms; and
28. make connections to the formulas for lateral and total surface area and determine solutions for problems involving cylinders.

MATH 8 addresses the required Texas Essential Knowledge and Skills (TEKS). These can be found at the [Texas Education Agency](https://www.tea.state.tx.us/) website.

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## Textbook and Materials

### **Textbook(s)**

The required digital textbook for this course is:

- Burger, Edward B., et al. (2015). *Texas GoMath! Grade 8*. Orlando, FL: Houghton Mifflin Harcourt. ISBN 0-544-10180-4.

This digital textbook can only be purchased through the TTU K-12 partner bookstore. You can find the link to the bookstore on the [TTU K-12 website](#). Once you have purchased the digital textbook, you will receive a username and password via email. You will log in at [Holt McDougal Online](#) to access your textbook.

If you would like a printed book, you can purchase the optional printed text:

- Burger, Edward B., et al. (2015). *Texas GoMath! Grade 8*. Orlando, FL: Houghton Mifflin Harcourt. ISBN 978-0-544-05288-8.

Please note that you will not be able to access any of the digital resources if you purchase only the printed textbook.

Before you begin your course, take a few minutes and review the *Help Center* in the upper right-hand corner of your textbook dashboard. This section provides *Getting Started*, *Quick Start Guide*, and *Help* links. These resources will teach you how to navigate your digital textbook.

Open the *Student Online Edition*. This will provide you with all of the information that you will need for the course. This textbook was designed and chosen so that you can actively participate in your learning with your digital text, explore concepts, take notes, and answer practice questions in your digital textbook.

At the beginning of each module, you will find two sections labeled **Are YOU Ready?** that prepares you for starting the unit. You will also find a section titled **Unpacking the TEKS**. This section will give you an opportunity to understand the TEKS and the vocabulary terms in the TEKS to help you know exactly what you are expected to learn in the module.

### **PDF assignments**

You will submit all lessons for this course electronically. Your work for each lesson will need to be saved as a PDF in order to submit the lesson for grading. See **Requirements for Creating PDFs** on course home page for information on PDF-creation options.

### **Other required materials**

- lined notebook paper

- pencils and erasers
- graph paper
- spiral notebook
- graphing calculator (see requirements in **Course Information** in this Syllabus)

## Technical Requirements

- Internet access – preferably high speed (for accessing Blackboard)
- Email
- Word processing software such as Microsoft Word
- Adobe Reader (download from [Adobe.com](http://Adobe.com))
- Audio and video capabilities (for watching/listening to course content)
- PDF app (free options available)

## Technical Skill Requirements

Be comfortable with the following:

- using a word processor
- Internet search engines and browsers
- creating PDFs (see **Requirements for Creating PDFs** on the course home page)

## Course Organization

This course consists of five lessons and a final examination. Each lesson contains the following:

- Introduction and Instructions
- Learning Objectives and Curriculum Standards
- Learning Activities
- Assignments

Each lesson includes several activities that present content knowledge. Each lesson also includes multiple graded assignments to ensure that you learn the content that has been presented in the activities. Be sure you read all instructions carefully and ask your instructor for help if something is not clear.

Lessons One through Five cover one or two modules in the textbook. Each module is, in turn, divided into sections. You should proceed through each lesson in the order in which it is written — one section at a time. This will make it easier for you to understand, as each section builds on earlier ones.

For each lesson, you should read the Introduction and Lesson Objectives. The *Introduction* prepares you for the content of each chapter, and the *Lesson Objectives*

explain the skills and concepts you'll learn from the lesson. The *How to Proceed* section provides step-by-step instructions on how to complete your lessons. Follow the instructions in the *How to Proceed* carefully. Test your skills with the **Q&A** questions that you will see periodically throughout the course. Make sure you grasp the concept before reading any further. Answers are provided for each question. Make sure you grasp the concept before reading any further. **It is very important that you read the course before proceeding to the assigned problems.**

Finally, you must complete and send in the **Section Assignments** (Module Quizzes and Mixed Review Test Prep) for grading (see **Submitting Assignments** in this Syllabus). You must submit **all** of the Assignments before you can take the final examination.

## Submitting Assignments

Be sure to follow the instructions below when preparing your section assignments for grading.

- Complete your work in pencil. Make sure the pencil marks are dark enough to be read by a scanner or photographed.
- Begin each lesson's assignment on a clean sheet of notebook paper.
- Show your work process **down** your paper, **not across**. However, you may make two columns. **Do not write on the back of your paper.**
- Skip a line after each problem, and circle your answer(s).
- When you have completed the assignment, you will scan it or take a photograph of the pages and assemble the images into a **single PDF** to submit for grading (see **Requirements for Creating PDFs** on the course home page for information on PDF-creation options). Instructions are included in each lesson.
- Don't go too fast through a lesson or you will miss important information. *Don't forget — math takes time and practice, so don't give up!*
- You will find a **Sample Lesson Assignment** in the **Resources** section of the course. Look at this sample before you begin Lesson One. Refer to it each time you begin a lesson until you are familiar with the format.

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## Course Outline

Please note that some assignments will be hidden from you when you start the course. As you move through the lessons and complete assignments, more will unlock for you.

Lesson	Topic	Approximate Time for Completion
<b>Lesson 1</b>	Expressions and the Number System	Three weeks
<b>Lesson 2</b>	Proportional and Nonproportional Relationships	Three weeks
<b>Lesson 3</b>	Relationships and Functions	Three weeks
<b>Lesson 4</b>	Relationships in Geometry, Part 1	Three weeks
<b>Lesson 5</b>	Relationships in Geometry, Part 2	Four weeks
<b>Final Exam</b>		

## Assignment Schedule

Each of the following must be completed to complete the course. Items with an asterisk (\*) indicate that these are summative assessments for the course.

Lesson	Weeks	Assignments
<b>1</b>	1-3	Checkpoint 1 (Non-graded) Section 1.1 Assignment Upload Section 1.2 Assignment Upload Section 1.3 Assignment Upload *Module 1 Summative Assignment Section 2.1 Assignment Upload Section 2.2 Assignment Upload *Module 2 Summative Assignment
<b>2</b>	4-6	Section 3.1 Assignment Upload Section 3.2 Assignment Upload Section 3.3 Assignment Upload Section 3.4 Assignment Upload *Module 3 Summative Assignment Section 4.1 Assignment Upload Section 4.2 Assignment Upload Section 4.3 Assignment Upload Section 4.4 Assignment Upload

<b>Lesson</b>	<b>Weeks</b>	<b>Assignments</b>
		Section 4.5 Assignment Upload *Module 4 Summative Assignment
<b>3</b>	7-9	Section 5.1 Assignment Upload Section 5.2 Assignment Upload Section 5.3 Assignment Upload *Module 5 Summative Assignment Section 6.1 Assignment Upload Section 6.2 Assignment Upload Section 6.3 Assignment Upload *Module 6 Summative Assignment Checkpoint 2 (Non-graded)
<b>4</b>	10-12	Section 7.1 Assignment Upload Section 7.2 Assignment Upload Section 7.3 Assignment Upload *Module 7 Summative Assignment Section 8.1 Assignment Upload Section 8.2 Assignment Upload Section 8.3 Assignment Upload *Module 8 Summative Assignment
<b>5</b>	13-16	Section 9.1 Assignment Upload Section 9.2 Assignment Upload Section 9.3 Assignment Upload *Module 9 Summative Assignment Section 10.1 Assignment Upload Section 10.2 Assignment Upload *Module 10 Summative Assignment Checkpoint 3 (Non-graded)
		<b>Final Exam</b>

## **Course Credit**

The course grade will be calculated as follows:

- 50% coursework average;
- 50% summative assessment average, including the final exam;
- A passing course grade is 70 or higher.

Students must attempt all assignments in the course. The final exam will not be available until all assignments have been accepted and graded by the teacher.

Students who score below 70% on the final exam will be eligible for one re-exam opportunity.

## Coursework

The graded assignments within each lesson are formative in nature. This means that they are designed to assist you in applying and demonstrating the lesson concepts, as well as identifying areas in which you need additional review. You may use all the lesson's learning activities to assist you as you complete the graded assignments.

## Summative Assessments

Summative assessments are those that allow you to demonstrate mastery of the course objectives. For summative assessments, you will NOT be allowed to use the learning materials. These are opportunities for you to show what you have learned by that point in the course. Summative assessments may be proctored using the online proctoring system Proctorio. Information about Proctorio is provided in **Remote Proctoring** in the Syllabus section of your course. The summative assessments for this course are as follows:

- **Summative Assessments (20% of Course Grade)**
  - Module 1 Summative Assignment (50 points)
  - Module 2 Summative Assignment (46 points)
  - Module 3 Summative Assignment (26 points)
  - Module 4 Summative Assignment (24 points)
  - Module 5 Summative Assignment (22 points)
  - Module 6 Summative Assignment (26 points)
  - Module 7 Summative Assignment (34 points)
  - Module 8 Summative Assignment (40 points)
  - Module 9 Summative Assignment (26 points)
  - Module 10 Summative Assignment (26 points)
- **Summative Final Exam (30% of Course Grade)**

## Course Completion and Extensions

- Students may not complete the course in less than 30 days.
- All courses expire six months after the enrollment date. Student may purchase a single three-month extension for a fee.
- Extensions are non-refundable and non-transferrable.

## Academic Integrity

It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and high standard of integrity. The attempt of students to present as their own any work not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offenders liable to serious consequences, possibly suspension.

“Scholastic dishonesty” includes, but is not limited to, cheating, plagiarism, collusion, falsifying academic records, misrepresenting facts, and any act designed to give unfair academic advantage to the student (such as, but not limited to, submission of essentially the same written assignment for two courses without the prior permission of the instructor) or the attempt to commit such an act.

## Student Expectations

You will be expected to log into the Blackboard course regularly to be aware of possible announcements/reminders and to pace your progress in the course.

Students are expected to maintain an online environment conducive to learning, which includes “netiquette” (Internet etiquette). Please review the basic rules for [Online Discussion Netiquette](#). Ensure that your email messages, discussion board postings, and other electronic communications are thoughtful and respectful. Diverse opinions are welcome in this course, and you are expected to demonstrate an open mind and courtesy when responding to the thoughts and ideas of others.

The following are prohibited:

- making offensive remarks in email or the discussion board;
- using inappropriate language or discussing inappropriate topics online;
- spamming;
- hacking;
- using TTU or Blackboard email or discussion boards for commercial purposes;
- using all caps (considered shouting in online communications); and
- cyber-bullying or online harassment of any type.

Inappropriate behavior shall result in consequences ranging from a request to correct the problem, to removal from the course or even the university, depending on the severity of the behavior. Disciplinary actions will be taken according to the TTU K-12 Student Handbook.

## Communication

- You can expect a reply from your instructor within 2 business days.
- Use the Blackboard Course Messages tool for sending messages to your instructor.

## Submitting Assignments

You will submit all assignments through the Blackboard Assignment Tool, rather than by email. For assignments that require you to upload a PDF or other document, please title your assignment files “lastName\_firstName\_assignmentName.xxx (.pdf, .doc, .xl, .jpg, etc.)”.

## Technical Difficulties

### ***Getting Help***

For student assistance with Blackboard, visit [TTU K-12 Support](#).

### ***Computer Problems***

A working computer is necessary for online coursework. Computer problems will not be accepted as a valid reason for failure to complete course activities within the allotted time frame. Identify a second computer, before the course begins, that you can use if you experience computer problems.

### ***Server Problems***

When the Blackboard server needs to be taken down for maintenance, the Blackboard administrator will post an announcement in your course informing you of the time and date. If the server experiences unforeseen problems, your course instructor will notify you.

### ***Lost or Corrupted Files***

You must keep/save a copy of every project/assignment on an external disk or personal computer. In the event of any kind of technology failure (e.g., Blackboard server crash or virus infection, students' own computer problems, loss of files in cyberspace, etc.) or any disputes, the instructor may request or require you to resubmit the files. In some instances, the instructor may need to open another attempt within Blackboard, so communication with your instructor is critical in these circumstances.