



# Mathematics, Grade 5 (MATH) 5A Syllabus

## Course Name

MATH 5A

Mathematics, Grade 5 – Semester A

## Course Information

MATH 5A is the first semester of this two-semester course.

Welcome to MATH 5A! Using this curriculum, you will be engaged in problem-solving, learning new mathematical concepts, practicing skills, and reading literature to reinforce mathematical concepts. This semester will help you master place value and fractions operations and algebraic reasoning. Take as much time as you need to understand these concepts, and don't worry if it's a little difficult at first. Watch the instructional videos as many times as you need before you try the homework assignments.

You'll take what you learn about place value and fractions operations and algebraic reasoning and apply some of that to working with distance and money. You'll also learn how to keep track of whole number, fraction, and decimal information with tools like fraction strips and hundreds charts. By the end of the semester, you should have a lot experience thinking about place value and fractions operations and algebraic reasoning.

## 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).

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## Course Objectives

After completing this course, you should be able to do the following:

1. Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
  - a. apply mathematics to problems arising in everyday life, society, and the workplace;
  - b. use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;
  - c. select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;
  - d. communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;
  - e. create and use representations to organize, record, and communicate mathematical ideas;
  - f. analyze mathematical relationships to connect and communicate mathematical ideas; and
  - g. display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.
2. Number and operations. The student applies mathematical process standards to represent, compare, and order positive rational numbers and understand relationships as related to place value. The student is expected to:
  - a. represent the value of the digit in decimals through the thousandths using expanded notation and numerals;
  - b. compare and order two decimals to thousandths and represent comparisons using the symbols  $>$ ,  $<$ , or  $=$ ; and
  - c. round decimals to tenths or hundredths.
3. Number and operations. The student applies mathematical process standards to develop and use strategies and methods for positive rational number computations in order to solve problems with efficiency and accuracy. The student is expected to:
  - a. estimate to determine solutions to mathematical and real-world problems involving addition, subtraction, multiplication, or division;
  - b. multiply with fluency a three-digit number by a two-digit number using the standard algorithm;
  - c. solve with proficiency for quotients of up to a four-digit dividend by a two-digit divisor using strategies and the standard algorithm;

- d. represent multiplication of decimals with products to the hundredths using objects and pictorial models, including area models;
  - e. solve for products of decimals to the hundredths, including situations involving money, using strategies based on place-value understandings, properties of operations, and the relationship to the multiplication of whole numbers;
  - f. represent quotients of decimals to the hundredths, up to four-digit dividends and two-digit whole number divisors, using objects and pictorial models, including area models;
  - g. solve for quotients of decimals to the hundredths, up to four-digit dividends and two-digit whole number divisors, using strategies and algorithms, including the standard algorithm;
  - h. represent and solve addition and subtraction of fractions with unequal denominators referring to the same whole using objects and pictorial models and properties of operations;
  - i. represent and solve multiplication of a whole number and a fraction that refers to the same whole using objects and pictorial models, including area models;
  - j. represent division of a unit fraction by a whole number and the division of a whole number by a unit fraction such as  $1/3 \div 7$  and  $7 \div 1/3$  using objects and pictorial models, including area models;
  - k. add and subtract positive rational numbers fluently; and
  - l. divide whole numbers by unit fractions and unit fractions by whole numbers.
4. Algebraic reasoning. The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:
- a. identify prime and composite numbers;
  - b. represent and solve multi-step problems involving the four operations with whole numbers using equations with a letter standing for the unknown quantity;
  - c. describe the meaning of parentheses and brackets in a numeric expression;
  - d. simplify numerical expressions that do not involve exponents, including up to two levels of grouping;
5. Personal financial literacy. The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:
- a. develop a system for keeping and using financial records.

MATH 5 addresses the required Texas Essential Knowledge and Skills (TEKS). These can be found at the [Texas Education Agency](http://www.tea.state.tx.us) website.

## Textbook and Materials

### **Textbook(s)**

The required textbook for this course is:

- *Texas Go Math! Grade 5* (2015). Orlando, FL: Houghton Mifflin Harcourt Publishers. ISBN 978-0-544-36512-4

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](#). We strongly recommend that you purchase the digital version *and* a paper textbook.

Once you have purchased the digital textbook, you will receive a username and password via email. You will log in at the [ThinkCentral website](#) to access your textbook.

In addition to your username and password, you will need the following information to login:

- State: Texas
- District: College
- School: Texas Tech University, Lubbock 79409

The optional paper textbook is:

- *Texas Go Math! Student Edition Bundle, Grade 5, Volumes 1 and 2* (2015). Orlando, FL: Houghton Mifflin Harcourt Publishers. ISBN: 978-0-544-14092-9

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

All **Math on the Spot** videos in this course are provided by Houghton Mifflin Harcourt Publishers.

### **Optional Suggested Literature**

#### **Modules 1-4**

- 1.1; 2.1-3, 5-8: *A Drive Through History*, Harcourt School Publishers. ISBN-10: 0153605162; ISBN-13: 978-0153605161
- 1.2-5: Cannon, Kathleen, *Dewey and His Decimals*, Houghton Mifflin. ISBN-10: 0618900101; ISBN-13: 978-0618900107
- 1.6, 8: *Halfpipe*, Harcourt School Publishers. ISBN-10: 0153601981; ISBN-13: 978-0153601989
- 1.7: Laager, HJ, *A Hundredth of a Second*, Houghton Mifflin. ISBN-10: 0618900306; ISBN-13: 978-0618900305

- 2.4: Shevits, S. Ada, *Niagara Falls Numbers*, Houghton Mifflin.  
ISBN-10: 0618900179; ISBN-13: 978-0618900176

### **Modules 5-6**

- 3.1-3.8: Williamson, Ben. *Doubling Every Day*, Houghton Mifflin.  
ISBN-10: 0618899219; ISBN-13: 978-0618899210
- 3.4: Brimmer, Larry Dane. *Mercury (True Books: Space)*, Children's Press.  
ISBN-10: 0516264362; ISBN-13: 978-0516264363
- 4.1-4.5: Ryan, Carter. *Seeking the Lowest Price*, Houghton Mifflin.  
ISBN-10: 0618899227; ISBN-13: 978-0618899227
- 5.1-5.5: Petersvier, Celie. *Fossil Hunters*, Houghton Mifflin.  
ISBN-10: 0618900292; ISBN-13: 978-0618900299
- 5.6-5.8: *Table Soccer, Anyone?* Harcourt School Publishers.  
ISBN-10: 0153601973; ISBN-13: 978-0153601972

### **Modules 7-8**

- 6.6: Serden, H.J. *Cranking Out the Numbers*. Houghton Mifflin.  
ISBN-10: 0618899189; ISBN-13: 978-0618899180
- 7.2: *Eratosthenes and His Sieve*, Houghton Mifflin. ISBN-10: 0618898913;  
ISBN-13: 978-0618898916
- 7.3-7.5: *A Drive Through History*, Harcourt School Publishers.  
ISBN-10: 0153605162; ISBN-13: 978-0153605161
- 8.1-8.2, 8.4: Laager, H.J. *Working on the Railroad*, Houghton Mifflin.  
ISBN-10: 0618900144; ISBN-13: 978-0618900145
- 8.3: *A Drive Through History*, Harcourt School Publishers.  
ISBN-10: 0153605162; ISBN-13: 978-0153605161

### **Materials**

Other required materials:

- base-ten blocks
- circles
- color pencils
- connecting cubes (may use other same size blocks, such as LEGO® bricks)
- counters or checkers
- decimal models
- deck of playing cards with face cards removed
- envelope
- fraction circles
- fraction strips
- game board

- glue stick
- graph paper
- markers
- money cards
- notebook paper
- number cards
- number cube or dice
- pan balance (make your own if needed)
- pencil
- place value chart
- scissors
- score card
- small zip top bags
- sticky notes
- straight edge
- symbol cards
- thousandths chart
- wide-ruled spiral notebook for Math Journal

***Optional supplies for Make Your Own Pan Balance (Lesson 8.1)***

- 6 12-inch pieces of yarn
- applesauce cups or Styrofoam cups
- pinto beans or pennies
- plastic hanger

***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 the course home page for information on PDF-creation options. The options include the choice of scanning your notebook pages or taking pictures of each page, so you can decide what works best for you.

Be sure your pencil marks, handwriting, and answers are clear for your instructor.

**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** in the Syllabus section of your course)

## Course Organization

This course consists of eight modules and a final examination. Each module is itself divided into lessons. Each lesson contains the following:

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

Each module includes several activities that present content knowledge. Each module also includes multiple graded assignments to ensure that you learn the content that has been presented in the activities. Some of the assignments are automatically-graded quizzes, and some are written assignments or activities that your instructor will grade. Be sure you read all instructions carefully and ask your instructor for help if something is not clear.

### **About This Course**

You will find that *Texas Go Math!* is designed to help you understand math concepts. Modules 1-8 will be completed this semester. Before each new lesson is started, you should complete the assigned **Lesson Check** online quiz. This quick review will provide a refresher of the previous lesson. Make sure you understand the concepts before moving forward to the next lesson. If you do not understand a concept or skill in the previous lesson, contact your teacher for further help. A **Module Assessment** will be assigned at the completion of each module. It will be completed online.

Be sure to look at the textbook page numbers and become familiar with the concepts we will cover. The course will help you pick out the key ideas you need to learn. You'll have a chance to work on practice exercises and watch **Math on the Spot** videos to help you check your understanding.

When you're ready, you can complete the **assignment quiz** online, then the **assignment problems** on your own notebook paper. Your instructor will be excited to see your work, so you'll scan or take a picture of it and upload it for grading (see **Requirements for Creating PDFs** on the course home page for more information). Your instructor will be able to check all of your work and help you if you have any problems.

In this curriculum, you will find listed optional literature to introduce most lessons. These books offer related math subjects for the lesson and will be enjoyable to the student. Check with your local library or purchase them online through your preferred retail provider.

As you experience success within the course, your self-confidence will increase. If you are struggling with a concept, it may be a challenge to stretch and extend your thinking. The goal of this course is to help you develop into a mathematically proficient learner, prepared to encounter the mathematics of the future. May you find enjoyment in the process.

### ***Math on the Spot Videos***

To watch the videos, log into the [Houghton Mifflin Harcourt ThinkCentral website](#). Follow the links to find the module and lesson number you are studying. The videos will walk you through concepts associated with problems in your textbook.

### **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.

<b>Lesson</b>	<b>Topic</b>	<b>Approximate Time for Completion</b>
<b>Module 1</b>	Place Value and Decimals	Two weeks
<b>Module 2</b>	Multiply and Divide Whole Numbers	Two weeks
<b>Module 3</b>	Multiply Decimals	Two weeks
<b>Module 4</b>	Divide Decimals	Two weeks
<b>Module 5</b>	Add and Subtract Fractions	Two weeks
<b>Module 6</b>	Multiply and Divide Unit Fractions and Whole Numbers	Two weeks
<b>Module 7</b>	Algebra: Expressions	Two weeks
<b>Module 8</b>	Algebra: Equations	Two weeks
<b>Final Exam</b>		

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## 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>Mod.1</b>	1-2	Checkpoint 1 (Non-graded) Lesson 1.1 Assignment Lesson 1.2 Assignment Lesson 1.3 Assignment Lesson 1.4 Assignment Lesson 1.5 Assignment Lesson 1.6 Assignment Lesson 1.7 Assignment Lesson 1.8 Assignment *Module One Summative Assessment *Module One Summative Assignment Upload
<b>Mod.2</b>	3-4	Lesson 2.1 Assignment Lesson 2.2 Assignment Lesson 2.3 Assignment Lesson 2.4 Assignment Lesson 2.5 Assignment Lesson 2.6 Assignment Lesson 2.7 Assignment Lesson 2.8 Assignment *Module Two Summative Assessment *Module Two Summative Assignment Upload
<b>Mod.3</b>	5-6	Lesson 3.1 Assignment Lesson 3.2 Assignment Lesson 3.3 Assignment Lesson 3.4 Assignment Lesson 3.5 Assignment Lesson 3.6 Assignment Lesson 3.7 Assignment Lesson 3.8 Assignment *Module Three Summative Assessment *Module Three Summative Assignment Upload Checkpoint 2 (Non-graded)
<b>Mod.4</b>	7-8	Lesson 4.1 Assignment Lesson 4.2 Assignment

Lesson	Weeks	Assignments
		Lesson 4.3 Assignment Lesson 4.4 Assignment Lesson 4.5 Assignment *Module Four Summative Assessment *Module Four Summative Assignment Upload
<b>Mod.5</b>	9-10	Lesson 5.1 Assignment Lesson 5.2 Assignment Lesson 5.3 Assignment Lesson 5.4 Assignment Lesson 5.5 Assignment Lesson 5.6 Assignment Lesson 5.7 Assignment Lesson 5.8 Assignment *Module Five Summative Assessment *Module Five Summative Assignment Upload
<b>Mod.6</b>	11-12	Lesson 6.1 Assignment Lesson 6.2 Assignment Lesson 6.3 Assignment Lesson 6.4 Assignment Lesson 6.5 Assignment Lesson 6.6 Assignment *Module Six Summative Assessment *Module Six Summative Assignment Upload
<b>Mod.7</b>	13-14	Lesson 7.1 Assignment Lesson 7.2 Assignment Lesson 7.3 Assignment Lesson 7.4 Assignment Lesson 7.5 Assignment *Module Seven Summative Assessment *Module Seven Summative Assignment Upload
<b>Mod.8</b>	15-16	Lesson 8.1 Assignment Lesson 8.2 Assignment Lesson 8.3 Assignment Lesson 8.4 Assignment *Module Eight Summative Assessment *Module Eight Summative Assignment Upload 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 Assessment (12 points)
  - Module 1 Summative Assignment Upload (35 points)
  - Module 2 Summative Assessment (12 points)
  - Module 2 Summative Assignment Upload (32 points)
  - Module 3 Summative Assessment (14 points)
  - Module 3 Summative Assignment Upload (32 points)
  - Module 4 Summative Assessment (11 points)
  - Module 4 Summative Assignment Upload (20 points)
  - Module 5 Summative Assessment (10 points)
  - Module 5 Summative Assignment Upload (32 points)
  - Module 6 Summative Assessment (12 points)
  - Module 6 Summative Assignment Upload (24 points)
  - Module 7 Summative Assessment (12 points)
  - Module 7 Summative Assignment Upload (27 points)

- Module 8 Summative Assessment (12 points)
- Module 8 Summative Assignment Upload (24 points)
- Summative Final Exam (**30% of Course Grade**)

## Course Completion

- Students may not complete the course in less than 30 days.
- All courses expire six months after the enrollment date.

## 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 mail or email.

## 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.