



Mathematics, Grade 5 (MATH) 5B Syllabus

Course Name

MATH 5B

Mathematics, Grade 5 – Semester B

Course Information

MATH 5B is the second 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 solving for area, perimeter, volume, converting units of measure, data analysis, and personal financial literacy. 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 measurement, data analysis, and personal financial literacy and apply some of that to working with measurement conversion and money. You'll also learn how to use graphs and frequency tables to organize real world problems. By the end of the semester, you should have a lot experience thinking about and analyzing data, measurement, and financial understanding.

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.

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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 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. 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;
 - b. add and subtract positive rational numbers fluently.
3. Algebraic reasoning. The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:
 - a. represent and solve multi-step problems involving the four operations with whole numbers using equations with a letter standing for the unknown quantity;
 - b. generate a numerical pattern when given a rule in the form $y = ax$ or $y = x + a$ and graph;
 - c. recognize the difference between additive and multiplicative numerical patterns given in a table or graph;

- d. use concrete objects and pictorial models to develop the formulas for the volume of a rectangular prism, including the special form for a cube ($V = l \times w \times h$, $V = s \times s \times s$, and $V = Bh$); and
 - e. represent and solve problems related to perimeter and/or area and related to volume.
4. Geometry and measurement. The student applies mathematical process standards to classify two-dimensional figures by attributes and properties. The student is expected to classify two-dimensional figures in a hierarchy of sets and subsets using graphic organizers based on their attributes and properties.
5. Geometry and measurement. The student applies mathematical process standards to understand, recognize, and quantify volume. The student is expected to:
 - a. recognize a cube with side length of one unit as a unit cube having one cubic unit of volume and the volume of a three-dimensional figure as the number of unit cubes (n cubic units) needed to fill it with no gaps or overlaps if possible; and
 - b. determine the volume of a rectangular prism with whole number side lengths in problems related to the number of layers times the number of unit cubes in the area of the base.
6. Geometry and measurement. The student applies mathematical process standards to select appropriate units, strategies, and tools to solve problems involving measurement. The student is expected to solve problems by calculating conversions within a measurement system, customary or metric.
7. Geometry and measurement. The student applies mathematical process standards to identify locations on a coordinate plane. The student is expected to:
 - a. describe the key attributes of the coordinate plane, including perpendicular number lines (axes) where the intersection (origin) of the two lines coincides with zero on each number line and the given point $(0, 0)$; the x -coordinate, the first number in an ordered pair, indicates movement parallel to the x -axis starting at the origin; and the y -coordinate, the second number, indicates movement parallel to the y -axis starting at the origin;
 - b. describe the process for graphing ordered pairs of numbers in the first quadrant of the coordinate plane; and
 - c. graph in the first quadrant of the coordinate plane ordered pairs of numbers arising from mathematical and real-world problems, including those generated by number patterns or found in an input-output table.
8. Data analysis. The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:
 - a. represent categorical data with bar graphs or frequency tables and numerical data, including data sets of measurements in fractions or decimals, with dot plots or stem-and-leaf plots;

- b. represent discrete paired data on a scatterplot; and
 - c. solve one- and two-step problems using data from a frequency table, dot plot, bar graph, stem-and-leaf plot, or scatterplot.
9. 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. define income tax, payroll tax, sales tax, and property tax;
 - b. explain the difference between gross income and net income;
 - c. identify the advantages and disadvantages of different methods of payment, including check, credit card, debit card, and electronic payments;
 - d. develop a system for keeping and using financial records;
 - e. describe actions that might be taken to balance a budget when expenses exceed income; and
 - f. balance a simple budget.

MATH 5 addresses the required Texas Essential Knowledge and Skills (TEKS). These can be found at the [Texas Education Agency](#) 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 9-11

- 9.1, 9.4: Shevitz, S.Ada. *Catching the Wind*. Houghton Mifflin. ISBN-10: 0618900233; ISBN-13: 978-0618900237
- 10.1-10.4: Warren, Spencer. *Graphing Practice*. Houghton Mifflin. ISBN-10: 0618899251; ISBN-13: 978-0618899258
- 11.1-11.3: Eden, Marilyn. *Beautiful Geometry*. Houghton Mifflin. ISBN-10: 0618899278; ISBN-13: 978-0618899272
- 11.4: Ryan, Carter. *A Roller Coaster of Angles*. Houghton Mifflin. ISBN-10: 061889926X; ISBN-13: 978-0618899265

Modules 12-14

- 12.1-12.2: HSP. *City of the Future*. Houghton Mifflin. ISBN-10: 0153602562; ISBN-13: 978-0153602566
- 13.1-13.7: Herbek, Stephanie. *A Math Mix Up*. Houghton Mifflin. ISBN-10: 0618900195; ISBN-13: 978-0618900190
- 14.1-14.2: Brach, David. *Is This a Career for You?* Houghton Mifflin. ISBN-10: 0618900322; ISBN-13: 978-0618900329
- 14.3-14.4: Warren, Spencer. *Graphing Practice*. Houghton Mifflin. ISBN-10: 0618899251; ISBN-13: 978-0618899258

Modules 15-17

- Introduction: Sachar, Louis. *Holes*. Yearling. ISBN-10: 0440414806; ISBN-13: 978-0440414803
- 15.1-15.2,15.4: Gulbis, Dan. *Data on the Endangered Species*. Houghton Mifflin. ISBN-10: 0618900128; ISBN-13: 978-0618900121
- 16.1-16.2: Cannon, Kathleen, *Dewey and His Decimals*. Houghton Mifflin. ISBN-10: 0618900101; ISBN-13: 978-0618900107
- 17.1-17.7: Ryan, Carter. *Seeking the Lowest Price*. Houghton Mifflin. ISBN-10: 0618899227; ISBN-13: 978-0618899227

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Materials

Other required materials:

- bar graph
- base-ten blocks
- centimeter cubes or sugar cubes
- centimeter ruler
- color cube (may tape colors to number cube)
- color pencils
- coordinate grid
- counters or other object to cover each shape on the grid (beans or skittles could be used)
- cup (with liter measurements)
- dotted graph paper
- Fahrenheit thermometer
- glue
- graph paper
- highlighters, 2 different colors
- ice cubes
- markers
- Math Journal from MATH 5A
- metric measures
- notebook paper
- number cube
- pencil
- protractor
- quadrilaterals
- ruler (with inches and centimeters)
- scissors
- sticky notes
- stopwatch (may use a clock, computer, or smart phone, if stopwatch is not available)
- unit cubes (sugar cubes may be used, if unit cubes are not available)
- water
- whiteboard
- wide-ruled spiral notebook
- yardstick
- zip top bags

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)
- 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 9-17 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.

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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 |
|-------------------|---------------------------|---------------------------------|
| Module 9 | Algebra: Formulas | One week |
| Module 10 | Algebra: Patterns | One week |
| Module 11 | Two-Dimensional Figures | Two weeks |
| Module 12 | Twelve: Volume | Two weeks |
| Module 13 | Convert Units of Measure | Two weeks |
| Module 14 | Graphing | Two weeks |
| Module 15 | Categorical Data | Two weeks |
| Module 16 | Numerical Data | Two weeks |
| Module 17 | Personal Finance Literacy | Two weeks |
| Final Exam | | |

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 |
|---------------|-------|--|
| Mod.9 | 1 | Checkpoint 1 (Non-graded) Lesson 9.1 Assignment Lesson 9.2 Assignment Lesson 9.3 Assignment Lesson 9.4 Assignment *Module Nine Summative Assessment *Module Nine Summative Assignment Upload |
| Mod.10 | 2 | Lesson 10.1 Assignment Lesson 10.2 Assignment Lesson 10.3 Assignment Lesson 10.4 Assignment *Module Ten Summative Assessment *Module Ten Summative Assignment Upload |

| Lesson | Weeks | Assignments |
|---------------|-------|---|
| Mod.11 | 3-4 | Lesson 11.1 Assignment Lesson 11.2 Assignment Lesson 11.3 Assignment Lesson 11.4 Assignment *Module Eleven Summative Assessment *Module Eleven Summative Assignment Upload Checkpoint 2 (Non-graded) |
| Mod.12 | 5-6 | Lesson 12.1 Assignment Lesson 12.2 Assignment Lesson 12.3 Assignment Lesson 12.4 Assignment Lesson 12.5 Assignment *Module Twelve Summative Assessment *Module Twelve Summative Assignment Upload |
| Mod.13 | 7-8 | Lesson 13.1 Assignment Lesson 13.2 Assignment Lesson 13.3 Assignment Lesson 13.4 Assignment Lesson 13.5 Assignment Lesson 13.6 Assignment Lesson 13.7 Assignment *Module Thirteen Summative Assessment *Module Thirteen Summative Assignment Upload |
| Mod.14 | 9-10 | Lesson 14.1 Assignment Lesson 14.2 Assignment Lesson 14.3 Assignment Lesson 14.4 Assignment *Module Fourteen Summative Assessment *Module Fourteen Summative Assignment Upload |
| Mod.15 | 11-12 | Lesson 15.1 Assignment Lesson 15.2 Assignment Lesson 15.3 Assignment Lesson 15.4 Assignment *Module Fifteen Summative Assessment *Module Fifteen Summative Assignment Upload |
| Mod.16 | 13-14 | Lesson 16.1 Assignment Lesson 16.2 Assignment Lesson 16.3 Assignment |

| Lesson | Weeks | Assignments |
|---------------|-------|--|
| | | Lesson 16.4 Assignment Lesson 16.5 Assignment Lesson 16.6 Assignment *Module Sixteen Summative Assessment *Module Sixteen Summative Assignment Upload |
| Mod.17 | 15-16 | Lesson 17.1 Assignment Lesson 17.2 Assignment Lesson 17.3 Assignment Lesson 17.4 Assignment Lesson 17.5 Assignment Lesson 17.6 Assignment Lesson 17.7 Assignment *Module Seventeen Summative Assessment *Module Seventeen Summative Assignment Upload Checkpoint 3 (Non-graded) |
| | | Final Exam |

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 9 Summative Assessment (20 points)
 - Module 9 Summative Assignment Upload (14 points)
 - Module 10 Summative Assessment (16 points)
 - Module 10 Summative Assignment Upload (12 points)
 - Module 11 Summative Assessment (16 points)
 - Module 11 Summative Assignment Upload (12 points)
 - Module 12 Summative Assessment (16 points)
 - Module 12 Summative Assignment Upload (18 points)
 - Module 13 Summative Assessment (18 points)
 - Module 13 Summative Assignment Upload (26 points)
 - Module 14 Summative Assessment (16 points)
 - Module 14 Summative Assignment Upload (16 points)
 - Module 15 Summative Assessment (16 points)
 - Module 15 Summative Assignment Upload (16 points)
 - Module 16 Summative Assessment (20 points)
 - Module 16 Summative Assignment Upload (24 points)
 - Module 17 Summative Assessment (20 points)
 - Module 17 Summative Assignment Upload (28 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.