



K-12
TEXAS TECH

Mathematics, Grade 8 B v8.0 – Syllabus

Course Name

MATHG8-B

Mathematics, Grade 8 B v8.0 – Semester B

Course Information

MATHG8-B is the second semester of this two-semester course.

Read, set, go! Grade 8 Pre-Algebra is all about training to run the race of high school math. Students will strengthen their skills in topics like linear relationships, functions, and equations, and learn new skills that prepare them for Algebra 1. This course is designed with interactive learning and real-world activities to strengthen students' math muscles for the race ahead.

Instructional time for Grade 8 Mathematics: Pre-Algebra will emphasize six areas:

1. representing numbers in scientific notation and extending the set of numbers to the system of real numbers, which includes irrational numbers
2. generate equivalent numeric and algebraic expressions including using the Laws of Exponents
3. creating and reasoning about linear relationships including modeling an association in bivariate data with a linear equation
4. solving linear equations, inequalities, and systems of linear equations
5. developing an understanding of the concept of a function
6. analyzing two-dimensional figures, particularly triangles, using distance, angle, and applying the Pythagorean Theorem

Course Delivery Method

Online

Contacting Your Instructor

You may contact your instructor using your Canvas Inbox. Technical support is available 24/7 at [TTU K-12](#).

Course Topics

After completing this course, the students should have increased knowledge of

- Determine if a linear relationship is also a proportional relationship
- Determine slope given a table, graph, or written description of a linear relationship
- Write an equation in slope-intercept form given a table, graph, or written description of a linear relationship
- Determine and interpret the slope and y-intercept of a two-variable linear equation from a written description, a table, a graph, or an equation in slope-intercept form
- Graph a two-variable linear equation from a written description, a table, or an equation in slope-intercept form
- Given a system of two linear equations and a specified set of possible solutions, determine which ordered pairs satisfy the system of linear equations
- Given a system of two linear equations represented graphically on the same coordinate plane, determine whether there is one solution, no solution, or infinitely many solutions
- Solve systems of two linear equations by graphing
- Given a set of ordered pairs, a table, a graph, or a mapping diagram, determine whether the relationship is a function.
- Identify the domain and range of the relation
- Analyze a written description or graphical representation of a functional relationship between two quantities and identify where the function is increasing, decreasing or constant
- Determine whether a function is a linear function given a graph, equation, or input-output table
- Construct a scatter plot or a line graph as appropriate for the context given a set of real-world bivariate numerical data
- Describe patterns of association given a scatter plot within a real-world context
- Informally fit a straight line given a scatter plot with a linear association
- Determine the sample space for a repeated experiment
- Find the theoretical probability of an event related to a repeated experiment
- Solve problems involving probabilities related to single or repeated experiments, including making predictions based on theoretical probability
- Given a preimage and image generated by a single transformation, identify the transformation that describes the relationship
- Describe and apply the effect of a single transformation on two-dimensional figures using coordinates and the coordinate plane

- Given a preimage and image generated by a single dilation, identify the scale factor that describes the relationship
- Solve problems involving proportional relationships between similar triangles

Textbook and Materials

No textbooks required. All content is within Canvas.

Materials

- Printer

Technical Requirements

- Internet access – preferably high speed (for accessing Canvas)
- browser (we recommend Chrome)
- supported browser plugins and settings
The following plugins and settings may be required to use our courses.
 - JavaScript enabled
 - Cookies enabled
 - Java installed
- Email
- Printing capabilities
- Adobe Reader (download from [Adobe](#))
- Audio and video capabilities (for watching/listening to course content)
- PDF app (free options available)

Technical Skill Requirements

Be comfortable with the following:

- accessing online learning materials via Canvas
- Internet search engines and browsers (we recommend Chrome)
- uploading assignments into Canvas (there will be instructions for uploading assignments)

Course Pacing

This course is designed to be completed in 18 weeks.

- Print this guide and use a calendar to fill in your goal dates for completing each Module.
- Note that you must have a grade of 70 or above on a Discussion-Based Assessment (DBA) in order to continue moving forward in the course. DBAs occur every other lesson.

- To achieve success, students are expected to submit work in each course weekly.
- Students can learn at their own pace; however, "any pace" still means that students must make progress in the course every week.
- Post the pace guide in a place where you and your Parent or Guardian will see it every day (on the refrigerator or next to the computer). Give yourself a check every time you complete a task, and celebrate your efforts!

Weeks	Lessons	Due Date (you write this in)
1	Checkpoint 1 (non-graded) 04.00 Linear Equations Introduction 04.01 Linear Relationships	
2	04.02 Slope 04.03 Slope-Intercept Form	
3	04.04 Graphing Linear Equations 04.05 Systems of Linear Equations	
4	04.06 Linear Equations Practice Exam 04.07 Linear Equations Discussion-Based Assessment 04.08 Linear Equations Exam	
5	05.00 Statistics and Probability Introduction 05.01 Identifying Functions	
6	05.02 Linear Functions 05.03 Scatter Plots	
7	05.04 Line of Fit 05.045 Sample Populations	
8	05.05 Theoretical Probability 05.06 Experimental Probability	
9	05.07 Statistics and Probability Practice Exam Checkpoint 2 (non-graded) 05.09 Statistics and Probability Exam	
10	06.00 Transformations Introduction 06.01 Identifying Transformations 06.02 Translations	
11	06.03 Reflections 06.04 Rotations	

Weeks	Lessons	Due Date (you write this in)
12	06.05 Dilations 06.06 Similar Triangles	
13	06.07 Transformations Practice Exam 06.08 Transformations Discussion-Based Assessment 06.09 Transformations Exam	
14	07.01 Simple and Compound Interest 07.02 Terms of a Loan	
15	07.03 Online Calculators 07.04 Financing Your Education Checkpoint 3 (non-graded)	
16	06.10 Final Practice Exam *Final Exam Part One and Part Two	
17	Floating Vacation Week	
18	Floating Vacation Week	

Course Credit

Your grade will be calculated as follows:

- formative assessments (50%)
- summative assessments (20%)
- summative final exam (30%)

Assignments are labeled as “summative” or “formative” under Grades in Canvas.

Course Completion and Extensions

- Students may not complete the course in less than 30 days.
- All courses expire 180 days 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.

Artificial Intelligence (AI) Use Policy

This policy covers any generative AI tool, such as ChatGTP, Elicit, Photo Math, etc. This includes text and artwork/graphics/video/audio, etc.

All work submitted in this course must be your own. You may not use artificial intelligence tools to complete your assignments in this course.

If an instructor suspects that an assignment is not the work of the student, it will receive a score of zero. The instructor will message the student or provide feedback on the assignment indicating the need to schedule a one-on-one video conference, during which the student will be required to demonstrate their skills or knowledge through an alternative or mutually agreed-upon assignment. The grade of the alternate or agreed upon assignment will be determined at the instructor's discretion with the highest possible score being 70%.

If it is determined that a student has violated final exam directions on Final Exam A or CBE Set 1, the exam will be scored as zero. The student may take Final Exam B or CBE Set 2 with the highest possible score being 70%.

The incident will be reported to Texas Tech K-12 Administration and documented in the student's file. Continued violations of Texas Tech University's Academic Integrity Policy will result in the removal of the student from the program.

Student/Parent Expectations

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

The following are prohibited while using the Canvas interface:

- spamming;
- hacking; and
- using TTU or Canvas email for commercial purposes;

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 Canvas Inbox for sending messages to your instructor.

Submitting Assignments

You will submit all assignments through Canvas, rather than by mail or email.

Technical Difficulties

Getting Help

For student assistance with Canvas, 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 Canvas server needs to be taken down for maintenance, the Canvas 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., Canvas 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 Canvas, so communication with your instructor is critical in these circumstances.