



Course Syllabus

Course Name: **7th Grade Advanced Math**

Teacher: **Mr. Lamb**

Room: **6**

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Welcome to 8th Grade Math S.Y. 2025 – 26

Course Overview:

In 7th grade advanced math, students will work at an accelerated rate to cover the content of both 7th and 8th grade math. They will build on their foundational math skills and explore more advanced topics, including linear equations, functions, and inequalities. Students will explore a wide range of mathematical concepts, including operations with integers, fractions, and decimals, as well as ratios, proportions, and percentages. They will also study algebraic expressions, systems of equations, real-world applications of rates and proportional relationships, and gain a deeper understanding of square roots and the Pythagorean theorem. Geometry topics such as area, perimeter, and volume as well as transformations, volume, and surface area of three-dimensional shapes. Additionally, students will analyze data using statistics and probability, preparing them for high school algebra and beyond. The course emphasizes problem-solving, critical thinking, and applying math concepts to real-life situations.

Supplies:

Students need to bring pencils of their choice, a notebook with dedicated space, a folder, and a charged chromebook to each class. If students wish to provide their own, they can also bring dry erase markers, a calculator, and other appropriate school supplies to be used when instructed. I will generally have paper, white boards, and calculators available. Other supplies may be needed for special projects or lessons, but adequate time will be given to acquire them.

Grading Breakdown:

The grade for the quarter will be determined by the following categories:

40% - Daily Work, 25% - Quizzes, 25% - Tests, 10% - Participation

Daily Work will include exit tickets, homework, and other activities. There will be two to three quizzes per quarter as determined by the schedule of lessons. One test will be given for each quarter and a final test will be given at the end of each semester. Participation will be determined by engagement during class, taking notes, and completion of activities.

Expectations of Students:

Students are expected to make their best efforts to be successful in the classroom and master the content. They should participate actively in the lessons. Students must follow all school rules in the classroom, and to consistently be safe and respectful.

Lessons will be made available on Google Classroom, and it is the responsibility of students to review these lessons when absent or as needed. Students may have homework two to three nights a week, and opportunities may be provided in the classroom to work on it. Students are responsible for ensuring assignments are completed by reviewing posted grades on PowerSchool. Students will use digital resources on Google Classroom, printed materials in the classroom, the iXL online program, their notebooks, and other provided resources.

Make-Up Work/Credit Due to Absences:

Generally, students have one day for each excused day absent in order to make up missed assignments. Classwork and learning continue during student absences. It is the responsibility of students to request make-up work from their teachers. If an assignment is due the day a student is absent, the assignment is due the day the student returns. Students can make arrangements to attend Targeted Assistance to address learning loss. If a quiz or test is missed due to absence, it is the responsibility of the student to schedule a time to make it up within one week. For planned absences, students should contact the teacher to collect work prior to the absence. Make-up work for unexcused absences, including suspension, is at the discretion of the teacher.

Cell Phones:

As stated in the student handbook, PAPA staff should not see or hear electronic devices during class time. Cell phones should not be accessed during instructional time, unless explicitly directed by the teacher. To do so is a disruption to the educational process for all in the classroom. Each teacher has their own procedure about where cell phones should be stored during the period. If needed, students will place their cellphones on the top of the teacher's table during class time. Cell phones may be used in exchange for a hall or restroom pass. When cell phones are brought to school, they are no longer solely personal property and are subject to search and seizure if the student is suspected of violating school rules or local law, including harassment, bullying, or drugs.

Academic Success:

Students must earn a 60% or higher semester grade in a class in order to “pass” the course. Demonstrating proficiency toward a standard or skill set, however, may be required at a level above 60% mastery. In math classes, students are expected to demonstrate mastery at 80% as Math is a subject that builds on prior skills. Large gaps in skills are difficult to remediate and negatively impact a student’s ability to master current and future concepts. If mastery is not demonstrated, students will participate in remediation to relearn the concepts and then retest over that standard/skill. Math and reading skills are remediated during Targeted Assistance during the school year. Students may be required to take Targeted Assistance, participate in academic tutoring or take a study hall class in lieu of arts electives if the student is performing below academic standards. All interventions are implemented to ensure students master course content and earn high grades.

Academic Rigor:

In 7th grade advanced math, academic rigor focuses on developing a deeper understanding of mathematical concepts and strengthening critical thinking skills. Students will be expected to analyze complex problems, justify their reasoning, and apply what they’ve learned to real-world situations. Lessons will challenge students to think beyond memorization by exploring multiple methods and making connections across topics such as algebra, geometry, and data analysis. Through persistence and active participation, students will gain the skills and confidence needed for success in high school mathematics and beyond.

Bloom’s Depth of Knowledge (DOK) Levels:

- Level 1 – Recall and Reproduction:
Students demonstrate basic understanding by recalling facts, formulas, or performing straightforward procedures—such as solving one-step equations or identifying properties of numbers and shapes.
- Level 2 – Skills and Concepts:
Students apply learned skills to slightly more complex situations. They may solve multi-step equations, interpret graphs, or compare mathematical methods to find the most efficient approach.
- Level 3 – Strategic Thinking:
Students use reasoning and logic to solve problems, justify solutions, and analyze patterns or relationships. They might explore functions, explain how changes in variables affect outcomes, or connect algebraic and geometric ideas.
- Level 4 – Extended Thinking:
Students engage in rich, multi-step tasks that require investigation, synthesis, and application over time. They might model real-world situations with systems of

equations, design and test mathematical experiments, or evaluate different solution strategies for complex problems.

Overview of Topics and Lessons:

- 7th Unit 1: Number Systems
 - Operations on Positive Rational Numbers
 - Addition and Subtraction of Integers
 - Multiplication and Division of Integers
 - Operations on Rational Numbers
- 8th Unit 1: Numerical Relationships
 - Investigating Patterns
 - Operations with Fractions
 - Powers and Roots
 - Rational Numbers
 - Rational and Irrational Numbers
 - Properties of Exponents
 - Scientific Notation
 - Operations with Scientific Notation
- 7th Unit 2: Expressions and Equations
 - Properties of Operations
 - Writing and Solving Equations
 - Solving and Graphing Inequalities
- 8th Unit 2: Equations
 - Writing Expressions
 - Solving Equations
 - Exploring Slope
 - Slope-Intercept Form
 - Proportional Relationships
- 7th Unit 3: Ratio and Proportion
 - Ration and Proportion
 - Proportional Reasoning
 - Proportional Relationships and Scale
 - Percent Problems
- 7th Unit 4: Geometry
 - Angle Pairs
 - Triangle Measurements
 - Similar Figures
 - Circles: Circumference and Area
 - Composite Area
 - Sketching Solids

- Volume - Prisms and Pyramids
- 8th Unit 3: Geometry
 - Angle-Pair Relationships
 - Angles of Triangles and Quadrilaterals
 - Introduction to Transformations
 - Rigid Transformations and Compositions
 - Similar Triangles
 - Dilations
 - The Pythagorean Theorem
 - Applying the Pythagorean Theorem
 - Converse of the Pythagorean Theorem
 - Surface Area
 - Volume of Solids
- 8th Unit 4: Functions
 - Introduction to Functions
 - Comparing Functions
 - Constructing Functions
 - Linear and Non-Linear Functions
- 7th Unit 5: Probability
 - Exploring Probability
 - Probability
 - Games and Probability
 - Estimating Probabilities
- 7th Unit 6: Statistics
 - Statistics
 - Exploring Sampling Variability
 - Comparative Statistics
- 8th Unit 5: Probability and Statistics
 - Scatter Plots and Association
 - Bivariate Data
 - Median-Median Line
 - Two-Way Tables and Association
- 7th Unit 7: Personal Financial Literacy
 - Budgeting and Money Management
- 8th Unit 6: Personal Financial Literacy
 - Managing Money