

Pre-Algebra

Grades:	7th – 10th
Prerequisites:	Middle-school level mathematics covering fundamentals Must know addition, subtraction, and multiplication facts up to 12 without using a calculator Must know how to add, subtract, multiply, and divide fractions and decimals Must know how to manipulate fractions, percents, and decimals
Day of Week:	Wednesday
Time of Class:	9:00-10:30 am EST
Length of Class:	30 weeks
Semester:	Fall, Winter, Spring
Tuition:	\$600.00
High School Credit:	1 mathematics

Class Dates:

Fall 2023:

Week 1: September 13

Week 2: September 20

No classes on September 27, October 4, 2023: Jewish High Holidays

Week 3: October 11

Week 4: October 18

Week 5: October 25

Week 6: November 1

Week 7: November 8

Week 8: November 15

No classes on November 22, 2023: Thanksgiving Holidays

Week 9: November 29

Week 10: December 6

Make-Up Day (if needed): December 13

Time off for Christmas and New Year's! Enjoy the holidays!

Winter 2024

Week 11: January 10

Week 12: January 17

Week 13: January 24

Week 14: January 31

Week 15: February 7

Week 16: February 14

Week 17: February 21

Week 18: February 28

Week 19: March 6

Week 20: March 13

Make-Up Day (if needed): March 20

Spring 2024

Please note that there are two breaks during this year's Spring term, for the observances of Eid and Passover.

Week 1: March 27

Week 2: April 3

No Classes on April 10, 2024: Eid (Muslim) Holiday – Eid Mubarak to our Muslim families!

Week 4: April 17

No Classes on April 24 and May 1, 2024: Spring Break – Happy Passover to our Jewish families!

Week 4: May 8

Week 5: May 15

Week 6: May 22

Week 7: May 29

Week 8: June 5

Week 9: June 12

Week 10: June 19

Make-Up Day (if needed): June 26

Instructor's Name:

Jonathan Meola

Instructor's Email:

jonathan@opententacademy.com

Instructor's Phone:

703-982-0684

Description of Class:

This course is a complete middle and high school pre-algebra course teaching concepts and skills necessary for success in subsequent math and science courses such as Algebra 1 and Geometry. This full-year course is designed for students who have completed a middle school mathematics sequence but are not yet ready to begin Algebra I. This course reviews key algebra concepts and skills from middle school mathematics and introduces basic Algebra I work with appropriate support. Students revisit concepts in numbers and operations, expressions and equations, ratios and proportions, and basic algebraic functions. Upon successful completion of the course, students are ready to begin a more formal high school Algebra I study.

Class Approach:

Students can learn math, have a good time doing it, and come away with an appreciation of its value as a tool for science, business, and everyday life. This class will help students to reach a deep understanding of math by encouraging them to investigate interesting problems and practice using problem-solving skills to make tough problems manageable.

Goals:

This class will prepare students for further study in math, science, as well as standardized tests.

Textbook:

Glencoe Pre-Algebra – **Fifth Edition**

Publication Date: **2003 version**

ISBN-10: 0-07-825200-8

ISBN-13: 978-0078252006

<https://www.directtextbook.com/isbn/0078252008>

Additional Supplies/Resources Needed:

Graph paper

Pencils

Access to a scientific graphing calculator (TI-83 or equivalent)

Access to a printer for printing out weekly assignments and assessments

Requirements:

Students should expect to spend approximately 5 – 6 hours per week on homework.

This comes to about an hour per day x 5-6 days per week

Weekly Homework:

Homework solutions will be published weekly.

Homework Policy:

Homework is designed to help the student master class material.

Homework solutions will be posted in Canvas (our LMS).

Understanding the class material and practicing the mathematics in the homework assignments will prepare the student well for quizzes and exams, which will be used to calculate student grades. As such, completion of homework assignments is important to mastering the topics and areas covered within this course.

Additional Policies:

Exams are closed book/note and will require a parent's signature validating that the student complied with parental proctoring.

Evaluation:

Four take-home quizzes (5% each, total of 20%)

Two midterm exams (20% each, for total of 40%)

Comprehensive final exam (40%)

Grading Scale:

90-100% = A

80-89% = B

70-79% = C

60-69% = D

0-59% = F

Anticipated Weekly Course Schedule:

Week	Topic (<i>Unit #s</i>)
Week 1	Reading Mathematics, Numbers & Expressions (1-1, 1-2)
Week 2	Properties, Variables & Equations (1-3, 1-4, 1-5)
Week 3	Ordered Pairs & Relations, Scatter Plots (1-6, 1-7)
Week 4	Integers & Absolute Value, Adding & Subtracting Integers (2-1, 2-2, 2-3)
Week 5	Multiplying & Dividing Integers, The Coordinate System (2-4, 2-5, 2-6)
Week 6	The Distributive Property, Simplifying Algebraic Equations, Solving Equations (Addition, Subtraction, Multiplication, Division) (3-1, 3-2, 3-3, 3-4)
Week 7	Solving & Writing Two-Step Equations, Using Formulas (3-5, 3-6, 3-7)
Week 8	Factors and Monomials, Powers & Exponents, Prime Factorization (4-1, 4-2, 4-3)
Week 9	Greatest Common Factor (GCF), Simplifying Algebraic Fractions (4-4, 4-5)
Week 10	Monomials, Negative Exponents, Scientific Notation (4-6, 4-7, 4-8) Midterm I (take-home exam under parental supervision)
Week	Topic (<i>Unit #s</i>)
Week 11	Writing Fractions as Decimals, Rational Numbers (Multiplying & Dividing) (5-1, 5-2, 5-3, 5-4)
Week 12	Adding & Subtracting Like Fractions, Least Common Multiple (LCM), Adding & Subtracting Unlike Fractions (5-5, 5-6, 5-7)
Week 13	Measures of Central Tendency, Solving Rational Number Equations, Arithmetic & Geometric Sequences (5-8, 5-9, 5-10)
Week 14	Ratios, Rates, Proportions, Scales (6-1, 6-2, 6-3)
Week 15	Fractions, Decimals, Percents, Using Percent Proportion, Finding Percents Mentally (6-4, 6-5, 6-6)
Week 16	Using Percent Equations, Percent of Change, Probability and Predictions (6-7, 6-8, 6-9)
Week 17	Solving Equations with Variables, Grouping Symbols, Inequalities (7-1, 7-2, 7-3)
Week 18	Solving Inequalities, Solving Multi-Step Inequalities (7-4, 7-5, 7-6)
Week 19	Functions, Linear Equations, Using Intercepts, Slope, Rate of Change (8-1, 8-2, 8-3, 8-4, 8-5)
Week 20	Slope-Intercept, Writing Linear Equations, Best-Fit Lines, Solving Systems of Equations, Graphing Inequalities (8-6, 8-7, 8-8, 8-9, 8-10) Midterm II (take-home exam under parental supervision)

Week	Topic (<i>Unit #s</i>)
Week 21	Square Roots, Real Numbers, Angles, Triangles, Pythagorean Theorem (9-1, 9-2, 9-3, 9-4, 9-5)
Week 22	Distance & Midpoint Formulas, Similar Triangles/Indirect Measurement, Sine/Cosine/Tangent Ratios (9-6, 9-7, 9-8)
Week 23	Line/Angle Relationships, Congruent Triangles, Transformations on Coordinate Plane, Quadrilaterals (10-1, 10-2, 10-3, 10-4)
Week 24	Area: Parallelograms, Triangles, Trapezoids; Polygons; Circles: Area & Circumference; Irregular Figures (10-5, 10-6, 10-7, 10-8)
Week 25	3-D Figures; Volumes & Surface Areas (Prisms, Cylinders, Pyramids, Cones) (11-1, 11-2, 11-3, 11-4, 11-5)
Week 26	Similar Solids, Precision & Significant Digits, Stem-Leaf Plots, Measures of Variation, Box-Whisker Plots (11-6, 11-7, 12-1, 12-2, 12-3)
Week 27	Histograms, Misleading Statistics, Counting Outcomes, Permutations & Combinations, Odds, Probability of Compound Events (12-4, 12-5, 12-6, 12-7, 12-8, 12-9)
Week 28	Polynomials (Adding, Subtracting, Multiplying by Monomials) (13-1, 13-2, 13-3, 13-4)
Week 29	Linear & Nonlinear Functions; Graphic Quadratic and Cubic Functions (13-5, 13-6)
Week 30	End of Year Review Final Exam (take-home exam under parental supervision)