



# **ALGEBRA 1**

## **COURSE SYLLABUS**

**GRADE LEVEL:** 8

**SCHOOL YEAR:** 2023 - 2024

**TEACHER:** DR. ISAAC MATERE

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### **COURSE DESCRIPTION:**

Algebra I is a course that students are required to make the transition from arithmetic to the new world of symbols. Symbolic reasoning and calculations with symbols are central in this course. The Common Core State Standards are adopted for students and teachers to achieve higher expectations.

Through the study of Algebra, students develop an understanding of the symbolic language of mathematics. Use properties of rational exponents, rational and irrational numbers. Interpret and create the structure, and perform arithmetic on linear and quadratic polynomials. Interpret, analyze, and solve linear, absolute value equations and inequalities, and quadratic and exponential equations. Construct and compare linear, quadratic, and exponential models. Use scatter plots to fit and interpret correlation coefficients, and summarize, represent, and interpret data using measures of center and spread. In addition, algebraic skills and concepts are developed and used in a wide variety of problem-solving situations. It gives students a solid foundation for exploring and understanding Geometry, Algebra II, and Calculus in future grades.

### **COURSE OBJECTIVES:**

To enable students, communicate in mathematics. Students need to listen, speak, read and write math just like any other language. They will be asked to utilize this math language to express the real-life problem, to construct a model to solve the problem, and to find the solution of the problem. Throughout the learning process, hope they can enjoy this efficient and very powerful language. In addition, student's use units, interpret them consistently in formulas as a way to understand problems and to guide the solution of multi-step problems. Use the structure of an expression to interpret complicated problems such as terms, factors, coefficients by viewing one or more of their parts as a singular entity. Factor a quadratic expression using factoring, complete the square, or formula method. Create equations in one, two or more variables to solve problems and to represent relationships between quantities; graph equations on coordinate axes with labels and scales. Understand a function (linear, quadratic, exponential), and use function notation, to evaluate for inputs in their domains, and interpret statements that use function notation in terms of a context. Write arithmetic and geometric sequences both recursively and with an explicit formula, and use them to model situations, and translate between the two of them. Understand and apply Pythagorean theorem.

### **ASSESSMENT:**

Tests and Quarterly Exams are announced in advance. Pop Quizzes are unannounced and can be given at any time during the class so students must come to class prepared. ALL Tests, Exams and Quizzes are cumulative so students are responsible for staying current and prepared of the previous scopes and lessons learned.

Homework/Classwork/Seatwork are graded based on completion and completing by the due dates. Students are responsible for checking the assignments' due dates posted on Google Classroom. Students are expected to be prepared to turn-in any work by the due date class time even if the Teacher did not collect the work at the due date. Actual work turn-in may be after the original due date, in which any incomplete work is well late. Any missing, incomplete or late works are counted with 10% or more penalty with due dates as posted on the Google Classroom. Students MUST submit "Mark as Done" in Google Classroom for each assignments posted. Not submitting "Done" count as Incomplete with 10% penalty. Additional 10% are penalized for each day for late turn-in work. Actual work turn-in may be after the original due date, in which any incomplete work is well late. No late work is accepted 3 days after the due dates posted. Students who are absent are responsible for keeping up with the class by doing the work as assigned on Google Classroom.

Students who miss the scheduled Test or Quarterly Exam must make-up the exam on return at the earliest. If the student does not make-up the exam at the earliest on return, then penalty may be deducted from the exam score. The make-up test/exam may be different and more challenging than the originally scheduled test/exam. The student grades are assigned as the following:

1. Tests and Pop Quizzes	30%
2. Homework/Classwork/Seatwork /Projects	30%
3. Quarterly Exam	30%
4. Deportment	10%
Total Grade	100%

### **PRIMARY TEXTBOOK & OTHER RESOURCES**

ALGEBRA 1— Common Core (Big Ideas Learning, 2022)

Ron Larson and Laurie Boswell, Algebra 1 – Resources by chapter

Ron Larson and Laurie Boswell, Algebra 1 – Assessment Book

Ron Larson and Laurie Boswell, Algebra 1 – Practice workbook and Test Preparation

[www.bigideasmath.com](http://www.bigideasmath.com)

### **ADDITIONAL INFORMATION**

Students are required to check the subject's Google Classroom regularly for assignments and announcements. Regular correspondences are conducted with the school's Gmail. A Class link/code: will be given for students to join Google classroom.

Students are required to come to class prepared with at least the standard school supplies:

Stationary:

1. Notebook - A Decent Notebook At least 60 to 80 pages - the wire bind ones are very convenient for the students to take notes during every lesson and to do some examples before they start with the classwork or homework assignments
2. File A 60 to 80 Plastic Pocket folder (Flip file) is preferred to keep all tear out assignments and tests together for the whole year
3. Ruler
4. Blue/black pen and pencil (only pens are allowed during tests)
5. Red pen for marking
6. Home online access (Computer/Laptop/Notepad/) to get into Google Classroom and other online websites. Codes will be given later on to get access to the Algebra 1 E-book.
7. Calculator: The CASIO fx-991ES Plus NATURAL-V.P.A.M is suggested to use in Grades 8 (You will be informed when to bring to school) and 9. From Grade 10 onwards a more advanced calculator will be introduced. Other resources may be required when instructed by your teacher.

**Academic Dishonesty** means employing a method or technique or engaging in conduct in an academic endeavor that contravenes the standards of ethical integrity expected at DIS. Academic dishonesty includes but is not limited to, the following:

1. Purposely incorporating the ideas, words of sentences, paragraphs, or parts thereof without appropriate acknowledgment and representing the product as one's own work; and
1. Representing another's intellectual work such as photographs, paintings, drawings, sculpture, or research or the like as one's own, including failure to attribute content to an AI.
2. Employing a tutor, making use of Artificial Intelligence without acknowledgement, getting a parent to write a paper or do an assignment, paying for an essay to be written by someone else and presented as the student's own work.
3. Committing any act that a reasonable person would conclude, when informed of the evidence, to be a dishonest means of obtaining or attempting to obtain credit for academic work.

**Any act of academic dishonesty will result in an automatic zero on the entire assignment**

## **1st QUARTER – TENTATIVE COURSE CONTENT**

<i>(NB: Depending on time and interest, the teacher may delete and/or add other selections.)</i>	
Week / Date	Topic / Projects / Assessments
<b>Week 1</b> <b>Aug 10<sup>th</sup> to 11<sup>th</sup></b> <b>Only 2 School Days</b> <i>10 ~ First Day / Orientation Day</i>	First Day of School/Orientation Day Class rules New student orientation
<b>Week 2</b> <b>Aug 14<sup>th</sup> to 18<sup>th</sup></b> <i>15 ~ Opening Mass</i>	1-1 Solving Simple Equations 1-2 Solving Multiple-Step Equations 1-3 Modeling Quantities Weekly Test
<b>Week 3</b> <b>Aug 21<sup>st</sup> to 25<sup>th</sup></b>	Accuracy with Measurements 1-4 Accuracy with Measurements 1-5 Solving Equations with Variables on Both Sides 1-6 Solving Absolute Value Equations Weekly Test
<b>Week 4</b> <b>Aug 28<sup>th</sup> to Sep 1<sup>st</sup></b>	1-7 Rewriting Equations and Formulas 2-1 Writing and Graphing Inequalities 2-2 Solving Inequalities Using addition or Subtraction 2-3 Solving Inequalities Using Multiplication or Division Weekly Test
<b>Week 5</b> <b>Sep 4<sup>th</sup> to 8<sup>th</sup></b> <i>8 ~ Holy Mass &amp; VIP Induction</i>	2-4 Solving Multi-Step Inequalities 2-5 Solving Compound Inequalities 2-6 Solving Absolute Value Inequalities Weekly Test
<b>Week 6</b> <b>Sep 11<sup>th</sup> to 15<sup>th</sup></b> <i>12-14 ~ Pre-Exam Days</i>	3-1 Functions 3-2 Characteristics of Functions 3-3 Linear Functions 3-4 Function Notation Weekly Test
<b>Week 7</b> <b>Sep 18<sup>th</sup> to 22<sup>nd</sup></b>	3-5 Graphing Linear Equations in Standard Form 3-6 Graphing Linear Equations in Slope-Intercept form 3-7 Transformations of linear Functions 3-8 Graphing Absolute Value Functions Weekly Test
<b>Week 8</b> <b>Sep 25<sup>th</sup> to 29<sup>th</sup></b> <b>No Classes</b> <i>25-28 ~Teacher's Conference</i> <i>29 ~ Moon Festival Holiday</i>	Teacher's conference Moon Festival Holiday

<b>Week 9</b> <b>Oct 2<sup>nd</sup> to 6<sup>th</sup></b> <u><b>3 Days of Class</b></u> <i>5-6 ~Q1 Exams</i>	Review of Quarter 1 Exam Quarter 1 Exam
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## **2<sup>nd</sup> QUARTER – TENTATIVE COURSE CONTENT**

<i>(NB: Depending on time and interest, the teacher may delete and/or add other selections.)</i>	
<b>Week / Date</b>	<b>Topic / Projects / Assessments</b>
<b>Week 1 (10)</b> <b>Oct 9<sup>th</sup> to 13<sup>th</sup></b> <u><b>3 Days of Class</b></u> <i>9-10 – Double 10 Holiday</i>	4-1 Writing Equations in Slope-Intercept Form 4-2 Writing Equations in Point-Slope Form Weekly Test
<b>Week 2 (11)</b> <b>Oct 16<sup>th</sup> to 20<sup>th</sup></b>	4-3 Writing Equations of Parallel and Perpendicular Lines 4-4 Scatter Plots and Lines of Fit Weekly Test
<b>Week 3 (12)</b> <b>Oct 23<sup>rd</sup> to 27<sup>th</sup></b>	4-5 Analyzing Lines of Fit 4-6 Arithmetic Sequences 4-7 Piecewise Functions Weekly Test
<b>Week 4 (13)</b> <b>Oct 30<sup>th</sup> to Nov 3<sup>rd</sup></b> <i>1 - All Saint's Day Mass</i>	5-1 Solving Systems of Linear Equations by Graphing 5-2 Solving Systems of Linear Equations by Substitution Weekly Test
<b>Week 5 (14)</b> <b>Nov 6<sup>th</sup> to 10<sup>th</sup></b>	5-3 Solving Systems of Linear Equations by Elimination 5-4 Solving Special Systems of Linear Equations 5-5 Solving Equations by Graphing Weekly Test
<b>Week 6 (15)</b> <b>Nov 13<sup>th</sup> to 17<sup>th</sup></b>	5-6 Graphing Linear Inequalities in Two Variables 5-7 Systems of Linear Inequalities 6-1 Properties of Exponents Weekly Test
<b>Week 7 (16)</b> <b>Nov 20<sup>th</sup> to 24<sup>th</sup></b>	6-2 Radical and Rational Exponents 6-3 Exponential Functions Weekly Test
<b>Week 8 (17)</b> <b>Nov 27<sup>th</sup> to Dec 1<sup>st</sup></b>	6-4 Exponential Growth and Decay 6-5 Solving Exponential Equations Weekly Test
<b>Week 9 (18)</b> <b>Dec 4<sup>th</sup> to 8<sup>th</sup></b> <i>8 - Foundation Day Celebrations</i>	6-6 Geometric Sequences 6-7 Recursively Defined Sequences Weekly Test
<b>Week 10 (19)</b> <b>Dec 11<sup>th</sup> to 15<sup>th</sup></b> <u><b>3 Days of Class</b></u> <i>14-15 ~ Q2 Exams</i>	Review of Quarter 2 Exam Quarter 2 Exam
<b>Dec 18<sup>th</sup> to Jan 1<sup>st</sup></b>	<b>Christmas Holiday</b>

### 3rd QUARTER – TENTATIVE COURSE CONTENT

(NB: Depending on time and interest, the teacher may delete and/or add other selections.)

Week / Date	Topic / Projects / Assessments
<b>Week 1 (20)</b> <b>Jan 3<sup>rd</sup> to 5<sup>th</sup></b> <u><b>3 Days of Class</b></u> <i>4 ~ New Year Mass</i>	7-1 Adding and Subtracting Polynomials 7-2 Multiplying and Dividing Polynomials Weekly Test
<b>Week 2 (21)</b> <b>Jan 8<sup>th</sup> to 12<sup>th</sup></b>	7-3 Special Product of Polynomials 7-4 Solving Polynomials Equations in Factored Form Weekly Test
<b>Week 3 (22)</b> <b>Jan 15<sup>th</sup> to 19<sup>th</sup></b>	7-5 Factoring $x^2 + bx + c$ 7-6 Factoring $ax^2 + bx + c$ Weekly Test
<b>Week 4 (23)</b> <b>Jan 22<sup>nd</sup> to 26<sup>th</sup></b>	7-7 Factoring Special Products 7-8 Factoring Polynomials Completely Weekly Test
<b>Week 5 (24)</b> <b>Jan 29<sup>th</sup> to Feb 2<sup>nd</sup></b>	8-1 Graphing $f(x) = ax^2$ 8-2 Graphing $f(x) = ax^2 + c$ Weekly Test
<b>Week 6 (25)</b> <b>Feb 5<sup>th</sup> to 9<sup>th</sup></b> <u><b>3 Days of Class</b></u> <i>8-9 ~ CNY</i>	8-3 Graphing $f(x) = ax^2 + bx + c$ 8-4 Graphing $f(x) = a(x - h)^2 + k$ Weekly Test
<b>Feb 8<sup>th</sup> to 16<sup>th</sup></b>	<b>CNY Holiday</b>
<b>Week 7 (26)</b> <b>Feb 19<sup>th</sup> to 23<sup>rd</sup></b> <i>19 ~ Lenten Mass</i> <i>21-23 ~ Pre-Exam Days</i>	8-5 Using Intercept Form 8-6 Comparing Linear, Exponential, and Quadratic Functions Weekly Test
<b>Week 8 (27)</b> <b>Feb 26<sup>th</sup> to March 1<sup>st</sup></b> <u><b>4 Days of Class</b></u> <i>28 ~ 228 Memorial Day Holiday</i>	Review of Quarter 3 Exam
<b>Week 9 (28)</b> <b>March 4<sup>th</sup> to 8<sup>th</sup></b> <u><b>4 Days of Class</b></u> <i>8 ~ Q3 Exams</i>	Quarter 3 Exam

## 4th QUARTER – TENTATIVE COURSE CONTENT

(NB: Depending on time and interest, the teacher may delete and/or add other selections.)

Week / Date	Topic / Projects / Assessments
<b>Week 1 (29)</b> <b>March 11<sup>th</sup> to 15<sup>th</sup></b> <u><b>4 Days of Class</b></u> <i>11 ~ Q3 Exams</i> <i>12 ~ Q4 Begins</i>	9-1 Properties of Radicals 9-2 Solving Quadratic Equations by Graphing 9-3 Solving Quadratic Equations Using Square Roots Weekly Test
<b>Week 2 (30)</b> <b>March 18<sup>th</sup> to 22<sup>nd</sup></b> <i>18-21 ~ Fire Drill</i>	9-4 Solving Quadratic Equations by Completing the Square 9-5 Solving Quadratic Equations Using the Quadratic Formula 9-6 Solving Nonlinear Systems of Equations Weekly Test
<b>March 25<sup>th</sup> to Apr 5<sup>th</sup></b>	<b>Easter Holiday</b>
<b>Week 3 (31)</b> <b>Apr 8<sup>th</sup> to 12<sup>th</sup></b> <i>10 ~ Easter Mass</i>	10-1 Graphing Square Root Functions 10-2 Graphing Cube Root Functions 10-3 Solving Radical Equations Weekly Test
<b>Week 4 (33)</b> <b>Apr 15<sup>th</sup> to 19<sup>th</sup></b>	10-4 Inverse of A Function 11-1 Measure of Center and Variation 11-2 Box-and-Whisker Plots Weekly Test
<b>Week 5 (34)</b> <b>Apr 22<sup>th</sup> to 26<sup>th</sup></b> <i>22-26 ~ AP Mock Exams</i>	11-3 Shapes of Distributions 11-4 Two-Way Tables Weekly Test
<b>Week 6 (35)</b> <b>Apr 29<sup>th</sup> to May 3<sup>rd</sup></b> <i>1-2 ~ Pre-Exam</i> <i>1-10~ Final Exams (K, 5, 8, 12 only)</i> <i>4/29 – 5/10 ~ AP Exams</i>	11-5 Choosing a Data Display Weekly Test
<b>Week 7 (36)</b> <b>May 6<sup>th</sup> to 10<sup>th</sup></b> <i>1-10~ Final Exams (K, 5, 8, 12 only)</i> <i>4/29 – 5/10 ~ AP Exams</i>	Review of Quarter 4 Exam Quarter 4 Exam
<b>Week 8 (37)</b> <b>May 13<sup>th</sup> to 17<sup>th</sup></b> <u><b>2 Days of Class</b></u> <i>15-16 ~ Q4 Exams</i> <i>17 ~ Record Day</i>	Quarter 4 Exam for other Grades
<b>Week 9 (38)</b> <b>May 20<sup>th</sup> to 24<sup>th</sup></b> <u><b>ACTIVITIES:</b></u> Double check the school calendar and emails from the administration.	----- <i>20-24 ~ Student Clearance Days</i> <i>21 ~ Baccalaureate Mass for Graduating classes</i> <i>22 &amp; 23 ~ Middle &amp; High School Sports Day</i> <i>23 ~ Pre-Kindergarten &amp; Gr. 1 - 4 Recognition/Kindergarten Graduation/Gr. 5 Promotion</i> <i>24 ~ Gr. 6 – 7 Recognition and Gr. 8 Graduation</i> <i>24 ~ Lower School Sports Day</i>
<b>Week 10 (39)</b> <b>May 27<sup>th</sup> to 31<sup>st</sup></b> <u><b>ACTIVITIES:</b></u> Double check the school calendar and emails from the administration.	----- <i>27 ~ House Culminating Activity</i> <i>28 ~ Gr. 9-11 Recognition and Gr. 12 Graduation</i> <i>29 ~ Class Party</i> <i>30 ~ Last Day of School &amp; Report Card Distribution (half day)</i> <i>31 ~ Teachers/Staff Meeting</i>