



The Facing History School

Algebra $\frac{1}{2}$ Syllabus



Teachers: Keysi and Danielle

Description:

This course provides students with an opportunity to engage in meaningful mathematical investigations, critical thinking and problem solving. Topics in this course include recognizing and developing patterns using tables, graphs and equations. In addition, students will explore operations on algebraic expressions, apply mathematical properties to algebraic equations, solve problems using equations, graphs and tables to investigate linear relationships. Technology will be used to introduce and expand upon the areas of study listed above.

Units of Study:

Unit 1: Introduction to Algebra at FHS

Unit 2: Solving Linear Equations & Inequalities in One Variable

Unit 3: Introduction to Functions

Unit 4: Linear Functions

Unit 5: Systems of Equations

Unit 6: Linear Inequalities and Systems of Linear Inequalities

Classroom Policies:

- ❖ Be on time.
- ❖ Do not talk when someone else is talking.
- ❖ Come prepared with required classroom materials.
- ❖ Stay on task
- ❖ NO CELL PHONES
- ❖ Be in uniform
- ❖ Always be courteous, considerate, and respectful toward others and their property.

Classroom Procedures and Expectations:

1. Tardies

A student is tardy to class if they are not physically in the classroom and ready to begin when the bell rings (Except for first period, tardie after 9:00 am). After 3 tardies, there will be a conference with dean and guidance counselor and parent/guardian will be called.

When late, student must have a pass. If you do not have a pass, you will be marked as an unexcused tardy.

2. Absent to Class

Planned Absence = you know you are going to be absent (e.g. doctor's appointment)

Make sure you let us know so we can give you the missing work. Documentation must be provided at your return.

Unplanned Absence = you are absent but did not anticipate or expect it (e.g. illness)

You must email your teachers and at your return, you must make up the missing work.

3. Headphones

Headphones should not be visible on your body. Headphones are not allowed in your ears, draped around your ears, and all the other possible ways to wear headphones.

4. Uniform

You must be in uniform before entering the room. You are expected to follow the school uniform policy in this class. If your shirt or pants are out of uniform (including hoodies), you will be sent to the admin offices to receive an appropriate uniform.

5. Bathroom/Water Fountain Policy

Students must ask permission to leave the classroom during the class period. Only one student will be allowed out of the classroom at a time. No students can use the bathroom during the first 10 minutes of class or last 10 minutes of class. You ALWAYS need a pass whenever you leave the classroom.

6. Homework, Quizzes and Exams

Homework will be assigned everyday. Quizzes are given every Friday, unless there is not class on a Friday, then the quiz will be given on a Thursday. There are final unit exams and end of semesters exams.

Students can take missed quizzes with documentation for full credit and without documentation for up to 80% of the grade.

Consequences for not following these rules will be as follows:

- 1.) Verbal Warning
- 2.) One-on-one conversation
- 3.) Call home and/or sent to Courtney or admin office.

Grading Policy

Category	Examples	Grade Percentage
Learning Activities	Classwork, Homework, Reflections	40%
Formative Assessments	Quizzes, Inquiry/Problem Solving	30%
Summative Assessments	Exams, Projects	30%

Final Grades

A+ 97-100	B+ 87-89	C+ 77-79	Fail 0-64
A 93-96	B 83-86	C 73-76	
A- 90-92	B- 80-82	C- 65-72	

Extra Help: We are here to help.

Tutoring will be available during lunch the following days:

Tuesday: Keysi - Room 237

Wednesday: Danielle - Room 237

Year at a Glance

Unit 1: Introduction to Algebra at FHS

Essential Question: What is Math?

Time Frame: 10 days

Unit Final Exam: October 5, 2018

Standards	Learning Targets
<p>PBAT Rubric Reasoning and Proof: I can justify my mathematical arguments logically.</p> <p>Problem Solving: I can select and analyze appropriate strategies to solve non-routine problems.</p> <p>CCSS: <u>N-RN.B.3</u> Use properties and operations to understand the different forms of rational and irrational numbers.</p> <p><u>A-SSE.A.1</u> Interpret expressions that represent a quantity in terms of its context</p> <p><u>A-SSE.A.2</u> Interpret expressions by viewing one or more of their parts as a single entity</p>	<p>LT 1: I can investigate mathematical prompts through inquiry to prove conjectures.</p> <p>LT 2: I can select and analyze appropriate strategies to solve non-routine problems.</p> <p>C 1.1: I can use properties and operations to understand rational numbers.</p> <p>C 1.2: I can interpret expressions that represent quantity in terms of its context.</p> <p>C 1.3: Interpret expressions by viewing one or more of their parts as a single entity.</p>

Unit 2: Solving Linear Equations & Inequalities in One Variable

Essential Question: How do we distinguish the difference between equality and inequality?

Time Frame:

Unit Final Exam:

Standards	Learning Targets
<p>PBAT Rubric: Connection: Demonstrates an in-depth understanding of the relationships between mathematical concepts, procedures, and/or strategies.</p> <p>Representation: Creates an accurate mathematical representation(s), inherent to the task, to solve problems or portray solutions.</p> <p>CCSS: <u>A-CED.A.1</u> Create equations and inequalities in one variable to represent a real-world context.</p> <p><u>A-REI.A.1a</u> Explain each step when solving a linear or quadratic equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.</p> <p><u>A-CED.A.3</u> Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context.</p> <p><u>A-REI.B.3</u> Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.</p>	<p>T 1: I can demonstrate understanding relationships between mathematical concepts and procedures.</p> <p>T 2: I can demonstrate understanding relationships between mathematical concepts and strategies.</p> <p>T 3: I can create an accurate mathematical representation(s), fundamental to the task, to solve problems or portray solutions.</p> <p>T 4: I can demonstrate an in-depth understanding of the relationships between mathematical concepts, procedures, and/or strategies.</p> <p>C 1.1: I can explain the difference between an equation and inequality given a world problem.</p> <p>C 1.2: I can create equations or inequalities in one variable to represent a real-world context.</p> <p>C 1.3: I can solve equations in one variable.</p> <p>C 1.4: I can solve inequalities in one variable.</p> <p>C 1.5: I can explain each step when solving a linear equation or inequality as following from the the previous step.</p>

Unit 3: Introduction to Functions

Essential Question: Why do we categorize relationships?

Time Frame:

Unit Final Exam:

Standards	Learning Targets
<p>PBAT Rubric</p> <p>Reasoning & Proof: Makes valid conceptual/theoretical argument(s) and mathematically justifies it logically and thoroughly.</p> <p>Connection: Demonstrates an in-depth understanding of the relationships between mathematical concepts, procedures, and/or strategies</p> <p>CCSS</p> <p><u>F-IF.A.1</u> Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range.</p> <p><u>F-IF.A.2</u> Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.</p>	<p>T 1: I can make a valid mathematical argument.</p> <p>T 2: I can justify my mathematical arguments logically and detail.</p> <p>T 3: I can demonstrate an in-depth understanding of the relationships between mathematical concepts, procedures, and/or strategies</p> <p>C 2.1: I can identify when a relation is a function.</p> <p>C 2.2: I can evaluate functions and interpret function notation.</p> <p>C 2.3: I can identify functions and its key features of their graphs.</p>

Unit 4: Linear Functions

Essential Question: How can a relationship be defined as linear?

Time Frame:

Unit Final Exam:

Standards	Learning Targets
<p>PBAT Rubric:</p> <p>Connections: Demonstrates an understanding of the relationships between mathematical concepts, procedures, and/or strategies.</p> <p>Communication: Always uses mathematical language and notations accurately.</p>	<p>Required skills:</p> <p>R 1: I can label quadrants, axis, coordinates, and scale of the coordinate plane.</p> <p>R 2: I can plot points in a coordinate plane.</p> <p>T 1: I can demonstrate understanding relationships between mathematical concepts and procedures.</p>

<p>Always clearly explains mathematical thinking in an organized and detailed way.</p> <p>CCSS: <u>F-BF.A.1</u> Write a function that describes a relationship between two quantities.</p> <p><u>A-REI.D.10</u> Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane.</p> <p><u>F-IF.B.6</u> Calculate and interpret the average rate of change of a function presented over a specified interval.</p> <p><u>F-IF.A.2</u> Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.</p> <p><u>F-IF.C.7</u> Graph functions and show key features of the graph by hand</p> <p><u>A-SSE.A.2</u> Recognize and use the structure of an expression to identify ways to rewrite it.</p>	<p>T 2: I can demonstrate understanding relationships between mathematical concepts and strategies.</p> <p>T 3: I can use mathematical language and notations accurately.</p> <p>T 4: I can clearly explain mathematical thinking in an organized and detailed way.</p> <p>C 4.1: I can write a function that describes a relationship between two quantities.</p> <p>C 4.2: I can solve equations graphically.</p> <p>C 4.3: I can calculate the average rate of change of a function given different representations.</p> <p>C 4.4: I can interpret the average rate of change of a function given different representations.</p> <p>C 4.5: I can graph functions and show key features of the graph by hand.</p> <p>C 4.6: I can recognize and use the structure of an expression to identify ways to write the equation of a line.</p>
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Unit 5: Systems of Equations

Essential Question: What impacts my choices?

Time Frame:

Unit Final Exam:

Standards	Learning Targets
<p>PBAT Rubric Reasoning and Proof: I can justify my mathematical arguments logically.</p> <p>Problem Solving: I can select and analyze appropriate strategies to solve non-routine problems.</p> <p><u>ALA.REI 6a.</u> Solve systems of linear equations in two variables both algebraically and graphically.</p>	<p>LT 1: I can justify my mathematical arguments logically.</p> <p>LT 2: I can select and analyze appropriate strategies to solve non-routine problems.</p> <p>C 5.1: I can interpret solutions as possible or impossible options in a model.</p> <p>C 5.2: I can create equations in two variables to represent a real world context.</p>

<p><u>A-CED.A.2</u> Create equations and linear inequalities in two variables to represent a real-world context.</p> <p><u>A-CED.A.3</u> Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context.</p>	<p>C 5.3: I can solve systems of linear equations in two variables graphically.</p> <p>C 5.4: I can solve systems of linear equations in two variables algebraically.</p>
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Unit 6: Linear Inequalities and Systems of Linear Inequalities

Essential Question: How does a region satisfy constraints?

Time Frame:

Unit Final Exam:

Standards	Learning Targets
<p>PBAT Rubric: Connections: Demonstrates an understanding of the relationships between mathematical concepts, procedures, and/or strategies.</p> <p>Communication: Always uses mathematical language and notations accurately.</p> <p>Always clearly explains mathematical thinking in an organized and detailed way.</p> <p>CCSS: <u>A-CED.A.2</u> Create equations and linear inequalities in two variables to represent a real-world context.</p> <p><u>A-CED.A.3</u> Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context.</p> <p><u>A-REI.D.12</u> Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes</p>	<p>T 1: I can demonstrate understanding relationships between mathematical concepts and procedures.</p> <p>T 2: I can demonstrate understanding relationships between mathematical concepts and strategies.</p> <p>T 3: I can use mathematical language and notations accurately.</p> <p>T 4: I can clearly explain mathematical thinking in an organized and detailed way.</p> <p>C 6.1: I can interpret solutions as possible or impossible options in a model.</p> <p>C 6.2: I can create linear inequalities in two variables to represent a real-world context.</p> <p>C 6.3: I can graph the solutions to a linear inequality in two variables graphically.</p> <p>C 6.4: I can graph the solution set to a system of linear inequalities in two variables graphically</p>

Student-Parent-Teacher Agreement Form

I. Student

I have read the syllabus and understand what is expected of me to be successful this semester in Algebra $\frac{1}{2}$ class.

Student Name (print): _____

Student Signature: _____

II. Parent

My child and I have reviewed and understand the class policies and expectations on the syllabus for Algebra $\frac{1}{2}$ class.

Parent/Guardian Name (print): _____

Parent/Guardian Signature: _____

Best Contact Numbers:

Home: _____ (Best time to contact from ____ to ____)

Cell: _____ (Best time to contact: from ____ to ____)

Work: _____ (Best time to contact: from ____ to ____)

Email Address: _____

Please write one goal for your child in Algebra $\frac{1}{2}$ class:

How you will support your child to reach this goal?
