



# Individualized Educational Services

Education Center  
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## Fall 2019 Algebra I Syllabus “Patterns of Nature”

Class Summary	
<b>Dates &amp; Times:</b>	Mondays & Wednesdays 12:30 pm - 1:45 pm
<b>Costs:</b>	\$37.50 per day Pre-Pay (less group discount), \$40 Drop-in. No material / registration fee.
<b>Instructor:</b>	Jonathan Gush; <a href="mailto:jonathan@ies-tutor.com">jonathan@ies-tutor.com</a>
<b>Credits:</b>	5 Units of High School Math, Algebra I, aligned to UC / CSU academic area “C”
<b>Texts:</b>	Big Ideas Math <i>Algebra I</i> ISBN 1608408388* Big Ideas Math <i>Algebra I Student Record &amp; Practice Journal</i> * Instructor Created Supplemental Materials
<b>Key Assignments:</b>	Vocabulary Study, Class Participation, Homework Assignments, Math Application Project or Mathematician Project, Individualized Support Work
<b>Key Assessments:</b>	Portfolio Review & Reflection or Chapter Quizzes, Vocabulary Quizzes, & Chapter Tests
<b>Google Classroom:</b>	juyzfui

\* These are available at <http://bim.eassymaterials.com> free of cost

### Course Outcomes:

1. Students will demonstrate the processes of algebra to solve problems, over the direct to the solution of memorizing facts from prior grade levels.
2. Students will use academic vocabulary and math vocabulary to explain what they know and approaches to solve a problem. Students will also know the fundamental theorems of algebra and explain how to use them to solve items.
3. Students will understand linear algebra and use symbols and visual representations to model different examples on number lines and coordinate planes.
4. Students will understand the differences and rationals for using one variable models versus two variable models and their applications in real-life scenarios.
5. Students will understand the difference and rationals for using equations versus inequalities models and their applications in real-life scenarios.
6. Students will understand the construct of integers as a human made number system with natural limitations and how absolute value can balance out the integer number system with the natural number system.



### **Instructor's Obligations**

1. Deliver instruction to ensure students think for themselves and develop their skills and critical thinking abilities.
2. Model math skills, critical thinking, and problem solving strategies
3. Develop instructional supports and accommodations as needed for students' success.
4. Communicate assignments and time lines to students and families to prevent confusion.
5. Share rubrics and grading expectations when assignments are assigned.
6. Maintain learning expectations that allow students to pursue as may post secondary options as possible.
7. Maintain a learning environment where students can take risks, make mistakes, ask questions and have discussions.
8. Give quality feedback to students and families on assignments and when asked questions in person or via email.

### **Students' Obligations**

1. Maintain current on study and assignment schedules to contribute to class discussions.
2. Proactively complete work and study over time, rather than "cram."
3. Participate in lively, opinionated discussions, but be civil and respectful to all people in the room.
4. Have a growth mindset and know that there are no expectations of perfection.
5. Keep a schedule to balance all life's activities.
6. Ask questions when you have them!

### **Family Obligations**

1. Understand your child's homeschooling program and diploma track, and progress towards graduation / completion.
2. Check in with the instructor proactively to understand your child's progress. Remember, the parent has to assign the transcript grade in conjunction with the supervising teacher that is backed by graded work samples.
3. Help schedule all of your child's obligations so they know what to expect
4. Establish routines for schooling, home needs, and special events.
5. Ask your child questions on what they are reading and pose questions for discussion.
6. Create a comfortable study space that is well lit with supplies near by.
7. Ask questions when you have them!

### **Students with IEPs, 504 Plans, or Students in Need of Accommodations**

Please inform the instructor of any needs you have so they can be accommodated. This class is designed for your success by choosing a math series with lessons that include built in strategies to help you learn the material. All students can meet high, grade level standards with the correct supports. Although the goals of the class are the same for everyone, the path that each student takes is unique and set up with the supports for success!

This class will be taught using neuro-educational strategies, including visualization of the content, directed vocabulary instruction, language supports, and self-management strategies. These strategies are research based teaching techniques to help all students learn, regardless of learning differences!

**Assignment Descriptions**

**Vocabulary.** Math has its own vocabulary; knowing it makes it easier to communicate problem solving strategies and understand mathematical concepts. Students will be expected to know vocabulary words from each lesson. Understanding may be demonstrated through ongoing vocabulary study (student created power point, quizlet study, work packet completion, etc.) or quizzes.

**Class Participation.** While in class, students will be expected to take notes, solve sample items, and collaborate with the instructor and other students. Students will be expected to keep their in class work for documentation and reference to aid with other assignments.

**Homework.** Students will have assigned work to build mastery related to the lessons completed in class. Students will keep their work to document their accomplishments, and as reference material to refer back to. Assigned math work will mainly consist of “Extra Practice” sections of the workbook. Should additional work be needed, it will be assigned as individualized support work.

**Individualized Support Work.** Through instructor, parent(s), and student collaboration, extra support work may be developed to help the student develop fluency, reteach missed instructional opportunities, or extension assignments. A variety of activities may be developed for support work, including fact practice, vocabulary practice, sketching out math concepts (visualization), calculator practice, etc. Support work is successful when there is a proactive approach to it!

**Final Project.** One project to be completed each semester, student’s choice:

**Math Application Project.** Students will research an application of a mathematical concept covered in the semester’s topics. A visual component must be completed, as well as written material explaining the rational for knowing the concept, a real-life problem, and the process to find the solution, with the solution. Please see rubric for this assignment.

**Mathematician Project.** Students will locate a mathematician or scientist that discovered a concept covered in this semester or an individual that uses a concept in their field of study. Mathematicians or scientist must be an actual person, with evidence gathered from reliable sources. Please see rubric for this assignment.

### **Documenting Growth, Grading & Feedback**

**Transitioning into Processed Based Learning.** Very few things are completed and finished forever; most of life is built upon patterns and traditions that grow overtime. The same is true for learning: it is a process rather than just chunks of information to be memorized and then forgotten. Competency is a life-long process that is built up through practicing skills, learning new ones, questioning, and reflecting. Students should expect to receive honest, constructive criticism to help them grow into their place into society. Even though the learning will never stop, it is important to stop and question “where are we now?” and “so what?” These questions will help everyone involved in the class make appropriate changes to the learning path.

**Taking Risks.** Learning and growth involves risk taking, including not performing well on the first try. The only failure is not trying. Learning from mistakes is the best type of learning. Reflecting back on what went well, what can be improved, and how others can help is critical! This course is not designed to have students fail the class- supports are built in to aim for success. As students learn to do more for themselves, the supports will change so they can continue to learn to do more independently.

**Grading and Feedback.** Students will be given rubrics in advance of all assignments so expectations are know and plans can be made accordingly. Teaching and supports will be individualized so students can meet grade level standards, giving them as many post secondary options as possible! Rubrics will scored and returned to the students in a timely manner so that follow up revisions can be made, if desired by the student and family. Because there are many writing genres and style to cover, there are bound to be some that are more difficult than others. Students may find that their writing is not yet at expected levels, but can continue to revise and edit with the instructor.

**Grading Scale.** Grades are recommend on the following, based on your family's high school path:

UC / CSU A-G Track- A-G	
A+	95 - 100%
A	90 - 94
B	80 - 90
C	70 - 80

General Diploma	
A	85 - 100%
B	75 - 85
C	70 - 75

Please note: there are no D and F grades listed because these grades represent a systematic failure and are not reflective of the individual student's progress nor abilities. Changes in teaching, supports, and study habits should be in made far before a student is a risk in earning a non-passing grade. Students are also welcome to participate in this class if they are working towards a High School Certificate of Completion. Grading is a collaborative effort based upon the student, instructor, family, and supervising teacher. Homeschooling parents are legally responsible for issuing the grades for their children, backed by work samples and assessments. There is no extra credit for the class, as assignments have been chosen for specific purposes; revision rather than extra busy work is expected. Should extra practice be needed for mastery, appropriate work will be given with supervision.

**Tentative Schedule** may change for needs of the group.

Date	Topic(s)	Classwork To Do:	Homework To Do:
9/4/19	Beginnings	<ul style="list-style-type: none"> <li><input type="checkbox"/> Introductions</li> <li><input type="checkbox"/> Google Class walk through</li> <li><input type="checkbox"/> Math as a process vs. math facts</li> <li><input type="checkbox"/> Core principals of Algebra processes</li> <li><input type="checkbox"/> Review of Number Systems</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Register for a Google email, get parent permission if needed</li> <li><input type="checkbox"/> Register for our Google Classroom</li> <li><input type="checkbox"/> Explore Google Classroom, Quizlet</li> </ul>
9/9/19	Single Step Linear Equations	<ul style="list-style-type: none"> <li><input type="checkbox"/> Single Step Equations</li> <li><input type="checkbox"/> Inverse Operations</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Chapter 1 Maintaing Mathematical Proficiency*, pg 1</li> <li><input type="checkbox"/> Review 1.1 Notetaking with Vocab</li> <li><input type="checkbox"/> Extra Practice, pg. 6</li> </ul>
9/11/19	Multi-Step Linear Equations	<ul style="list-style-type: none"> <li><input type="checkbox"/> Inverse Operations</li> <li><input type="checkbox"/> Fractions as Division Problems?</li> <li><input type="checkbox"/> Multiple Step Equations</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Review 1.2 Notetaking with Vocab</li> <li><input type="checkbox"/> Extra Practice, pg. 10</li> </ul>
9/16/19	Complex Linear Equations	<ul style="list-style-type: none"> <li><input type="checkbox"/> Variables on Both Sides of the Equation</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Review 1.3 Notetaking with Vocab</li> <li><input type="checkbox"/> Extra Practice, pg. 16</li> </ul>
9/18/19	Rewriting Linear Equations	<ul style="list-style-type: none"> <li><input type="checkbox"/> Using algebraic properties to manipulate equations</li> <li><input type="checkbox"/> Solving or Rewriting Equations?</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Review 1.5 Notetaking with Vocab</li> <li><input type="checkbox"/> Extra Practice, pg. 25</li> </ul>
9/23/19	Absolute Value	<ul style="list-style-type: none"> <li><input type="checkbox"/> Visualizing a number line and opposites</li> <li><input type="checkbox"/> Absolute Value as Distance Measure</li> <li><input type="checkbox"/> Solving Absolute Value</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Review 1.4 Notetaking with Vocab</li> <li><input type="checkbox"/> Extra Practice, pgs. 20-21</li> <li><input type="checkbox"/> Complete Chapter 1 Assessments, due September 30, 1019</li> </ul>
9/25/19	Visualizing Linear Inequalities	<ul style="list-style-type: none"> <li><input type="checkbox"/> Creating Number Lines with integers</li> <li><input type="checkbox"/> Understanding vocabulary for the symbols: <math>&lt;</math>, <math>\leq</math>, <math>&gt;</math>, and <math>\geq</math>.</li> <li><input type="checkbox"/> Graphing Inequalities</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Chapter 2 Maintaing Mathematical Proficiency*, pg 27</li> <li><input type="checkbox"/> Review 2.1 Notetaking with Vocab</li> <li><input type="checkbox"/> Extra Practice, pg. 31</li> </ul>
9/30/19	Solving Linear Equations	<ul style="list-style-type: none"> <li><input type="checkbox"/> Turn in Chapter 1 Assessments</li> <li><input type="checkbox"/> Solving Inequalities using inverse operations</li> <li><input type="checkbox"/> Scale of Number Lines</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Review 2.2 Notetaking with Vocab</li> <li><input type="checkbox"/> Extra Practice, pg. 36-7</li> <li><input type="checkbox"/> Review 2.3 Notetaking with Vocab</li> <li><input type="checkbox"/> Extra Practice, pg. 41-42</li> </ul>
10/2/19	Solving Multistep Inequalities	<ul style="list-style-type: none"> <li><input type="checkbox"/> Compare &amp; Contrast Inequalities to Equations &amp; Expressions</li> <li><input type="checkbox"/> Solving &amp; Graphing Inequalities</li> <li><input type="checkbox"/> Introduce Project Types</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Review 2.4 Notetaking with Vocab</li> <li><input type="checkbox"/> Extra Practice, pg. 46-47</li> <li><input type="checkbox"/> Determine what project you'd like to do</li> </ul>
10/7/19	Compound Inequalities	<ul style="list-style-type: none"> <li><input type="checkbox"/> Project Type Check-in</li> <li><input type="checkbox"/> Define "and" and "or" as conjunctions</li> <li><input type="checkbox"/> Graphing and Writing Compound Inequalities</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Review 2.5 Notetaking with Vocab</li> <li><input type="checkbox"/> Extra Practice, pg. 51-52</li> </ul>
10/9/19	Absolute Value Inequalities	<ul style="list-style-type: none"> <li><input type="checkbox"/> Understanding the 2 Solution Set</li> <li><input type="checkbox"/> Graphing, Solving, and Writing Inequalities with Absolute Value</li> <li><input type="checkbox"/> Using Technology vs. Integrating Technology to Solve Problems</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Review 2.6 Notetaking with Vocab</li> <li><input type="checkbox"/> Extra Practice, pg. 56-57</li> <li><input type="checkbox"/> Complete Chapter 2 Assessments, Due October 16, 2019</li> </ul>

Date	Topic(s)	Classwork To Do:	Homework To Do:
10/14/19	Defining Functions & Their Types	<input type="checkbox"/> Describing Mathematical Relationships <input type="checkbox"/> Functions: Linear vs. Non-Linear <input type="checkbox"/> Vocabulary of Functions & Graphs	<input type="checkbox"/> Chapter 3 Maintaing Mathematical Proficiency*, pg 58 <input type="checkbox"/> Review 3.1 Notetaking with Vocab <input type="checkbox"/> Extra Practice, pg. 63 <input type="checkbox"/> Review 3.2 Notetaking with Vocab <input type="checkbox"/> Extra Practice, pg. 68
10/16/19	Function Notation	<input type="checkbox"/> Wait, why $f(x)$ ? <input type="checkbox"/> No, its still the same thing, for now <input type="checkbox"/> Using Function Notation <input type="checkbox"/> Discuss Topics for Project	<input type="checkbox"/> Review 3.3 Notetaking with Vocab <input type="checkbox"/> Extra Practice, pg. 72-73 <input type="checkbox"/> Consider Final Project topic, due October 23, 2019
10/21/19	Graphing Lines in Standard Form	<input type="checkbox"/> Appreciating Standard Form <input type="checkbox"/> Using Standard Form to Your Advantage <input type="checkbox"/> Appreciating the Number 0 and the intercepts it brings!	<input type="checkbox"/> Review 3.4 Notetaking with Vocab <input type="checkbox"/> Extra Practice, pg. 77-78
10/23/19	Graphing Lines with Slope Intercept Form	<input type="checkbox"/> Appreciating Slope Intercept Form <input type="checkbox"/> Rising and Running <input type="checkbox"/> Make it a Fraction <input type="checkbox"/> Graphing Using Slope Intercept <input type="checkbox"/> Project Topic Discussion	<input type="checkbox"/> Review 3.5 Notetaking with Vocab <input type="checkbox"/> Extra Practice, pg. 83
10/28 - 11/1	Sharpen the saw	IES' Fall Break	
11/4/19	Transformation of Lines	<input type="checkbox"/> Understanding the Changes in the Formula and their Effects on the Line <input type="checkbox"/> How to find sources & research strategies	<input type="checkbox"/> Review 3.6 Notetaking with Vocab <input type="checkbox"/> Extra Practice, pg. 83 <input type="checkbox"/> Find sources and turn in list of sources on November 13, 2019
11/6/19	Graphing Absolute Value Equations	<input type="checkbox"/> Is it a linear Equation? <input type="checkbox"/> Graphing $f(x) =  x $ <input type="checkbox"/> Transformations of the parent graph	<input type="checkbox"/> Review 3.7 Notetaking with Vocab <input type="checkbox"/> Extra Practice, pg. 94 <input type="checkbox"/> Complete Chapter 3 Assessments, Due November 20, 2019
11/11/19	Sharpen the saw	Veteran's Day, Observed; IES Closed	
11/13/19	Writing Equations in Slope Intercept Form	<input type="checkbox"/> Turn in List of Sources <input type="checkbox"/> Slope Formula <input type="checkbox"/> Known vs. unknown information <input type="checkbox"/> Writing Equations in Slope Intercept Form with and without an Intercept	<input type="checkbox"/> Chapter 4 Maintaing Mathematical Proficiency*, pg 95 <input type="checkbox"/> Review 4.1 Notetaking with Vocab <input type="checkbox"/> Extra Practice, pg. 99
11/18/19	Writing Equations in Point Slope Form	<input type="checkbox"/> Turn in Chapter 3 Assessments <input type="checkbox"/> Breaking Down Features of Point-Slope Form	<input type="checkbox"/> Review 4.2 Notetaking with Vocab <input type="checkbox"/> Extra Practice, pg. 104-105
11/20/19	Parallel & Perpendicular Lines	<input type="checkbox"/> Visualizing Parallel & Perpendicular Lines <input type="checkbox"/> Writing Equations of Parallel & Perpendicular Lines	<input type="checkbox"/> Review 4.3 Notetaking with Vocab <input type="checkbox"/> Extra Practice, pg. 109-110
11/25 - 11/29	Sharpen the saw	Thanksgiving Break, IES Closed	

Date	Topic(s)	Classwork To Do:	Homework To Do:
12/2/19	Scatter Plots	<input type="checkbox"/> Understanding Scatter Plots <input type="checkbox"/> Interpreting Data & Correlation <input type="checkbox"/> Creating Lines of Best Fit	<input type="checkbox"/> Review 4.4 Notetaking with Vocab <input type="checkbox"/> Extra Practice, pg. 114-115
12/4/19	Analyzing Lines of Fit	<input type="checkbox"/> Using Technology to Calculate Lines of Best Fit <input type="checkbox"/> Margin of Error <input type="checkbox"/> Review paper expectations & presentations	<input type="checkbox"/> Review 4.5 Notetaking with Vocab <input type="checkbox"/> Extra Practice, pg. 119-120 <input type="checkbox"/> Continue to work on Semester Project, Due last day of class! <input type="checkbox"/> Rough Draft of Project Due 1/8/20
12/9/19	Arithmetic Sequences	<input type="checkbox"/> Visualizing Arithmetic Sequences <input type="checkbox"/> Common Differences <input type="checkbox"/> Equations for Arithmetic Sequences <input type="checkbox"/> Project Check-in	<input type="checkbox"/> Review 4.6 Notetaking with Vocab <input type="checkbox"/> Extra Practice, pg. 124-125 <input type="checkbox"/> Complete Chapter 4 Assessments, Due 1/8/20
12/11/19	Solving Systems of Equations by Graphing	<input type="checkbox"/> Two for the Price of 1! <input type="checkbox"/> Models of Systems of Equations <input type="checkbox"/> Solving Systems of Equations <input type="checkbox"/> Using Systems of Equations to Solve Linear Equations <input type="checkbox"/> Define the answer for a system set	<input type="checkbox"/> Chapter 5 Maintaing Mathematical Proficiency*, pg 131 <input type="checkbox"/> Review 5.1 Notetaking with Vocab <input type="checkbox"/> Extra Practice, pg. 135-136 <input type="checkbox"/> Review 5.5 Notetaking with Vocab <input type="checkbox"/> Extra Practice, pg. 155-156 <input type="checkbox"/> Rough Draft of Paper Due 1/8/20
12/16-20/19	Sharpen the saw	IES Flex Week	
12/23 - 1/3/20	Sharpen the saw	IES Winter Break	
1/6/20	Solving Linear Equations by Substitution	<input type="checkbox"/> Turn in Rough Draft of Project <input type="checkbox"/> Introduce Substitution Method <input type="checkbox"/> Identify when the Method Works Best	<input type="checkbox"/> Review 5.2 Notetaking with Vocab <input type="checkbox"/> Extra Practice, pg. 140-141
1/8/20	Solving Systems of Equations by Elimination	<input type="checkbox"/> Turn in Chapter 4 Assessments <input type="checkbox"/> Turn in Rough Draft of Paper <input type="checkbox"/> Understanding the Elimination Method and when to use it <input type="checkbox"/> How to Make Elimination Better <input type="checkbox"/> It Works for Fractions, too!	<input type="checkbox"/> Review 5.3 Notetaking with Vocab <input type="checkbox"/> Extra Practice, pg. 140-141
1/13/20	Special Systems of Equations	<input type="checkbox"/> What is special? <input type="checkbox"/> Types of Solution Sets <input type="checkbox"/> Start Project Presentations	<input type="checkbox"/> Review 5.4 Notetaking with Vocab <input type="checkbox"/> Extra Practice, pg. 150-151
1/15/20	Graphing Linear Inequalities with two Variables	<input type="checkbox"/> Graphing by Type of Inequality and the line <input type="checkbox"/> How to Shade to Relate 2 Variables <input type="checkbox"/> Project Presentations	<input type="checkbox"/> Review 5.6 Notetaking with Vocab <input type="checkbox"/> Extra Practice, pg. 160-161 <input type="checkbox"/> Chapter 5 Assessment Due by 1/29/19 for Final Fall 2019 Algebra I Grade! <input type="checkbox"/> Semester Work Reflection
1/20/20	Sharpen the saw	MLK, Jr. Day; IES Closed	
1/22/19	Systems of Linear Inequalities	<input type="checkbox"/> Strategies for Graphing 2 Inequalities <input type="checkbox"/> Defining the Solution Set <input type="checkbox"/> Project Presentations <input type="checkbox"/> Final Project Papers Due!	<input type="checkbox"/> Review 5.7 Notetaking with Vocab <input type="checkbox"/> Extra Practice, pg. 165-161 <input type="checkbox"/> Complete Chapter 5 Assessments, Due January 29, 2019 for final grade <input type="checkbox"/> Complete Reflection ASAP for grade

\*If you have difficulty with the Maintain Mathematical Proficiency activities, please seek extra assistance to be successful in this course.

**Grade Tracker** to know your progress.

Date Due	Assignment	Points	Possible	Grade
9/30/19	Chapter 1 Vocabulary Study		÷ 30	=
9/30/19	Chapter 1 Work Completion		50	
9/30/19	Chapter 1 Assessment		40	
9/30/19	Chapter 1 Participation & Attendance		15	
10/16/19	Chapter 2 Vocabulary Study		30	
10/16/19	Chapter 2 Work Completion		60	
10/16/19	Chapter 2 Assessment		40	
10/16/19	Chapter 2 Participation & Attendance		15	
10/23/19	Final Project: Topic Selection		25	
11/13/19	Final Project: Research Sources		20	
11/18/19	Chapter 3 Vocabulary Study		30	
11/18/19	Chapter 3 Work Completion		70	
11/18/19	Chapter 3 Assessment		40	
11/18/19	Chapter 3 Participation & Attendance		15	
1/8/20	Chapter 4 Vocabulary Study		30	
1/8/20	Chapter 4 Work Completion		60	
1/8/20	Chapter 4 Assessment		40	
1/8/20	Chapter 4 Participation & Attendance		15	
1/8/20	Final Project: Rough Draft		25	
1/13/20	Final Project: Delivery		50	
1/22/20	Final Project: Content		50	
1/22/20	Final Project: Mechanics		50	
1/22/20	Chapter 5 Vocabulary Study		30	
1/22/20	Chapter 5 Work Completion		70	
1/29/20	Chapter 5 Assessment		40	
1/29/20	Chapter 5 Participation & Attendance		15	
1/29/20	Final Project: Work Reflection		45	
Totals:			÷ 1000	=