Kolbe Academy
Home School

ALGEBRA 1 Honors (H)
Foerster Algebra 1

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COURSE TITLE: Algebra 1 Honors

COURSE TEXTS AND RESOURCES:

- *Algebra 1 Expressions, Equations, and Applications, 3rd Edition*, Paul A. Foerster, © 2006
- *Algebra 1 Expressions, Equations, and Applications Solutions Manual*, Paul A. Foerster
- *Foerster's Algebra 1 Home Study Companion Flash Drive*, David Chandler (optional)

COURSE DESCRIPTION:

This course plan includes a one-year course in Algebra 1 Honors (H). Parents should preview the course plans to gain a better understanding of what it entails.

The beginning of the Algebra 1 (H) course moves at a very quick pace as much of the material in the first 2 chapters is review of Pre-Algebra. A review of decimals, fractions, and percentages is not included, so parents should be sure the student is comfortable with those topics before beginning the course.

SCOPE AND SEQUENCE:

Algebra 1

Chapter 1	Expressions and Equations
Chapter 2	Operations with Negative Numbers
Chapter 3	Distributing: Axioms and Other Properties
Chapter 4	Harder Equations
Chapter 7	Expressions and Equations Containing Two Variables
Chapter 8	Linear Functions, Scattered Data, and Probability
Chapter 13	Inequalities
Chapter 5	Some Operations with Polynomials and Radicals
Chapter 6	Quadratic Equations
Chapter 9	Properties of Exponents
Chapter 10	More Operations with Polynomials
Chapter 11	Rational Algebraic Expressions
Chapter 12	Radical Algebraic Expressions
Chapter 14	Functions and Advanced Topics

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DIPLOMA REQUIREMENTS:

Summa Cum Laude diploma candidates are required to follow either the Kolbe Core Algebra (K) course (K) or Kolbe Honors course (H) track outlined in this course plan. ***Magna Cum Laude*** and ***Standard*** diploma candidates may choose to pursue the (H) or (K) designation, but are not required to do so, and instead have the option of altering the course plan as they choose. ***Summa*** students must complete 4 years of mathematics during their high school course of study including Algebra 1, Geometry, Algebra 2, and Pre-Calculus (or higher). ***Magna*** students must complete 3 years of mathematics during their high school course of study including Algebra 1, Geometry, and Algebra 2 (or higher). ***Standard*** diploma students must complete 2 years of mathematics including Algebra 1. Please see below for specific semester reporting requirements and transcript designations for Algebra 1 (K) and Algebra 1 (H).

SEMESTER REPORTING REQUIREMENTS:

Designation*	**H**
Course Title	**Algebra 1**
Semester 1	Completed Chapter 7 Test (Parts 1 and 2) Completed Algebra 1 Honors Semester 1 Exam
Semester 2	Completed Chapter 10 Test Completed Algebra 1 Honors Semester 2 Exam

***Designation refers to designation type on transcript. H designates a Kolbe Academy Honors course.**

If the student wishes to have the course distinguished on the transcript with an (H) as a Kolbe Academy Honors course, please be sure to send the correct exams and components each semester for verification as specified above. **If no designation on the transcript is desired, parents may alter the lesson plan and any written sample work is acceptable to receive credit for the course each semester.** If you have any questions regarding what is required for the (H) designation or diploma type status, please contact the academic advisory department at 707-255-6499 ext. 5 or by email at advisors@kolbe.org.

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COURSE PLAN "AT A GLANCE" OUTLINE:

Semester 1	Material Covered:	Exam Schedule:
Week 1	Chapter 1: 1-1 through 1-10	
Week 2	Chapter 2: 2-1 through 2-9	Chapter 1 Test
Week 3	Chapter 3: 3-1 through 3-6	Chapter 2 Test
Week 4	Chapter 4: 4-1 through 4-5	Chapter 3 Test
Week 5	Chapter 4: 4-6 through 4-7	Chapter 4 Test
Week 6	Chapter 7: 7-1 through 7-4	
Week 7	Chapter 7: 7-5 through 7-6	Chapter 7-1 through 7-6 Test
Week 8	Chapter 7: 7-7 through 7-9	
Week 9	Chapter 7: 7-10	Chapter 7-7 through 7-10 Test
Week 10	Chapter 8: 8-1 through 8-4	Chapter 8 Test
Week 11	Chapter 13/Chapter 6: 13-1 through 13-3, 6-3	
Week 12	Chapter 13: 13-4 through 13-5	
Week 13	Chapter 13: 13-6 through 13-7	Chapter 13 Test
Week 14	Chapter 5: 5-1 through 5-4	
Week 15	Chapter 5: 5-5 through 5-7	
Week 16	Chapter 5: 5-8 through 5-10	
Week 17	Semester 1 Review	Chapter 5 Test
Week 18	Semester 1 Review	Algebra 1 Honors Semester 1 Exam

Semester 2	Material Covered:	Exam Schedule:
Week 1	Chapter 6: 6-1 through 6-4	
Week 2	Chapter 6: 6-5 through 6-8	
Week 3	Chapter 6: 6-9 through 6-11	Chapter 6 Test
Week 4	Chapter9: 9-1 through 9-4	
Week 5	Chapter 9: 9-5 through 9-8	
Week 6	Chapter 10: 10-1 through 10-4	Chapter 9 Test
Week 7	Chapter 10: 10-5 through 10-9	
Week 8	Chapter 11: 11-1 through 11-3	Chapter 10 Test
Week 9	Chapter 11: 11-4 through 11-6	
Week 10	Chapter 11: 11-7 through 11-8	Chapter 11-1 through 11-8 Test
Week 11	Chapter 11/Chapter 12: 11-9 through 11-11, 12-1	Chapter 11-9 through 11-10 Test
Week 12	Chapter 12: 12-2 through 12-4	
Week 13	Chapter 12: 12-5 through 12-7	
Week 14	Chapter 12: 12-8 through 12-10	Chapter 12 Test
Week 15	Chapter 14: 14-1 through 14-3	
Week 16	Chapter 14: 14-4 through 14-5	
Week 17	Chapter 14: 14-6 through 14-7	Chapter 14 Test
Week 18	Semester 2 Review	Algebra 1 Honors Semester 2 Exam

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COURSE PLAN METHODOLOGY:
Mastery in mathematics is achieved through constant practice. It is recommended that students keep to a 5 day/week schedule with mathematics despite the scheduling of their other courses.

The ***Oral Practice*** problems that appear at the beginning of the exercises with each lesson are assigned in this course plan only occasionally. In the sections in which they are not assigned, parents may still desire to use these to check for understanding during a lesson or may want to use them as short quiz grades or participation grades, if desired.

The ***Exercise Assignments*** for each section generally include most or all odd numbered problems. Most odd numbered problems are answered in the back of the student text to aid students in determining whether they have understood the methodology of the problem. If additional work is needed, students may want to pick more of the odd or a few of the even numbered problems for further practice.

Each chapter includes a ***Chapter Review***. They can be used to prepare for Chapter Tests. One set of comprehensive ***Exams*** for Kolbe Core (H) students is included at the end of the course plan to be taken at the end of each semester. A full two hours should be allotted for the student to complete Kolbe Academy's Semester Exams. All questions are taken from the test bank provided by the author.

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♦♦♦ FIRST SEMESTER ♦♦♦

WEEK 1	
♦♦♦ Chapter 1 ♦♦♦ **Expressions and Equations**	
	Chapter 1 should be a review of Pre-Algebra. Add more exercises where needed.
1-1, 2	Operations with Numbers. Read section 1-1. Do exercises 1–31 every other odd (1, 5, 9, 13, …) Variables. Read section 1-2. Do exercises 1, 3, 7, 11, 15, 19, 23, 25, 29, 35
1-3, 4	Powers and Exponents. Read section 1-3. Do exercises 1a, f, h, i, j, 5, 9, 11, 15, 19, 27, 35, 45 Order of Operations. Read section 1-4. No calculator. Do exercises 1 – 25 odd, 29, 33, 35
1-5, 6	Expressions from Word Statements. Read section 1-5. Do exercises 1 – 29 odd. Introduction to Equations. Read section 1-6. Do exercises 1, 3.
1-7, 8	Solving Equations. Read section 1-7. Do exercises 1 – 21 every other odd, 41 – 49 odd Problems That Lead to Equations. Read section 1-8. Do exercises 1, 5, 9, 11, 15, 19, 21
1-9,10	Problems That Lead to Expressions and Equations. Read section 1-9. Do problems 1, 5, 9 Chapter 1 Review. Do problems T2 i, T3 a, T4 b, c, T5 d, T6 b, T7 d, g, T8, T10

Notes

Chapter 1 should be a review of Pre-algebra.

The exercises that are assigned are those at the end of the section, and do not include the oral practice unless specifically stated. Oral practice that is not assigned should be included as needed.

Note the difference between the problems in section 1-5 and those in section 1-6, 1-7, and 1-8. The exercises in 1-5 give a value for the variable and ask the student to evaluate an expression. Those in 1-6, 1-7, and 1-8 give an equation and ask the student to work backwards to find the value of the variable.

The purpose of section 1-9 is to guide the student to write equations from word problems. Students should write down the expression in part a, the equation in part b, and then use the equation in part b to solve the subsequent parts. Do not give one number answers before writing the equation in part b.

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WEEK 2	
♦♦♦ **Chapter 1 Test** ♦♦♦ ♦♦♦ **Chapter 2** ♦♦♦ **Operations with Negative Numbers**	
TEST	Chapter 1 Test
2-1 **to** **2-3**	Introduction to Negative Numbers. (Optional sections. If students are very familiar with negative numbers, 2-1 through 2-5 can be skipped. Read the note at the end of Week 2). Operations with Negative Numbers. Sections 2-1 through 2-3 are a review of addition and subtraction of negative numbers. Student should be familiar with this material, and the three sections should be easy to go over in one day. Do odd exercises in sections 2-1, 2-2, and 2-3. Note in particular the blue box on page 52 entitled TO SUBTRACT SIGNED NUMBERS. The concept of changing a subtraction to adding the opposite will be used in section 2-6. Read section 2-1. Do exercises as needed. These can also be done orally. Read section 2-2. Do exercises as needed, orally if preferred. Read section 2-3. Do exercises 1-50 every other odd. Practice rewriting subtraction problems as adding the opposite.
2-4 **to** **2-5**	Multiplying and Dividing Signed Numbers. Read section 2-4. Do odd exercises 1 - 23 every other odd, 25 -40 odd, 41 – 49 part a. only, 51. Read section 2-5. Do odd exercises 1 – 30 every other odd, 31 – 40 all, 41 to 49 part a. only, 53.
2-6, 7	Commuting and Associating. Read section 2-6. Do exercise 2-6 1-39 odd, 45, 47, 49. Equations That Need Two Transformations. Read section 2-7. Do exercise 2-7 1-29 odd.
2-8, 9	Two Transformation Equations Read section 2-8. Do oral practice A through J. Do exercises 1, 5, 11 Chapter 2 Review. Do exercises T1 b, c, e, T4 a, e, f, h, k, j, l, m T5 a, b, f T6 a-c T7 a-c, T8

Notes

Note the blue box on page 52 entitled TO SUBTRACT SIGNED NUMBERS. The concept of changing a subtraction to adding the opposite will be used in section 2-6 and is a strategy to remember when combining like terms in later chapters.

Section 2-8 is like section 1-9 and involves writing and using expressions, then writing and using equations.

WEEK 3	
♦♦♦ **Chapter 2 Test** ♦♦♦ ♦♦♦ **Chapter 3** ♦♦♦ **Distributing, Axioms, and Other Properties**	
TEST	Chapter 2 Test
3-1 to 3-3	Chapter 3, Distributing: Axioms and Other Properties. Read section 3-1. Do exercises 1-9 odd. Read section 3-2. Do exercises 1-39 every other odd, 41, 47, 49 Distributive property over multiplication and division. Read section 3-3. Do exercises 1-49 every other odd
3-4	Like Terms. Read section 3-4. Do exercises 1-79 every other odd.
3-5	Axioms for Adding and Multiplying. Read section 3-5. Do exercises 1-30 odd, may be done orally. Do exercises 31, 35, 37, 43, 45
3- 6	Properties of Equality. Read section 3-6. Do exercises 1-39 odd, may be done orally. Do exercises 41, 43, 45, 51
Notes It is not necessary to memorize the axioms and properties. It is reasonable to allow students to use a list of properties for the test. A list of axioms and properties is provided in this course plan both at the end of the Chapter 3 Test and the Semester 1 Exam.	