

Kolbe Academy Home School

HIGH SCHOOL GEOMETRY

Jacobs Geometry: Seeing, Doing, Understanding

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COURSE TITLE: Geometry

COURSE TEXTS:

- ❖ *Geometry: Seeing, Doing, Understanding*, Harold Jacobs, 3rd edition, © 2003 (T4101)
- ❖ Teacher's Manual (T4101A), Optional
- ❖ Geometry DVD Lectures (T4101D), Optional

COURSE DESCRIPTION:

This Geometry course can follow any Algebra I program, whether the student has used Saxon Algebra I, Jacob's Elementary Algebra, or another First year Algebra course. If questions should arise about the preparedness of a student for this course, please contact the Academic Advisor department at Kolbe Academy. This course presents all the geometrical concepts in a traditional fashion to the high school student. This course will sufficiently prepare the student for questions on the math section of the PSAT, ACT, or SAT standardized tests. Students completing this course as well as a previous Algebra I program will be ready to take the traditional second year of Algebra II. Student's who wish to continue on in the Saxon mathematics series upon completion Jacob's Geometry will find much repetition in the Saxon Algebra II course because the majority of the material covered is Geometry. Students choosing to continue with Saxon after this course should be prepared to take through Advanced Mathematics I in order to complete all the Algebra II concepts necessary to succeed on the ACT and SAT standardized tests. It is more desirable for students to pursue a traditional Algebra II course following this Geometry course. The Kolbe Academy recommended course of study includes continuing with Foerster's Algebra and Trigonometry upon completion of the Jacob's Geometry text.

The Harold Jacob's Geometry text includes engaging language that will help to keep the interest of the student throughout the duration of the course. The lessons are set up to challenge students, yet offer sound explanations to give students the tools to complete problems efficiently. The author has set his text up to include three sets of problems with each lesson so as to present the basic concepts in Set I exercises, applications in Set II exercises, and extension of concepts in Set III exercises. Finally, there are Algebra reviews located at the end of most chapters in the student textbook.

SCOPE AND SEQUENCE:

- | | |
|-------------------------------|-------------------------------------|
| 1. Conditional statements | 10. Area |
| 2. Direct and indirect proofs | 11. Similarity |
| 3. Pythagorean theorem | 12. The Right Triangle |
| 4. Lines and Angles | 13. Circles |
| 5. Congruence | 14. The concurrence Theorems |
| 6. Inequalities | 15. Regular polygons and the Circle |
| 7. Parallel Lines | 16. Geometric solids |
| 8. Quadrilaterals | 17. Non-Euclidean Geometry |
| 9. Transformations | |

HIGH SCHOOL DIPLOMA REQUIREMENTS:

Summa Cum Laude diploma candidates are required to follow either the Kolbe Core course (K) or Kolbe Honors course (H) track outlined in the 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** diploma students are required to complete a total of four years of math including Algebra I, Geometry, Algebra II, and Pre-Calculus during the high school course of study. **Magna** diploma students must complete three years of mathematics including Algebra I, Geometry, and Algebra II. **Standard** diploma students must complete 2 years of mathematics including Algebra I. Please see below for specific course titles, quarterly reporting requirements and transcript designations for geometry.

REQUIRED SAMPLE WORK FOR HIGH SCHOOL CREDIT:

Designation*		K	H
Course Title	Geometry	Geometry	Geometry
Quarter 1	1. Any written sample work	1. Quarter 1 Exam	1. Quarter 1 Exam with Honors portions completed. 2. Sample of Set III exercise assignments.
Quarter 2	1. Any written sample work	1. Quarter 2 Exam	1. Quarter 2 Exam with Honors portions completed. 2. Sample of Set III exercise assignments. 3. Copy of semester honors project
Quarter 3	1. Any written sample work	1. Quarter 3 Exam	1. Quarter 3 Exam with Honors portions completed. 2. Sample of Set III exercise assignments.
Quarter 4	1. Any written sample work	1. Quarter 4 Exam	1. Quarter 4 Exam with Honors portions completed. 2. Sample of Set III exercise assignments. 3. Copy of semester honors project

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

If the student wishes to have the course distinguished on the transcript with a (K) as a Kolbe Academy Core course or with an (H) as a Kolbe Academy Honors course, please be sure to send the correct exams and components each quarter 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 quarter.** If you have any questions regarding what is required for the (K) or (H) designations or diploma type status, please contact the academic advisory department at 707-255-6499 ext. 5 or by email at advisors@kolbe.org.

COURSE PLAN "AT A GLANCE" OUTLINE:**Quarter 1**

Weeks 1-7: Chapters 1-4
 Week 6: 1st semester project assigned
 Week 8: Review
 Week 9: Quarter 1 Exam

Quiz Schedule

Week 2: Quiz 1
 Week 3: Quiz 2
 Week 5: Quiz 3
 Week 7: Quiz 4

Quarter 2

Weeks 1-7: Chapters 5-8
 Week 8: Review
 Week 9: Quarter 2 Exam

Week 2: Quiz 5
 Week 4: Quiz 6
 Week 6: Quiz 7
 Week 7: Quiz 8

Quarter 3

Week 1: 2nd semester project assigned
 Weeks 1-7: Chapters 9-12
 Week 8: Review
 Week 9: Quarter 3 Exam

Week 2: Quiz 9
 Week 4: Quiz 10
 Week 6: Quiz 11
 Week 7: Quiz 12

Quarter 4

Weeks 1-6: Chapters 13-15
 Week 7: Chapter 16 (Honors only)
 Week 8: Review
 Week 9: Quarter 4 Exam

Week 2: Quiz 13
 Week 4: Quiz 14
 Week 6: Quiz 15

Be sure to refer to the course plan that follows for specific guidance on assignments, quizzes, and exams.

COURSE PLAN METHODOLOGY:

The text is set up to include three sets of problems with each lesson. Students pursuing the (H) or (K) designation are assigned problems from both Sets I and II of the text. Additionally, students pursuing the (H) designation for this course should complete the problems and assignments listed under the heading of "Honors Assignments." These assignments generally include the more advanced problems located in the Set III exercises. Finally, honors students are assigned one project each semester that must be completed. Kolbe Core students may complete these additional honors assignments for extra credit and engage in the semester projects if they so desire.

It is advisable for students to keep a list of the important Theorems, Definitions, and Postulates that are introduced throughout the book. This will help tremendously in completing proofs throughout the course, and acts as a quick reference for students as they progress in the course. A complete list of Theorems, Definitions, and Postulates is located on page 741. Honors students will be asked to do many proofs, and should be prepared to handle formal proofs on tests. All students are advised to complete the brief algebra reviews located at the end of chapters 1 – 12 as they appear throughout the course. While not required, these reviews will help students to keep the skills learned in Algebra I fresh for next year. The quarterly tests are adapted from the Harold Jacob's test bank for Geometry: Seeing, doing, and Understanding.

◆◆◆ FIRST QUARTER ◆◆◆

WEEK 1			
◆◆◆ Chapter 1: An Introduction to Geometry ◆◆◆			
Lesson	Set I and II Assignments (Core (K) and Honors (H) Students)		Honors Assignments
Lesson 1	Set I: 1 – 16	Set II: 17 -20; 21 – 27	Set III: 1 – 8
Lesson 2	Set I: 6 – 19	Set II: 24 – 33	Set III: (all)
Lesson 3	Set I: 1 –10, 16 – 18	Set II: 19 – 34	Set III: 1–10
Lesson 4	Set I: 1 – 6, 10 – 16	Set II: 17 – 21, 33 – 36	Set III: 1 – 7
Notes			
WEEK 2			
Lesson	Set I and II Assignments (Core (K) and Honors (H) Students)		Honors Assignments
Lesson 5	Set I: 1 – 12	Set II: 13 – 15	Set III: 1 – 10
Quiz 1	Please notice the quizzes below are assignments from the Chapter Summary and Reviews. Students should try to do them as closed book quizzes.		
	Chapter 1 Review	Set I: 4 -8, 15, 17	Set II: 20 – 24, 27 – 30
	Core Student Quiz: ____/15		Honors Quiz: ____/17
◆◆◆ Chapter 2: The Nature of Deductive Reasoning ◆◆◆			
Lesson 1	Set I: 7 –17	Set II: 21 – 30, 34 – 46	Set III: 1 – 4
Lesson 2	Set I: 5 – 8, 12 – 17	Set II: 28 – 30, 36 – 37	Set III (all)