Kolbe Academy
Home School

GRADE FOUR
MATHEMATICS
Saxon Math 5/4

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Kolbe Academy
Home School

♦ SYLLABUS ♦

Mathematics
Grade 4

COURSE TITLE: Mathematics

COURSE TEXT: *Saxon Math 5/4,* Third Edition, 2004, (T4054)

COURSE DESCRIPTION:

This course introduces to the student a program of "foundational" elements upon which the successful mathematical equations are worked out. This program contains a thorough review of addition, subtraction, and single digit multiplication and division. The subsequent arithmetic content includes number concepts, estimation functions, two- and three-digit computations, decimals and fractions. The basic skills of algebra and geometry are introduced.

Continual and incremental practice with word problems, measurement, scale, and graph reading, as well as arithmetic, provides the opportunity for students to learn and remember the foundational skills and concepts of mathematics.

Be sure to read the introduction that Saxon provides at the beginning of their books. Each lesson should begin with a warm-up exercise with the Facts Practice Test as described in the introduction of *Saxon Math 5/4*. Each test provided by *Saxon Math 5/4* is cumulative such that an entire week of review is not necessary for the quarterly exams. Quarterly exams should be a compilation from the weekly tests given in that particular quarter.

Care should be taken to make sure that students complete all the problems, as well as all the supplemental work in any trouble area. Supplemental material is provided at the back of *Saxon Math 5/4* for selected lessons. This material is strictly optional.

COURSE OBJECTIVES:

- To understand and use math skills in estimating and interpreting data; and organizing, measuring, and predicting.
- To assist the student to be able to apply math ideas to ordinary, everyday problems.
- To translate word problems into numbers and find the answers.

SCOPE AND SEQUENCE:

- Quarter 1: Lessons 1-30
- Quarter 2: Lessons 31-60
- Quarter 3: Lessons 61-90
- Quarter 4: Lessons 91-120

SKILLS TO BE DEVELOPED:

- Development of mental math skills.
- Preparation for solving problems easily and accurately.

COURSE PLAN METHODOLOGY:

Kolbe Academy has worked diligently to create the best possible course plans with the home schooling family in mind. Remember, however, that our program is intended to be flexible. Per the principle of subsidiarity, these course plans are a **suggested** course of study. As the teacher, you should adapt and modify them to meet the individual learning needs of your child. **Do not feel obligated to follow these course plans exactly**.

In the course plans that follow, *Saxon Mathematics 5/4* student textbook is represented by the abbreviation **SAX.** The *Saxon Mathematics 5/4* Tests and Worksheet booklet is represented by the abbreviation **WORK.** Each weekly assignment is summarized in the first rows of the week's daily course plan along with the goals and notes for that week. The specific daily assignments for the student are outlined in the following lines indicated by the **DAY 1, DAY 2, DAY 3, DAY 4, and DAY 5** abbreviations. Parent daily guidelines are given to the right of the student assignments. The quarterly schedule is set up such that one lesson, investigation or test can be done on a five-day schedule. Although most of Kolbe Academy Home School course plans are set up for a four day week, the mathematics courses at this level do benefit from a five day week schedule. This can be altered if the student would like to double up on an assignment or test on the final day of their week. A family's schedule can and should vary as needed.

A weekly grade book is included at the end of the week's course plan *as a convenience*. Parents should use the grade book only as a help to their homeschooling and not as a hindrance. It includes a cumulative list of written assignments from the week's course plan as well as space for additional assignments, if needed. **Kolbe Academy does not require that you keep record of all student work.** If you intend to report your student's work to Kolbe Academy for an official record, only one sample of written and graded work is required per quarter per course along with the signed and filled out report card. The weighting suggestion in the end of quarter grade book is there for *convenience* and may be modified as the parent deems fit. Please consult the welcome packet for a full tutorial on using the grade book.

This mathematics course contains 36 weeks broken into four 9-week quarters. Week 8 is a lighter week, and usually includes a few days for review. You should use the review days as time to catch up if necessary and then go over the subject matter. **If you intend to use the tests provided, look them over *before* teaching the subjects and make sure you review the material in the tests throughout the quarter.** Some children have a difficult time doing written exams, but it is important for them to learn how to take them. If your fourth grader does poorly on them, give them to him orally a couple of days after he has taken them and average the grades.

Finally, begin every class with a prayer. This is a good way to help the child memorize new prayers. Repeat the same ones every day until they are known. Be sure to explain the meanings of the prayers. Repetition in all areas of study is most beneficial.

Kolbe Academy
Home School

GRADE FIVE
MATHEMATICS
Saxon Math 6/5

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Kolbe Academy
Home School

♦ SYLLABUS ♦

Mathematics
Grade 5

COURSE TITLE: Mathematics

COURSE TEXTS: *Saxon Math 6/5 Home Study Kit, Third Edition, 2005,* (T4065)

COURSE DESCRIPTION:

This course is designed to strengthen and increase the student's basic mathematical skills to a fifth grade level of competence. Be sure to read the introduction that Saxon provides at the beginning of their books. Each lesson should begin with a warm-up exercise with the Facts Practice Test as described in the introduction of *Saxon Math 6/5*.

Each test provided by *Saxon Math 6/5* is cumulative such that an entire week of review is not necessary for the quarterly exams. Quarterly exams should be a compilation from the weekly tests given in that particular quarter.

Care should be taken to make sure that students complete all the problems, as well as all the supplemental work in any trouble area. Supplemental material is provided at the back of *Saxon Math 6/5* for selected lessons. This material is strictly optional.

COURSE OBJECTIVES

- Numeration:
  - Naming, ordering, counting, reading
  - Place value
  - Rounding and writing numbers
  - Comparing
  - Roman numerals
- Addition and Subtraction up to 6 digits
- Multiplication to 3 digits
  - Powers of 10
  - Money
  - Using exponents
- Division up to 3 digit divisors
  - Estimating
  - Finding divisibility factorization
  - Finding factors
  - Identifying prime or composite
  - Powers of 10
- Decimals to 10 thousandths place
  - Reading and writing
  - Expanding, comparing and rounding
  - 4 operations
  - Writing fractions as decimals
  - Repeating
- Measurement
- Fractions – 4 operations
  - Finding equal fractions
  - Mixed numbers
  - Comparing
  - Estimating
  - Reciprocals
  - Ratios
- Geometry
  - Identifying lines, rays, and angles
  - Measuring, drawing, and identifying angles and perpendicular lines
  - Circles: center, radius and diameter
  - Identifying polygons and parts of triangles
  - Finding perimeter and circumference
  - Classifying triangles
  - Using sum of angle measures in a triangle
- Percent
  - Relating fractions, decimals and percents
  - Changing fractions to percents and vice versa

- Discount and sale price

❖ Probability

❖ Statistics and Integers
  - Making and reading various tables and graphs
  - Writing and comparing integers
  - Adding and subtracting integers
  - Graphing pairs of integers

SCOPE AND SEQUENCE:

❖ Quarter 1: Lessons 1-30
❖ Quarter 2: Lessons 31-60
❖ Quarter 3: Lessons 61-90
❖ Quarter 4: Lessons 91-120

SKILLS TO BE DEVELOPED:

❖ Develop basic computational skills
❖ Develop problem solving skills
❖ Understand and use skills in estimating, interpreting and organizing data: measuring and predicting.
❖ Able to apply mathematical ideas to everyday situations.

COURSE PLAN METHODOLOGY:

Kolbe Academy has worked diligently to create the best possible course plans with the home schooling family in mind. Remember, however, that our program is intended to be flexible. Per the principle of subsidiarity, these course plans are a **suggested** course of study. As the teacher, you should adapt and modify them to meet the individual learning needs of your child. **Do not feel obligated to follow these course plans exactly**.

In the course plans that follow, *Saxon Mathematics 6/5* student textbook is represented by the abbreviation **SAX.** The *Saxon Mathematics 6/5* Tests and Worksheet booklet is represented by the abbreviation **WORK.** Each weekly assignment is summarized in the first rows of the week's daily course plan along with the goals and notes for that week. The specific daily assignments for the student are outlined in the following lines indicated by the **DAY 1, DAY 2, DAY 3, DAY 4, and DAY 5** abbreviations. Parent daily guidelines are given to the right of the student assignments. The quarterly schedule is set up such that one lesson, investigation or test can be done on a five-day schedule. Although most of Kolbe Academy Home School course plans are set up for a four-day week, the mathematics courses at this level do benefit from a five-day week schedule. This can be altered if the student would like to double up on an assignment or test on the final day of their week. A family's schedule can and should vary as needed.

A weekly grade book is included at the end of the week's course plan *as a convenience*. Parents should use the grade book only as a help to their homeschooling and not as a hindrance. It includes a cumulative list of written assignments from the week's course plan as well as space for additional assignments, if needed. **Kolbe Academy does not require that you keep record of all student work.** If you intend to report your student's work to Kolbe Academy for an official record, only one sample of written and graded work is required per quarter per course along with the signed and filled out report card. The weighting suggestion in the end of quarter

grade book is there for *convenience* and may be modified as the parent deems fit. Please consult the welcome packet for a full tutorial on using the grade book.

This mathematics course contains 36 weeks broken into four 9-week quarters. Week 8 is a lighter week, and usually includes a few days for review. You should use the review days as time to catch up if necessary and then go over the subject matter. **If you intend to use the tests provided, look them over *before* teaching the subjects and make sure you review the material in the tests throughout the quarter.**
Some children have a difficult time doing written exams, but it is important for them to learn how to take them. If your fifth grader does poorly on them, give them to him orally a couple of days after he has taken them and average the grades.

Finally, begin every class with a prayer. This is a good way to help the child memorize new prayers. Repeat the same ones every day until they are known. Be sure to explain the meanings of the prayers. Repetition in all areas of study is most beneficial.

Kolbe Academy
Home School

GRADE SIX
MATHEMATICS
Saxon Math 7/6

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Kolbe Academy
Home School

♦ SYLLABUS ♦

Mathematics
Grade 6

COURSE TITLE: Mathematics Grade 6

COURSE DESCRIPTION:

This course moves the student from arithmetic to foundational treatments of "geometry, measurement, algebra, number, and scale and graph reading." Word problems are also included.

Be sure to read the introduction that Saxon provides at the beginning of their books. Each lesson should begin with a warm-up exercise with the Facts Practice Test as described in the introduction of *Saxon Math 7/6*. Each test provided by *Saxon Math 7/6* is cumulative such that an entire week of review is not necessary for the exams. The midterm and semester exams are a compilation from the weekly tests given in that particular nine weeks.

Care should be taken to make sure that students complete all the problems, as well as all the supplemental work in any trouble area. Supplemental material is provided at the back of *Saxon Math 7/6* for selected lessons. This material is strictly optional.

COURSE TEXTS:

- *Saxon Math 7/6 Home Study Kit, Fourth Edition, 2005*

COURSE OBJECTIVES:

1. Addition, subtraction, multiplication and division
2. Parentheses
3. Fractional parts
4. Linear Measure
5. Perimeter
6. Comparing and sequences
7. Reading scales and graphs
8. Place value
9. Negative numbers
10. Average
11. Factors
12. Greatest Common Factor
13. Fractions
14. Reciprocals
15. Area
16. Decimals
17. Common Denominators
18. Polygons
19. Composite numbers and prime factorization
20. Lines
21. Cancel
22. Percent
23. Exponents
24. Volume
25. Ratio
26. Angles
27. Unit canceling
28. Pi
29. Adding integers
30. Unit conversion
31. Divisibility

SCOPE AND SEQUENCE:

- Semester 1 Weeks 1-9: Lessons 1-30
- Semester 1 Weeks 10-18: Lessons 31-60
- Semester 2 Weeks 1-9: Lessons 61-90
- Semester 2 Weeks 10-18: Lessons 91-120

Kolbe Academy
Home School

♦ SYLLABUS ♦

Mathematics
Grade 6

SKILLS TO BE DEVELOPED:

- ❖ Develop basic computational skills
- ❖ Develop problem solving skills
- ❖ Understand and use skills in estimating, interpreting and organizing data: measuring and predicting.
- ❖ Able to apply mathematical ideas to everyday situations.

COURSE PLAN METHODOLOGY:

Kolbe Academy has worked diligently to create the best possible course plans with the home schooling family in mind. Remember, however, that our program is intended to be flexible. Per the principle of subsidiarity, these course plans are a **suggested** course of study. As the teacher, you should adapt and modify them to meet the individual learning needs of your child. **Do not feel obligated to follow these course plans exactly**.

In the course plans that follow, *Saxon Mathematics 7/6* student textbook is represented by the abbreviation **SAX.** The *Saxon Mathematics 7/6* Tests and Worksheet booklet is represented by the abbreviation **WORK.** Each weekly assignment is summarized in the first rows of the week's daily course plan along with the goals and notes for that week. The specific daily assignments for the student are outlined in the following lines indicated by the **DAY 1, DAY 2, DAY 3, DAY 4, and DAY 5** abbreviations. Parent daily guidelines are given to the right of the student assignments. The weekly schedule is set up such that one lesson, investigation or test can be done on a five-day schedule. Although most of Kolbe Academy Home School course plans are set up for a four-day week, the mathematics courses at this level do benefit from a five-day week schedule. This can be altered if the student would like to double up on an assignment or test on the final day of their week. A family's schedule can and should vary as needed.

This mathematics course contains 36 weeks broken into two 18-week semesters. Weeks 8 and 17 are lighter weeks, and usually include a few days for review. You should use the review days as time to catch up if necessary and then go over the subject matter. **If you intend to use the tests provided, look them over *before* teaching the subjects and make sure you review the material in the tests throughout each nine-week period.** Some children have a difficult time doing written exams, but it is important for them to learn how to take them.

Finally, begin every class with a prayer. This is a good way to help the child memorize new prayers. Repeat the same ones every day until they are known. Be sure to explain the meanings of the prayers. Repetition in all areas of study is most beneficial.

Kolbe Academy
Home School

GRADE SEVEN
MATHEMATICS
Saxon Math 8/7 with Pre-Algebra

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Kolbe Academy
Home School

♦ SYLLABUS ♦

Mathematics
Grade 7

COURSE TITLE: Mathematics

COURSE TEXT: *Saxon Math 8/7 with Pre-Algebra – Homeschool, Third Edition*

COURSE DESCRIPTION:

This course provides the student with an introduction to algebra, on a level to be used before Algebra 1 or before a pre-Algebra course. If a student completes this course with ease, he is ready to go onto Algebra 1. The student who struggles with this course is advised to continue with Saxon Algebra 1/2 or another pre-Algebra course. Although much of the same ground is covered, he will be able to attain greater mastery.

Be sure to read the introduction that Saxon provides at the beginning of their books. Each lesson should begin with a warm-up exercise with the Facts Practice Test as described in the introduction of *Saxon Math 8/7*. Each test provided by *Saxon Math 8/7* is cumulative, such that an entire week of review is not necessary for the quarterly exams. Quarterly exams are a compilation from the weekly tests given in that particular quarter.

Supplemental material is provided at the back of *Saxon Math 8/7* for selected lessons. This material is strictly optional. However, if the student is struggling in any particular area, this material should be used to reinforce the troubling concepts. The student should work at his own pace. He should not be held back by this outline if he is capable of going ahead, but he should not fall too far behind this outline. Care should be taken to make sure that the student completes all the problems, as well as all the supplemental work, in any trouble area.

SCOPE AND SEQUENCE:

1. Factors
2. Fractions
3. Word Problems
4. Linear Measure
5. Polygons
6. Perimeter
7. Prime and Composite Numbers
8. Mixed Numbers
9. Multiples
10. Common Denominators
11. Decimal Numbers
12. Ratio
13. Graphs
14. Proportions
15. Exponents
16. Square Root
17. Rates
18. Percent
19. Scientific Notation
20. Liquid Measure
21. Circumference
22. Pi
23. Volume
24. Mean
25. Median
26. Mode
27. Range
28. Simple Probability
29. Semicircles
30. Surface Area
31. Probability, Chance, and Odds

COURSE PLAN METHODOLOGY:

Kolbe Academy has worked diligently to create the best possible course plans with the home schooling family in mind. Remember, however, that our program is intended to be flexible. Per the principle of subsidiarity, these course plans are a **suggested** course of study. As the teacher, you should adapt and modify these course plans to meet the individual learning needs of your child. **Do not feel obligated to follow these course plans exactly**.

Kolbe Academy
Home School

♦ SYLLABUS ♦

Mathematics
Grade 7

Saxon Math 8/7 with Pre-Algebra is represented by the abbreviation **SAX**. Each weekly assignment is summarized in the first line of the week's daily course plan. The specific daily assignments are outlined in the following lines indicated by the **DAY 1**, **DAY 2**, **DAY 3**, **DAY 4**, and **DAY 5** abbreviations. Parent daily guidelines are given to the left of the student assignments. Although most of Kolbe Academy Home School course plans are set up for a four-day week, the mathematics courses at this level do benefit from a five-day week schedule. This can be altered if the student would like to double up on an assignment or test on the final day of their week. A family's schedule can and should vary as needed.

A weekly grade book is included at the end of the week's course plan *as a convenience*. It includes a cumulative list of written assignments from the week's course plan with point values given as a suggestion. Space for additional assignments, if needed, is included. **Kolbe Academy does not require that you keep record of all student work.** If you intend to report your child's work to Kolbe Academy for an official report card, only one sample of written and graded work is required per quarter for each course along with a report card submission. Parents should use the grade book only as a help to their home schooling and not as hindrance. Point values and weighting are suggested for *convenience* and may be modified, dropped completely, or added to as the parent deems fit. Please consult the welcome packet for a full tutorial on using the grade book.
This history course contains 36 weeks broken into four 9-week quarters. Week 8 is considered a review week and week 9 is dedicated strictly to examination. Your student may not need all of Week 8 for review. You can use this time to catch up if necessary and then go over the subject matter. **If you intend to use the tests provided, look them over before teaching the subjects and make sure you teach the material in the tests.**

Finally, begin every class with a prayer. This is a good way to help the child memorize new prayers. Repeat the same ones every day until they are known. Be sure to explain the meanings of the prayers. Repetition in all areas of study is most beneficial.

Kolbe Academy
Home School

GRADE EIGHT
PRE-ALGEBRA
Saxon Algebra ½

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Kolbe Academy
Home School

♦ SYLLABUS ♦

Pre-Algebra
Grade 8

COURSE TITLE: Pre-Algebra

COURSE TEXTS: *Saxon Algebra 1/2 Home Study Kit: An Incremental Development,* Third Edition
Saxon Algebra 1/2 Solutions Manual, Optional

COURSE DESCRIPTION:
This course provides a transition "from the concrete concepts of arithmetic to the abstract concepts of algebra." Students who may have struggled with Saxon Mathematics 8/7 are encouraged to use Saxon Algebra 1/2 prior to moving onto a course in Algebra I.

The tests provided by Saxon should be used as weekly quizzes to test the student's understanding of the previous week's material. They should be given at the end of the week in which the Test is scheduled according to the Course Plan. A final exam over the quarter's material should be given at the end of the quarter. A final cumulative exam is an optional test to be given at the end of the course to bring together all of the concepts taught within the Algebra ½ course and to better prepare the student for their High School Mathematics courses.

SCOPE AND SEQUENCE:

1. Whole Numbers
2. Subtraction and Addition Patterns
3. Multiplication and Division Patterns
4. Decimals
5. Word Problems
6. Points, Lines, and Rays
7. Divisibility
8. Fractions
9. Multiples
10. Areas
11. Metric System
12. Variables
13. Roots
14. Volume
15. Surface Area
16. Percents
17. Ratio and Proportion
18. Mixed Numbers
19. Absolute Value
20. Parentheses
21. Properties of Algebra
22. Exponents and Signed Numbers
23. Classifying Triangles
24. Roman Numerals
25. Probability
26. Pythagorean Theorem
27. Permutations
28. Real Numbers

COURSE PLAN METHODOLOGY:
Kolbe Academy has worked diligently to create the best possible course plans with the home schooling family in mind. Remember, however, that our program is intended to be flexible. Per the principle of subsidiarity, these course plans are a **suggested** course of study. As the teacher, you should adapt and modify them to meet the individual learning needs of your child. **Do not feel obligated to follow these course plans exactly**.

In the course plans that follow, *Saxon Pre-Algebra* is represented by the abbreviation **SAX**. Each weekly assignment is summarized in the first line of the week's daily course plan. The specific daily assignments are outlined in the following lines indicated by the **DAY 1, DAY 2, DAY 3, DAY 4, and DAY 5** abbreviations. Parent daily guidelines are given to the right of the student assignments. The quarterly schedule is set up such that one

lesson, investigation or test can be done on a five-day schedule. Although most of Kolbe Academy Home School course plans are set up for a four-day week, the mathematics courses at this level do benefit from a five-day week schedule. This can be altered if the student would like to double up on an assignment or test on the final day of their week. A family's schedule can and should vary as needed.

A weekly grade book is included at the end of the week's course plan *as a convenience*. Parents should use the grade book only as a help to their homeschooling and not as a hindrance. It includes a cumulative list of written assignments from the week's course plan as well as space for additional assignments, if needed. **Kolbe Academy does not require that you keep record of all student work.** If you intend to report your student's work to Kolbe Academy for an official record, only one sample of written and graded work is required per quarter per course along with the signed and filled out report card. The weighting suggestion in the end of quarter grade book is there for *convenience* and may be modified as the parent deems fit. Please consult the welcome packet for a full tutorial on using the grade book.

This Pre-Algebra course contains 36 weeks broken into four 9-week quarters. Week 8 is a lighter week, and usually includes a few days for review. You should use the review days as time to catch up if necessary and then go over the subject matter. **If you intend to use the tests provided, look them over *before* teaching the subjects and make sure you review the material in the tests throughout the quarter.**

Finally, begin every class with a prayer. This is a good way to help the child memorize new prayers. Repeat the same ones every day until they are known. Be sure to explain the meanings of the prayers. Repetition in all areas of study is most beneficial.

Kolbe Academy
Home School

GRADE EIGHT OR NINE
ALGEBRA I
Saxon Algebra 1

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Kolbe Academy
Home School

♦ SYLLABUS ♦

Algebra I
Grade 8 or 9

COURSE TITLE: Algebra I

COURSE DESCRIPTION:

Students may begin this course after completing any pre-Algebra course, including the Saxon Math 8/7 (with pre-Algebra) course. Students who struggled with Saxon 8/7 are advised to use Saxon Algebra 1/2 prior to beginning an Algebra I course. Upon completion of Saxon's Algebra I, students may either continue with the Saxon program by using Saxon's Algebra 2 book, or may switch into a standard Geometry course using Jacob's Geometry. Please be advised that Saxon does not have a separate Geometry course. The author instead integrates all Geometry concepts throughout the Algebra I, Algebra II, and Advanced Math programs. It is advisable that all college bound students exclusively using the Saxon program complete through Advanced Math in order to cover all the Geometry and Trigonometry concepts that might appear on the PSAT, ACT, and SAT standardized tests.

SCOPE AND SEQUENCE:

This course covers, among other topics, the following:

1. division by zero
2. reciprocal and multiplicative inverse
3. exponents
4. algebraic phrases
5. word problems
6. canceling
7. ratio
8. conjunctions
9. dividing fractions
10. domain
11. elimination
12. closure
13. coin problems
14. algebraic proofs
15. rational equations functions

SKILLS TO BE DEVELOPED:

- problem-solving.
- use of diagrams and graphs.
- familiarity with the concepts and procedures of algebra.

DIPLOMA REQUIREMENTS:

Summa Cum Laude diploma candidates are required to follow the Kolbe Core course (K) track outlined in this Algebra I course plan. ***Magna Cum Laude*** and ***Standard*** diploma candidates may choose to pursue the (K) designation, but are not required to do so, and instead the parent has the option of altering the course plan as desired. ***Summa*** students must complete 4 years of mathematics during their high school course of study including the equivalent of Algebra I, Geometry, Algebra II, and Pre-Calculus (or higher). For a Summa student planning to use Saxon for their high school course of study, this means completing at minimum, the entirety of the *Saxon Advanced Math* program (meaning completing the entire *Saxon Advanced Math* text). ***Magna*** students must complete 3 years of mathematics during their high school course of study including Algebra I, Geometry, and Algebra II (or higher). For a Magna student planning to use Saxon for their high school course of study, this means completing at least through the Kolbe Advanced Math I course plan which covers a little over half of the *Saxon Advanced Math* book. ***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 Algebra I.

REQUIRED SAMPLE WORK:

Designation*		**K**
Course Title	**Algebra I**	**Algebra I**
Quarter 1	1. Any written sample of work	1. Completed Saxon Test 7
Quarter 2	1. Any written sample of work	1. Completed Saxon Test 15
Quarter 3	1. Any written sample of work	1. Completed Saxon Test 23
Quarter 4	1. Any written sample of work	1. Completed Saxon Test 30

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

If the student wishes to have the course distinguished on the transcript with a (K) as a Kolbe Academy Core 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) designation or diploma type status, please contact the academic advisory department at 707-255-6499 ext. 5 or by email at advisors@kolbe.org.

COURSE TEXT: *Saxon Algebra 1* (Third Edition)

Kolbe Academy
Home School

HIGH SCHOOL
ALGEBRA II with GEOMETRY
Saxon Algebra 2

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Kolbe Academy
Home School

♦ SYLLABUS ♦

Algebra II with Geometry
High School

COURSE TITLE: Algebra II with Geometry

COURSE DESCRIPTION:

The following course covers the basics of Algebra II and quite a bit of Geometry. The Saxon series integrates Geometry throughout their Algebra I, Algebra II, and Advanced Mathematics books. Students looking for a more substantial course in Geometry should use Jacob's Geometry prior to beginning this course. Summa Cum Laude diploma candidates should be completing this course no later than Grade 10 in order to ensure that Calculus be completed in the 12th grade.

SCOPE AND SEQUENCE:

1. Absolute value
2. Percent
3. Pythagorean theorem
4. Substitution
5. Scientific notation
6. Area
7. Trinomial factoring
8. Chemical compounds
9. Abstract fractional equations
10. Radical equations ideal gas laws quadratic formula force vectors slope formula discriminant number word problems

SKILLS TO BE DEVELOPED:

- The fundamental aspects of problem-solving
- Use of diagrams
- Familiarity with the concepts and procedures of algebra.

DIPLOMA REQUIREMENTS:

Summa Cum Laude diploma candidates are required to follow the Kolbe Core course (K) track outlined in this Algebra II with Geometry course plan. ***Magna Cum Laude*** and ***Standard*** diploma candidates may choose to pursue the (K) designation, but are not required to do so, and instead the parent has the option of altering the course plan as desired. ***Summa*** students must complete 4 years of mathematics during their high school course of study including the equivalent of Algebra I, Geometry, Algebra II, and Pre-Calculus (or higher). For a Summa student planning to use Saxon for their high school course of study, this means completing at minimum, the entirety of the *Saxon Advanced Math* program (meaning completing the entire *Saxon Advanced Math* text). ***Magna*** students must complete 3 years of mathematics during their high school course of study including Algebra I, Geometry, and Algebra II (or higher). For a Magna student planning to use Saxon for their high school course of study, this means completing at least through the Kolbe Advanced Math I course plan which covers a little over half of the *Saxon Advanced Math* book. ***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 Algebra II with Geometry.

REQUIRED SAMPLE WORK:

Designation*		**K**
Course Title**	**Algebra II with Geometry**	**Algebra II with Geometry**
Quarter 1	1. Any written sample of work	1. Completed Saxon Test 7
Quarter 2	1. Any written sample of work	1. Completed Saxon Test 15
Quarter 3	1. Any written sample of work	1. Completed Saxon Test 23
Quarter 4	1. Any written sample of work	1. Completed Saxon Test 32

***Designation refers to designation type on transcript. K designates a Kolbe Academy Core course.**
****Students who have already taken a separate Geometry course (i.e. Jacobs Geometry) or who plan to do so next year, should use a course title of just "Algebra II."**

If the student wishes to have the course distinguished on the transcript with a (K) as a Kolbe Academy Core 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) designation or diploma type status, please contact the academic advisory department at 707-255-6499 ext. 5 or by email at advisors@kolbe.org.

COURSE TEXT: *Saxon Algebra 2* (2007, 3rd Edition)

Kolbe Academy
Home School

HIGH SCHOOL
PRECALCULUS with GEOMETRY
Saxon Advanced Mathematics

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Kolbe Academy
Home School

♦ SYLLABUS ♦

Precalculus with Geometry
High School

COURSE TITLE: Precalculus with Geometry

COURSE DESCRIPTION: The *Advanced Mathematics* book by Saxon can be used in 2, 3, or 4 semesters. Kolbe Academy offers a course in two (10 credits) and four (20 credits) semesters. Those students interested in doing the course in 3 semesters (15 credits) should contact Kolbe for additional guidance. Those students who are more proficient in math, may want to use this one year honors Advanced Math course (10 credits), calling the course "Precalculus with Geometry." Students will be prepared for Calculus after this one year study of Advanced Mathematics. Students wishing to pursue a less rigorous approach to the advanced mathematics course should follow the Advanced Math I and II two-year (20 credits) track.

SCOPE AND SEQUENCE:

This course provides, among other topics, in-depth coverage of the following:

- trigonometry
- logarithms
- geometry
- analytic geometry
- fundamentals of algebra requisite for success in the above areas

SKILLS TO BE DEVELOPED:

- problem-solving.
- use of diagrams.
- familiarity with the concepts and procedures of algebra and advanced mathematics.
- Using the graphing calculator

COURSE TEXT: *Saxon Advanced Mathematics* (2nd edition)

DIPLOMA REQUIREMENTS:

Summa Cum Laude diploma candidates are required to follow the Kolbe Honors course (H) track outlined in this Precalculus with Geometry course plan or use the subsequent course plans for Kolbe Core (K) credit. ***Magna Cum Laude*** and ***Standard*** diploma candidates may choose to pursue the (H) designation, but are not required to do so, and instead the parent has the option of altering the course plan as desired. ***Summa*** students must complete 4 years of mathematics during their high school course of study including the equivalent of Algebra I, Geometry, Algebra II, and Pre-Calculus (or higher). For a Summa student planning to use Saxon for their high school course of study, this means completing at minimum, the entirety of the *Saxon Advanced Math* program (meaning completing the entire *Saxon Advanced Math* text). ***Magna*** students must complete 3 years of mathematics during their high school course of study including Algebra I, Geometry, and Algebra II (or higher). For a Magna student planning to use Saxon for their high school course of study, this means completing at least through the Kolbe Advanced Math I course plan which covers a little over half of the *Saxon Advanced Math* book. ***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 Precalculus with Geometry.

REQUIRED SAMPLE WORK:

Designation*		**H**
Course Title**	**Precalculus with Geometry**	**Precalculus with Geometry**
Quarter 1	1. Any written sample of work	1. Completed Saxon Test 7
Quarter 2	1. Any written sample of work	1. Completed Saxon Test 15
Quarter 3	1. Any written sample of work	1. Completed Saxon Test 23
Quarter 4	1. Any written sample of work	1. Completed Saxon Test 31

***Designation refers to designation type on transcript. H designates a Kolbe Academy Core course.**
****Students who have already taken a separate Geometry course (i.e. Jacobs Geometry) should use a course title of just "Precalculus."**

If the student wishes to have the course distinguished on the transcript with a (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 (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.

Kolbe Academy
Home School

HIGH SCHOOL
CALCULUS
Saxon Calculus, 2nd Edition

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Home School

♦ SYLLABUS ♦

Calculus
High School

COURSE TITLE: Calculus

COURSE DESCRIPTION:

This book is designed for prospective mathematics majors as well as for students whose primary interests are in engineering, physics, business, or the life sciences. Students following the Kolbe Core Calculus I track will have a firm foundation in Calculus I concepts and a brief introduction to Calculus II concepts. Kolbe Core students may proceed for an additional full year of Calculus II and complete the book. Students following the Kolbe Honors Calculus I and II track will have a firm foundation in Calculus I and II concepts. The Honors course prepares a student for taking the AP Calculus AB Exam as well as preparing them fairly well for the AP Calculus BC Exam. The Kolbe Core Calculus I, Kolbe Core Calculus II, and the Kolbe Honors Calculus I and II courses each receive 10 math credits towards any diploma.

The book contains a sufficient review of PreCalculus concepts, however, students should not attempt this Calculus course without completing one of the following: Algebra II/Trigonometry, PreCalculus, Saxon Advanced Mathematics, or other equivalent PreCalculus course. Students who excelled in mathematics throughout high school or who are highly motivated, should be encouraged to pursue the Honors track.

SCOPE AND SEQUENCE:

1. PreCalculus review
2. Limits and their properties (Calculus I)
3. Introduction to Differentiation (Calculus I)
4. Techniques of Differentiation (Calculus I)
5. Applications of differentiation (Calculus I)
6. Introduction to Integration (Calculus I)
7. Applications of Integration (Calculus II)
8. Techniques of Integration (Calculus II)
9. Analytical geometry (Calculus II)
10. Series and Sequences (Calculus II)

DIPLOMA REQUIREMENTS:

Summa Cum Laude diploma candidates are required to follow the Kolbe Honors course (H) track or Kolbe Core course (K) track outlined in this Calculus 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 the parent has the option of altering the course plan as desired. ***Summa*** students must complete 4 years of mathematics during their high school course of study including the equivalent of Algebra I, Geometry, Algebra II, and Pre-Calculus (or higher). ***Magna*** students must complete 3 years of mathematics during their high school course of study including Algebra I, Geometry, and Algebra II (or higher). For a Magna student planning to use Saxon for their high school course of study, this means completing at least through the Kolbe Advanced Math I course plan which covers a little over half of the *Saxon Advanced Math* book. ***Standard*** diploma students must complete 2 years of mathematics including Algebra I. Please see the next page for specific course titles, quarterly reporting requirements and transcript designations for Calculus.

REQUIRED SAMPLE WORK:

Designation*		**K**	**H**	**K**
Course Title**	**Calculus I**	**Calculus I**	**Calculus I and II**	**Calculus II**
Quarter 1	1. Any written sample work	1. Completed Saxon Test 5	1. Completed Saxon Test 9	1. Completed Saxon Test 22
Quarter 2	1. Any written sample work	1. Completed Saxon Test 9	1. Completed Saxon Test 18	1. Completed Saxon Test 26
Quarter 3	1. Any written sample work	1. Completed Saxon Test 13	1. Completed Saxon Test 27	1. Completed Saxon Test 31
Quarter 4	1. Any written sample work	1. Completed Saxon Test 18	1. Completed Saxon Test 37	1. Completed Saxon Test 37

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

Please be sure to note that you are using the SECOND EDITION of Saxon Calculus when you turn in your Course of Study form and quarterly reports. The first edition has fewer lessons and tests, so there are different sample requirements for that edition.

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 TEXT: *Saxon Calculus* (2nd Edition)

Please be sure to note that you are using the SECOND EDITION of the Saxon Calculus when you turn in your Course of Study form and quarterly reports. Please call Kolbe Academy for the 1st edition course plans if you are using the 1st edition.