



Saxon Geometry

SETON HOME STUDY SCHOOL

Lesson Plans ♦ Tests ♦ Answer Keys ♦ Quarter Report Forms



Course Manual

MAT211_15A

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Lesson Plan updated August 2014

Cover: *St. Thomas Aquinas at His Study*, by Sandoval

Basic Outline of the Saxon Geometry Textbook

Also, all student should familiarize themselves with the general organization of the textbook and the aids available. The basic outline is as follows:

Table of Contents	iii – xv
Lessons, Labs, and Investigations	1 – 775
Skills Bank – reviews of various arithmetic and algebraic concepts	776 – 799
Properties and Formulas	800 – 805
Postulates and Theorems	806 – 812
Glossary – definitions of all significant terms used in the textbook	813 – 871
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The main section of the textbook comprises 12 Sections consisting of a total of 120 **Lessons**, 15 **Labs**, and 12 **Investigations**.

Lessons present new concepts followed by two sets of problems: **Lesson Practice** problems (which are based on the lesson just presented) and **Practice Distributed and Integrated** problems (which are based on *all* the lessons previously presented).

Labs are designed to provide students with hands-on learning experience and are of two types: (1) Geometric Constructions using compass and straight edge and Technology Applications related to computerized geometric figures. The geometric CONSTRUCTIONS sections (Labs 1 – 9) present step-by-step guided practice for constructing various figures using compass and straight edge. The TECHNOLOGY sections (Labs 10 – 15) make use of computer software to produce and manipulate geometric figures electronically. Each lab is followed by *Lab Practice* problems directly related to that specific lab.

Investigations present new concepts using a somewhat different approach than either the lessons or labs. These Investigations *contain within them problems related to the concept being taught* followed by a set of Investigation Practice problems related directly to the concepts just presented in that Investigation.

Incremental Development and Continuous Practice Teaching Method

By design the standard Saxon math programs have two important aspects. They use incremental development and continuous practice. Incremental development refers to the division of concepts into small, easy to understand pieces that are taught over several lessons. Thus, a major concept is not taught

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in one lesson, but rather developed over time. The student is not expected to fully understand the complete concept the first time it is taught, just the incremental aspects of the concept taught in that lesson. Continuous practice means that fundamental skills and concepts are practiced and reviewed throughout the year.

The new Saxon Geometry program uses this same basic approach.

The twin ideas of “incremental development” and “continuous practice” fall together in the educational concept of “distributed learning.” Testing has proved that distributed learning is more effective than “massed learning”. Looking at material several times in smaller increments makes a more lasting impression on the brain than looking at something once for an extended period of time. So to gain the maximum benefit from this approach, it is important to work at maintaining the schedule of studying one lesson each day and doing all of the problems each day when feasible.

Practical Lesson Plan Strategies

Daily Math Schedule:

1 period in Morning
1 period in Afternoon

Most parents remember their own high school Math classes and the homework they had to complete once they came home from school. The classes usually lasted about 50 minutes and the homework took about that long also. One lesson was studied per day and the next day the class moved on to the next lesson. Math textbooks were written with this schoolwork / homework template in mind. Saxon textbooks are no different. With all this in mind and adapting to the home environment, experience has shown that it is advisable that 2 math periods per day be scheduled, one in the morning and one in the afternoon or evening, focusing on only one lesson per day.

Each Period:

50 Minutes

Each period should be about 50 minutes since experience has demonstrated that to go beyond 50-60 minutes in one session is counterproductive.

Daily Lesson Plan

1. Read lesson.
2. Work *Lesson Practice* problems. Check and redo as necessary.
3. Work Practice Distributed and Integrated problems. Check and redo as necessary.

Have the student read and understand each lesson and then work out the ***Lesson Practice*** set of several problems that follow the lesson for the first period, and then begin working on the ***Practice Distributed and Integrated*** set of 30 problems until the 50 minutes are up. The student should continue where he left off for the second 50 minute period. Proceed in order from the first problem to the last; do not skip around.

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To **check** any problem related to *Lessons, Labs, or Investigations* use the Solutions Manual.

Be sure any homework problems done incorrectly are corrected and then redone. For each Lesson you will find the complete solutions to each **Lesson Practice** problem and **Practice Distributed and Integrated** set of problems in the separate Solutions Manual. For each Lab Practice problem, each internal Investigation problem, and each Investigation Practice set of problems, complete solutions are also provided in the Solutions Manual. The parent/teacher should consider giving the student the Solutions Manual and having him check his own work with general oversight by the parent/teacher. You may also desire to adopt a *one problem / one solution at a time* checking approach. With this method the student will be able to identify one technical misunderstanding at a time and be able to focus on it immediately and correct it before moving on. In any case the parent/teacher should adjust the approach to what experience informs her actually works for her student.

Try to do all the problems in each lesson

Saxon strongly recommends that the student do all of the problems in each lesson set because the course is cumulative, meaning that each lesson will include material from the previous lessons. If the student has demonstrated complete mastery of some of the problem types, however, then the parent/teacher may advise the student to skip them. This should be done with caution as the problem type may appear on any test throughout the year.

LABS
Labs 1-9 Required
Labs 10-15 Optional
INVESTIGATIONS
Inv. 1-12 Required

There are 15 Labs and 12 Investigations scattered throughout the textbook. Labs provide hands-on learning experience and are of two types: geometric constructions using compass and straight edge and technology applications related to computerized geometric figures. The CONSTRUCTIONS sections (Labs 1 – 9) using compass and straight edge are required while the TECHNOLOGY sections (Labs 10 – 15) which require special computer software are optional. Investigations are guided lessons taught in a more informal manner than the formal lessons. They also are required.

Scheduling Goal:
5 lessons, labs, investigations, or tests per week

In the beginning do not worry about “getting behind.” It is more important that the student understand each lesson than it is that he keep on a schedule. However, as time goes by and the parent/teacher is able to get a sense of the amount of time it takes for a particular student to do each lesson by completing all problems, the parent/teacher may desire to reduce the number of problems from 30 to 20 or from 30 to 15 for practical reasons to keep to a realistic scheduling goal of 5 lessons (or labs or investigations or tests) per week. Just be aware of the fact that the more problems the student works out the better he gets.

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