We are in the process of revising and updating our high school Math lesson plan manuals. A feature of this update is a revision of the introduction and the general outline of the approach recommended for each course. This includes a series of Teaching Tips, some general and some specific, that may be helpful to both parents and students. A preliminary sample is presented here for one of these courses.

ALGEBRA 1 (3RD EDITION)

TEACHING

TIPS

The Saxon math program has two important aspects. It uses 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 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 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 a 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.

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

Have the student read and understand each lesson and then work out the ***Practice*** problems that follow the lesson for the first period, and then begin working on the ***Problem Set*** 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 lesson to the last; do not skip around.

To Check Problems
Practice **Problems -**   *Solutions Manual*
Problem Set **Problems -**   *Solutions Manual*

Be sure any homework problems done incorrectly are corrected and then redone. You will find the complete solutions to each *Practice* problem and *Problem Set* problem in the separate 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.

Scheduling Goal: *4 lessons and a test per week after the first 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 for practical reasons to keep to a realistic scheduling goal of 4 lessons and a test per week. Just be aware of the fact that the more problems the student works out the better he gets.

Consider using the optional *D.I.V.E. into Math* CD-ROM. This computer aid features a teacher explaining each lesson throughout the entire textbook. The teacher verbally explains each concept while writing on a blackboard. This "human element" approach is very helpful to students. The student should view the D.I.V.E. lesson before or in lieu of the textbook lesson before beginning work on the lesson problems.

D.I.V.E .into Math CD-ROM

**If you have trouble understanding a concept or if test grades start slipping …**

If you have trouble understanding a concept, put your math work away for a while and come back to it later that same day or the next day. If you still do not understand, ask your parent/teacher or call a Seton academic counselor for help. Do not allow yourself to become frustrated. A Seton counselor is just a telephone call away.
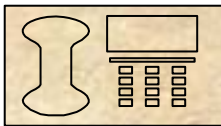
Problems ?

540-636-9990

Call or e-mail Seton and ask for a Math Counselor
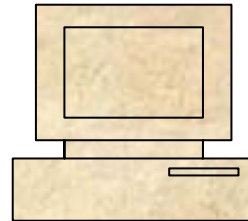
counselors @ setonhome.org

If your student is having some small to moderate difficulties, the situation is not serious in most instances and is correctable with patience, perseverance, and a disciplined approach to whatever problems the student has. In this regard relatives, siblings, or fathers may sometimes, if the circumstances are right, be of help. If you would like to discuss the situation involving your student with a Math Counselor, do not hesitate to contact one.

However, if the student is having great difficulties understanding even *basic* concepts, this *may* indicate that the level of math he is presently in is beyond his level of comprehension. In this case after consultation with a Math Counselor you *may* decide to move him back to Alg ½ or Math 87.

In either case these difficulties usually show up somewhere in the 1st or 2nd Quarter and the sooner they are noticed and dealt with the better for the student.

Testing and Grading Guidelines

After extensive research on student testing performance for over a decade, Saxon has published the following testing procedure in its most recent Upper Grades Teacher Resource Packet:

"We strongly advise that Test 1, which covers the first four lessons, be given only after Lesson 8 has been taught and the homework completed. Test 2 should be given only after Lesson 12 has been completed, and so on. Always remember to test at least four lessons behind. By following this schedule, students always have four days to practice a concept before they are tested on it."

For your convenience, a testing schedule has been included in this lesson plan.
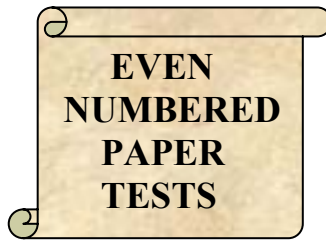
ODD NUMBERED PAPER TESTS
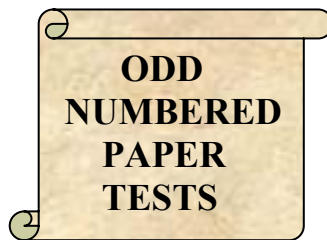
Parent/teacher grades

Use *Odd-Numbered Tests Answer Key*

May be redone one or more times.

Are *not* sent to Seton

Odd-numbered paper tests (provided along with this lesson plan manual) are to be used as practice tests and graded at home with the *Odd-Numbered Tests Answer Key* provided in this booklet. The student should work out each problem on loose leaf paper showing every step of the solution. Each test contains 20 problems, each problem is worth 5 points, and partial credit may be given. These odd-numbered tests may be redone (by simply redoing only the missed problems) as many times as the parent/teacher judges appropriate for the student to master the material covered in the test. The parent/teacher may choose to record the final grade for each odd-numbered test on the quarter report forms or have Seton base the student's grade solely on his even-numbered test grades. These odd-numbered tests themselves are *not* sent to Seton.
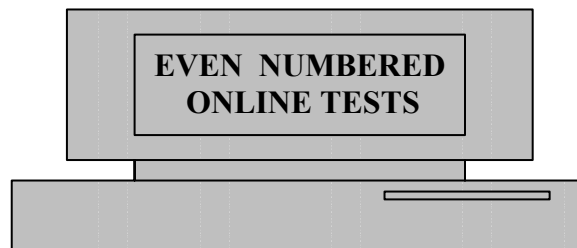
EVEN NUMBERED PAPER TESTS

Send to Seton for grading.

May be redone only once.

Even-numbered paper tests (provided along with this lesson plan manual) are to be sent to Seton for grading at the end of the quarter, along with the quarter report form. The student should work out each problem on loose leaf paper showing every step of the solution, and submit these along with the test sheet and answer sheet. Each test contains 20 problems, each problem is worth 5 points, and partial credit may be given. These even-numbered tests may be redone only once (by simply redoing only the missed problems) after they are graded and received back from Seton. These tests may be sent to Seton one at a time or all tests for the quarter may be submitted at once. See the back side of a Quarter Report Form for detailed instructions

EVEN NUMBERED ONLINE TESTS

Electronically uploaded and graded by Seton.

May be redone only once.

Even-numbered on-line tests may be done as an alternative to the even-numbered paper tests. The student should work out each problem on loose leaf paper showing every step of the solution, enter the answers into the computer, check to make sure they have been entered correctly, and upload the test. Once all answers are entered and uploaded, grading for these tests is done electronically and practically instantaneously. Each test contains 20 problems and each problem is worth 5 points. Since they are multiple choice tests, no partial credit will be given. These tests may be redone by re-working incorrect problems, changing only those answers, and uploading the redone test.

ALL TESTS
ARE CLOSED
BOOK

CALCULATORS may not
be used on tests and their
use on homework
problems is strongly
discouraged.