

# DIVE Calculus, 2nd Edition

## Teacher Guide & Course Instructions

### Quick Start Guide

1. **Parents and Students:** Watch the [Getting Started](#) video.
2. **Critical:** Print the **STUDENT INSTRUCTION SHEET** on page 5.
3. Print the **ASSIGNMENT CHART** on page 6.
4. **Critical:** Use the Timed Method, described under Syllabus on page 2.
5. If your student will take an Advanced Placement exam, see [AP Prep](#)
6. Determine the number of homework problems to do by reading the Weekly Schedule section.
7. **Gather Required Materials**
  - Drawing Compass
  - Ruler
  - TI 83, TI 83+, TI 84, or TI 84+ Graphing Calculator: [See Recommendations](#)

### [Time- Saving Tips for Success](#)

Need help accessing or viewing the DIVE video lessons?

[Stream & Download Access Instructions & Tech Support](#)

**VHX: Error SystemTimed Out:** [Follow these Steps](#)

[CD-ROM Access Instructions & Tech Support](#)

### Course Components

## Syllabus & Assignment Chart

The DIVE syllabus, on page 6 of this guide, organizes assignments on a 42 week schedule. However, this is only a general guide. Instead of requiring the student to complete a lesson per day, the student should work on math for about two hours per day, four to five days per week. At the end of that two hours, regardless of how much of the lesson is completed, the student should stop. Then, pick up where they left off the next day. This ensures the student has time to relearn forgotten concepts without spending 3-4 hours on math. Initially, it may take two or three days to complete one lesson. However, as mastery, long-term retention, and fluency are developed, math will become faster and easier.

Link to [Table of Contents for Saxon Calculus, 2nd Edition](#)

### Lessons

Each lesson is made up of three parts: **DIVE Lecture, Saxon Example Problems, and Saxon Problem Set**. The DIVE lecture number corresponds with the assigned Saxon lesson for that day. So if you are assigned Lesson 4, you will watch DIVE Lecture 4 and complete Saxon Lesson 4 in the Saxon Student Textbook.

#### DIVE Video Lectures

The lesson in the Saxon textbook is not the complete lesson. John Saxon designed his program to be taught in a public school classroom by a trained Saxon instructor. So think of the DIVE lectures as going to class. They have important information that is not in the book. Don't skip class! The DIVE lectures will actually save time by ensuring you understand.

During the lecture students should take notes and work problems with Dr. Shormann, pausing and rewinding as necessary. They should not be looking at their book. It is too difficult to look at the book, watch the lecture, and take notes. Because Saxon has limited practice on the new concept, Dr. Shormann uses different example problems in his lectures than the ones in the Saxon textbook. If a student needs more practice they can do the Example Problems in the Saxon lesson.

#### Saxon Problem Sets Build Long-term Retention & Fluency

Finally, the problem set is completed. It provides more than enough review of previously learned concepts. Saxon's unique method of continual review (not spiral) means the student is either practicing the concept in the mixed practice or building on it in the new lesson. Practicing a concept daily over a long period of time has been proven to build long-term retention.

Keep in mind the Problem Set problems are just practice. It is expected that students will "forget" some of the concepts. The key is to re-learn these forgotten concepts. A lesson reference number is in parentheses next to each problem indicates which lesson that concept was taught in. Simply click on that DIVE Lecture to quickly re-learn that concept. Better than an answer, this gives students the opportunity to apply what was just learned, which builds retention.

Rarely, after re-watching the DIVE lecture, the student may not understand. Mark the problem wrong and

go to the next problem. It will be corrected during the grading step.

### Saxon Answer Key for Grading Daily Work

Found in the Home Study Packet, the Answer Key provides the answers (not full solutions) to all Problem Set questions. At this level, it is recommended students grade their own work as this is part of the learning process. After seeing the correct answer, students can often find their mistake without using any other resources. If not, simply re-watch the corresponding DIVE lecture and try correcting the problem again. Homework should be graded and corrected before starting the next lesson.

### Saxon Solutions Manual Provides Step-by-Step Solutions

If, after watching the DIVE lecture, the student still does not understand a problem, let them look at the Solutions Manual. Here they will find step-by-step solutions to every Problem Set question and Test question. A parent should keep this booklet and only have the student use it when grading is completed and they have corrected all the problems they can by re-watching the DIVE lecture.

### Q&A Email Service with Dr. Shormann

If, after viewing the Solutions Manual, the student still does not understand the concept, Use [this form](#) to contact Dr. Shormann. Typically the student has missed a foundational concept along the way and he can pinpoint that for you.

## Tests

Approximately every 4 lessons there is a test. The tests are in a small booklet called Test Forms, nestled in the Home Study Packet. The tests are cumulative, which means there are concepts from previous lessons. Students should spend 10-15 minutes studying for the test by working a few practice problems from each lesson the test covers. This information is listed on the syllabus in parentheses next to each test number.

## Weekly Schedule

### Use the Timed Method

**Students should work on math 4 or 5 days per week, for 1.5 - 2 hours per day.** At the end of this time, regardless of how much of the lesson is completed, stop and pick up where you left off the next day. Eventually, the student will build retention and fluency and complete their lessons faster and faster.

Instead of requiring the student to complete a full lesson every day, use the timed method in red text above. This will ensure the student has time to go back and relearn forgotten concepts, building mastery and fluency.

### How many problems in the Problem Set should I complete?

Each lesson has 25-30 homework problems. However, most DIVE students do not need this much review. Following is a method that works well for reducing the amount of review while maintaining fluency and building long-term retention. If test scores drop below an 80 or 85, this means the student needs more practice and should increase the number of homework problems.

### Odds or Evens + 5

With this schedule students complete the odd numbered problems on odd numbered lessons and even

numbered problems on even lessons. If you have a very strong math student, 15 problems may be enough review. Typically 15 problems do not provide enough review for most students to build fluency. Therefore, we recommend adding 3-5 more problems from the most recent lessons (see the lesson reference number in parentheses next to each problem). For example, if you are on lesson 65, you would do all the odd numbered problems in the Mixed Practice section. Then circle 3-5 problems that have 65, 64, 63, 62, in parentheses next to the problem. This will add extra practice on the most recently learned concepts.

## New to DIVE or Saxon Math?

The first 30 lessons of each Saxon text are review and move fairly quickly. However, if you are new to Saxon/DIVE these lessons may not be review and extra time may be required to complete these lessons. It is especially important to use the Timed Method described under Weekly Schedule above. Don't be surprised if it takes 2 or 3 days to complete a lesson during this review section.

## Grades

### **Saxon Solutions Manual Step-by-Step Solutions to all homework and tests.**

This book has step-by-step solutions to every homework and test question. A grade recording form is on page 6 below.

**Homework Grades:** The homework is practice (think piano or baseball practice). Don't be concerned about the number of missed homework problems. Students are expected to miss or "forget" some of the concepts until mastery is achieved. The continual "reminder" of solving the problem in the corrections step, over a long period of time, will build mastery and long-term retention. If all the homework is completed and corrected as instructed on page 5, award a 100. Points can be deducted for sloppy work, not following instructions, etc.

**Test Grades:** Test scores are the only tool that should be used to measure understanding. Concepts are not tested until the student has had time to achieve mastery. Tests should be graded by a parent. Mark each wrong problem but do not correct or mark what they did wrong. Instead, the student should correct each missed problem by following the steps on page 4. Missed problems corrected on paper without using any resources should be awarded 1/2 credit. This gives the student an incentive for showing their work. Missed problems corrected by re-watching the video lecture, looking at notes, etc, are not awarded extra credit.

If test scores drop below an 80 or 85 (with extra credit for corrected problems), back up 4 lessons and have the student do all the problems in each lesson. When test scores go up, you can try reducing the number of homework problems again.

To calculate a final grade, find the average for each column (sum of all grades divided by the number of grades) add all the grades in one column and divide by the number of grades). Then use the following formula to calculate the final grade.

$$\text{Final Grade} = (\text{Total Homework Average} \times .20) + (\text{Total Test Average} \times .80)$$

# Daily Schedule: Student Instructions for Lessons & Tests

**Parents: Read the Syllabus & Assignment Chart section on page 1.**

**Print this page for daily use by the student.**

1. <b>Watch the DIVE lecture.</b> Take brief notes on headings and formulas only. <b>Pause the lecture and solve each example problem on your notes.</b> Do not copy the example problems.	<ul style="list-style-type: none"> <li>Try to solve the missed problem again. If you can't, skip it and go to the next missed problem.</li> <li>Repeat these steps to re-learn each missed problem.</li> </ul>
2. <b>Example Problems</b> (in Saxon Textbook) Do all the Example Problems found in the textbook. Re-watch the DIVE lecture, as needed.	<ul style="list-style-type: none"> <li><b>For all problems you still cannot correct:</b></li> </ul>
3. <b>Do the Problem Set</b> (Odd/Even + 5) Follow these steps if you <u>can't solve a problem</u> .	<ul style="list-style-type: none"> <li>View the step-by-step solution in the Saxon Solutions Manual</li> </ul>
A. Click the DIVE lecture that matches the number in parenthesis next to the question.	<ul style="list-style-type: none"> <li>Close the manual and try to solve the problem on your corrections page. Don't copy the solution.</li> </ul>
B. Fast forward the lecture until you see a similar example problem.	<ul style="list-style-type: none"> <li>Repeat these steps for each remaining missed problem.</li> </ul>
C. Watch this section of the lecture. Pause the lecture and attempt to work the example problem in the lecture.	<ul style="list-style-type: none"> <li>For any problems you cannot solve by using the solutions manual, email <a href="mailto:Dr.Shormann@www.diveintomath.com">Dr. Shormann</a> <a href="http://www.diveintomath.com/ask-a-math-question/">www.diveintomath.com/ask-a-math-question/</a></li> </ul>
D. Try to solve the homework problem again. If you can't, skip to the next question. Don't spend more than 10 minutes time "stuck" on a problem.	<p style="text-align: center;"><b>Tests</b></p> <p>Study by working a few practice problems from each lesson listed next to the test number on the assignment chart.</p>
E. Repeat these steps to answer all the questions you can for this lesson.	Test should be graded by a parent. Parents, do not correct, just mark wrong problems.
4. <b>Grade the Homework</b> (use Answer Key in Homeschool packet). Put an x next to each wrong answer. Do not correct until the next step.	Check your work and correct all missed problems you can without using any resources.
5. <b>Start a new page in your notebook titled, "Corrections: Lesson x".</b>	Any missed problems corrected this way should be awarded 1/2 credit.
<b>Correct each missed problem by:</b>	Re-learn and correct all other missed problems by following steps 4 A - D
<ul style="list-style-type: none"> <li>Check each missed problem for careless mistakes and correct the ones you can.</li> </ul>	Do Example Problems from the textbook for each missed problem.
<ul style="list-style-type: none"> <li>For each remaining missed problem, follow steps A - C under #3 above.</li> </ul>	Any problems you can't correct, email <a href="mailto:Dr.Shormann@www.diveintomath.com">Dr. Shormann</a> <a href="http://www.diveintomath.com/ask-a-math-question/">www.diveintomath.com/ask-a-math-question/</a>

# Syllabus for Calculus, 2nd Edition

## 3 Semester Syllabus

### Grade Recording Form for DIVE/Saxon Calculus, 2nd Edition

Student Name \_\_\_\_\_ School Year \_\_\_\_\_

Week	Lessons	Homework	Test	Test Grade
1	1-4			
2	5-8		Test 1	
3	9-12		2	
4	13-16		3	
5	17-20		4	
6	21-24		5	
7	25-28		6	
8	29-32		7	
9	33-36		8	
10	37-40		9	
11	41-44		10	
12	45-48		11	
13	49-52		12	
14	53-56		13	
15	57-60		14	
16	61-64		15	
17	65-68		16	
18	69-72		17	
19	73-76		18	
20	77-80		19	
21	81-84		20	
22	85-88		21	
23	89-91			
24	92-94		22	
25	95-97		23	
26	98-100		24	
27	101-103			
28	104-106		25	
29	107-109		26	

30	110-112		27	
31	113-115			
32	116-118		28	
33	119-121		29	
34	122-124		30	
35	125-127			
36	128-130		31	
37	131-133		32	
38	134-136		33	
39	137-139			
40	140-142		34	
41	143-145		35	
42	146-148		36	
	Homework and Test Average			
	Final Grade			

## AP Exam Prep

### 1. Read the following articles:

- [Advanced Placement Information](#)
- [Which AP Calculus Exam Should I Take?](#)

### 2. Follow the instructions for the AP exam you will take:

#### AP Calculus AB Exam Prep

- Complete Shormann Calculus or the first 112 lessons in the DIVE/Saxon Calculus course by March 15
- Complete the CLEP Professor for CLEP and AP Calculus course
- Take 3-6 practice tests in an AP Calculus AB prep book like Princeton Review

#### AP Calculus BC Exam Prep

- Complete all assignments in the DIVE/Saxon Calculus course
- Complete the CLEP Professor for CLEP and AP Calculus
- Take 5-10 practice exams in an AP Calculus BC prep book like Princeton Review

Which AP Exam should I take?