

DIVE for Saxon Physics

Teacher's Guide & Syllabus

Stream and Download Format



PARENTS: Important Setup Instructions

1. Parents & Students: Watch the [Getting Started](#) video.

2. Parents: Download the Teacher Materials

A link to download the exams, exam solutions, and other materials are automatically emailed. If you haven't received it, please do a search in your email for **"DIVE Download Link"**. Check your spam and trash folders, too. If you need help: [Contact Support](#)

3. Video Lectures & Labs: A login email is sent within 2 business days from support@vhx.tv (DIVE Into Math & Science). Check your spam, trash, and updates folders

4. Required Products

- [DIVE Stream & Download Lectures & Labs for Saxon Physics](#)
- Saxon Physics Homeschool Kit with Solutions Manual (1st Edition)
- DIVE Physics Lab Workbook (see number 6)
- A Scientific or Graphing Calculator (TI-83, TI 84, TI-84 Plus, TI-Nspire CX or TI Nspire CX II, or similar). Do not purchase the TI Nspire CX-CAS (can't be used on SAT or AP Exam)

5. Bookmark the Assignment Chart - linked on page 2

6. Physics Lab Workbook (in the Documents folder of the Teacher's Materials)

You can either purchase a hard copy here: [Physics Lab Workbook](#) or follow these steps to print it:

- Go to the **Teacher Materials** folder downloaded in step 2.
- Open the **Documents** folder
- Right click the file titled **Lab Workbook for DIVE Physics**
 - **Macs:** Select Open, Open With, Preview, then Print.
 - **Windows:** Select, Open With, then Adobe Reader (free here: get.adobe.com/reader). Tech Issues: Restart your computer. If that doesn't work, update Adobe Reader at the link above, then restart your computer.

7. Print the [Student Instruction Sheets](#)

8. Optional: Grade Calculator

- If you are using the Simple Grading Method (p. 7 of this guide), skip this step.
- If using Detailed Grading, follow the steps here: [Grade Calculator](#)

9. Read "AP Exams" on page 2.

10. Review the remaining pages of this guide.

While Dr. Shormann will teach the course and answer questions, it is the parent's responsibility to make sure the student follows the course instructions. Briefly read over the instructions in this guide. Then, refer to the Student Instruction Sheets (below) for short step-by-step instructions for each assignment.

Welcome

DIVE Physics provides expert video instruction for every lesson in the Saxon Physics Textbook. Since the Saxon course does not include labs, Dr. Shormann developed 23 video labs that make learning abstract physics concepts easier. This course can be used as a standard high school course or as preparation for the AP Physics Exams. Dr. Shormann provides all the instruction for the course via videos and email support. The parent's primary responsibility is to supervise the student, making sure they follow the course instructions. [Table of Contents](#)

Course Description

See: [Official Course Description](#)

Use as a High School Course or For AP Physics Exams

- **AP Exams & SAT Subject Exams**

If your student plans to take an AP Physics or the Physics SAT Subject Test, **follow the instructions on page 9.** To learn more about these exams see: [AP Exams](#).

- **High School Course**

While completing the DIVE + Saxon Physics course prepares students for the AP Physics exams and the Physics SAT Subject Test, it is easily modified for use as a high school course by completing only the lessons required for high school credit. The high school course can be used as an honors or standard high school course.

- **Standard High School Course**

1. Allow the student to learn at their own pace (see Assignment Chart section below).
2. Complete all assignments through Week 22.
3. Optional: The Quarterly Exams can be skipped. However, if you choose to take them, see the Student Instructions for DIVE Quarterly Exams in the Lab Manual.
4. Use the Simple Grading Method (in Grades section) to calculate the final grade.
5. Use the Standard Grade Scale to assign a letter grade.
6. Transcript: 1 Credit Physics with Lab

- **Honors High School Course**

Follow all the steps for the Standard course above except:

1. Complete Quarterly Exams 1 & 2
2. Use the Honors Grade Scale to assign a letter grade.
3. Credits: 1 Credit Honors Physics with Lab

Assignment Chart

The [DIVE Physics Assignment Chart](#) is printed on page (i) of the DIVE Lab Workbook. The chart organizes assignments on a 32 week schedule. A typical school year is 36 weeks. This means there are four weeks that can be used when extra time is needed to understand a concept. **Struggling or reluctant math students can use** the Timed Method: Instead of requiring the student to complete an assignment per day, students should work on **Physics at least 4-5 days per week, for no more than 1.5 - 2 hours per day**. At the end of this time, if the assignment is not completed, have the student stop and pick up where they left off the next day. **Learn More:** [The Timed Method Develops Fluency](#)

Student Instruction Sheets

Step-by-step Student Instructions for completing Problem Sets, Tests, and Quarterly Exams are printed in the DIVE Lab Workbook and posted here: [Student Instruction Sheets](#). While Dr. Shormann will provide instruction and answer questions, parents need to make sure the student follows these instructions. For easy reference, print the Student Instructions.

Lessons

There are typically 4 lessons each week. Each lesson is made up of 3 steps:

1. Watch the DIVE Video Lecture

In the video lectures, Dr. Shormann teaches every lesson in the Saxon text. Students should take brief notes on formulas, key concepts, etc. After Dr. Shormann presents each example problem, **pause the lecture and solve the**

problem on your lecture notes. Rewind and pause as needed.

How to Access the Lecture & Lab Videos

An email with a link to access the videos on the VHX platform is automatically emailed to the address on the order. For detailed instructions: [How to Access Lecture & Lab Videos](#)

2. Complete the Saxon Problem Set (Homework)

Next, the Problem Set in the Saxon Textbook is completed. This section provides review of previously learned concepts. Saxon's unique method of continual review (not spiral) means the student is either practicing the concept in the Problem Set 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.

How Many Problems Should I Do?

Since Saxon Physics only has 20 problems per Problem Set, Dr. Shormann recommends completing all the problems. If you have a very strong math student, you can try to skip one Problem Set per week (don't skip any video lectures). If the weekly test scores drop below an 85 (graded as instructed), do not skip any Problem Sets.

My students missed too many Problem Set questions.

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 by re-watching the lecture that teaches that concept, then attempt the problem again. Better than an answer, this gives students the opportunity to apply what was just learned, which builds retention. You should only use test scores, not problem set

grades, to evaluate understanding.

3. Grade and Correct

Saxon Answer Key: Found in the *Saxon Home Study Packet*, the Answer Key provides the answers (not step-by-step solutions) to all Problem Set questions. Students should grade their homework using the Answer Key. This is a valuable 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.

Saxon Solutions Manual Provides Step-by-Step Solutions: The Saxon Solutions Manual provides step-by-step solutions to every Problem Set question. The student should only use this when instructed on the Student Instruction Sheet.

Q&A Email Support with Dr. Shormann

If, after viewing the Solutions Manual, the student still does not understand the concept, contact Dr.Shormann [here](#).

The most common problem is the student can't figure out why their answer is wrong. The student should take a picture of their written work for the problem and include it when contacting Dr. Shormann.

Weekly Video Labs & Lab Workbook

There are 23 video labs designed to spark interest and make abstract ideas easier to learn. While watching the lab video, students formulate a hypothesis, record data, and calculate results in the DIVE Lab Workbook (see page 2). Students use the video solutions at the end of the video lab to grade and correct their Lab Workbook. A completion grade is recommended. This means if the lab is completed, graded, and corrected, a 100 is awarded. Points can be deducted for

sloppy or incomplete work.

Is a Lab Kit available?

DIVE Physics labs use equipment that is cost-prohibitive for home use.

Therefore, Lab Kits and Supply Lists are not available. A lab science credit can be earned by watching the video labs and completing the lab workbook.

Saxon Weekly Tests

Approximately every 4 lessons there is a Saxon test. The tests are in a small booklet called Saxon Test Forms. The tests are cumulative, which means there are concepts from previous lessons. Students should spend 10-15 minutes studying for the test by following the **Student Instructions** in the front of the Lab Workbook. This also includes instructions for grading and correcting tests.

Important Note: Saxon does not provide step-by-step solutions to test questions.

If, after completing the steps on the Student Instructions, more help is needed, the student should contact Dr. Shormann as directed on the student instructions.

DIVE Quarterly Exams

Every 8 weeks there is a Quarterly Exam written by Dr. Shormann. These are located in the Exams folder in the Teacher Materials. Quarterly exams should be taken and graded under parental supervision. If the student has completed their Saxon homework and tests with honesty and integrity, then the DIVE Quarterly Exams will be relatively easy. Step-by-step instructions for studying and taking Quarterly Exams are printed in the Lab Workbook.

Video Solutions for Quarterly Exams are in the Exams Solutions folder of the DIVE Teacher Materials Folder that was downloaded and saved to your Desktop.

How to Print the Quarterly Exams

- Open the **Exams folder** in the **Teacher Materials** folder.
- **Macs:** Right click the Exams, select Open, Open With, then Preview.
- **Windows:** Open with Adobe Reader (free here: get.adobe.com/reader).

Grades: Simple Or Detailed Grading Method

• SIMPLE GRADING METHOD

Honors Course: An overall grade is easily calculated by averaging the scores of the four quarterly exams, then add 20% for Daily Work (Problem Sets, labs, and lecture notes). If all assignments were completed, a 100 is awarded. Deduct points for skipped, sloppy, and incomplete work. Use this formula:

QA= Quarterly Exam Average, TA= Test Average (total test scores divided by the # of tests), DW = Daily Work Average

Formula: $QA (.50) + TA(0.30) + DW(.20) = \text{Final Grade}$

Standard Course: Since these students do not take the Quarterly Exams, simply average the scores of the Saxon tests and add 20% for Daily Work (Problem Sets, labs, and lecture notes). If all assignments were completed, a 100 is awarded. Deduct points for skipped, sloppy, and incomplete work. Use this formula to calculate overall grade:

TA= Test Average (total test scores divided by the # of tests) DW = Daily Work

Final Grade = $TA (.80) + DW (.20)$

• DETAILED GRADING METHOD using the [DIVE Physics Grade Calculator](#)

The Grade Calculator is a spreadsheet that is pre-formatted to weight each assignment as listed below. Simply type in the student's grade for each assignment and the final grade is automatically calculated.

Lecture Notes (15%): Grade these based on completion. If your child took a thorough set of notes, give them a 100%. Your child should take brief notes on titles and subtitles, formulas, diagrams, and tables. ALL practice problems should be solved on paper. If you have more than one child working on the

same DIVE Science course, give the better grade to the one with the more thoroughly completed set of notes.

Problem set (15%): I recommend a completion grade. If all questions are completed, graded and corrected, award 100%. If you prefer, you can enter a percentage grade based on 5 points per question.

Saxon Weekly Tests (25%): Students should grade their tests using the Answer Key. Give partial credit if the student can figure out their mistake. Understanding Physics is the responsibility of the student, not the parent, and therefore the parent should not feel like they need to know Physics well enough to tell when their child is making a mistake. The Christian student will grade their paper honestly and work hard to learn from their mistakes.

Laboratory Assignments (20%): Grade these based on completion. If your child completes the pages in the lab activity, then grades and corrects using the video solutions, give them a 100%. Give lower scores for incomplete, sloppy or lazy work.

Quarterly exams (25%). These exams can be taken twice and the scores are averaged. Students should grade exams using the Exam Solutions in the Teacher Materials.

Grade Scale

Honors Grade Scale

A – 93-100
B – 84 – 92
C – 74 – 83
D – 65 – 73
F – 64 or below
I – Incomplete

Standard Grade Scale

A – 90 -100
B – 80 – 89
C – 70 – 79
D – 60 – 69
F – 59 or below
I – Incomplete

Transcripts

Free downloadable transcript templates along with instructions are available on our website: [Transcripts & Credits](#)

AP Physics Exams: Earn up to 8 College Credits

Dr. Shormann's [CLEP Professor for AP Physics](#) is a three to six week course that provides excellent preparation for these exams. There are four AP Physics exams. Multiple exams can be taken in the same year. Detailed instructions on how to prepare for each of these exams is found below. Ideally, at least one AP Physics exam should be taken by the end of the 11th grade year so the results are received in time to submit with college admissions and scholarship applications. A passing score on an AP Physics exam can significantly boost your application in the selection process. **Learn More about why take an AP exam, how to register, etc:** [DIVE AP Exam Information Sheet](#)

Which AP Physics Exam Should I Take?

There are 4 AP Physics exams. The information below explains what is required to prepare for each exam. However, the best way to determine which AP exam to take is to start the DIVE Physics course and see how much the student is able to complete by the time you need to register for the exam. If the student is doing well and seems like he will only complete the first 80 lessons by March, register for the AP Physics 1 Exam.

If you think he will finish all the lessons by March, register and prepare for either the Physics 1 & 2 exams. Or, if the student has been taking Calculus along with the Physics course, the student can prepare for one or both of the AP Physics C exams which earn credit in higher level physics courses.

AP Physics Exam 1 Preparation [Credits Chart for Physics](#)

Algebra-based - Precalculus (or Saxon Advanced Math) must be taken along with the DIVE/Saxon Physics course or previously completed.

To prepare for the AP Physics 1 exam, complete all the DIVE/Saxon Physics assignments through lesson 80 by mid-March. This allows sufficient time to prepare for the exam using our [CLEP Professor for AP Physics](#) course. This is a three to six week software course that provides specific preparation for the AP Physics exam. Then do 5-10 practice exams prep book can be used if extra practice exams are needed. Learn More: [AP Physics Prep Schedule](#)

Prepare for AP Physics Exams 2 - [Credits Chart for Physics](#)

This exam is also Algebra-based. However, [Precalculus](#) (or Saxon Advanced Math) must be completed or taken along with the DIVE/Saxon Physics course. To prepare, complete all the assignments in the DIVE/Saxon Physics course through lesson 100 by mid-March. This allows 6 weeks to complete the [CLEP Professor for AP Physics](#) course. This is a three to six week software course that provides specific preparation for the AP Physics exam. Upon completion of the CLEP Professor course, take 5-10 practice exams using a prep book, like Princeton's Review.

Prepare for AP Physics Exams 1 & 2 - [Credits Chart for Physics](#)

These exams can be taken in the same year. They are both Algebra-based exams. However, [Precalculus](#) (or Saxon Advanced Math) must be completed or taken along with the DIVE/Saxon Physics course. To prepare, complete all the assignments in the DIVE/Saxon Physics course by mid-March. This allows 6 weeks to complete the [CLEP Professor for AP Physics](#) course. This is a three to six week software course that provides specific preparation for the AP Physics exam. Upon completion of the CLEP Professor course, take 5-10 practice exams using a prep book, like Princeton's Review.

AP Physics C Exams Preparation - See [Credits Chart for Physics](#)

There are two C exams: AP Physics C: Mechanics and AP Physics C: Magnetism & Electricity. Both are calculus-based so calculus should be completed or taken along with the DIVE/Saxon Physics course. They can be taken the same year or over two years. To prepare for these exams, complete all the lessons in

the DIVE/Saxon Physics course and the [CLEP Professor for AP Physics](#) by the first of March. Then, spend 4-6 weeks taking timed practice exams from an AP Physics C test prep book.

SAT Subject Test Preparation

Complete all the DIVE/Saxon Physics lessons and the [CLEP Professor Physics](#) lessons (prescribed by the diagnostic test) no less than three weeks before the exam. Then start using a Physics Subject Test prep book and take as many practice tests as possible before the exam.

Troubleshooting

DIVE Physics files are simply video and document files. Therefore, any technical issues are simple and easily solved.

1. The video lectures won't open or play.

Contact: [Tech Support for Download & Stream](#)

2. I can't open or print the lab workbook.

Windows: Download get.adobe.com/reader. Restart Computer and try again.

Macs: Right click the file, select Open, Open With, Preview

Need Help?

If you have any questions about this information, please contact us. However, if you have questions concerning the content of your course (ie: what is DNA?), please contact Dr. Shormann at drshormann@gmail.com