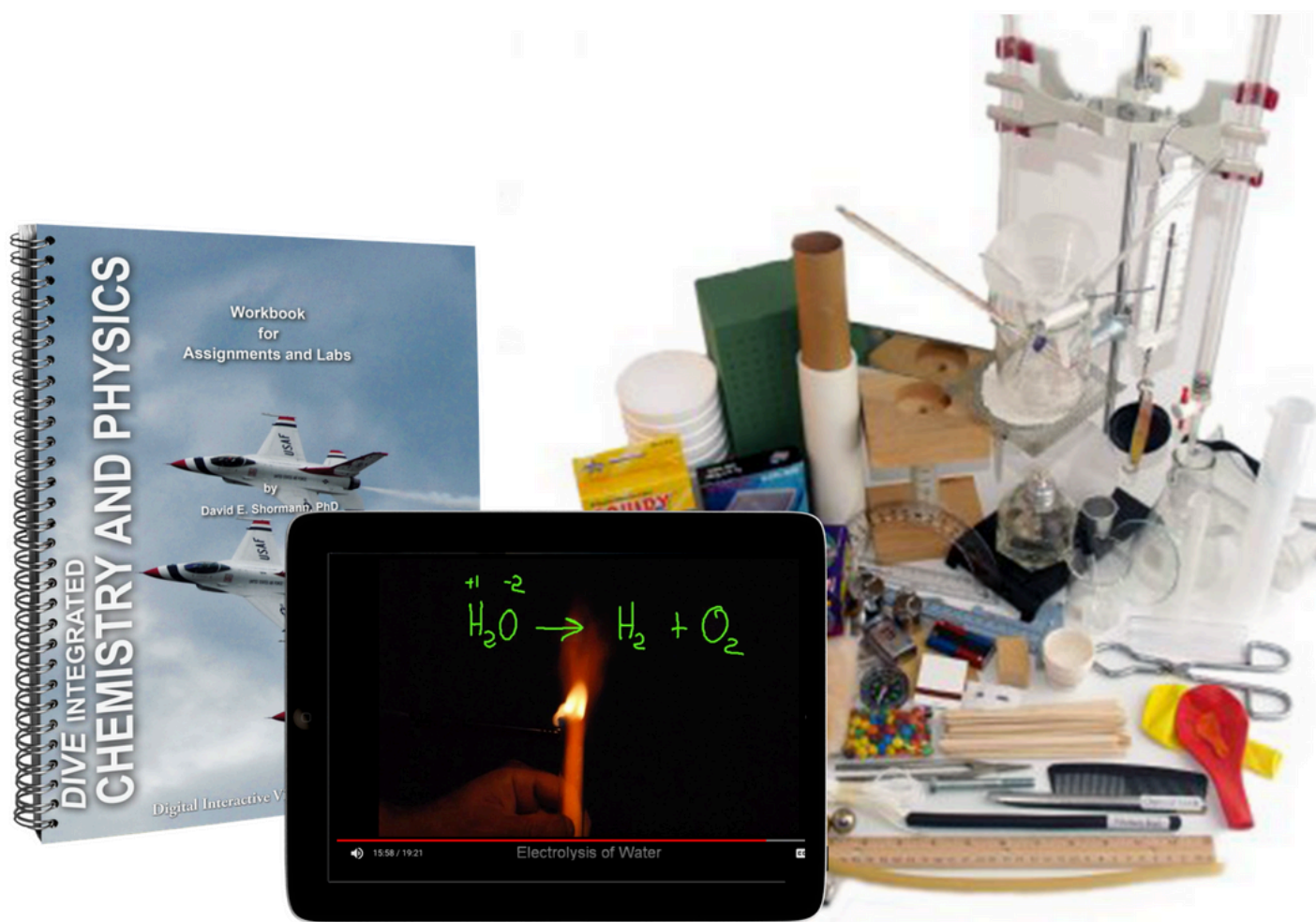


# DIVE Integrated Chemistry and Physics Self-Paced eLearning Course

## TEACHER'S GUIDE



This file is a Google document that can be downloaded by clicking File (in the upper left menu), Download As, then PDF. If you are a Google Drive user, you can upload the PDF to your Google Drive Account

# Parents: Course Setup Instructions

While this course provides instruction, grading, and Q&A support, a parent must supervise the student to ensure assignments are completed as instructed and to monitor student progress.

1. **Parents: Watch the [Getting Started](#) video with your student.**
2. Read the [Labs](#) section. If you choose to use either the DIVE Lab Kit or your own lab supplies, you must follow these instructions for every lab: [Instructions and Supply List for Hands-on Labs](#)
3. Print and/or save these: [Printable Files](#) (Lab Workbook, Exam Study Sheet, etc)
4. Select a [Reading Supplement](#)
5. To ensure you receive important emails about your course add these email addresses to Contacts\* in the parent/teacher and the student email account:  
support@diveintomath.com and noreply@educadium.com
6. Read Pages 3-10.
7. Bookmark, save, or print this Teacher's Guide.
8. After you receive the login email, follow the steps under **PARENTS** to continue setting up the course. To find out when your login email will be sent, see: [eCampus](#)
9. There is no separate parent login. Parents use the same login the student uses. [Learn More](#).

Need help? [Contact Us!](#)

[Technical Issues](#)

[Grade Change Requests](#)

[Request Help Using a Course](#)

[Contact Tech Support](#)

[Transcripts & Credits](#)

[NCAA](#)

[Struggling Science Student](#)

[Ask Dr. Shormann a Homework, Quiz, or Test Question](#)

Teacher Guide

# Table of Contents

Page	Topic
2	<b>Important:</b> <a href="#">Quick Start Setup Instructions</a>
4	<a href="#">Honors or Standard High School Course</a>
6	<a href="#">Lessons: Video Lectures, Reading Assignments, &amp; Review Questions</a>
9	<a href="#">Labs</a>
10	<a href="#">Quarterly Exams</a>
10	<a href="#">Q &amp; A Email and Technical Support</a>
11	<a href="#">Online Gradebook</a> <ul style="list-style-type: none"><li>• <a href="#">Optional Extra Credit</a></li></ul>
13	<a href="#">Grade Weights &amp; Extra Credit</a>
16	<a href="#">Learning Disabilities: How to Modify the Timed Exams</a>
18	<a href="#">Table of Contents for ICP</a>
20	<a href="#">Reading Supplements</a>

# Welcome!

DIVE ICP is a complete, digital curriculum that can be used as an honors or standard high school course. Below you will find a brief overview of the course components and step-by-step instructions for setting up your course. **Scope & Sequence** can be found at the end of this guide.

## Honors or Standard High School Course

DIVE Integrated Chemistry and Physics can be used as an honors or a standard high school course.

**Honors Course:** Take the exam as instructed under "Honors Course" on the [Student Exam Study Instructions](#) and use the Honors Grade Scale (in the Grades section below).

**Standard High School Course:** Take the exam as instructed under "Standard Course" on the [Student Exam Study Instructions](#) and use the Standard Grade Scale (in the Grades section below).

## High School Credit

[Honors:](#) 1 Honors Integrated Chemistry and Physics with Lab

[Standard:](#) 1 Integrated Chemistry and Physics with Lab

Learn More: [Transcript, Course Description, Credits](#)

# Schedule

**Timed Method:** A standard school year is 36 weeks and your course subscription is 52 weeks (12 months). While the course is set up on a 32 week schedule, it is designed to be self-paced. **Instead of requiring the student to complete all assigned work in one day, have them work on science four days per week for 45 minutes to an hour.** At the end of that time, regardless of how much of the lesson is completed, stop. Then have the student pick-up where they left off the next day. This allows students to slow down when needed to grasp a concept and move ahead faster when the content is easier for them. Most students will easily complete the course in 36 weeks or less. If more than 12 months is needed, [extend your subscription here](#).

My student needs to start Biology soon. Can ICP be taken over the summer or in one semester? See this [Knowledge Base article](#)

## Assignment Chart

The assignment chart is now integrated into the eLearning course. On the left menu you will see the course is organized by week. Click on a week and you will see all the assignments for the week. There are typically one or two lessons per week and a video lab. Every 8 weeks a quarterly exam is taken.

**Featuring Automated Grading and Grade Recording**

Each course is organized into 32 weeks. Click the week to view all the assignments for that week.

Video lectures teach complex concepts, making them easier to understand.

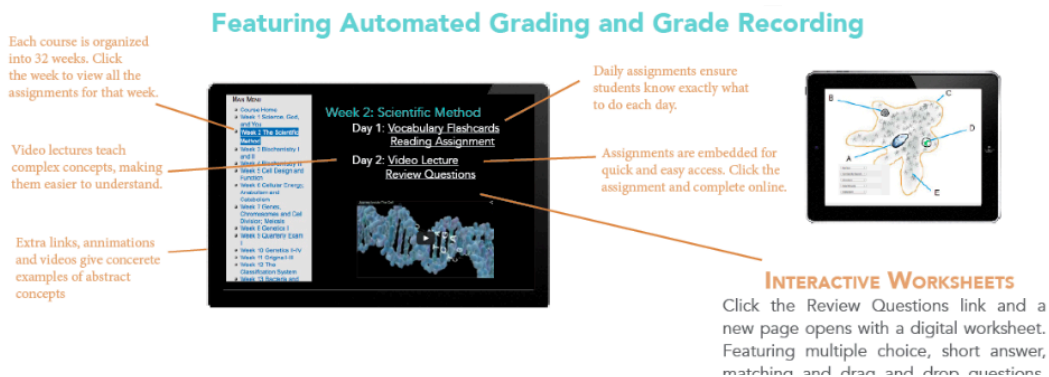
Extra links, animations and videos give concrete examples of abstract concepts

Week 2: Scientific Method  
Day 1: Vocabulary Flashcards  
Reading Assignment  
Day 2: Video Lecture  
Review Questions

Daily assignments ensure students know exactly what to do each day.

Assignments are embedded for quick and easy access. Click the assignment and complete online.

**INTERACTIVE WORKSHEETS**  
Click the Review Questions link and a new page opens with a digital worksheet. Featuring multiple choice, short answer, matching and drag and drop questions



# Lesson Components:

Each lesson is made up of 4 parts: Terms, Reading, Video Lectures, and Lesson Review Questions. The eLearning course has embedded links to each assignment.

## 1. Terms (Vocabulary)

Students can learn the terms assigned in each lesson by using our new digital flashcards, hand-writing the terms using the DIVE Glossary, or a combination of the two. Terms should be reviewed 3-4 days per week.

**Digital Flashcards:** a quick and easy way to learn and memorize terms. Hosted online, these flashcards provide a quick and easy way to learn and memorize terms. They also have games, quizzes, voice recordings of the terms and definitions and much more!

**DIVE Glossary:** If you prefer to hand-write their terms and definitions, use the glossary, linked on the Course Home page under Printable Items. The glossary can be printed or viewed on the computer. After hand writing the terms, students can use the digital flashcards to review and memorize the terms.

## 2. Reading Assignments

Like most college classes, DIVE Science courses are lecture based, meaning most of the material for assignments and exams come from the lectures. Reading assignments simply familiarize the students with the content, building a foundation for the video lecture. Therefore, it is not necessary to read for full understanding of every topic. The video lectures teach the complex concepts in a concrete way that is easier and more efficient to learn. We caution against taking notes on the reading assignments. Instead, have the student focus on taking good notes of the video lectures.

### **Internet Textbook or Physical Textbook**

The DIVE Internet Textbook (free) is our recommended reading supplement. Designed specifically for the DIVE Integrated Chemistry and Physics course, the reading assignments are short and succinct. The links to each weekly reading assignment are embedded in the eLearning course and include animations, interactive graphics, etc. However, if you prefer a physical textbook, a Reading Syllabus with the exact page numbers to read in your book each week, is available for many publishers. A list of available Reading Syllabi is at the end of this guide.

## 3. Video Lecture

Building on the terms and reading assignment, Dr. Shormann provides step-by-step instruction on the complex concepts, like RNA synthesis, which are difficult to understand by reading. During the lecture, students should take notes, pausing and rewinding as needed, until they understand. While taking notes is a critical skill for college preparation, most students have not had much experience. Be patient as this skill develops slowly at first. Taking screenshots can be helpful for large or complex diagrams. To learn how to take a screenshot, Google your Operating System and “Screenshot”.

## 4. Review Questions

This is not a quiz. It is a learning activity that requires students to apply what they learned in the lecture, developing understanding and building retention. Because this is a learning activity, the grades for the Review Questions are a small percentage of the overall grade. **Repeating Review Questions to improve the score is not recommended.**

Students can use their lecture notes, video lecture, definitions (Quizlet) to complete the Review Questions. After answering each question, click **Submit**. The system will tell you if the answer is right or wrong. If wrong, a small penalty (10%) is assessed, but you can keep trying until you get it correct (most questions). If you don't know the answer, don't spend time trying to find it in the reading, etc. Re-learning will take place in the next step. Parents should not help students until the Results page is displayed.

**When an explanation is needed, a link to a video solution is included in the automated feedback.** If the answer is simply a term that doesn't require an explanation, the answer is provided.

After completing all the questions, click **Submit All & Finish**. This will record the score in the online grade book. A results page is displayed with all the questions, the correct answers, and the student's answers. This page can be printed, saved, or emailed to the parent.

Students should correct their lecture notes by adding the information for all missed questions. A complete set of notes is needed to study for the exams. If there is anything the student does not understand at this point, they should contact Dr. Shormann using the contact form in the eLearning system.

**If the student fails or earns a low grade,** instead of retaking the Review Questions, students should correct missed questions by adding the missing or correct information to their notes. At the end of the course, extra credit can be added to the final grade. See the "Extra Credit" section below.



# Labs

Each week, except on exam weeks, there is 1 video lab. A printable PDF of the lab manual is posted on the eLearning course home page. A hard copy of the lab manual can also be purchased [here](#).

While completing the labs hands-on is ideal, it is not required. In fact, our video labs were designed so that even if the labs are not completed hands-on, the student would still get an excellent college preparatory lab experience that teaches the student how to use lab equipment and processes in college labs. Both options earn one science lab credit.

## Hands-On: Using Lab Supplies

You can either purchase the DIVE Lab Kit from Nature's Workshop Plus or create your own lab kit. Students first watch the video lab, then complete the lab with the lab supplies while watching the video and filling out the lab activity sheet in the lab manual. **Important:** If completing the labs hands-on, with the lab kit or with your own supplies, read these [Lab Instructions](#).

## Without Lab Supplies

With this option, the student views the video lab, working interactively by filling out the lab manual. Dr. Shormann does not give the answers during the lab. Students must make a hypothesis, record observations, and write up results.

## Grading Labs

At the end of the video lab, there are video solutions to the lab workbook pages. Students watch the solutions and correct the lab workbook pages as needed. No grades are assigned and no grades are recorded in the online grade book. However, at the end of the course, you can manually add extra credit for the labs and other handwritten work as described in the "Extra Credit" section below.

## Quarterly Exams

Every 8 weeks there is an exam. No other assignments are due on the week of the exam. This gives the student a full week to study. **Quarterly exams should be taken under parental supervision.** Students should use the [Student Exam Study Instructions](#)

## Answer Keys or Solutions Manual

Because the assignments are continually updated, we do not have Answer Keys for the Science courses. However, the Results Page, which is displayed after each assignment is submitted, shows all the questions and correct answers for that assignment. You can also access the Results Pages by opening the Grade Book (User Report) and selecting the grade for the assignment. For solutions to Labs, please go to the [Grading Labs](#) section.

## Q&A Email Support

If your student has a question about a homework or test question. Have them complete and submit the assignment, then contact him here: [Ask Dr. Shormann a Question](#)

## Struggling Student? We can help!

Most issues are easily solved by following these [Time-Saving Tips for Success](#).

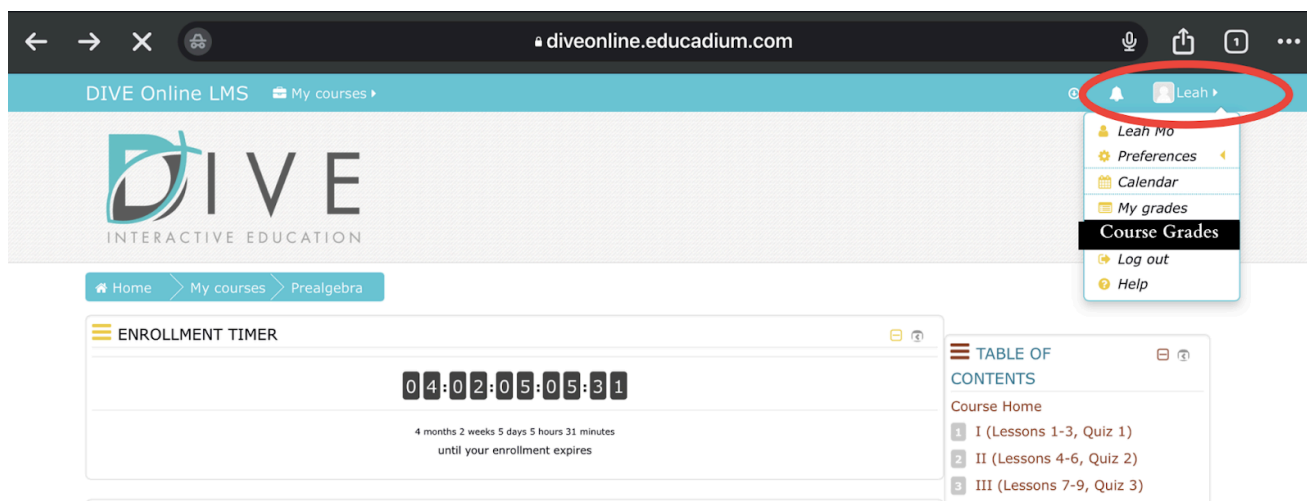
If you would like to speak with a consultant, please [schedule a phone appointment](#).

## Technical Issues

If your child experiences technical difficulties while completing an assignment, please let us know and we can reset the assignment so the student can take it again. To request a reset, please fill out the form here: [Science eLearning Grade Changes & Resets](#)

# Online Grade Book & Grading

Login using the same login as the student, select “My Courses” in the top menu, then select the course title. In the top right corner, select the student’s name, then “Course Grades”.



**Grade:** This is your student’s grade in points.

**Percentage:** This is your student’s grade as a percentage.

**Class Average:** This is **NOT** your student’s grade. It’s the average grade of ALL the students who have taken this assignment.

Assignments	Your Student's Grades		Average Grade of All Students in this Course
	Grade	Percentage	Class Average
Grading Shormann Prealgebra			
Lesson 1 Practice Set	90.00	90.00 %	86.95
Lesson 2 Practice Set	85.00	85.00 %	84.59
Lesson 3 Practice Set	95.00	95.00 %	91.60
Quiz 1(Lessons 1-3)	10.00	100.00 %	9.71
Lesson 4 Practice Set	90.00	90.00 %	93.36
Lesson 5 Practice Set	97.50	97.50 %	94.04
Lesson 6 Practice Set	92.50	92.50 %	91.64
Quiz 2(Lessons 4-6)			

## Running Average:

This is the grade for all the assignments that have been completed so far. It does not average the zero for assignments that have not been completed. So, as long as the student has not skipped any assignments, this is where you would see the student's current grade based on the assignments they have completed.

Assignments	Grade	Percentage	Class Average
Lesson 4.7A Review	-	-	93.55
Lesson 4.7B Review	-	-	95.28
Quarterly Review 4	-	-	81.77
<b>Earth Science</b>			
<b>Earth Science Final Grade</b> Include empty grades.	4.21	4.21 %	18.93
<b>Running Average</b>	786.29	87.37 %	2070.98

*Final Grade*

*Running Average - Only Completed Assignments*

## Final Grade:

This is the grade used at the end of the course for the final grade. It includes the zeros for assignments that were not completed. In this example, only a few of the assignments have been completed so the final grade is very low. At the end of the course, if all assignments are completed, the Final Grade and Running Average are the same.

### Add Extra Credit to the Final Grade

For details, see "[Optional Extra Credit](#)" below.

## Transcripts & Credits

For a free transcript template and detailed instructions, see [Transcripts & Credits](#)

## ISSUES WITH THE GRADE BOOK

### **Issue: Final Grade and Running Average Are Not the Same**

This means one or more assignments were not completed. Scroll through the grade book and look for assignments in the "Percentage" column that don't have a grade. See the next section to resolve this issue.

### **Issue: No Grade in the Percentage Column**

1. Select the title of the assignment in the Grade Book.
2. If there is a button that says "Continue Last Attempt", this means the student opened and/or started the assignment but did not click Submit All & Finish. Select the "Continue Last Attempt" button, "Finish Attempt" then, "Submit All & Finish".
3. If there is a "Start Quiz" button, this means the student did not start the assignment. You can either leave it as a 0 or have the student do the assignment, which will raise the final grade.

## Grade Weights

The following describes how the grades are "weighted".

Review Questions	40%
Quarterly Reviews	60%

## Optional: Extra Credit

Keep in mind, as the parent and/or teacher, you are responsible for assigning grades. Our grading system is a tool to help you. You are not required to use the grades in the eLearning grade book or follow any of our recommendations. Use the course like you would any other curriculum, like Abeka or Bob Jones.

*While the grades in the eLearning system for Review Questions and Quarterly Reviews account for good lecture notes and labs, some extra credit can be added for handwritten work.* If your student corrected missed problems, took good lecture notes, corrected lab activities by watching the video solutions at the end of the lab, extra credit can be added at the end of the course by following the options below. However, this is not necessary because the eLearning system already includes extra credit by allowing students to take the exams twice and averaging the scores which is like adding up to 10 points to each exam grade.

**Option 1:** Add up to 3 points to the Final Grade in the Grade Book. After determining the new grade, add it to the Certificate (see below). The new grade should not be more than 100.

**Option 2:** Use the “Simplified Grading Method” below.

This extra credit cannot be added to the grade book. Simply add the points to your student’s final grade, then put the new grade on the Certificate of Completion (see below).

## Grading the Detailed Way

While we don’t normally recommend using this method, we realize some situations may require it. Follow the steps below to download the grade calculator and enter the grades for each individual assignment.

## How to Grade Handwritten Work for the Detailed Grading Method:

This includes definitions, lecture notes, and lab activities. If you need to give extra credit, use a completion grade for these assignments. That means, if a student is putting little effort into their handwritten work, that usually shows up as poor scores on Review Questions and Quarterly Exams. Some things your child should take notes on include titles and subtitles, definitions and important concepts, diagrams and tables with notes explaining them, and ALL practice problems. Did they fill out their lab manual and correct it using the video solutions? Does it appear that they have taken notes on every lecture? If yes, then they deserve a 95-100 on the handwritten work.

1. Read all the instructions below.
2. Open this link: [DIVE Grade Calculator for ICP](#)
3. Select File, Download as, Microsoft Word.
4. Open Microsoft Excel (Windows) or Numbers (Mac). If you don't have one of these, you can use Google Sheets (also free at [www.sheets.google.com](http://www.sheets.google.com)).
5. In your application, Go to File, Open File, and select the grade calculator file.
6. Select **Save AS**, then save it to your Desktop with your student's name and course title.
7. Type the grades in the appropriate cell. Do not edit any other cells.

The spreadsheet will automatically weigh the grades and calculate a final grade.

### Honors Course Grading Scale

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

### Standard Course Grading Scale

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

## Certificate of Completion

Upon course completion, a certificate of achievement can be printed. Go to the Course Home page, scroll down the left menu, then click **Certificate**.

## Grade Changes and Assignment Resets

If, for any reason, you want the student to retake an assignment, or you want to change a grade, please follow the instructions below. While we are happy to adjust grades and assignments, don't overemphasize grades. The grade book is simply a tool to help you quickly evaluate your student's progress and understanding. DIVE does not report your grades to anyone or keep long-term records of grades. Once the subscription expires, all the grades disappear.

[Request Grade Changes & Assignment Resets Here](#)

## Learning Disabilities: How to Modify the Timed Exams

While we cannot change the timer on the exams or quizzes, you can give the student more time by following these steps. However, you will need to manually record grades or use the [“Simplified Grading Method”](#) (below) instead of using the online grade book.

**Parent Supervision Required:** The exams are normally limited to one hour. This method doubles the time to two hours.

1. Study using the Study Instructions linked just above the exam.
2. Have the student take the exam twice. In the first attempt, complete only the first half of the exam. In the second attempt, complete the second half. This gives the student 2 hours to complete the exam.
3. Add the two scores together.
4. Have the student correct all missed problems on paper. If they correct all missed problems, **add 100 points to their grade then, divide it by two**. This is the equivalent of giving them two attempts and averaging the scores.
5. For grade recording and calculating a final grade, see the next section below.



## Grading for Learning Challenged Students

Because students with learning challenges often require many accommodations, instead of using the grades in the eLearning course and submitting multiple grade change requests, manually record the four exams, then use the Simplified Grading Method to calculate the final grade.

### Simplified Grading Method

If you allow your student to skip assignments, modify the time for learning disabilities, etc, the online grade book will not accurately calculate a final grade. Instead, use this simple method to give a completion grade of 90 for all Review Questions, Labs, Notes, etc,. This way, you don't need to submit multiple grade change requests or manually record all the scores. All you need is the average of the four exam grades to put in the formula below. This new grade can be added to the Certificate.

**Exam Average** = Sum of all the exam grades divided by 4.

**Final Grade = Exam Average (.60) + 36**

**For Example:** If the exam average is a 70, it would be:  $70 (.60) + 36 = 78$

To use a different completion grade for the Review Questions, use this formula:

**Final Grade = Exam Average (.60) + Completion Grade (.40)**

To calculate an exact score manually using the original weights, record all the grades, then use this formula:

**Exam Avg. (.60) + Review Questions Avg. (.40)**

You can also request a grade change for each assignment by using the "Request A Grade Change Form" on the Course Home page.

# DIVE Integrated Chemistry & Physics

## Table of Contents

Week	Lesson	Lab Activity
1	1-Science, God, and You	1-Laboratory Introduction
2	2-The Scientific Method	2-The Scientific Method
3	3-Units and Unit Analysis 4-Mass, Volume, and Density	3-Measuring Matter
4	5-Scientific Notation and Significant Digits	4-Measuring and Significant Digits
5	6-Solids, Liquids, Gases, and the Kinetic Theory	5-Chemical and Physical Changes
6	7-Atoms, Compounds, and Mixtures	6-Elements, Compounds, and Mixt.
7	8-Atomic Structure	7-Electrons and Energy Levels
8	Study for EXAM 1 (Lessons 1-8)	Quarterly Exam 1
9	9-Nuclear Chemistry	8-Nuclear Energy and Radioactivity
10	10-Periodic Table, Electron Configuration	9-Family Relationships
11	11-Using the Periodic Table	10-Metals and Nonmetals
12	12-Chemical Bonding	11-Organic Chemistry, Fractionation
13	13-Oxidation Numbers, Writing Chemical Formulas 14-Identifying, Writing, and Balancing Chemical Equations	12-Reactions and Equations
14	15-Solutions	13-Phase Shifts in Solutions
15	16-Acids, Bases, and Salts	14-Acid/Base Titrations
16	Review for EXAM 2 (Lessons 9-16)	Quarterly Exam 2

17	17-Energy and Momentum	15-Newton, Gravity, & Energy
18	18-Velocity and Acceleration	16-Acceleration
19	19-Newton's Laws	17-Applications of Newton's Laws
20	20-Work and Simple Machines	18-Pulley's and 1st Class Levers
21	Bridge Building (See Lab Activity 19)	19-Bridge Building, More Levers
22	21-Pressure and Fluid Dynamics	20-Press, Buoyancy, and Fluid Force
23	22-The Gas Laws	21-Boyle's and Charles' Laws
24	Review for Exam 3 (Lesson 17-22, Labs 15-21)	Quarterly Exam 3
25	23-Thermodynamics	22-Specific Heat of a Metal
26	24-Static Electricity	23-Static and Current Electricity
27	25-Current and Ohm's Law	24-Electric Circuits
28	26-Magnetism and Electricity	25-Mag. Fields and Electromagnets
29	27-Sound Waves	26-Properties of Sound
30	28-Electromagnetic Waves	27-Solar Power
31	29-Reflection and Refraction	28-Reflection and Refraction
32	Review for EXAM 4 (Lessons 23-29, Labs 22-28)	Quarterly Exam 4

# Reading Supplements

## Honors Recommended Textbooks

Select a textbook below that has an asterisk next to it.

## Standard Recommended Textbooks

Any of the texts below may be used for a standard high school course.

### **\*DIVE Internet Textbook** (included with each DIVE course)

**Favorite:** Created by Dr. Shormann specifically for this course, the DIVE Internet Textbook has succinct reading assignments with animations, clickable graphics, and other media that make it easier to understand. The links to the reading assignments are embedded in the eLearning system. To view a sample of the links and the reading assignments: [Sample DIVE Internet Textbook](#)

## Reading Syllabi for Physical Textbooks

### **\*Bob Jones University Press**

This publisher teaches from a Biblical, six day Creation worldview. With good graphics and short, succinct reading assignments, these text provide all the reading required for an excellent, honors level course. It is also good for a standard course.

**\*Favorite:** [Bob Jones Physical World](#)

[\\*Bob Jones Physical Science, 4th ed.](#)

[\\*Bob Jones Physical Science, 5th ed.](#)

[\\*Bob Jones Physical Science, 6th ed.](#)

## **\*A Beka Publishers**

This publisher teaches Integrated Chemistry and Physics from a Biblical, six day Creation worldview. These texts have nice graphics and succinct reading assignments. Any edition of these texts will work well, even for an honors course, so you can purchase an older used copy.

### **Favorite: \*ABeka Science: Matter and Energy, 1st Edition**

This new text includes all the required reading for DIVE ICP. With nice updated graphics and succinct reading assignments this text is great for standard or honors course. There is only one edition of Abeka Matter & Energy. Here is the link to the textbook: [Abeka Matter & Energy](#)

[Abeka Matter & Energy, 2nd Edition](#)

[Abeka Science of the Physical Creation, 2nd ed.](#)

This text is lacking some of the required reading for our DIVE course. However, we have provided internet links for the missing reading assignments but don't recommend it for an advanced or honors course.

## **Apologia Ministries**

This publisher teaches from a Biblical, six day Creation worldview. Written in a conversational style, these texts have longer, more descriptive reading assignments than any other textbook on this list. In 2010 colleges changed their requirements for IPC. While the DIVE ICP course meets these new requirements, the Apologia textbook is missing some of these topics. However, because the DIVE reading syllabus has internet links to the missing reading assignments, students can use this text along with DIVE ICP.

[Apologia Physical Science 2nd ed.](#)

[Apologia Physical Science 3rd ed.](#)

[Apologia Physical Science 4th ed.](#)

## Other Publishers

[CPO Physical Science, 1st ed.](#)

[\\*Prentice Hall Physical Science, Concepts in Action 2009](#)

[PRENTICE HALL'S \*PHYSICAL SCIENCE\*, Concepts in Action ©2009 -  
Without Earth Science Topics](#)

**Don't see your textbook?** See: [Request A New Reading Syllabus](#)

## Need Help?

If you have any questions about this information, [please contact us here](#).

If you have questions concerning the content of your course (ie: what is DNA?), please contact Dr. Shormann here: [Ask Dr. Shormann a Homework or Test Question](#)