

Here's a little background information for you concerning the **General Chemistry and Physics** curriculum

Hello and welcome to the second book in the *General Science* series! This series is intended to bridge the gap between the current *Elementary* and *Advanced* books within the *Classic Science* series. More specifically, this book has been designed for students who are starting to take science more seriously—whether you're planning to move on to advanced chemistry, physics, or just want a stronger understanding of how the world actually works.

If you've used books from the *Classic Science* series before, you'll notice that the structure here should feel familiar. If you're new, don't worry—this book is built to guide you step by step. The goal isn't just to give you information, but to help you think like a scientist: asking questions, solving problems, and making connections between ideas.

I want to thank you to the many students and families out there that have shared their feedback over the years concerning the *Classic Science* curriculum. It is through your questions, suggestions, and critiques that have helped shape this series into the best I can offer for you and your family.

So, if you're ready to dig in, experiment, and maybe even struggle a little (that's where learning happens), let's get started...

Parents! Here is some helpful advice for you...

Any general science course is built around a set of core ideas that help students understand how matter and energy behave in the world around them. In this book, those ideas include the structure of matter, chemical interactions, reactions and conservation laws, motion and forces, energy transfer, waves, sound, light, and the electromagnetic spectrum. While each of these topics could easily support an entire year of study, this book is designed to provide a strong foundation that will be expanded upon in the *Advanced* series.

The first portion of the book focuses on chemistry fundamentals, beginning with the basic properties of matter and atomic structure before moving into the periodic table, bonding, and chemical reactions. From there, students learn how to predict the amounts of products formed in chemical reactions, explore the behavior of gases, and examine the chemistry of solutions.

In the second half of the book, the focus shifts to physics concepts, starting with motion, forces, electricity, and magnetism. Students then investigate work, energy, machines, and

efficiency before moving into waves, sound, light, and electromagnetic technology. Throughout these units, the emphasis remains on understanding relationships—how variables connect, how energy moves, and how scientific principles apply to real-world situations and modern technology.

I cannot stress enough the importance of maintaining a dedicated notebook for this class. With so much content packed into the course, strong organization can make a significant difference. Chemistry and physics both involve a large amount of vocabulary, symbols, equations, and diagrams. Writing things down, organizing definitions, and even creating flashcards can be extremely helpful—especially since many terms and formulas reappear across multiple units.

I also strongly encourage allowing students to use their notes when completing practice questions (and, in some cases, quizzes as well). While fully open-note exams may not be appropriate for every learner, allowing a notecard or small equation sheet during assessments can help students focus more on understanding the why and how behind their work, rather than relying solely on memorization.

As for you parents out there, there is no need to relearn all of this information to help guide your child through the numerous questions. You will find answer keys to all practice questions, quizzes, pre-tests, and full exams in this parent edition!

Weekly Timeline

This is a 36-week curriculum which has been arranged into four-week units. Each week may be broken down into at least three separate days to make it easier for you to set up a schedule:

- 1) *The first day of each week contains a reading assignment and a series of practice problems for your child.*
- 2) *The second day can be spent reviewing the answers from the practice problems on the first day, to review the flash cards for the week, AND to preview the weekly lab activity which may require some preparation.*
- 3) *The third day is set aside for a lab activity that will reinforce the concepts being taught that week.*

As can be expected, all students approach their learning at different rates. If more time is needed each week for the reading or for reviewing the practice problems or labs, that is fine! You are the best gauge of your children and their learning.

Unit Quizzes and Quarterly Tests

Each four-week unit contains a quiz in similar format to the weekly practice problems. These quizzes, and their answer keys, will be found in Chapters 4, 8, 12, 16, 20, 24, 28, and 32 within this book.

Four quarterly tests have been created to further assess your child's understanding of the chapter concepts in addition to the unit quizzes. These will be found at the end of chapters 8, 16, 24, and 32. Your child will need time to prepare for these tests as a full week has been provided for their administration. A pre-test has been built for each of these quarterly exams as well. The following chart will provide a possible timeline you may use for the first eight weeks of study.

Week	Unit	Chapter	Topics	Assessment
1	1	1	<i>Intro to Chemistry</i>	<i>Chapter 1 practice questions</i>
2	1	2	<i>Chemical and Physical Properties of Matter</i>	<i>Chapter 2 practice questions</i>
3	1	3	<i>States of Matter</i>	<i>Chapter 3 practice questions</i>
4	1	4	<i>Protons, Neutrons, and Electrons</i>	<i>Chapter 4 practice questions</i> Unit 1 Quiz
5	2	5	<i>Periodic Table and Trends</i>	<i>Chapter 5 practice questions</i>
6	2	6	<i>Electron Configuration, Energy, and Light</i>	<i>Chapter 6 practice questions</i>
7	2	7	<i>Ionic and Covalent Bonds</i>	<i>Chapter 7 practice questions</i>
8	2	8	<i>Types of Reactions</i>	<i>Chapter 8 practice questions</i> Unit 2 Quiz
9	1-2	1-8	--	Unit 1-2 Pre-test and Test

Test week suggestions...

I would highly recommend setting up a regular schedule to prepare for the quarterly tests. Breaking down each testing week into three or more separate days will make it easier to reflect on the pre-test before completing the quarterly exam. Here are my suggestions:

- 1) *The first or second days of each testing week should be spent reviewing the weekly practice problems and unit quizzes. Do not forget to study the labeled diagrams too!*
- 2) *One day should obviously be allowed for your child to complete the test.*
- 3) *An additional day should be set aside to evaluate the answers, correct any possible mistakes within their notes, and for a review of what has been learned. This material overlaps many times throughout the year so a little reflection will be a good thing.*

Weekly activities and ESP labs

You will find several weekly activities identified as an "ESP Lab". These are inquiry-based activities that require a child to set up an experiment and collect data. For you Classic Science veterans out there, I have modified the format a bit. Be certain to check it out! If this is your first experience within these books, the ESP labs are mini-science fair projects. Before you start to cringe at the thought of doing several "science fair projects" in a single year, I have provided a method for you to use in the first few pages of this book and a list of materials you will need at the end. I believe in using easy-to-find materials for these

activities to help keep costs down. A couple of them require a little prep work. I would recommend reading ahead each week so you are not rushing at the last minute.

I have used this method in my nearly 30 year career as an educator and continue to hear from families how the ESP method has helped their children understand the basics of scientific inquiry. I believe you and your family will feel the same after finishing this book.

Future projects?

A couple of years have passed since the first *General Science* book has been released, and a few more gray hairs have appeared - but I'm not done yet...

I still have few more ideas bouncing around in my brain concerning new books (and a few updates for the existing curriculum as well.)

I will be making some much-needed updates to the *Elementary* series in the months to come. And, I'm bouncing a few ideas around concerning future *Advanced* series books that I'd like to work on. If anyone out there has a few suggestions, feel free to email me at mrq@eequalsmcq.com I'd love to hear from you!

The best way to keep up-to-date on any new developments for my books is to sign up for my monthly LabNotes at www.eequalsmcq.com. I'm certain you'll love the free LabNotes activities for you and your family!

I want to give a huge thank-you to all the families who have used these books over the years. Choosing to spend time learning alongside your children—reading, experimenting, and talking through ideas—means more than you may realize. Those shared moments are what turn science into something real and meaningful.

The time and effort you've put into guiding your kids through science truly matters. Working through questions together, encouraging curiosity, and even wrestling with confusion helps build confidence that lasts well beyond this course. Those experiences are often what students remember most.

It's an honor to know these books have been part of your family's learning journey. Thank you for the time, patience, and curiosity you continue to invest in your children every step of the way.

Keep asking questions and keep searching for the answers! And if you get stuck, I'm only a click away mrq@eequalsmcq.com

Take care,

Scott McQuerry