

Conceptual Academy: Chemistry Science Courses: Grades 9-12



Reviewed: July, 2020 by Blair Lee, M.S.



Basic Details at a Glance

- Grade Level: grades 9-12
- Year-Long Chemistry Lab Class

Publisher's Information

- Conceptual Academy
- Support@ConceptualAcademy.com
- <https://www.conceptualacademy.com/>

Conceptual Chemistry is a guided self-study laboratory course which includes a textbook and a video series that goes along with the text. There are four versions of Conceptual Chemistry: the Full Version, Life Science, Contextual, and College Prep. The recommended span to complete the Full Version is 25 – 36 weeks. The recommended

span to complete the other three versions is 16 – 25 weeks. Students who take these courses will have a solid understanding of chemistry. They will be well prepared for college level science and understand the basic chemistry in their day-to-day life. This book + video + labs course is the most complete package available for homeschool chemistry. My only complaint is that I did not find it when I was homeschooling my son.

You might be wondering which of the 4 chemistry courses I recommend. I will be honest that I went into this review thinking I knew the answer to this question. In fact, I was wrong. I expected the 3 shorter versions to be the same but less. Instead, each of the four courses focuses on different aspects within the field of chemistry.

If you are looking for a high-quality, engaging high school level chemistry course you do not need to look any further than **Conceptual Chemistry**.

When my son was in middle school, I looked forward to the time when I would homeschool chemistry with him. I taught chemistry at the college level. I enjoyed teaching it, and I had some very definite ideas about how chemistry, the central science that forms the foundation for all other sciences, should be taught. I looked at many different chemistry courses to use with him, but they all fell flat for one reason or another. So what would the perfect homeschool high school chemistry course look like?

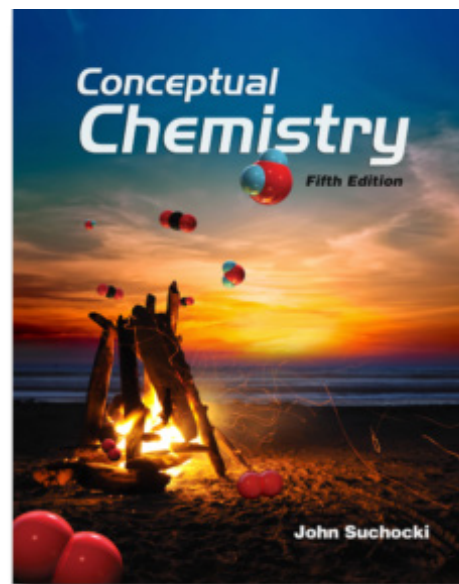
The Components for the Perfect High School Chemistry Course for Homeschoolers

1. Comprehensive textbook that:
 - a. Starts with the basics and builds from there so that students finish the course with a solid foundation in chemistry
 - b. Can be finessed to make it math-heavy or math-light
 - c. Presents information aligned with that taught at public high schools, colleges, and universities
 - d. Has an accompanying schedule so that parents are not left wondering about the specific material students need to cover.
 - e. Has quizzes
 - f. Has an answer key for assigned problems
 - g. Has tests
 - h. Does not bore your socks off
2. Has Labs
 - a. that are easy to integrate into the course
 - b. That are thoughtfully paired as a hands-on application of the course material

- c. requiring lab materials that are not expensive to gather & a lab Kit for those people who would rather spend the money than gather supplies
 - d. that have been tested to ensure they work in home environments
 - e. That teach lab technique in a way that is engaging, thoughtful, and explained well
3. As a bonus: Has online lectures to go along with the course.

Conceptual Chemistry meets all these criteria.

For years I looked for a high school chemistry course that had the textbook and lab component. I wasn't worried about the lecture part, because I could lecture from the course. (Yes, I have done this a time or two for my son.) I could not find a course that met all of the requirements listed under #1 and #2. Much to my disappointment, high school chemistry ended up being frustrating, and time consuming, as I was forced to actually craft my own material. Luckily I was able to use the lecture notes and labs from when I taught chemistry at the college level. That is not really a workable option for most homeschoolers.



Textbook: Conceptual Chemistry by John Suchocki

There is one 1 textbook for all 4 versions of Conceptual Chemistry. The textbook has a good structure for the presentation of the science topics – elements, atomic particles, molecules & atoms, chemical reactions, environmental. It is a comprehensive course that starts with basic concepts and builds from there. There is a nice mix of fonts, font color, and highlighted text to help make sure students key into important information. The photos and illustration are well chosen. Much of this is fairly standard for this type of textbook.

In addition to these more standard features, Conceptual Chemistry has some unique features that make this a special science textbook. There are hands-on activities that are easy to set up and conduct woven into the core text at the start of every chapter. These meaningful activities provide a real-world context for the material students are learning. Suchocki does a masterful job of presenting the math in a way that makes it feel “doable” without making it overwhelming. I love the way the problem sets are written and organized. They are organized into the following sections: Comprehension, Hands-On Application, Mathematical Application, Evaluation, and Readiness Assurance Test. This is a great structure for teaching. This way you can pick and choose those areas you prefer to use for assessment. Don't worry if you are not sure how to make use of the sectioned problem sets. The videos have quizzes and problem sets embedded into them. Finally, between each chapter is a section called “Contextual Chemistry: A Spotlight on Issues Facing Our Modern Society.” These are 1 ½ page essays followed by thoughtful discussion questions. The high-interest topics range from Global Climate Change to Hair and Skin Care to Pseudoscience.

Online Lectures, Images, and Homework Sessions



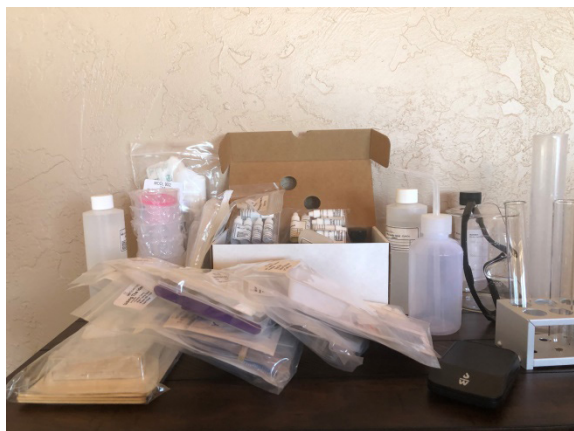
John Suchocki

The taped online lectures set this program apart making it the most complete package on the market for high school chemistry for homeschool students making it the best high school level homeschool friendly chemistry course on the market. Nothing else I've seen even comes close. The online component contains a nice mix of videos, images, and teacher speaking. In addition to the lectures, the online portion has multiple choice Lesson Reading Quizzes and it has Homework Practice Sessions. The Homework Practice Sessions have students respond with a short answer. Once an answer is given (you can write anything in this section, it does not check for correctness), there is a button that takes students to multiple choice questions. They thought to include a closed caption option for students who need that. There is also an accompanying Teacher's Guide, study advice for students, and downloadable homework sheets. As with the text, the author seems to have thought of everything you might need to create a very thorough course.

The videos are fairly short, generally between 5 and 10 minutes. Some of the videos are all vectors, others have John Suchocki talking to the screen, and others have demonstrations on them conducted by the team of Kai and Maile. It is not clear if Kai and Maile are scientists or actors, but it doesn't matter. Their presentations are engaging and educational. They follow along with the assigned sections of the text. Like the text, they contain manageable amounts of theory that nicely build on previous concepts.

The images that are paired with vocabulary and math and science concepts are well chosen. I expect these will lead to a much more complete understanding. For example, the discussion of weight versus mass or the densities of iron versus Styrofoam lends itself particularly well to a video presentation where images, math equations, and an oral explanation are incorporated to help students better understand these core science concepts.

The Labs



John Suchocki and I see eye-to-eye about the importance of incorporating meaningful hands-on labs throughout a science course in order to adequately learn. As mentioned above, there are simple but meaningful labs interspersed through the text, and there is a lab section within the problem set at the end of each chapter. Those are great, but there also needs to be a more formal treatment of lab work so that students learn proper lab procedure, the methodical approach scientists use when conducting experiments (the Scientific Method), and have guided immersive hands-on assignments where they demonstrate the science they are learning. This is done with the accompanying lab manual, *Beyond the Laboratory Manual*. This was written to take “a cyclic guided approach using everyday materials.” This manual has a materials list, information on writing lab reports, and lab sheets. I appreciated the focus on researching

subjects before getting to the hypothesis. Too often, hypotheses are treated like a guess instead of a supposition based on existing knowledge. From there students are scaffolded through the process of conducting the lab while recording observations and making conclusions. It is a thoughtful and well done approach.

When I asked John about a lab kit to go along with his course, John told me that there was one, but it was not necessary because all the supplies are easy to get, probably even from your own pantry. I wanted to see the kit anyway. It is an amazing kit, with absolutely everything you could need in it. It even comes with a hot mitt. After looking through the course and the lab manual that comes with it, I have to agree with John, you do not need it. I like that you have the option of spending the money on the kit if you want the convenience. There are three versions of the kit ranging in price from \$148.50 – \$238.50. If you do not want to spend that much money, you can easily do the experiments without the kit.

Conclusion

With an excellent textbook, superbly done companion videos, and meaningful hands-on labs this is the best high school level chemistry course available for homeschooling students.

Where to get this course:

The textbook is for sale through Amazon or other third-party book sellers. John tells me there is no need to buy the most recent edition. An earlier edition will do.

[The video series is for sale at Conceptual Academy.](#)

The [lab kit is available through eScience Tools.](#)