

4. Is Novare curriculum suitable for a home school environment?

Yes it is. But it may not feel like what you are used to.

Science education in our country is badly impaired by poorly calibrated expectations. Sadly, that includes much that is produced for home use. As mentioned in our Textbook Philosophy, the United States falls further behind other western nations in science and math every time a ranking is published, college freshmen are increasingly unprepared for classes, and they often require remedial coursework before they can begin credit classes. To remedy this problem requires more than bureaucracies, boards, and even more than most publishers are willing or able to accomplish. The pedagogical goal of science education should be to learn, master and retain the subject matter. This is our goal, and we care more about it than we do about increasing sales or pretending education can be easy.

Most science educators know that there is a level of comprehension at which a student feels like she has grasped the material, but cannot talk competently about it, cannot solve computation problems, and does not possess the skills of measurement, observation, and analysis required in real science.

Many curriculum producers hold out the promise of easy learning, simple administration, and making the subject fun, all the while promising academic rigor, creation-based content, and preparation for college. But what you often get is a paint-by-numbers, connect-the-dots approach that in the interest of simplicity, low cost, parental freedom, and enabling independent learning ultimately fails to provide an education anywhere near an ordinary public school, much less realize the dreams parents had when they started home schooling in the first place: that they could do a better job than public schools.

Lab experiments using only household items are inadequate to teach students laboratory skills such as the use of real lab apparatus, applying the concepts of precision vs. accuracy in measurement, following correct safety procedures, and using correct material disposal procedures. All of these are essential scientific skills and necessary for college lab preparation.

Exercises that avoid the integration of mathematics inexplicably bypass a major learning opportunity. And those that only require meaningless student activities such as copying vocabulary definitions, answering multiple choice questions, completing sentences by fill-in-the-blank, or plotting points on a pre-labeled, pre-scaled grid effect almost no real science learning at all. And few, if any, science-in-a-box curricula require the most basic and best science-learning activity: the preparation from scratch of a concise, properly formatted, analytical lab report.

If you are ready, perhaps even desperate, to escape the cycle of impoverished science-learning methods, then Novare materials are for you.

Have you heard that Novare curriculum is difficult to use in a home school? With the growing popularity of home schooling in America, hundreds of publishers are vying to

accommodate this lucrative market. Parents of home schoolers are notoriously a very busy lot and often feel out of their depth in the higher grades. Subsequently, welcome message has been fostered by some publishers that home schooling at the high school level can happen with little effort on the part of parents (as seen by the products that promise “*such-and-such made easy!*”) They tell busy parents what they want to hear and affirm common fears: you don’t have time, you don’t know science well enough to teach it anyway, you need our easy solution to educate your children. Thus, many “science-in-a-box” programs give the appearance of education with worksheets, experiments, reading, and vocabulary. But in most cases, the quality of learning is shallow, soon forgotten, and does not adequately prepare students for college sciences or a technical career.

Novare materials are not difficult to use, but we believe that effective learning does not happen with many traditional methods. Hard work is needed on the part of students: daily review, close reading of textbooks, and regular rehearsal of skills, terms, and concepts. Students must develop the discipline of managing their own personal academic life.

The hardest part about using Novare materials is not the content, but the determination required to stay on top of the textbook reading and studying according to the methods described in each course, methods designed to bring about *mastery*. This requires responsibility and maturity and, as mentioned above, it probably will not feel like what your student is used to. It will feel harder because it requires more focus and closer engagement with the content than is demanded by most science programs.

How much parental involvement is required? That depends on how organized your student is, how diligent, how honest, and how motivated. The good news is that parents do not need to have a science background. That’s what the textbook is for. Ordinary students will need some degree of administrative help from parents to get a routine established early on and to keep students accountable to produce quality work. However, parents DO need to understand what’s going on with the mastery paradigm. You can read about that 1) in the introduction of each text, 2) in the documents on the Resource CD, and 3) in greater depth in our little book *Teaching Science So That Students Learn Science*, available on our website.

Parents can help in getting students organized and on schedule using the materials on the Resource CD. They can help with grading verbal/written work to help students learn to communicate formal technical information, and they can help in overseeing lab experiments. Because homework is graded for *completion and not accuracy*, students can grade their own homework using the answers included with the course. Parents just need to see that it gets done, and that students follow up on correcting their own work to shore up gaps in their knowledge. Parents can grade quizzes and tests and assign a grade, and they grade high school lab reports using standards described in *The Student Lab Report Handbook*.

What about costs? Our books are priced competitively. All major publishers charge much more than Novare. And most Christian home school publisher’s materials are in the same ballpark. And since Novare does not rely on teacher’s manuals, a complete bundle of our high-quality course often costs as much or less than that of other publishers.

As for lab expenses, we strive to keep them modest. Nevertheless, we believe some investment in a few pieces of real lab equipment and materials is imperative. *More is caught than taught*, as the saying goes, and students learn much from handling beakers and measuring chemicals and operating a balance beam. Nobody wants their student to encounter a graduated cylinder for the first time in their college chemistry course.

How hard is it for students? Students will need to allocate time daily for review and study. More is described in the book introduction, but we recommend they make flash cards for memorization work. They will need to read every chapter of the book including the Introduction. And they will be required to provide accurate, concise responses to questions using proper scientific communication. The demands of the mathematics differ from book to book, but it is always aligned to the math course students are traditionally taking simultaneously. With Novare, students feel they are being invited into the adult world of science.

Novare courses are not hard; they are the way science should be taught and the difficulty level that should be expected in order to really learn the subject. Students usually find Novare books challenging, but they cannot help but feel a thrill that they are finally learning something. And that rewards their hard work.