

Rainbow Science as High School Credit

The Rainbow is a two-year curriculum targeting approximately 7th-9th grade home-schoolers. Because of the unique approach to scope and sequence, many people find it appropriate for use as an early high school curriculum. The following is guidance from the author/publisher with regards to its appropriateness for high school credit.

The Rainbow is not designed to precisely fit the mold of a typical public or private school curriculum. For this reason, crossing over to fit precise standards may be somewhat contrived. Nevertheless, the curriculum can be harmonized with traditional reporting requirements.

Of utmost importance to *The Rainbow* is its scope and sequence. Nowhere in the public or private school experience are the sciences presented as an integrated whole, as they are in *The Rainbow*. In this point, our curriculum provides a better framework for later learning than typical curricula. Students learn not only what topics make up a particular scientific discipline, but they also learn how all those disciplines are related to one another. Because of this oversight on the part of traditional schools, even career scientists are often unaware of the continuity among the sciences. We believe this understanding to be pivotal to a well-rounded science education. Many parents will use *The Rainbow* at the high-school level to give students that “big picture” framework for this reason alone.

In the first year of *The Rainbow*, our students study the conceptual content of the disciplines of Physics and Chemistry. This content is the equivalent of a Physical Science course. Our coverage is, however, somewhat broader. For example, we touch on the subjects of nuclear physics and chemical kinetics. These more advanced, abstract concepts may be taught with relative ease at home. From our viewpoint, this curriculum is entirely adequate and fulfills all necessary requirements for high school credit as an equivalent to a 9th grade Physical Science course. The course content is intentionally less math oriented than the corresponding public school content. That is because the material is conceptually challenging. We reserve the more mathematically rigorous treatment of the subject matter for later Physics and Chemistry courses after students have developed a mastery of the requisite algebra skills.

The second year of *The Rainbow* is a survey of the concepts of biology and applied sciences. The Biology course is generally targeted at eighth or ninth grade students, but its content is equivalent to a 9th or 10th grade Introductory Biology or Biology I course. Because of its focus on first principles, however, a few commonly included exercises in traditional early-high-school courses are omitted. An example is the memorization of the Krebs cycle and glycolysis. These exercises are reserved for advanced biology (“Biology II”) courses. From our viewpoint, this curriculum is entirely adequate and fulfills all necessary requirements for high school credit.

The course exceeds the typical public school experience in terms of its laboratories. As in all of our courses, the students perform a laboratory every week. Thus, in a typical school year, our students are performing 30+ laboratories per year, far exceeding the experience in any public or private high school. We believe that these experiences bring the curriculum

above all norms and standards for high school curricula. The content of the curriculum cannot be judged on the basis of the textbook content alone. The laboratory content comprises one out of every three days of study.

The Applied Sciences portion of year two is an advanced treatment of what might be compared to an earlier Earth Science course in traditional education. Because of the prior coverage of the basic sciences in our course, however, students have a better conceptual grasp of the more complex aspects of nature such as atmospheric phenomena, geological makeup and environmental science. They have also had more exposure to the concepts of measurement and units, data reduction and presentation and other skills that are developed through a thorough laboratory experience. This earth science material is often presented to younger kids (untimely, in our view) without the prerequisite background in the basic sciences.

Although the laboratory portion of the curriculum is far more extensive than public and private school analogs there may be a particular laboratory exercise (such as the dissection of a fetal pig) that would be required by a few high schools (fewer and fewer these days) and that is not included in *The Rainbow*. We find that where such differences may arise, the perceived deficiency can be easily remedied by a supplemental laboratory exercise obtained from an online retailer (such as homesciencetools.com), who provide fetal pigs and instruction booklets for dissection. Unlike traditional high schools, our students will advance to the point of true hypothesis testing (with close guidance) by the end of this two-year curriculum.

The first year of the curriculum should not be used as either a high school Physics or Chemistry course, as it lacks appropriate rigor, including mathematical rigor. The second year of the course should not be used as an Advanced Biology (Biology II or AP Biology) course. In the more advanced courses, students will learn more advanced physiology and biochemical processes than we provide in *The Rainbow*.

Thank you for your interest in our curriculum!