

Science QCC Revisions – Executive Summary

Like the other curriculum areas, the most noticeable difference in the new Science Quality Core Curriculum (QCC) is the fact they are now performance standards. The curriculum is trimmed down with the expectation that students will be given the opportunity to achieve scientific literacy, while also giving students the necessary tools to be successful at the next level of their educational career. With fewer topics, teachers will be able to go deeper into appropriate material and thereby, increase the overall rigor and expectation of each grade level and course. In the past, there has been too much material for students to have the opportunity to master key concepts of science. Most of the former objectives operated at the knowledge level, so students had no need for true standards. Performance standards will not only allow teachers to teach to the depth each student needs and deserves, the new document will also provide teachers with the tools to know if their students actually mastered a concept through the use of student work and commentary.

The *Standards for Excellence in Education* by the Council for Basic Education (CBE) was used for our standards and benchmarks. The CBE are a distilled version of the American Association for the Advancement of Science's publication, *Benchmarks for Scientific Literacy*. We have added vocabulary lists in each course with the intent to have a "common language" within our science curriculum. We are also adding a reading standard just as the other three areas have. There is also a large emphasis on the process of science at all grade levels. Our goal is for students to "Do Science, not View Science." This is emphasized throughout the task lists and student work. A student cannot simply "learn" science, it must be experienced in order to be meaningful and mastered.

With regard to content, the most radical change is moving Earth Science to sixth grade and Physical Science to eighth grade. This move was made because the brain-based research gives us a look at what cognitive level students tend to be at certain grade levels. Physical Science is very abstract and has a fairly intense mathematics strand in it. Eighth graders, who have experienced more mathematics courses and have two more years of cognitive development, have a better chance for success and mastery in Physical Science than sixth graders do. Kindergarten through fifth grade has moved some topics around, but none so substantial that resources and textbooks are a problem.

In high school, we put together four courses. We chose Physical Science and Biology, because they are tested by the EOCT and GHSGT, and Chemistry and Physics because these are the usual gateways into college. These four courses also represent the four most taken by high school students. Plans are to gradually add more performance based courses as time permits. Human Anatomy and Physiology and Environment Science are the next two slated to be revised. All other science courses will operate on the old QCC until revised.

The Teacher Teams are still working to collect student work. It has been difficult to find appropriate student work, so the teachers are continuing that process.

Recommended Phase-In

I would like to recommend that we first decide on a “common language” among the four curriculum areas so that when all of this is rolled out, we are all using the same vocabulary. My recommendation for phase-in is to begin in 2004-05 with sixth through twelfth grade. This is important due to the “cycling-in” of the “six-eight switch”. My recommended plan for that is below. High school teachers will find it easier to phase-in the new curriculum in the first year due to the fact they are departmentalized and a whole scale curriculum change would not affect them. The kindergarten through fifth grade could phase-in during the 2005-06 school year.

	2004-05	2005-06	2006-07	2007-08
6 th Grade	Physical Science	Earth Science	Earth Science	Earth Science
7 th Grade	Life Science	Life Science	Life Science	Life Science
8 th Grade	Earth Science	Earth Science	Earth Science	Physical Science