



Over the last four years the teachers of Morgan Hill Unified have been working to transform science education. California has adopted the **Next Generation Science Standards (NGSS)** because they know that a strong science education will increase opportunities in college, future careers, and develop well-rounded citizens. The science, technology, engineering, and mathematics (STEM) workforce continues to grow and the state does not have a sufficient number of graduates to fill the jobs. Instruction aligned with NGSS provides all students, regardless of background or previous exposure to science, with learning experiences that deepen their understanding of science and how the world works.

Morgan Hill teachers have been looking closely at these standards and the potential impacts for students. The Science Task Force and Secondary Curriculum Council made up of teachers, parents, principals, and other staff members reviewed the information. During that time they considered the following implications:

- college and career readiness
- access to all standards for all students
- readiness for students and sites
- teacher training
- impact on course offerings in all disciplines
- and changes to CA State Science Testing

MHUSD Three-Course Model	Graduation Requirements	Three Years of Science
<p>The Science Task Force and Secondary Curriculum Council concluded that the Three-Course Model was the best option for our district. This model combines four years of science content into three courses. It will integrate Earth and Space Science into current core science classes:</p> <ul style="list-style-type: none"> ● The Living Earth: Biology and Earth Science ● Chemistry in the Earth System: Chemistry and Earth Science ● Physics of the Universe: Physics and Earth & Space Science <p>This integration allows for teachers to use real-world and current applications to teach Science, thus engaging students and requiring students to apply critical thinking skills.</p>	<p>When considering the significance of equal access to all standards, CA Science Testing, the addition of new content tested, preparing students for success in the workforce, and the importance of global issues, the Morgan Hill Board of Education adopted updated Science graduation requirements. Beginning with the current Freshmen class (Class of 2021), all students will now be required to take The Living Earth, Chemistry in the Earth System, and Physics in the Universe. The Science Department has been teaching The Living Earth to the current freshmen class in anticipation of this change, and will be working with the counseling offices to ensure that all students will remain on track and enrolled in the appropriate courses for next year. Principals maintain discretion to adjust requirements for Special Education students, extenuating circumstances, and students who may graduate with alternative school diplomas.</p> <p>By requiring all students to take Physics, students will be graduating with more than basic foundational knowledge of science and engineering. Students will be able to practice advanced skills needed to apply that knowledge to relevant environmental and technical problems, which is what NGSS is designed to support. In addition, the CA Science Test will cover all topics and be equal weight to Math and English Language Arts on the CA Assessment Dashboard and an integral part of monitoring student progress as part of California’s accountability system.</p>	<p>A detailed analysis of the previous Morgan Hill Unified high school graduates of 2017 found that 92.6% of high school students took three or more years of science. The remaining students were spread out among other electives at the high school; indicating that this change will have minimal impact on student access to electives. Morgan Hill Unified is looking for creative implementation of the core curriculum with CTE pathways and blended instruction to ensure that students still have a variety of ways to meet this requirement consistent with their interests. For example, students on CTE pathways can still take Ag Biology and Soil Chemistry. Students may substitute Physics in the Universe for AP Physics after the completion of The Living Earth and Chemistry in the Earth System. Students may also enroll in other Science elective classes and AP Science courses as interested.</p>

This truly effective transformation of science education will position our students to thrive and prosper in our science and technology oriented workforce and communities. As educators, we are excited about an alignment between educational policies, teaching practices, the NGSS promise of “All Standards, All Students”, and the growing opportunities this will mean for our students.

On behalf of the Secondary Curriculum Council, Science Task Force and Governing Board of Education,
 Glen Webb, Director of Curriculum, Instruction, and Assessment