

The Next Generation Science Standards

Course Changes for the 2020-2021 School Year

Why are we making changes to courses?

The Next Generation Science Standards (NGSS) overhaul expectations for students. With new standards comes new courses of study and new courses to address the new standards. In June 2019, the SCUSD Board of Education approved the adoption of the 3-course Earth Integrated Model in high school and the CA Preferred Integrated Model in middle school. Both recommendations were made by a committee of teachers in consultation with external stakeholders and a districtwide vote of all implicated teachers.

Why integrated science courses?

Integrated science has demonstrated benefits nationally and internationally which guided the framework's recommendation to integrate science content across themes. Here are some of the rationales generated by our committee of teachers and the CA Science Framework to guide communication to parents and other stakeholders or community members:

- Integrated science learning reflects and approximates the real world thinking of scientists and engineers. The real problems facing our world are not discipline specific and students need practice eliciting thinking across content in instruction.
- The Cross Cutting Concepts (CCCs) and the Environmental Principles and Concepts (EP & Cs) are new additions to the California NGSS. These big ideas in science cut across science discipline's and cannot be fully explained through the lens of (1) discipline¹.
- SCUSD is not suggesting coordinated science learning where the year is broken up into separate discipline sections (this is still discipline specific learning), but rather truly integrated where multiple disciplines are called on to explain complex phenomena.
 - **MS Example:** Astronomy is taught through the lens of gravity and other forces that work at a distance. The connections and applications to physics are applied to astronomy.
 - **HS Example:** Chemical reactions and combustion are taught through the lens of climate change, weather phenomena and global temperature increases.
- All of the NGSS are rigorous and it takes consistent exposure, practice and understanding of content over an entire grade span. If a student, for example, only explicitly learns about Earth Science in one year then it stunts their ability to call on and use that content knowledge and thinking in future years.

¹ CA Science Framework (Chapter 5) <https://www.cde.ca.gov/ci/sc/cf/documents/scifwchapter5.pdf>

2020-2021 School Year Implications

	Middle School	High School
Credentialing	No/minimal issues - any science credential can teach an integrated science class at the middle school level.	<p>Geoscience Credential - Teachers that have just a geoscience credential or an authorization to just teach Earth Science will need to secure an additional credential. We are conducting a site based landscape analysis to identify teachers.</p> <p>Course Bubble - Certain courses will see a balloon of sections as a result of moving Biology to the 9th grade year for all students (for example). Some sites will have mixed cohorts of 9th and 10th grade Biology. This bubble will persist until the last course in the sequence and then section numbers will normalize. We are conducting an FTE implications analysis to identify where this bubble will impact sites the most.</p>
Course Offerings	Science 7, Science 8 and GATE options will be available to students. Content will be integrated across all MS grade levels (Earth Science, Physical Science and Life Science).	<p>Changes²:</p> <ul style="list-style-type: none"> ● Biology → Bio/Earth ● Chemistry → Chem/Earth ● Physics → Physics/ Earth ● Chem Study HP → Chem/Earth Honors <p>No Changes:</p> <ul style="list-style-type: none"> ● Advanced Placement Science Classes ● Science Electives <p>Discontinuing Core Courses:</p> <ul style="list-style-type: none"> ● Physical Science 1P/2P ● Molecular Biology 1P/2P³
Courses of Study, Course Titles	Courses of study will be written to reflect integrated instruction. We will begin this process in winter 2020.	Courses of study will be re-written for “d level” approval for all courses that are changing to match the newly adopted curriculum materials or the CA Science Framework for the 3-course model. We will begin this process in the winter 2020.
Course Repeaters	N/A	Sites should prioritize repeating courses during the school day if possible. The Biology/Chemistry and Physics online courses will still be available - they will give students credit toward graduation and a-g,

² These changes will also impact pathway specific core science courses (like Medical Biology or Biology BP)

³ Molecular Biology is being discontinued as an advanced option for Bio/Earth. It can still be offered as an elective similar to Anatomy/ Physiology.

		but they will not replace a D or an F in an Earth Integrated course.
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Comprehensive Sexual Health Education (CSHE) Changes for the 2019-2020 School Year

Why is CSHE mandated?

The state of California recognizes the importance of Comprehensive Sexual Health Education. Comprehensive sexual health education is linked to lower rates of unintended pregnancies, STIs and harmful relationship behaviors. California is not a new implementer of sexual health programming - but the California Healthy Youth Act expands sexual health education to be inclusive of all student identities and instruction around topics like harassment, human trafficking and relationship violence.

What is currently expected of teachers and school sites?

Students must receive comprehensive sexual health education once in middle and once in high school. In SCUSD, those identified courses are 7th Grade Science and high school Biology courses. Teachers in those courses must facilitate a ~2 week curriculum that is inclusive of all mandated topics required by the California Healthy Youth Act. School sites and administrators should be prepared to support site level implementation by:

1. Supporting instruction and providing time and support for teacher collaboration
2. Communicating with families and providing information toward opt out procedures where appropriate.
3. Maintain a front office copy of the curriculum for preview - binders were sent to school sites last year
4. Support office (and support staff) awareness of [minor rights and consent laws](#).

What changes are being made for the 2019-2020 school year?

Prior to this school year, the curriculum included 11 lessons on the topics covered in the Healthy Youth Act. This year, we have added a 12th lesson to accommodate new instructional requirements around human trafficking (as opposed to just sex trafficking). This 12th lesson is now live and can be taught at any time. Training is available and strongly encouraged - teachers received an email from Aaron Pecho with instructions to access the online training modules.

How do teachers access the new lesson?

Teachers (and parents) should visit our website to receive digital copies of our lesson plans and lesson materials (www.scusd.edu/chya). Teachers can also access our district opt-out and notification letters online. At the bottom of the webpage, there are links to lesson plan overviews with lesson materials linked.

How can teachers get support?

Teachers should reach out to Janna Cantwell (Janna-Cantwell@scusd.edu) for support. Support is tailored to the teacher and could include support in planning (team or individual) for instruction, lesson modeling, observation and co-teaching.

When are teachers supposed to teach these lessons?

Teachers can teach these lessons at any time during the year. We have not mandated when instruction happens. Due to the nature and importance of the lessons, we prefer the lessons be taught as early as possible.