

Santa Monica Malibu Unified School District NGSS Implementation Plan

The goal of the NGSS is to prepare California students to be *future citizens* and *future scientists* which leads to a specific vision about science education.

Key Instructional Shifts

- *Three Dimensional.* Students engage in scientific inquiry of phenomena using all three dimensions of the CA NGSS.
- *Coherent across the curriculum.* Learning builds upon itself from year to year and science integrates with other parts of the curriculum.
- *Relevant to local communities and student interests.* Content and skills build on students' existing experience to learn about and solve real-world problems.

Looks like...

Students make sense of phenomena and design solutions.

- Students develop models of systems within the natural world and use them to explain phenomena or solve problems.
- Students are actively engaged in the practices through investigations and experiments and technologies they have generated.
- Engineering is integrated into all science disciplines.

Students learn through inquiry.

- Students engage with relevant, real-world learning in which they must investigate and problem-solve using critical thinking.
- Students build science and engineering understanding using a variety of practices in investigations, experiments, and project-based experiences.
- Students revise their thinking and understanding as they engage in science and engineering practices.

Students engage in purposeful reading, writing, speaking, and listening.

- Student-to-student discourse is productive, using practices to explain phenomenon or solve problems.
- Student reasoning and argumentation play a central role in understanding labs and text.
- Science and engineering notebooks reflect student thinking using the science and engineering practices to understand content and show development and revision of student's scientific models.

**Adapted from the CA Science Framework, CA Department of Education, 2016.*

Actions

Goal: In partnership with higher education professional development providers, align science instruction to the CA NGSS Framework reflecting the three key shifts.

Strategy 1: Align the SMMUSD scope and sequence of science content and practices through teacher leadership teams.

Strategy 2: Build teacher capacity to implement the pedagogical and content shifts within the grade level and/or course through a collaborative and engaging professional learning sequence.

Strategy 3: Review and adopt instructional materials for K-12 (begin process in 18-19).

	2018-19	2019-20	2020-21
<i>High School</i>	<ul style="list-style-type: none"> → Understand the 3-course high school NGSS model. → Develop the scope and sequence, including the integrated component of Earth and Space Science. → Understand and apply the 3-dimensions of NGSS and → Plan an instructional segment around phenomena. → Embed engineering practices into science teaching. → Examine instructional materials to support NGSS implementation. 	<ul style="list-style-type: none"> → Build on learning from 18-19 and tailor sessions per teacher feedback → Support lesson design using the 3-dimensions of NGSS → Pilot instructional materials to support NGSS. Recommend materials for 2020-21. 	<ul style="list-style-type: none"> → Build on learning from 19-20 → Identify teacher leaders to continue honing their pedagogical and content expertise so that they can tailor support based on the site's identified needs. → Utilize newly adopted instructional materials to support scope and sequence developed by teachers.

	2018-19	2019-20	2020-21
<i>Middle School</i>	<ul style="list-style-type: none"> → Engage in NGSS designed experiences with a focus on performance expectations and observable features of student performance. → Generate a deeper understanding of the 3 dimensions of NGSS → Expand the use of phenomena, framing questions and opportunities for increasing student voice/choice. → Examine instructional materials to support NGSS implementation. 	<ul style="list-style-type: none"> → Pilot instructional materials to support NGSS. Recommend materials for 2020-21. 	<ul style="list-style-type: none"> → Build on learning from 19-20 → Identify teacher leaders to continue honing their pedagogical and content expertise so that they can tailor support based on the site's identified needs. → Utilize newly adopted instructional materials to support scope and sequence developed by teachers.
	2018-19	2019-20	2020-21
<i>Elementary</i>	<ul style="list-style-type: none"> → Generate a deeper understanding of the 3 dimensions of NGSS. → Develop a shared understanding of student-centered approach to science with an emphasis on science talk and notebooking. → Create a culture of science talk. → Leverage students' 	<ul style="list-style-type: none"> → Modeling to support student agency → Engage students in argumentation and productive science discourse. → Develop an elementary story line using the 3 dimensions of NGSS. → Pilot instructional materials to support NGSS. 	<ul style="list-style-type: none"> → Build on learning from 19-20 → Identify teacher leaders to continue honing their pedagogical and content expertise so that they can tailor support based on the site's identified needs. → Utilize newly adopted instructional materials to support scope and sequence developed by teachers.

	curiosity- planning around phenomena. → Examine instructional materials to support NGSS implementation.	Recommend materials for 2020-21.	
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