

# TK-12 SLUSD Vision for Science

San Leandro Unified School District is committed to preparing students to be informed citizens, successful in college and careers. Accordingly, all TK-12 students will have equitable access to rigorous culturally relevant, project-based teaching and learning methods that:

- Develop deep understanding of science through the synergy of the three dimensions of the Next Generation Science Standards (NGSS) grounded in real world phenomena and the [California environmental principles and concepts](#).
- Form enduring scientific habits of mind and 21st century competencies.
- Cultivate lifelong student wonder and curiosity.

Terms	Elaboration & outcomes
Informed citizens	<ul style="list-style-type: none"> <li>• Students leaving SLUSD will have the skills and knowledge they need to make informed decisions for the health and wellbeing of their families and communities.</li> <li>• Students will be able to make scientifically informed decisions on local, national or global levels.</li> </ul>
Successful in college and career	<ul style="list-style-type: none"> <li>• All students view themselves as potential scientists &amp; engineers and possess an expanded view of career opportunities.</li> <li>• Students have the skills necessary to succeed in their chosen field.</li> <li>• Students connect their science learning to career options through partnerships with employers, universities, and community organizations.</li> </ul>
Equitable access	<ul style="list-style-type: none"> <li>• All SLUSD students TK-12 engage in learning and self assessment of all Next Generation Science Standards.</li> <li>• All students will have equitable access to resources, trained and skilled teachers, hands-on experiences, technology, field trips, and differentiation for their needs and specialization to advance their interests.</li> <li>• Students graduating from SLUSD will enter science &amp; engineering careers at rates matching the city's demographics.</li> </ul>
Rigor	<ul style="list-style-type: none"> <li>• Students are responsible for grappling with ideas, models and constructing explanations that demonstrate understanding and increase in complexity and sophistication over time.</li> <li>• Assessments and performances of understanding are 3 dimensional and varied in format.</li> <li>• Students will not just be end users of technology, starting in elementary, they will receive age-appropriate computer science instruction that enables them to code, modify &amp; create.</li> </ul>

Teaching & learning methods	<ul style="list-style-type: none"> <li>● Instruction uses student curiosity and creativity as a driver for inquiry, thereby fostering lifelong learning.</li> <li>● Teachers and students engage in Project Based Learning and include the community as much as possible.</li> <li>● Science will be integrated throughout the content areas</li> <li>● Teachers support students through culturally and linguistically relevant instruction.</li> <li>● Teaching and learning are grounded in purpose. Learning is active; both “hands-on” and “minds-on”.</li> <li>● Understanding is demonstrated through performance based assessment.</li> <li>● Students construct meaning through multimodal exploration, discourse and argumentation.</li> <li>● Technology/simulations and digital probes will be used to enhance the understanding of hands-on learning experiences.</li> <li>● Teachers will engage in collaboration, reflection, differentiated professional development, and coaching to continually improve and deepen their science teaching practice. This will occur both within grade levels and across TK-12 to achieve coherence.</li> </ul>
Three dimensions of NGSS	<ul style="list-style-type: none"> <li>● Students will engage with disciplinary core ideas using the science and engineering practices, and crosscutting concepts to explain relevant phenomena and design solutions to problems.</li> <li>● Teachers will integrate the life, physical, earth and engineering standards when appropriate, in order to best address the phenomena being investigated.</li> </ul>
Real world phenomena	<ul style="list-style-type: none"> <li>● Units of study focus on students grappling with and explaining observable phenomena. Focus on providing first hand experiences and fostering personal interest.</li> </ul>
Scientific habits of mind	<ul style="list-style-type: none"> <li>● Students can flexibly use both the Science and Engineering Practices and the Crosscutting Concepts.</li> <li>● Scientists and engineers rely on human qualities such as curiosity, persistence, precision, reasoning, logic, imagination and creativity.</li> <li>● Scientists and engineers are guided by habits of mind such as intellectual honesty, tolerance of ambiguity, skepticism, and openness to new ideas (<i>from: connections to the nature of science NGSS standards</i>).</li> </ul>
21st century competencies	<ul style="list-style-type: none"> <li>● Students will engage in and develop collaboration, critical thinking, creativity, communication, cultural and technological competencies and decision making.</li> </ul>

**A shared vision considers :**

- What kind of science teaching and learning do we want for our children and staff? What does quality science instruction look/sound/feel like?
- What will students learn? How will they learn? How will we attend to their cognitive, affective, psychological, social, and physical needs?
- How will students benefit from science instruction in our district? How will we ensure their future success?
- How will their success be measured or demonstrated?
- Of all the educational innovations and research, which strategies should we seek to employ in our school?
- If parents had a choice, on what basis would they choose to send their children to our science classes? (Hirsh, 1996)
- What makes our city/district unique? What resources do we have to offer?
- Who are our students and families - how would we best serve them?