

Strengthening Science & NGSS Implementation: Model Content for LCAPs

Goal & Identified Need	Annual Measurable Outcomes & Targets (include by high need & other student subgroups)	Data Collection Mechanisms
State Priority #1. Basic Services		
Qualified and/or credentialed teachers in science	Appropriately credentialed and trained teacher in every science classroom	Credential information; record of participation in professional learning; annual teacher surveys
	Actions/Services Examples Invest in Science Resource Teachers at elementary school level Middle school teachers' credentials are aligned with district NGSS middle school implementation models (E.g., preferred integrated model) Hire credentialed high school science instructors in science disciplines, specifically Earth Science.	
Aligned and adequate materials for NGSS	Every classroom utilizes NGSS aligned materials	School purchasing data; teacher survey; classroom observations/walkthroughs
	Actions/Services Examples Adopt NGSS designed or aligned materials (see Toolkit Resources List) Ensure access to supplemental resources to support NGSS implementation	
Adequate facilities for science instruction	Every school has adequate facilities for science instruction	Reporting by teachers that facilities are adequate for science instruction
	Actions/Services Examples Elementary & Middle schools: Match existing facilities to meet science program student-learning goals. High schools: Ensure all students have equitable access to adequate laboratory facilities, including creating flexible learning spaces in high schools to support science laboratory lessons	
State Priority #2. Implementation of State Standards		
All teachers will be supported in teaching the Next Generation Science Standards (NGSS)	Appropriately trained teacher in every science classroom	Credential information; record of participation in professional learning; annual teacher surveys
	Actions/Services Examples Provide intentionally planned and designed professional learning for all grade level teachers around NGSS Provide opportunities for job-embedded professional learning opportunities (e.g., peer to peer coaching) Professional Learning Communities (PLCs) at all school sites around improving science instruction	

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Comprehensive plan for NGSS implementation	District on track to be ready for full implementation of NGSS by fall 2018	Semi-annual review of plan objective vs. accomplishments
	Actions/Services Examples	
	District engages in NGSS implementation planning and documents the resulting plan with annual goals and objectives	
	Implement syscience for coaching and peer observation to provide ongoing feedback on NGSS implementation	
Consistent integration of science across disciplines	Number of hours teachers report using science integration strategies	Teacher survey, classroom observations/walkthroughs, master schedules
	Actions/Services Examples	
	Elementary school teachers use time flexibly to teach science and other core disciplines	
	Middle and high school teachers collaborate and plan instructional integration across disciplines at school sites	
	Provide professional learning on science integration instruction	
Plan for science materials and resource management	Every classroom has the materials and resources needed to implement selected math and science instructional materials	Teacher survey, school site action plans
	Actions/Services Examples	
	Create district instructional materials management center	
	Ensure all classrooms have resources to order science materials/consumables at end of year	
	Appoint point person at every site to collect information on science materials and lab equipment needs.	
State Priority #3. Course Access		
Adequate time provided for science	Number and configuration of weekly/minutes provided for science; at minimum follow publisher guidelines for the materials used.	School data and teacher surveys
	Actions/Services Examples	
	Elementary schools ensure adequate (amount and configuration) time provided for NGSS learning.	
	Middle schools ensure Math/Science combination classes allocate appropriate time for science instruction	
	High school implement the NGSS model of three years of science instruction for all students	

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Equitable access to science instruction; schools serving high proportions of high need students offer a full range of coursework.	Identified courses and established number of hours for high need students to participate in science	Course offerings and enrollment of high-need students; intervention data per student
	Actions/Services Examples	
	Elementary schools ensure interventions and pullouts do not happen during science time	
	Middle and high schools ensure course admittance is determined by appropriate measures (e.g., math scores should not be used for science course admittance)	
	Ensure Transitional Kindergarten classrooms have access to science learning opportunities.	
Appropriate and sufficient variety of course offerings in secondary	Number, range, and accessibility of course offerings	School course offering data; number of students enrolled in science courses; number of classrooms engaging in science partnerships
	Actions/Services Examples	
	Create appropriate and sufficient science course offerings in secondary schools for a range of student trajectories, including those that support career prep, count for college entrance, and provide honors/AP credit.	
	Partner with science enrichment organizations, including environmental literacy organizations	
State Priority #4. Student Achievement		
District science assessments	Students will demonstrate grade level proficiency in science	District science assessments at all grade levels.
	Actions/Services Examples	
	Develop and implement districtwide science content assessment to provide student learning data as bridge until NGSS assessments are released.	
	Develop and implement districtwide writing benchmark assessment around science content and hands-on activity.	
Science course completion	Increase the number and percentage of students who complete science graduation and college requirements (C and D requirements for UC admissions).	Transcript data
	Actions/Services Examples	
	Provide secondary science teachers with training on how to retain students in courses (e.g., AVID, Restorative Practices, etc.)	
	Collaborative trainings between middle and high school counselors to facilitate student and parent understanding of high school graduation requirements in science.	
	Clear pathway for all students to complete the C and D requirements of A-G through access to science and lab courses, with targeted supports for high need students.	

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NGSS assessments (TBD)	Students will demonstrate proficiency in Science at tested grade levels (TBD)	Results on new NGSS state science assessment (TBD)
Actions/Services Examples		
Offer opportunities for teachers to become familiar with NGSS assessments when they are available		
Support teachers to utilize NGSS aligned/designed embedded and formative assessments		
State Priority #5. Other Student Outcomes		
Science Learning Activation	Students' levels of science activation will increase annually by (insert goal here for all and for subgroups)	Science Learning Activation Assessment (see www.activationlab.org/tools)
Actions/Services Examples		
Science learning opportunities should support development of fascination with science, value of science, competency belief in science, and scientific sensemaking		
Science learning opportunities should provide access to rich materials; social interaction; and activating learning experiences (see www.activationlab.org)		
Out-of-school activities and achievements	Students participation in quality out-of-school science activities and achievements will increase annually	Student surveys; number of students participating in science activities and internships; number of partnerships per year.
Actions/Services Examples		
Schools provide information and access to quality out-of-school science activities and achievements		
Offer opportunities to extend science learning outside the classroom (e.g. clubs, lunchtime activities, science education in the garden, field trips, maker spaces, etc.)		
Establish high school and middle school internship programs with local science businesses and organizations		
21st Century/Deeper Learning Skills	Students' scores on a selected assessment of 21st Century Skills will increase annually by (insert goal here for all and for subgroups)	Selected assessment of 21st Century Skills
Actions/Services Examples		
Teachers receive training on 21st century teaching and learning		
School sites establish 21st Century learning environments across classrooms and site		

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State Priority #6. Student Engagement		
Positive engagement in science learning experiences	Increase student participation in science activities that support cognitive, behavioral, and affective engagement in learning	Student survey of cognitive, behavioral, and affective engagement in science learning; Number of science or environmental education field trips/experiences per year; number of students participating in science fair
	Actions/Services Examples	
	Science learning opportunities should provide access to rich materials; social interaction; and activating learning experiences (see www.activationlab.org)	
	Expose students to science experiences through environmental education, field-based learning opportunities in partnership with community and outdoor education organizations	
	Engage college and graduate students as mentors in science learning	
	Provide resources for schools/districts to participate in Science Fairs	
	Increase the number and percentage of students participating in out-of-school science clubs and programs	
Highly engaged students at all grades	Science course enrollment, attendance and completion*	Enrollment numbers and attendance data from science courses; suspension/expulsion rates at all grade levels
	Actions/Services Examples	
	Increase the number and percentage of students from underrepresented groups who enroll in and complete science courses	
	Provide targeted support services to help high needs students engage in and succeed in science coursework	
	Provide access to science courses for students with behavioral issues	
State Priority #7. Family Involvement		
Parents understand and utilize avenues to increase involvement in their students' science learning	Participation/attendance at school and community science learning and engagement offerings	Number of events per site per year; number of parents engaged on science committee
	Actions/Services Examples	
	Provide resources and supports for Family Science Nights or Festivals	
	Create a community science education leadership team that includes parents to support the district's science/NGSS implementation plan and programs.	
	Facilitate exhibitions and opportunities for students to showcase their science achievements, learning and endeavors with peers, parents, and the community	

* = required by state

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Opportunities for parents to learn more about NGSS	Each district/school will offer a minimum of one opportunity per year for parents to learn more about NGSS	Parent attendance data
Actions/Services Examples		
District/schools will offer materials and opportunities for parents to learn more about NGSS		
Parent Education Nights		
Parent representation on district science leadership team.		
State Priority #8. School Climate		
Inclusive science activities--not just provided to advanced learners	Students and parents feel included and welcome at/in science activities; students feel a sense of pride in their school and efforts in classroom	Student and parent surveys; participation and attendance data; (survey data); disaggregated data about participation in science activities (in and after school)
Actions/Services Examples		
Implement opportunities to strengthen school community through school-wide engagement in science activities and programs (e.g., Saturday Science Program)		
School sites focus on science topic for an extended period of time during the school year (e.g., Ocean Science Month)		
Improve access to virtual showcase opportunities of science learning through district, school, and science websites.		