

I. Teacher Preparation

A. Elementary School Licensure Requirements

1. Licensure Grade Levels¹

a. Does the state offer an Early Elementary Education credential (Preschool/Kindergarten to Grade 2/3)?	Yes	Early Childhood (Birth – 2)
b. Does the state offer an Elementary Education credential (Kindergarten/Grade 1 to Grade 5/6)?	Yes	Elementary (K-8)

2. Early Elementary²

a. Is an educational practice examination required for licensure?	Yes
b. Is an examination in reading and writing or language arts required for licensure?	Yes
c. Is a mathematics examination required for licensure?	Yes
d. Is a science examination required for licensure?	Yes

3. Elementary Education²

a. Is an educational practice examination required for licensure?	Yes
b. Is an examination in reading and writing or language arts required for licensure?	Yes
c. Is a mathematics examination required for licensure?	Yes
d. Is a science examination required for licensure?	Yes

4. Licensure Renewal

a. What is the period of validity for an educator's license?	Less than 5 years	
	5 years	X ¹
	Greater than 5 years	

b. Can in-service teachers receive certification credit for professional development courses/programs in Earth and Space Sciences?	Yes	X	Professional development can focus on any curriculum with the completion of the approval process. ³
	No		
	Local issue		
	Unknown		

B. Elementary School Curriculum Support

1. Guidelines for Curriculum Development

a. Does the SEA provide guidelines for curriculum development, beyond the state's science standards?	No
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b. If yes, which of the following does the state provide?	1. Science frameworks		
	2. Curriculum maps		
	3. Learning progressions		
	4. Benchmark maps		
	5. Templates for unit design		
	6. Curriculum development guides		
	7. Model units		
	8. Lesson plan templates/guides		
	9. Web-based lesson plan portals		
	10. Model lesson plans		
	11. Assessment guidelines		

2. Instructional Materials⁴

a. At what level does adoption of instructional materials occur?	State level	
	Local level	X

b. If the state is an adoption state, do adopted materials in science include those that address topics specific to the geosciences?	N/A	
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3. Support for New Standards³

a. Does that state provide resources to school systems to effectively implement the standards as they change?	Yes		Local systems determine how allocate programs and provide resources. The local districts submit resources they would like to use. A committee formed at the state level approves those resources for use in the district. Once those resources are approved, any district can use them without going through the approval process. Currently, the committee is working on a document on how to implement the new standards.
	No		
	Local issue	X	
	Unknown		

4. Professional Development⁵

a. Does the SEA provide professional development that is, at least in part, specific to the geosciences?	Yes, provided by SEA	X	NV selected and funded the Math and Science (MSP) grant in March (2014) titled, Focusing On Crosscutting Concepts to Understand Science (FOCCUS). Project FOCCUS will offer science teachers throughout Nevada the opportunity to participate in three phases of professional learning designed to increase their knowledge related to the Nevada Academic Content Standards for Science based on the Next Generation Science Standards.
	Yes, but independent of SEA		
	No		
	Local issue		
	Unknown		

II. Curriculum

A. Elementary School State Science Standards

1. Organization⁶

a. What is the name of the state's elementary school science standards?		Nevada Academic Content Standards for Science (NVACSS) (2014) - based on the Next Generation Science Standards (NGSS)		
b. What is the grade-level arrangement of the standards?		Grade specific	X	
		Grade-level bands		
		Benchmark grade levels		
c. How are the standards outlined?	Overarching standard statements (level one)	X	d. What terms are used to identify each level?	Performance Expectations
	Sub-standard statements that provide more detail to the overarching standards (level two)			

2. Content⁶

a. Are the science standards subdivided according to scientific discipline (Physical Science, Life Science, and Earth and Space Science)?	Yes	The standards are grouped into four major domains: 1) Physical Sciences 2) Life Sciences 3) Earth and Space Sciences 4) Engineering, Technology, and Applications of Science
b. Are the Earth and Space Science standards identified by core ideas in the geosciences?	Yes	The standards can be organized according to Disciplinary Core Idea (DCI). The DCIs for Earth and Space Sciences are: <u>ESS1 Earth's Place in the Universe</u> -ESS1A: The Universe and its Stars -ESS1B: Earth and the Solar System -ESS1C: The History of Planet Earth <u>ESS2 Earth's Systems</u> -ESS2A: Earth Materials and Systems -ESS2B: Plate Tectonics and Large-Scale Systems -ESS2C: The Role of Water in Earth's Surface Processes -ESS2D: Weather and Climate -ESS2E: Biogeology <u>ESS3 Earth and Human Activity</u> -ESS3A: Natural Resources -ESS3B: Natural Hazards -ESS3C: Human Impacts on Earth Systems -ESS3D: Global Climate Change
c. Do the state's standards include current issues in the geosciences? Current issues	Yes	K: Students look the impact of humans on the local environment and consider ways to reduce that impact. 1: Students look at design solutions that reduce the impacts of

in the geosciences can be described as Earth science processes altered by human activities or Earth science processes that affect human well-being.		weather-related hazards. 4: Students examine renewable and non-renewable energy resources and how their uses affect the environment 5: Students consider the impact of human activities on the environment and ways that these impacts can be reduced and resources and the environment can be protected.
d. Do the state's standards include career exploration in the geosciences?	No	

3. Development

a. When were the standards adopted or last revised?	Within the last two years (2014-2015)	X	School year 2014-2015 ⁶
	Between 3-6 years ago (2010-2013)		
	Between 7-10 years ago (2006-2009)		
	More than 10 years ago (before 2006)		

b. Does the state have plans to review/revise its science standards?	Currently under review		The Nevada Department of Education adopted the NGSS as the official Nevada Academic Content Standards for Science in the Spring of 2014.
	Within the next 5 years (2015-2020)		
	Between 5 and 10 years from now (2020-2025)		
	No plan or timeline exists	X	
	Unknown		

B. Middle School State Science Standards

1. Content⁶

a. What is the name of the state's middle school science standards?	Nevada Academic Content Standards for Science (NVACSS) (2014) Based on the Next Generation Science Standards (NGSS)
b. Are Earth and Space Science topics included in the standards?	Yes
c. Is Life Science and Physical Science content included in the standards?	Yes

C. High School State Science Standards

1. Content⁶

a. What is the name of the state's high school science standards?	Nevada Academic Content Standards for Science (NVACSS) (2014) Based on the Next Generation Science Standards (NGSS)
b. Are Earth and Space Science topics included in the standards?	Yes

c. Is Life Science and Physical Science content included in the standards?	Yes
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D. High School Course Requirements

1. Credits Required for Graduation⁷

a. What is the total number of credits required for graduation?	22.5
b. What is the number of science credits required for graduation?	3

2. Course Content⁷

a. Is Life Science required?	No
b. Is Physical Science required?	No
c. Is Earth Science required?	No
d. Is Environmental Science required?	No
e. Is Earth Science accepted?	Yes
f. Does Earth Science have to be lab-based?	Yes

III. Instruction

A. Elementary School Approaches to Instruction

1. State Science Standards⁶

a. Do the state's science standards provide guidelines regarding any specific approach to be used for science teaching?	Yes
b. If so, what is the term used to identify this approach?	NGSS Science and Engineering Practices

c. Do the state's science standards provide a rationale for this approach?	Yes
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d. If so, what is the rationale?	“Engaging in the practices of science helps students understand how scientific knowledge develops; such direct involvement gives them an appreciation of the wide range of approaches that are used to investigate, model, and explain the world. Engaging in the practices of engineering likewise helps students understand the work of engineers, as well as the links between engineering and science. Participation in these practices also helps students form an understanding of the crosscutting concepts and disciplinary ideas of science and engineering; moreover, it makes students’ knowledge more meaningful and embeds it more deeply into their worldview.”
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2. Guidelines for Curriculum Planning

a. If the state offers guidelines for curriculum planning, do these advocate more specific strategies for science instruction?	No
b. If so, what are the strategies?	N/A

3. Technology³

a. Are decisions regarding the use of technology in elementary science classrooms made at the state level or local level?	Local level
b. What kinds of technology are being used by elementary school science teachers in the state?	It varies from district to district. Some districts have STEM labs available.

IV. Learning Contexts

A. Elementary School Classrooms

1. Class Size³

a. What is the average number of students in an elementary classroom?	Unknown
b. What is the maximum allowable number of students in an elementary classroom?	Unknown

2. Instructional Time³

a. At the elementary level, are teachers recommended or required to dedicate a certain amount of instructional time to science?	There is no time requirement		The state doesn't mandate instructional time. Each district has a time management plan that would include science.
	Local decision	X	
	Teachers must spend a certain amount of time teaching science.		
	Unknown		

B. Elementary School Support Services

1. Specialized Support³

a. Are there specific policies in place regarding English as a Second Language (ESL) and Special Education services that could impact science instruction (e.g. pull-out or push-in models)?	Local level decision		Teachers must follow IEP plans. If there are other modifications it would be up to the district.
	Depends on the specifications of a student's IEP or ILP	X	
	Teachers must follow specific practices regarding science		
	Unknown		

V. Extra-Curricular Programs

A. Elementary School Geosciences Enrichment Opportunities

1. After-School and Informal Education³

a. Are opportunities to engage in geoscience-related topics outside of school (e.g. after-school programs and informal education programs) being offered to students in the state?	Yes
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b. If so, what are they?	<p>The clubs vary by school. Some examples of clubs would be Science Olympiad, science fairs, Lego Robotics, and NASA Kids.</p> <p>There are many informal partnerships that have been established with the local districts through a variety of organizations. Examples of organizations include the Carson River Project, WILDE, and WET.</p>
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2. Remedial Education³

a. What remedial supports are in place for geosciences topics with which students are struggling?	Local level decision	X	
	Remediation services are being provided to students in science		
	No remediation support in science		
	Unknown		

VI. Monitoring Systems

A. Elementary School Statewide Science Assessment

1. Structure and Content

a. What is the name of the statewide standardized test in science at the elementary level?	Nevada Proficiency Examination Program (NPEP) assesses students, in grades 3-8, on the Nevada Criterion Referenced Tests in reading and math. Two additional tests, science and writing are tested in grades 5-8. ⁸
b. At what grade(s) is the assessment implemented?	5 ⁸
c. Does the statewide science assessment measure achievement of the state's standards, i.e. is the assessment aligned with state standards?	Yes ³
d. Is the content of the statewide science assessment sub-divided by discipline, namely Physical Science, Life Science, Earth and Space Science?	No ³

e. Are there any plans for revising or changing the current elementary level science assessment?	No plans for revision		New assessment for 2017 ³
	Revision is planned, but timeline is unknown		
	Revision is planned with implementation date set	X	
	Unknown		

2. Results⁹

a. Is student achievement measured by Performance Level Descriptors?	Yes
b. If yes, how many performance levels are there?	4

3. District Level Reporting⁹

a. At the district level, are the percentages of students performing at each PLD reported to the public?	Yes	Test results are reported by school, district or state. The Nevada Report Card does not report scores by science disciplines.
b. At the district level, is student achievement reported according to scientific discipline (Life Sciences, Physical Sciences, Earth and Space Sciences)?	No	
c. If yes, is this data available to the public?	N/A	

4. State Level Reporting³

a. At the state level, are the percentages of students performing at each PLD reported to the public?	Yes	The current assessment is multi content with multiple choice and short answer questions. Teachers can complete item analysis to do comparison.
b. At the state level, is student achievement reported according to scientific discipline (Life Sciences, Physical Sciences, Earth and Space Sciences)?	Yes	
c. If yes, is this data available to the public?	No	

B. Elementary School International Assessments in Science

1. TIMSS¹⁰

a. Has the state participated in the Trends in International Mathematics and Science Study (TIMSS)?	No
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b. If yes, in which years did the state participate?	1995	
	2003	
	2007	
	2011	

C. Middle School Statewide Science Assessment

1. Structure and Content¹¹

a. What is the name of the statewide standardized test in science at the middle school level?	Nevada Proficiency Examination Program (NPEP) Nevada CRT proficiency test in Science
b. At what grade(s) is the assessment implemented?	8
c. Does the assessment address Life Science concepts?	Yes
d. Does the assessment address Life Science concepts?	Yes
e. Does the assessment address Earth Science concepts?	Yes

C. High School Statewide Science Assessment(s)

1. Structure and Content¹¹

a. What is the name of the state's standardized science assessment(s)?	Nevada High School Proficiency Exam (HSPE)	ACT State Testing
b. At what grade level is the assessment implemented?	10	11
c. Does the assessment address Life Science concepts?	Yes	Yes
d. Does the assessment address Physical Science concepts?	Yes	Yes
e. Does the assessment address Earth Science concepts?	Yes	Yes

VII. Accountability

A. School Level

1. Individual Student³

a. Does the state produce an Individual Student Report (ISR) that describes a student's performance on the state's science assessment?	Yes	
b. Is the ISR made available to a student's parents or guardians?	Yes	
c. Is the ISR made available to a student's teacher?	Unknown	
d. Does the ISR report student's performance in terms of scale score and achievement level?	Yes	
e. Does the ISR subdivide results by science discipline (Physical Science, Life Science, Earth and Space Science)?	No	

2. Teacher Appraisal³

a. Are students' results on the statewide science assessment a component of teacher evaluation?	Can be, it is a local decision
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B. District Level

1. District Accreditation³

a. Are student outcomes in statewide science assessments at the elementary level part of accreditation of public schools at the district level?	Yes		
	No	X	
	At a future point		
	Local decision		
	Unknown		

C. State Level

1. Statewide Monitoring³

a. Are student outcomes in statewide science assessments at the elementary level used in monitoring the adequacy of state educational systems?	No	
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2. Trends in Student Outcomes⁹

a. Does the SEA report to the public performance results on the state science assessment over time?	Yes
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b. If yes, how many years of achievement data are available?	3 years (2011-2012 to 2013-2014)		
	4-7 years (2007-2008 to 2013-2014)	X	
	8 to 10 years (2004-2005 to 2013-2014)		
	11 or more years (before 2004-2005)		

c. Are the results also subdivided by science discipline (Life Sciences, Physical Sciences, Earth and Space Sciences)?	No
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¹ State of Nevada Department of Education, Specific Areas of Licensure:

http://www.doe.nv.gov/Educator_Licensure/Specific_Areas_of_Licensure/

² Educational Testing Service, Nevada Test Requirements: <http://www.ets.org/praxis/nv/requirements/>

³ State of Nevada Department of Education (personal communication).

⁴ Education Commission of the States, State Textbook Adoption: <https://www.ecs.org/clearinghouse/57/75/5775.htm>

⁵ Nevada Next Generation Science Education, Project FOCCUS: Supporting the new NVACS for Science with MSP: <http://www.nevadangse.net/framework/project-foccus-supporting-new-nvacs-for-science/>

⁶ State of Nevada Department of Education, Science, Nevada Academic Content Standards for Science 2014 (NVACSS 2014): http://www.doe.nv.gov/Standards_Instructional_Support/Nevada_Academic_Standards/Science/

⁷ Nevada Legislature, Chapter 389 – Examinations, Courses, Standards and Graduation: <http://www.leg.state.nv.us/NRS/NRS-389.html#NRS389Sec018>

⁸ Time 4 Learning, Nevada Standardized Test Prep, Nevada Proficiency Examination Program: <http://www.time4learning.com/testprep/index.php/nevada-standardized-test-prep/>

⁹ State of Nevada Department of Education, Nevada Annual Reports of Accountability: <http://www.nevadareportcard.com/di/>

¹⁰ U.S. Dept. of Education, Institute of Education Sciences, National Center for Education Statistics, Trends in International Mathematics and Science Study (TIMSS), State and District Participation in TIMSS: <https://nces.ed.gov/TIMSS/benchmark.asp>

¹¹ State of Nevada Department of Education, Assessments: <http://www.doe.nv.gov/Assessments/>