

I. Teacher Preparation

A. Elementary School Licensure Requirements

1. Licensure Grade Levels

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

2. Early Elementary

a. Is an educational practice examination required for licensure?	No
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?	No

3. Elementary Education

a. Is an educational practice examination required for licensure?	No
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?	No

4. Licensure Renewal

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

b. Can in-service teachers receive certification credit for professional development courses/programs in Earth and Space Sciences?	Yes	X	
	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?			Yes
b. If yes, which of the following does the	1. Science frameworks	X	- North Caroline Extended Essential Standards (Science K-2, Science 3-5) - Essential Standards: (K, 1, 2, 3, 4,

state provide?			5) Science, Unpacked Content
	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 Materials

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

b. If the state is an adoption state, do adopted materials in science include those that address topics specific to the geosciences?	Yes	No list of adopted textbooks for Elementary Science could be found on the SEA website. However, North Carolina will be selecting (adopting) K-5 Elementary Science textbooks during the 2015-2016 school year for use beginning in 2016. There is not a specific text or resources for geosciences. There could be information about geosciences in the textbooks.
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3. Support for New Standards

a. Does that state provide resources to school systems to effectively implement the standards as they change?	Yes	X	The state does provide resources. The wiki website hosts the resources. Unpacking standards, presentations and unit planning workshops are also provided.
	No		
	Local issue		
	Unknown		

4. Professional Development

a. Does the SEA provide professional development that is, at least in part, specific to the geosciences?	Yes, provided by SEA		There is a non formal educators group with approximately 80-100 representatives that attend the state meetings. The group includes: NC Department of the Environment and Natural Resources, National Parks, museums, and 4-H. The Department of Natural Resources provides resources for teachers and programs for students (WET, WILD, and GLOBE). All partners align programs to the standards. Teachers who participate in workshops learn content, pedagogy and how to align the standards from experts in that field. The state also has regional meetings for teachers and supervisors and the other partners are invited to attend.
	Yes, but independent of SEA	X	
	No		
	Local issue		
	Unknown		

II. Curriculum

A. Elementary School State Science Standards

1. Organization

a. What is the name of the state's elementary school science standards?	North Carolina Essential Standards (K-2 Science and 3-5 Science)
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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?	Essential Standards
	Sub-standard statements that provide more detail to the overarching standards (level two)	X		Clarifying Objectives

2. Content

a. Are the science standards subdivided according to scientific discipline (Physical Science, Life Science, and Earth and Space Science)?	Yes	Standards are organized according to: - Physical Science - Earth Science - Life Science
b. Are the Earth and Space Science standards identified by core ideas in the geosciences?	Yes	Earth Science standards are sub-divided by: - Earth Systems, Structures and Processes - Earth in the Universe - Earth History
c. Do the state's standards include current issues in the geosciences? Current issues in the geosciences can be described as Earth science processes altered by human activities or Earth science processes that affect human well-being.	No	
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)		February, 2010
	Between 3-6 years ago (2010-2013)	X	
	Between 7-10 years ago (2006-2009)		
	More than 10 years ago (before 2006)		

b. Does the state have plans to	Currently under review		There is a 5 year revision legislative cycle. In 2017 the science standards will be reviewed.
	Within the next 5 years	X	

review/revise its science standards?	(2015-2020)		North Carolina Essential Standards, K-2 Science, 3-5 Science, were adopted in February of 2010 and fully implemented in the 2012-2013 school year.
	Between 5 and 10 years from now (2020-2025)		
	No plan or timeline exists		
	Unknown		

B. Middle School State Science Standards

1. Content

a. What is the name of the state's middle school science standards?	North Carolina Essential Standards
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. Content

a. What is the name of the state's high school science standards?	North Carolina Essential Standards
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

D. High School Course Requirements

1. Credits Required for Graduation

a. What is the total number of credits required for graduation?	22
b. What is the number of science credits required for graduation?	3

2. Course Content

a. Is Life Science required?	Yes
b. Is Physical Science required?	Yes
c. Is Earth Science required?	Yes
d. Is Environmental Science required?	Yes
e. Is Earth Science accepted?	Yes
f. Does Earth Science have to be lab-based?	Not stated

III. Instruction

A. Elementary School Approaches to Instruction

1. State Science Standards

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?	Science as Inquiry
c. Do the state's science standards provide a rationale for this approach?	No
d. If so, what is the rationale?	N/A

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. Technology

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?	Varies across the state.

IV. Learning Contexts

A. Elementary School Classrooms

1. Class Size

a. What is the average number of students in an elementary classroom?	Average class size is approximately 15-22 depending on grade.
b. What is the maximum allowable number of students in an elementary classroom?	Unknown

2. Instructional Time

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	X	
	Local decision		
	Teachers must spend a certain amount of time teaching science.		
	Unknown		

B. Elementary School Support Services

1. Specialized Support

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		Schools must follow the IEPs and accommodations. NC also has Multi-Tier System of Support for all students. The system is to prevent failure.
	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 Education

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?	4-H Clubs and programs offered through the Non formal partners.
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2. Remedial Education

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?	North Carolina Testing Program, End-of- Grade Science Test, Grade 5
b. At what grade(s) is the assessment implemented?	5
c. Does the statewide science assessment measure achievement of the state's standards, i.e. is the assessment aligned with state standards?	Yes
d. Is the content of the statewide science assessment sub-divided by discipline, namely Physical Science, Life Science, Earth and Space Science?	Yes

e. Are there any plans for revising or changing the current elementary level science assessment?	No plans for revision	X	When the standards change the assessment will change, and crosswalk workshops will be held for teachers.
	Revision is planned, but timeline is unknown		
	Revision is planned with implementation date set		
	Unknown		

2. Results

a. Is student achievement measured by Performance Level Descriptors?	Yes
b. If yes, how many performance levels are there?	5

3. District Level Reporting

a. At the district level, are the percentages of students performing at each PLD reported to the public?	Yes	SEA reports assessment results at the district level in the same way that results are reported at the State level. Summary scores on the assessment are reported as scaled score results by performance level: Level 1: Limited Command Level 2: Partial Command Level 3: Sufficient Command Level 4: Solid Command Level 5: Superior Command
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?	No	

4. State Level Reporting

a. At the state level, are the percentages of students performing at each PLD reported to the public?	Yes	At the state level, the SEA website reports aggregated scores on the End-of-Grade (EOG) Science Test, Grade 5. Scores are not subdivided by discipline.
b. At the state level, is student achievement reported according to scientific discipline	No	

(Life Sciences, Physical Sciences, Earth and Space Sciences)?		
c. If yes, is this data available to the public?	No	

B. Elementary School International Assessments in Science

1. TIMSS

a. Has the state participated in the Trends in International Mathematics and Science Study (TIMSS)?	Yes
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b. If yes, in which years did the state participate?	1995	
	2003	
	2007	
	2011	X

C. Middle School Statewide Science Assessment

1. Structure and Content

a. What is the name of the statewide standardized test in science at the middle school level?	North Carolina Testing Program, End-of-Grade Science Test, Grade 8
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 Content

a. What is the name of the state's standardized science assessment(s)?	End-of-Course Biology Assessment
b. At what grade level is the assessment implemented?	End-of-Course
c. Does the assessment address Life Science concepts?	Yes
d. Does the assessment address Physical Science concepts?	No
e. Does the assessment address Earth Science concepts?	No

VII. Accountability

A. School Level

1. Individual Student

a. Does the state produce an Individual Student Report (ISR) that describes a student's performance on the state's science assessment?	Yes	Schools provide parents/guardians an Individual Student Report. The report describes an individual student's performance compared to the average scores for the school, the school system, and the state.
b. Is the ISR made available to a student's parents or guardians?	Yes	The Individual Student Report provides aggregated scores and does not subdivide the results by discipline.
c. Is the ISR made available to a student's teacher?	Yes	Classroom rosters can be created from state-supplied software. These rosters include, for each student, a summary of the information contained on the Individual Student Report.
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	Classroom rosters do not subdivide science assessment scores by scientific discipline.

2. Teacher Appraisal

a. Are students' results on the statewide science assessment a component of teacher evaluation?	No
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B. District Level

1. District Accreditation

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 Monitoring

a. Are student outcomes in statewide science assessments at the elementary level used in monitoring the adequacy of state educational systems?	Yes	
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2. Trends in Student Outcomes

a. Does the SEA report to the public performance results on the state science assessment over	Yes
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time?	
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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)		
	8 to 10 years (2004-2005 to 2013-2014)		
	11 or more years (before 2004-2005)	X	17 years of data (1996-2013)

c. Are the results also subdivided by science discipline (Life Sciences, Physical Sciences, Earth and Space Sciences)?	No
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