I. Teacher Preparation

A. Elementary School Licensure Requirements

1. Licensure Grade Levels[1]

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

2. Early Elementary[2]

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?	No

3. Elementary Education[2]

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		Renewal coursework is only accepted if the course is in an area that the teacher is certified in. So for a geosciences course to be acceptable for renewal, the teacher must already have the Science area of certification.[3]
		No	X	
		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	1. Science frameworks		

of the following does the state provide?	2. Curriculum maps		
	3. Learning progressions		
	4. Benchmark maps		
	5. Templates for unit design		
	6. Curriculum development guides	X	Curriculum Guides[4]
	7. Model units		
	8. Lesson plan templates/guides		
	9. Web-based lesson plan portals		
	10. Model lesson plans		
	11. Assessment guidelines		

2. Instructional Materials[5]

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	Publishers: Delta Science Module, Full Option Science System, Discovery Education Science, McGraw-Hill School Education, and Pearson Education-Scott Foresman At each grade level, module titles reflect the geoscience topics of the standards. In addition, grade level science books are South Carolina Editions.

3. Support for New Standards[5]

a. Does that state provide resources to school systems to effectively implement the standards as they change?	Yes	X	The Office of Instructional Practices and Evaluations (OIPE) at the South Carolina Dept. of Education is providing PD regional sessions for K-12 teachers to learn how the Science and Engineering Practices (SEPs) are integrated into the new 2014 Science Standards and how to align grade-level learning engagements to the 2014 Science Standards.
	No		
	Local issue		
	Unknown		

4. Professional Development[3]

a. Does the SEA provide professional development that is, at least in part, specific to the geosciences?	Yes, provided by SEA		Professional development on the standards (essential Knowledge guides) and areas of teacher concern are addressed through professional development offerings at the state and district level. Science teachers are not required to attend the professional development. Some of the trainings are held for the entire state and others are held regionally. Two or three are held per year. Teachers may receive renewal credits for attending. This year and next will focus on the essential knowledge guides and understanding the science content for elementary teachers as well as engineering practices. The following year will focus on the new assessment. Some districts are involved with Project Learning Tree. Teachers may receive additional professional development through that organization as well. Project WET and Project WILD are also used in some districts.
	Yes, but independent of SEA		
	No		
	Local issue	X	
	Unknown		

II. Curriculum

A. Elementary School State Science Standards

1. Organization[6]

a. What is the name of the state's elementary school science standards?	South Carolina Academic Standards and Performance Indicators for Science

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?	Conceptual Understanding
	Sub-standard statements that provide more detail to the overarching standards (level two)	X		Performance Indicator

2. Content[6]

a. Are the science standards subdivided according to scientific discipline (Physical Science, Life Science, and Earth and Space Science)?	Yes	
b. Are the Earth and Space Science standards identified by core ideas in the geosciences?	Yes	- Exploring Weather Patterns - Weather - Weather and Climate - Exploring the Sun and Moon - Stars and the Solar System - Earth's Natural Resources - Earth's Materials and Resources - Changes in Landforms and Oceans
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.	Yes	Not at the K-2 level. In grade 3, students consider the impact of humans on the environment (farming, mining, or building). In grade 5, students look at the effect of human activities on the land and ocean (conservation and pollution).
d. Do the state's standards include career exploration in the geosciences?	No	

3. Development

a. When were the standards	Within the last two years (2014-2015)	X	2014[4]

adopted or last revised?	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 new standards, adopted in 2014 went through a review and writing process that started in 2011. During the 2014-2015 school year, professional development is being provided to teachers to support the understanding and implementation of the new standards.[7]
	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. Content[6]

a. What is the name of the state's middle school science standards?	South Carolina Academic Standards and Performance Indicators for Science
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[6]

a. What is the name of the state's high school science standards?	South Carolina Academic Standards and Performance Indicators for Science
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[8]

a. What is the total number of credits required for graduation?	24
b. What is the number of science credits required for graduation?	3

2. Course Content[8]

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?	Not stated
f. Does Earth Science have to be lab-based?	Not stated

III. Instruction

A. Elementary School Approaches to Instruction

1. State Science Standards[6]

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 and Engineering Practices

c. Do the state's science standards provide a rationale for this approach?	Yes

d. If so, what is the rationale?	In addition to the academic standards, each grade level or high school course explicitly identifies Science and Engineering Practice standards, with indicators that are differentiated across grade levels and core areas. The term "practice" is used instead of the term "skill," to emphasize that scientists and engineers use skill and knowledge simultaneously, not in isolation.

2. Guidelines for Curriculum Planning[4]

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[3]

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 throughout the state depending on local focus for instruction, teacher's experience and funding. Some districts use 3-D printers and other simulations.

IV. Learning Contexts

A. Elementary School Classrooms

1. Class Size[3]

a. What is the average number of students in an elementary classroom?	15.9 students per teacher.
b. What is the maximum allowable number of students in an elementary classroom?	Unknown

2. Instructional Time[3]

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		SEA official was unaware of a requirement for instructional time for science.
	Local decision		
	Teachers must spend a certain amount of time teaching science.		
	Unknown	X	

B. Elementary School Support Services

1. Specialized Support[3]

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		No knowledge about how students are remediated or receive additional assistance.
	Depends on the specifications of a student's IEP or ILP		
	Teachers must follow specific practices regarding science		
	Unknown	X	

V. Extra-Curricular Programs

A. Elementary School Geosciences Enrichment Opportunities

1. After-School and Informal Education[3]

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

b. If so, what are they?	Some districts use Project Learning Tree to complete additional projects that extend beyond the classroom. Standards for Project Learning Tree will be updated to correlate with the standards in SC next year.

2. Remedial Education

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

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?	South Carolina Palmetto Assessment of State Standards (SC-PASS)[9]
b. At what grade(s) is the assessment implemented?	4 and 5[9]
c. Does the statewide science assessment measure achievement of the state's standards, i.e. is the assessment aligned with state standards?	Yes[10]
d. Is the content of the statewide science assessment sub-divided by discipline, namely Physical Science, Life Science, Earth and Space Science?	Yes[10]

e. Are there any plans for revising or changing the current elementary level science assessment?	No plans for revision		The science assessment will be updated. Next academic year, students will be tested on some new items. The following year 2016-2017, the new assessment will be given. Training will continue with teachers on new content for the assessment.[3]
	Revision is planned, but timeline is unknown		
	Revision is planned with implementation date set	X	
	Unknown		

2. Results[11]

a. Is student achievement measured by Performance Level Descriptors?	Yes
b. If yes, how many performance levels are there?	3

3. District Level Reporting[12]

a. At the district level, are the percentages of students performing at each PLD reported to the public?	Yes	Results are reported for each school district in the state at grades 3, 4, and 5. Results are reported according to the themes/topics for each science discipline (Earth Science, Life Science, Physical Science), as outlined in the state standards.
b. At the district 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?	Yes	

4. State Level Reporting[13]

a. At the state level, are the percentages of students performing at each PLD reported to the public?	Yes	Achievement levels are reported for Grades 3, 4, and 5 topically: Grade 3: Scientific Inquiry ; Habitats & Adaptation; Earth's Materials & Changes ; Heat & Changes in Matter; Motion & Sound Grade 4: Scientific Inquiry; Organisms & Their Environments; Astronomy; Weather; Properties of Light & Electricity Grade 5: Scientific Inquiry; Ecosystems: Terrestrial & Aquatic; Landforms & Oceans; Properties of Matter; Forces & Motion
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?	Yes	

B. Elementary School International Assessments in Science

1. TIMSS[14]

a. Has the state participated in the Trends in International Mathematics and Science Study (TIMSS)?	No

b. If yes, in which years did the state participate?	1995	
	2003	
	2007	
	2011	

C. Middle School Statewide Science Assessment

1. Structure and Content[15]

a. What is the name of the statewide standardized test in science at the middle school level?	South Carolina Palmetto Assessment of State Standards (SC-PASS)
b. At what grade(s) is the assessment implemented?	6, 7, and 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 Examination Program (EOCEP) in Biology 1/Applied Biology 2.[16]	ACT State Testing[17]
b. At what grade level is the assessment implemented?	End-of-Course	11
c. Does the assessment address Life Science concepts?	Yes	Yes
d. Does the assessment address Physical Science concepts?	No	Yes
e. Does the assessment address Earth Science concepts?	No	Yes

VII. Accountability

A. School Level

1. Individual Student[18]

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 an Individual Student Report (ISR) to parents/guardians. This report describes an individual student's performance on statewide assessments in terms of scale score and proficiency level. Grades 3, 4, and 5 reports include student performance on the science assessment in terms of scale score and proficiency level. In addition, results are subdivided according to Standard. The ISR provides the points earned and the total points possible for each Standard. The Science Standards for Grade 3: Scientific Inquiry; Habitats and Adaptations; Earth's Materials and Changes; Heat and Changes in Matter; Motion and Sound The Science Standards for Grade 4: Scientific Inquiry; Organisms and their Environments; Astronomy; Weather; Properties of Light and Electricity The Science Standards for Grade 5: Scientific Inquiry; Ecosystems: Terrestrial and Aquatic; Landforms and Oceans; Properties of Matter; Forces and Motion School-level rosters are generated that contain student results for a specific school. The results are sorted by grade level tested; within each grade, students are listed alphabetically. School Roster Reports do not subdivide scores by standard or discipline. School Roster Reports are available to teachers through a secure website.
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?	Yes	
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)?	Yes	

2. Teacher Appraisal[3]

a. Are students' results on the statewide science assessment a component of teacher evaluation?	A new process for evaluating teachers is in the development phase, which will be based on student growth in all academic areas.

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		
	At a future point		
	Local decision		
	Unknown	X	

C. State Level

1. Statewide Monitoring[3]

a. Are student outcomes in statewide science assessments at the elementary level used in monitoring the adequacy of state educational systems?	Yes	SC has a report card system for each district for state and federal accountability.

2. Trends in Student Outcomes[19]

a. Does the SEA report to the public performance results on the state science assessment over time?			Yes
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	5 years of data (2009-2014)
	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)?			Yes

[1] South Carolina, State Department of Education, Licensure Resources, South Carolina Licensure Manual: http://ed.sc.gov/agency/se/Educator-Services/Licensure/LicensureForms.cfm
[2] South Carolina, State Department of Education, Licensure Resources, Required Examinations, South Carolina's Required Examinations 2014-2015, PDF: http://ed.sc.gov/agency/se/Educator-Services/Licensure/Required-Examinations.cfm
[3] South Carolina, State Department of Education (personal communication).
[4] South Carolina, State Department of Education, Science, 2014 Science Standards: http://ed.sc.gov/agency/se/Instructional-Practices-and-Evaluations/Science.cfm
[5] Elementary State Adopted Instructional Materials List, 2014-15 Elementary Comprehensive Master List of State Adopted Instructional Materials, PDF: http://www.mysctextbooks.com/whatsnew.aspx
[6] South Carolina, State Department of Education, Science, 2014 Science Standards, South Carolina Academic Standards and Performance Indicators for Science 2014, PDF: http://ed.sc.gov/agency/se/Instructional-Practices-and-Evaluations/Science.cfm
[7] South Carolina, State Department of Education, Science, 2014 Science Standards, Science Standards Revision Time Line: http://ed.sc.gov/agency/se/Instructional-Practices-and-Evaluations/Science.cfm
[8] South Carolina, State Department of Education, Defined Program, Grades 9-12 and Graduation Requirements: https://ed.sc.gov/agency/programs-services/124/documents/2013version43-234.pdf
[9] South Carolina, State Department of Education, PASS (Palmetto Assessment of State Standards): http://ed.sc.gov/data/pass/

[10] South Carolina, State Department of Education, Science, 2014 Science Standards, PDF: http://ed.sc.gov/agency/se/Instructional-Practices-and-Evaluations/Science.cfm
[11] South Carolina, State Department of Education, 2014 Palmetto Assessment of State Standards (PASS) Test Scores: http://ed.sc.gov/data/pass/2014/
[12] South Carolina, State Department of Education, 2014 Palmetto Assessment of State Standards (PASS) Test Scores: http://ed.sc.gov/data/pass/2014/
[13] South Carolina, State Department of Education, 2014 Palmetto Assessment of State Standards (PASS) Test Scores, State Scores by Grade Level and Standard: http://ed.sc.gov/data/pass/2014/
[14] 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
[15] South Carolina, State Department of Education, South Carolina Palmetto Assessment of State Standards (SCPASS) Grades 4-8: http://ed.sc.gov/agency/programs-services/45/index.cfm
[16] South Carolina, State Department of Education, End-of-Course Examination Program (EOCEP): http://ed.sc.gov/agency/programs-services/41/index.cfm
[17] South Carolina, State Department of Education, The ACT: http://ed.sc.gov/agency/programs-services/215/index.cfm
[18] South Carolina, State Department of Education, South Carolina Palmetto Assessment of State Standards (SCPASS) Grades 4-8, Test Scores, 2014 Score Report User's Guide, PDF: http://ed.sc.gov/agency/programs-services/45/
[19] South Carolina, State Department of Education, PASS (Palmetto Assessment of State Standards): http://ed.sc.gov/data/pass/