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 Education (P-3)
b. Does the state offer an Elementary Education credential (Kindergarten/Grade 1 to Grade 5/6)?	Yes	Elementary Generalist (K-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?	Yes

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[3]
	Greater than 5 years	

b. Can in-service teachers receive certification credit for professional development courses/programs in Earth and Space Sciences?	Yes	X	They can receive certification credit through a university or through the professional growth points system.[4]
	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

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 Materials[5]

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	

3. Support for New Standards

a. Does that state provide resources to school systems to effectively implement the standards as they change?	Yes	X	When the standards change, professional development is offered regionally, which provides teachers and supervisors an explanation for the changes, and it provides expectations for instruction and assessment.[4]
	No		
	Local issue		
	Unknown		

4. Professional Development[4]

a. Does the SEA provide professional development that is, at least in part, specific to the geosciences?	Yes, provided by SEA	X	Indiana Science Technology Engineering Mathematics (I-STEM) Resource Network is a collaboration of 10 regional hubs (including 6 universities) that offer professional development opportunities for teachers and administrators. This includes elementary level courses as well as courses specific to the Earth sciences. The state department does not typically provide professional development. I-STEM and Purdue University are the biggest providers for professional development for earth and space science.
	Yes, but independent of SEA		
	No		
	Local issue		
	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?	Indiana Academic Standards - Science 2010

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?	Core Standards
	Sub-standard statements that provide more detail to the overarching standards (level two)	X		Indicators

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?	No	
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	In Grade 4, students examine natural resources, conservation of natural resources, and the impact on the environment from the use of natural resources by humans.
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)		April 2010[6]
	Between 3-6 years ago (2010-2014)		
	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	Currently under review		Standards were adopted in 2010. The state department is mandated to review standards every 6 years. The standards review/revision process will begin again in
	Within the next 5 years (2015-2020)	X	
	Between 5 and 10 years from		

standards?	now (2020-2025)		2015 and be adopted in 2016.[4]
	No plan or timeline exists		
	Unknown		

B. Middle School State Science Standards

1. Content[6]

a. What is the name of the state's middle school science standards?	Indiana Academic Standards - Science 2010
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?	Indiana Academic Standards - Science 2010
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[7]

a. What is the total number of credits required for graduation?	40 (20 year long)
b. What is the number of science credits required for graduation?	4 (2 year long)

2. Course Content[7]

a. Is Life Science required?	Yes
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?	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?	Inquiry-based

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[4]

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?	I-pads and Chrome books are the widely used forms of technology for the elementary schools.

IV. Learning Contexts

A. Elementary School Classrooms

1. Class Size[4]

a. What is the average number of students in an elementary classroom?	Approximately 20-30
b. What is the maximum allowable number of students in an elementary classroom?	There is no mandate on class size.

2. Instructional Time[4]

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		No required time for science. There is a 90 minute literacy block that is mandated. Teachers do receive professional development on how to include science during literacy. It is a local decision if it is included.
	Local decision	X	
	Teachers must spend a certain amount of time teaching science.		
	Unknown		

B. Elementary School Support Services

1. Specialized Support[4]

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	X	Schools must follow the IEP and provide accommodations for ESL students. ESL students may be pulled from science to receive ESL instruction. This practice is a local decision.
	Depends on the specifications of a student's IEP or ILP		
	Teachers must follow specific practices regarding science		
	Unknown		

V. Extra-Curricular Programs

A. Elementary School Geosciences Enrichment Opportunities

1. After-School and Informal Education[4]

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?	Students participate in geosciences activities after school through programs offered by the Department of Natural Resources (WET and WILD) at the schools. The idea is to get more science in the after school programs because there is not enough time for all the content during the school day. In addition, Hoosier River Watch, Indiana State Forestry, Purdue and other higher education institutions have programs for children. The state partners with I-STEM, Department of Natural Resources and the After School Network, which includes parks, museums and zoos in the state.

2. Remedial Education[4]

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	X	
	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?	Indiana Statewide Testing for Educational Progress Plus (ISTEP+)[8]
b. At what grade(s) is the assessment implemented?	4[8]
c. Does the statewide science assessment measure achievement of the state's standards, i.e. is the assessment aligned with state standards?	Yes[9]
d. Is the content of the statewide science assessment sub-divided by discipline, namely Physical Science, Life Science, Earth and Space Science?	Yes[9]

e. Are there any plans for revising or changing the current elementary level science assessment?	No plans for revision	X	The standards were adopted in 2010, and the alignment to the assessment was completed in 2012. The assessment will change when the standards change.[4]
	Revision is planned, but timeline is unknown		
	Revision is planned with implementation date set		
	Unknown		

2. Results[10]

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

3. District Level Reporting

a. At the district level, are the percentages of students performing at each PLD reported to the public?	Yes[11]	In Indiana, districts are known as "corporations." Results on the ISTEP+ in science are reported for each corporation. Results on the ISTEP+ subdivided by science discipline are not published on the SEA website. Results on the ISTEP+ subdivided by science discipline are available to Corporation (District) Administrators.
b. At the district level, is student achievement reported according to scientific discipline (Life Sciences, Physical Sciences, Earth and Space Sciences)?	Yes[12]	
c. If yes, is this data available to the public?	No[12]	

4. State Level Reporting[12]

a. At the state level, are the percentages of students performing at each PLD reported to the public?	Yes	The ISTEP+ (the statewide science assessment) reports that are provided to parents, teachers, and administrators subdivide science scores according to discipline.
b. At the state level, is student achievement reported according to scientific discipline	Yes	

(Life Sciences, Physical Sciences, Earth and Space Sciences)?		The results provided on the SEA website do not provide scores subdivided by discipline.
c. If yes, is this data available to the public?	No	Assessment scores are subdivided by standard and are available to the student, teacher, and parent.

B. Elementary School International Assessments in Science

1. TIMSS[13]

a. Has the state participated in the Trends in International Mathematics and Science Study (TIMSS)?	Yes

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

C. Middle School Statewide Science Assessment

1. Structure and Content[14]

a. What is the name of the statewide standardized test in science at the middle school level?	Indiana Statewide Testing for Educational Progress Plus (ISTEP+)
b. At what grade(s) is the assessment implemented?	6
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[15]

a. What is the name of the state's standardized science assessment(s)?	ISTEP+ End of Course Assessments (ECAs) Biology I
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[12]

a. Does the state produce an Individual Student Report (ISR) that describes a student's performance on the state's science assessment?	Yes	Parents receive an individual "Student Report" for the Statewide Testing for Educational Progress (ISTEP+) assessment. For Grade 4 students, this includes the student's performance on the science part of the test. The student's performance is reported according to each of the science standards, which includes Physical Science, Life Science, and Earth Science. For each child in the class, teachers receive an individual "Student Report" for the Statewide Testing for Educational Progress (ISTEP+) assessment. For Grade 4 students, this includes the student's performance on the science part of the test. The student's performance is reported according to each of the science standards, which includes Physical Science, Life Science, and Earth Science.
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[16]

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

B. District Level

1. District Accreditation[4]

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[4]

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

2. Trends in Student Outcomes[17]

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)		
	8 to 10 years (2004-2005 to 2013-2014)		
	11 or more years (before 2004-2005)	X	12 years of data (2002-2014)

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

[1] Indiana Department of Education, Licensing, Office of Educator Licensing and Development (OELD): http://www.doe.in.gov/licensing
[2] Indiana Department of Education, Licensing, Teacher Testing, Indiana Core Assessments for Educator Licensure, General Program Information November 2013, PDF: http://www.doe.in.gov/licensing/teacher-testing
[3] Indiana Department of Education, Licensing, Renewing an Indiana Educator License: http://www.doe.in.gov/licensing/renewing-indiana-educator-license
[4] Indiana Department of Education (personal communication).
[5] Indiana Department of Education, Achievement, Curriculum, State Review of Textbooks and Curricular Materials: http://www.doe.in.gov/achievement/curriculum/state-review-textbooks-and-curricular-materials
[6] Indiana Department of Education, Indiana Academic Standards, Science, K-8 Science Standards, PDF: http://www.doe.in.gov/standards/science
[7] Indiana Department of Education, Indiana's Diploma Requirements: http://www.doe.in.gov/ccr/indianas-diploma-requirements
[8] Indiana Department of Education, Asessment, ISTEP+ Grades 3-8: http://www.doe.in.gov/assessment/istep-grades-3-8
[9] Indiana Department of Education, Asessment, ISTEP+ Grades 3-8 Blueprints, Science, Grade 4, PDF: http://www.doe.in.gov/assessment/istep-grades-3-8
[10] Indiana Department of Education, Asessment, ISTEP + Performance Level Descriptors, Science Grade 4, ISTEP+ Grade 4 Science Performance Level Descriptors, PDF: http://www.doe.in.gov/assessment/istep-performance-level-descriptors
[11] Indiana Department of Education, Accountability, Find School and Corporation Data Reports, ISTEP+ (2014), Science and Social Studies Results by Grade Level (Public and Non-Public), MSExcel: http://www.doe.in.gov/accountability/find-school-and-corporation-data-reports
[12] Indiana Department of Education, Assessment, ISTEP+ Grades 3-8, Additional Resources, ISTEP+ Guide to Test Interpretation 2013, PDF: http://www.doe.in.gov/assessment/istep-grades-3-8
[13] 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

[14] Indiana Department of Education, Assessment, Office of Student Assessment, ISTEP+ Grades 3-8: http://www.doe.in.gov/assessment/istep-grades-3-8
[15] Indiana Department of Education, Assessment, Office of Student Assessment, Chapter 2, End-of-Course Assessments: http://www.doe.in.gov/assessment
[16] RISE Evaluation and Development System, How Does Rise Work?, Overview, Learn more about the RISE system, PDF: http://www.riseindiana.org/how-does-rise-work/overview
[17] Indiana Department of Education, ISTEP+ Results: http://www.doe.in.gov/assessment/istep-results