

## **I. Teacher Preparation**

### ***A. Elementary School Licensure Requirements***

#### **1. Licensure Grade Levels<sup>1</sup>**

a. Does the state offer an Early Elementary Education credential (Preschool/Kindergarten to Grade 2/3)?	No	
b. Does the state offer an Elementary Education credential (Kindergarten/Grade 1 to Grade 5/6)?	Yes	Generalist (Grade level EC-6) Generalist (Grade Level 4-8)

#### **2. Early Elementary<sup>2,3</sup>**

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

#### **3. Elementary Education<sup>2,3</sup>**

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?	Yes

#### **4. Licensure Renewal<sup>4</sup>**

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	
	No	
	Local issue	
	Unknown	X

### ***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 Materials<sup>5</sup>

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	<p>All instructional materials listed below are aligned 100% with the Texas Essential Knowledge and Skills (TEKS) for Science</p> <p><u>Pearson Education, Inc., publishing as Scott Foresman</u>: Texas Interactive Science, Gr K, 1, 2, 3, 4,</p> <p><u>Houghton Mifflin Harcourt</u>: Houghton Mifflin Harcourt Texas ScienceFusion, K, 1, 2, 3, 4, 5</p> <p><u>Knowing Science LLC</u>: Core Science Curriculum and STEM Kit, Knowing Science, K, 1, 2, 3, 4, 5</p> <p><u>Delta Education LLC / CPO Science</u>: FOSS (Full Option Science System), Texas Edition, K, 1, 2, 3, 4, 5</p> <p><u>Discovery Education Inc</u>: Discovery Education Science Techbook - Grade K, 1, 2, 3, 4, 5</p> <p><u>Accelerate Learning Inc.</u>: STEMscopes 2.0 Kindergarten, 1, 2, 3, 4, 5; TPS Publishing, Inc.; Creative Science Curriculum with STEM, Literacy and Arts Texas Edition, Grade Kindergarten, 1, 2, 3, 4, 5</p> <p><u>Technical Laboratory Systems</u>: SciTEX Living with Science, K, 1, 2, 3, 4, 5</p> <p><u>Edusmart</u>: Edusmart Texas Science – Kindergarten, 1, 2, 3, 4, 5</p>
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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	
	No	
	Local issue	
	Unknown	X

## 4. Professional Development

a. Does the SEA provide professional development that is,	Yes, provided by SEA	
	Yes, but independent of SEA	

at least in part, specific to the geosciences?	No		
	Local issue		
	Unknown	X	

## II. Curriculum

### A. Elementary School State Science Standards

#### 1. Organization<sup>6</sup>

a. What is the name of the state's elementary school science standards?		Texas Essential Knowledge and Skills (TEKS) 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?	Essential Knowledge and Skills
	Sub-standard statements that provide more detail to the overarching standards (level two)			

#### 2. Content<sup>6</sup>

a. Are the science standards subdivided according to scientific discipline (Physical Science, Life Science, and Earth and Space Science)?	Yes	At each grade level, the standards are organized according to the following strands:  1) Scientific Investigation and Reasoning 2) Matter and Energy 3) Force, Motion, and Energy 4) Earth and Space 5) Organisms and Environments
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 2, students identify natural resources. In grade 3, students continue exploring natural resources and how they may be conserved. In grade 4, students differentiate between renewable and nonrenewable resources, and examine the importance of conservation. In grade 5 students look at alternative energy resources.
d. Do the state's standards include career exploration in the geosciences?	Yes	In grades 3, 4, and 5, students connect science concepts with history of science, science careers, and contributions of scientists.

#### 3. Development

a. When were the standards	Within the last two years (2014-2015)		2010 <sup>6</sup>
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adopted or last revised?	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 review/revise its science standards?	Currently under review		
	Within the next 5 years (2015-2020)		
	Between 5 and 10 years from now (2020-2025)		
	No plan or timeline exists		
	Unknown	X	

***B. Middle School State Science Standards***

**1. Content<sup>6</sup>**

a. What is the name of the state's middle school science standards?	Texas Essential Knowledge and Skills (TEKS) 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<sup>6</sup>**

a. What is the name of the state's high school science standards?	Texas Essential Knowledge and Skills (TEKS) 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<sup>7</sup>**

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<sup>7</sup>

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

### **III. Instruction**

#### ***A. Elementary School Approaches to Instruction***

##### **1. State Science Standards<sup>6</sup>**

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?	Unknown
b. What kinds of technology are being used by elementary school science teachers in the state?	Unknown

#### **IV. Learning Contexts**

##### ***A. Elementary School Classrooms***

###### **1. Class Size**

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

##### ***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		
	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**

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?	Unknown
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b. If so, what are they?	Unknown
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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		
	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?	State of Texas Assessments of Academic Readiness (STAAR) exams <sup>8</sup>		
b. At what grade(s) is the assessment implemented?	5 <sup>8</sup>		
c. Does the statewide science assessment measure achievement of the state's standards, i.e. is the assessment aligned with state standards?	Yes <sup>9</sup>		
d. Is the content of the statewide science assessment sub-divided by discipline, namely Physical Science, Life Science, Earth and Space Science?	Yes <sup>10</sup>		
e. Are there any plans for revising or changing the current elementary level science assessment?	No plans for revision	<input type="checkbox"/>	
	Revision is planned, but timeline is unknown	<input type="checkbox"/>	
	Revision is planned with implementation date set	<input type="checkbox"/>	
	Unknown	<input checked="" type="checkbox"/>	

#### **2. Results<sup>11</sup>**

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

#### **3. District Level Reporting<sup>12</sup>**

a. At the district level, are the percentages of students performing at each PLD reported to the public?	Yes	State of Texas Assessments of Academic Readiness (STAAR) exams data files are available that provide results at the regional, district, and campus levels.  These data files are for use with statistical packages such as SAS <sup>TM</sup> and SPSS <sup>TM</sup> .  Unable to download files to view results.
b. At the district level, is student achievement reported according to scientific discipline (Life Sciences, Physical Sciences, Earth and Space Sciences)?	Unknown	
c. If yes, is this data available to the public?	Unknown	

#### **4. State Level Reporting<sup>11</sup>**

a. At the state level, are the percentages of students performing at each PLD reported to the public?	Yes	The SEA produces a Summary Report for Grade 5 Science that gives the results of students on the assessment according to Reporting Category. Matter and Energy Force, Motion, and Energy
b. At the state level, is student achievement reported according to scientific discipline (Life Sciences, Physical Sciences, Earth and	Yes	

Space Sciences)?		Earth and Space
c. If yes, is this data available to the public?	Yes	Organisms and Environments

***B. Elementary School International Assessments in Science***

**1. TIMSS<sup>13</sup>**

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 Content<sup>14</sup>**

a. What is the name of the statewide standardized test in science at the middle school level?	State of Texas Assessments of Academic Readiness (STAAR) 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 Content<sup>14</sup>**

a. What is the name of the state's standardized science assessment(s)?	State of Texas Assessments of Academic Readiness (STAAR) End-of-course assessment for Biology
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<sup>15</sup>**

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 a Confidential Student Report to parents/guardians. The report describes an individual student's performance in terms of scale score and achievement level.
b. Is the ISR made available to a student's parents or guardians?	Yes	In addition, the Confidential Student Report includes scores subdivided by Reporting Category. For Grade 5 Science, these are: Matter and Energy
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	Force, Motion, and Energy Earth and Space Organisms and Environments
e. Does the ISR subdivide results by science discipline (Physical Science, Life Science, Earth and Space Science)?	Yes	The Confidential Campus Roster is available for each grade assessed at each campus and lists every student for whom an answer document or online record was submitted. This report provides detailed student-level score results for each subject area assessed.  In addition, the Confidential Campus Roster includes scores subdivided by Reporting Category.

**2. Teacher Appraisal**

a. Are students' results on the statewide science assessment a component of teacher evaluation?	Unknown
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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	
	At a future point	
	Local decision	
	Unknown	X

**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?	Unknown	
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**2. Trends in Student Outcomes<sup>16</sup>**

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)	X	3 years of data (2011-2014)
	4-7 years (2007-2008 to 2013-2014)		
	8 to 10 years (2004-2005 to 2013-2014)		
	11 or more years (before 2004-2005)		

c. Are the results also subdivided by science discipline (Life Sciences, Physical Sciences, Earth and Space Sciences)?	No
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<sup>1</sup> Texas Education Agency, Texas Educators, Certification, Initial Certification, Becoming a Classroom Teacher in Texas:

[http://tea.texas.gov/Texas\\_Educators/Certification/Initial\\_Certification/Becoming\\_a\\_Classroom\\_Teacher\\_in\\_Texas/](http://tea.texas.gov/Texas_Educators/Certification/Initial_Certification/Becoming_a_Classroom_Teacher_in_Texas/)

<sup>2</sup> Educational Testing Service (ETS), State Board for Educator Certification, Texas Education Agency, Texas Examinations of Educator Standards, Getting Ready to Test, TExES Tests Offered, PDF:

<http://www.texas.ets.org/texas/registration-information/>

<sup>3</sup> Educational Testing Service (ETS), State Board for Educator Certification, Texas Education Agency, Texas Examinations of Educator Standards, TExES Tests At A Glance: <http://www.texas.ets.org/texas/prepmaterials/tests-at-a-glance/>

<sup>4</sup> Texas Education Agency, Texas Educators, Certification, Certification Renewals, Renewal Requirements:

[http://tea.texas.gov/Texas\\_Educators/Certification/Certification\\_Renewals/](http://tea.texas.gov/Texas_Educators/Certification/Certification_Renewals/)

<sup>5</sup> Texas Education Agency, Curriculum, Instructional Materials, State-Adopted Instructional Materials, Instructional Materials 2014-2015 Adoption Bulletin, PDF:

[http://tea.texas.gov/Curriculum\\_and\\_Instructional\\_Programs/Instructional\\_Materials/State-Adopted\\_Instructional\\_Materials/](http://tea.texas.gov/Curriculum_and_Instructional_Programs/Instructional_Materials/State-Adopted_Instructional_Materials/)

<sup>6</sup> Texas Education Agency, Curriculum, Curriculum Standards, Texas Essential Knowledge and Skills, Texas Essential Knowledge and Skills by Chapter, Chapter 112. Science: <http://tea.texas.gov/curriculum/teks/>

<sup>7</sup> Texas Education Agency, Curriculum, Graduation Information, State Graduation Requirements:

<http://tea.texas.gov/graduation.aspx>

<sup>8</sup> Texas Education Agency, Student Testing and Accountability, Testing, State of Texas Assessments of Academic Readiness (STAAR), STAAR Resources: <http://tea.texas.gov/student.assessment/staar/>

<sup>9</sup> Texas Education Agency, Student Testing and Accountability, Testing, State of Texas Assessments of Academic Readiness (STAAR), STAAR Performance Standards: <http://tea.texas.gov/student.assessment/staar/performance-standards/>

<sup>10</sup> Texas Education Agency, Student Testing and Accountability, Testing, State of Texas Assessments of Academic Readiness (STAAR), STAAR Students Expectations Tested, Spring 2015 Grades 3-8, Grade 5 Science – English, MSExel: <http://tea.texas.gov/student.assessment/staar/exptested/>

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<sup>11</sup> Texas Education Agency, Student Testing and Accountability, Testing, State of Texas Assessments of Academic Readiness (STAAR), STAAR Statewide Summary Reports 2014-2014, Spring 2014 3-8, Grade 5, Summary Report, Grade 5 Science, PDF:

[http://tea.texas.gov/Student\\_Testing\\_and\\_Accountability/Testing/State\\_of\\_Texas\\_Assessments\\_of\\_Academic\\_Readiness\\_%28STAAR%29/STAAR\\_Statewide\\_Summary\\_Reports\\_2013-2014/](http://tea.texas.gov/Student_Testing_and_Accountability/Testing/State_of_Texas_Assessments_of_Academic_Readiness_%28STAAR%29/STAAR_Statewide_Summary_Reports_2013-2014/)

<sup>12</sup> Texas Education Agency, Student Testing and Accountability, Testing, State of Texas Assessments of Academic Readiness (STAAR), STAAR Aggregate Data for 2013-2014

[http://tea.texas.gov/Student\\_Testing\\_and\\_Accountability/Testing/State\\_of\\_Texas\\_Assessments\\_of\\_Academic\\_Readiness\\_%28STAAR%29/STAAR\\_Aggregate\\_Data\\_For\\_2013-2014/](http://tea.texas.gov/Student_Testing_and_Accountability/Testing/State_of_Texas_Assessments_of_Academic_Readiness_%28STAAR%29/STAAR_Aggregate_Data_For_2013-2014/)

<sup>13</sup> 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>

<sup>14</sup> Texas Education Agency, Student Testing and Accountability, Testing, State of Texas Assessments of Academic Readiness (STAAR): <http://tea.texas.gov/student.assessment/staar/>

<sup>15</sup> Texas Education Agency, Student Testing and Accountability, Testing, Student Assessment Results, Interpreting Assessment Reports, State of Texas Assessments of Academic Readiness (STAAR) Grades 3-8, PDF:

<http://tea.texas.gov/student.assessment/interpguide/>

<sup>16</sup> Texas Education Agency, Student Testing and Accountability, Testing, State of Texas Assessments of Academic Readiness (STAAR), STAAR Statewide Summary Reports: <http://tea.texas.gov/staar/rpt/sum/>