



## MATH IN THE EARLY AND MIDDLE GRADES: A SURVEY OF SREB PREPARATION POLICIES

### Background

All 16 SREB states have set content and coursework standards for teacher candidates enrolled in early childhood, elementary and middle grade preparation programs. In the Pre-Kindergarten through Grade Six band, administrative rules usually require demonstration of content knowledge in all academic disciplines.

While certification add-ons and endorsements allow educators to specialize in mathematics or literacy instruction in the elementary grades, only nine SREB states specify the mathematical concepts and skills teacher candidates should demonstrate competency in.

This brief, produced for the Georgia State Board of Education's October 2016 retreat, analyzes how states set math content standards for teacher candidates in Elementary and Middle Grades preparation programs.

### Analysis of State Policies

In reviewing state administrative rules, SREB staff discovered that state policies address math preparedness elementary and middle grades teacher candidates in four ways.

#### Categories

1. State sets expectations for beginning elementary **teacher math knowledge and skills** (6 states)
2. State requires **subject-area concentration(s)** to receive elementary certification (3 states)
3. State requires **minimum credit hour requirements** to receive elementary certification (4 states)
4. State adopts [ACEI Standards for Elementary Level Teacher Preparation](#) (3 states)

#### Association of Childhood Education International (ACEI) Elementary Standards for Mathematics

"[Teacher] candidates know, understand, and use the major concepts and procedures that define number and operations, algebra, geometry, measurement, and data analysis and probability. In doing so, they consistently engage problem solving, reasoning and proof, communication, connections and representations."

**Table 1: SREB State Policies**

State	Category	Citation	Summary
Alabama	ACEI Standards	<a href="#">AAC 290-3-3-.06</a>	The Alabama State Board of Education adopted the ACEI Standards for <b>Elementary Education</b> (K-6) teacher candidates.
Arkansas	Subject-Area Concentrations <sup>1</sup>	<a href="#">ADE 327-6</a>	The regulation does not reference math content requirements for <b>Elementary</b> (K-6) or <b>Middle Childhood</b> (Gr. 4-8) programs. Candidates in Middle Childhood programs select two concentrations among four core academic subjects.
Delaware	Teacher Knowledge and Skills	<a href="#">14 DAC 290</a>	The state requires <b>Elementary Education</b> programs to deliver “instruction on research and evidence-based best practices and strategies for teaching childhood numeracy,” and ensure “a deep conceptual understanding of the content.” The rule describes required content areas and pedagogical strategies.
Florida	Credit Hour Requirements	<a href="#">6A-4.0151</a>	The state created two pathways for <b>Elementary Education</b> (K-6) certification: degree with a major in elementary education OR a degree with 30 semester hours in elementary-related subjects.
Georgia	ACEI Standards	<a href="#">PSC 505-3-.14</a>	The Georgia Professional Standards Commission adopted the ACEI Standards for <b>Elementary Education</b> (P-5) teacher candidates.
Kentucky	Subject-Area Concentrations	<a href="#">16 KAR 2:010</a>	The state requires that <b>Early Grades</b> (K-5) candidates be prepared in the academic disciplines taught in elementary grades. The same rule creates two pathways to <b>Middle-Level</b> (Gr. 5-9) licensure, including (1) an academic major in a core subject area or (2) selection of two teaching fields.
Louisiana	Teacher Knowledge and Skills	<a href="#">Bulletin 746</a>	State regulation contains math competencies for <b>Early Childhood</b> (Pre-K-3) and <b>Elementary</b> (Gr. 1-5) certification areas. The same regulation describes the math and disciplinary literacy requirements for certification in <b>Intermediate Mathematics</b> (Gr. 4-8).
Maryland	Credit Hour Requirements	<a href="#">COMAR 13A.12.02.03</a>	COMAR 13A.12.02.03 requires candidates in <b>Early Childhood Education</b> (PreK-3) programs to take a “minimum of 12 semester hours of course work in both mathematics and science.” <a href="#">COMAR 13A.12.02.04</a> references the same 12 credit hour requirement for mathematics and science coursework for candidates seeking <b>Elementary Education</b> (Gr. 1-6) certification. <a href="#">COMAR 13A.12.02.05</a> requires candidates in <b>Middle School</b> (Gr. 4-9) programs to pursue an academic concentration.
Mississippi	Subject-Area Concentrations	N/A	The State Review Process for Mississippi Educator Preparation Programs ( <a href="#">Link</a> ) requires <b>Elementary Education</b> teacher candidates to complete two 18-hour content area concentrations.

<sup>1</sup> Arkansas, Kentucky, and Maryland require one or more academic concentrations for candidates in Middle Grades programs.

**Table 1: SREB State Policies (continued)**

State	Category	Citation	Summary
North Carolina	Teacher Knowledge and Skills <sup>2</sup>	<a href="#">State Board Rule TCP-A-001</a>	The regulation references <b>Elementary</b> (K-6) licensure and a <b>Math Add-On Certification</b> . The SEA has produced a <a href="#">brochure</a> about the math add-on license, which describes the six-course program of study and “high-leverage teaching practices.”
Oklahoma	Teacher Knowledge and Skills	<a href="#">OAC 210:20-9-172</a>	The rule describes state certification standards and expectations for mathematical competencies for candidates seeking certification in <b>Early Childhood, Elementary</b> and <b>Intermediate</b> grades.
South Carolina	Credit Hour Requirements	N/A	State certification guidelines ( <a href="#">Link</a> ) require six credit hours of mathematics content for an <b>Early Childhood Education</b> degree.
Tennessee	ACEI Standards	<a href="#">Educator Preparation Policy 5.504</a>	The Tennessee State Board of Education adopted the ACEI Standards for <b>Elementary Education</b> (K-5) teacher candidates. The same state policy references the National Council for Teachers of Mathematics (NCTM) <a href="#">program standards</a> for <b>Elementary Mathematics Specialists</b> .
Texas	Teacher Knowledge and Skills	SBEC Standards	The State Board of Educator Certification has produced certificate standards for <b>Elementary Math Generalists</b> ( <a href="#">Link</a> ) and <b>Middle Grades Math Instructors</b> ( <a href="#">Link</a> ). The standards outline the expectations for beginning teachers’ knowledge and skills.
Virginia	Teacher Knowledge and Skills	8 VAC 20-542-100 & 110	State certification standards and math competencies for <b>Primary Education</b> (PreK-Gr. 3; <a href="#">Link</a> ) and <b>Elementary Education</b> (PreK-Gr. 6; <a href="#">Link</a> ) candidates are identical.
West Virginia	Credit Hour Requirements	<a href="#">126 CSR 114</a>	Each <b>Elementary</b> (K-6) program must include three hours of college algebra, minimum six hours of college-level mathematics courses and a three-hour math pedagogy course. Each <b>Middle Level</b> (Gr. 5-9) program must contain a course in college algebra, minimum 18 hours in college-level mathematics, and a three-hour methods course.

**For More Information**

SREB is here to serve you! If you have any more questions related to teachers and principals, please contact the Educator Effectiveness team.

<p>Andy Baxter Vice President for Educator Effectiveness <a href="mailto:andy.baxter@sreb.org">andy.baxter@sreb.org</a> (704) 491-4768</p>	<p>Matthew Smith Program Manager, Educator Effectiveness <a href="mailto:matthew.smith@sreb.org">matthew.smith@sreb.org</a> (404) 879-5538</p>
--	--

<sup>2</sup> For Math Add-On Certification requirements only.