

State K-3 Policies

What are the requirements for pre-service qualifications and for professional development for in-service educators in STEM subjects?

September 2020

At least 20 states require some form of math knowledge for pre-service teacher candidates. Five additional states only require professional development in math for in-service teachers, with three states having requirements for both teacher candidates and current teachers. Ten states specifically identify science and additional STEM subjects in their policies. Twenty-two states plus Washington, D.C., do not specify requirements in statute, rules or regulations.

The following information was gathered from state statutes and regulations only.

To view other data points, click [here](#).

STATE ▲	WHAT ARE THE REQUIREMENTS FOR PRE-SERVICE QUALIFICATIONS AND FOR PROFESSIONAL DEVELOPMENT FOR IN-SERVICE EDUCATORS IN STEM SUBJECTS IN GRADES K-3?	CITATION
Alabama	Teacher Preparation: candidates must demonstrate an ability to understand Alabama Science Course Study: Science and interpret three dimensional expectations outlined by grade level. Candidates know, understand, and use the major concepts, procedures, and practices that define counting and cardinality, number and operations with base 10 and fractions, algebraic thinking, measurement and data, and geometry.	Ala. Admin. Code 290-3-3-06
Alaska	Not specified in statute or regulation.	
Arizona	Not specified in statute or regulation.	

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Arkansas	Not specified in statute or regulation.	
California	Teacher Preparation: a general subject matter examination authorizing teaching multiple subjects shall include an examination of the candidate's knowledge in mathematics and science, in addition to other areas.	Cal. Educ. Code § 44282 Cal. Educ. Code § 44227.2
Colorado	Not specified in statute or regulation.	
Connecticut	Not specified in statute or regulation.	
Delaware	Teacher Preparation: all approved educator preparation programs for prospective elementary school teachers shall provide instruction on research and evidence-based best practices and strategies for teaching childhood numeracy. Instructional concepts include counting and cardinality, operations and algebraic thinking, measurements and data, geometry, fractions and more.	Code Del. Regs. 14 290
District of Columbia	Not specified in statute or regulation.	
Florida	Teacher Preparation: includes content knowledge in math as part of teacher preparation programs.	Fla. Admin. Code Ann. r. 6A-5.066
Georgia	Teacher Preparation: educator preparation rules outline requirements and content standards for optional K-5 Mathematics and Science Endorsement Program.	Ga. Comp. R. & Regs. 505-3-.92 Ga. Comp. R. & Regs. 505-3-.93
Hawaii	Not specified in statute or regulation.	
Idaho	Professional Development: the STEM School Designation for public schools applies to K-12 grades and includes a course of study with STEM instruction and curriculum focused on problem-solving, student involvement in team-driven project-based learning and the engineering design process.	Idaho Code Ann. §33-4701

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Illinois	Teacher Preparation: math standards for elementary teachers address core content knowledge in college math coursework, learning progressions and interconnections among domains, foundational knowledge in counting and cardinality, operations and algebraic thinking, numbers and operations in base ten and fractions, measurement and data and geometry and using high-leverage instructional practices.	Ill. Admin. Code tit. 23, § 20.120 Ill. Adm. Code tit. 23, § 26.135
Indiana	Not specified in statute or regulation.	
Iowa	Teacher Preparation: each teacher candidate must demonstrate the acquisition of core knowledge that includes mathematics.	Iowa Admin. Code r. 281-79.15(256)
Kansas	Not specified in statute or regulation.	
Kentucky	Professional Development: the Kentucky Department of Education shall provide assistance to schools and teachers, including publicizing professional development opportunities, methods of measuring effective professional development, the availability of high quality instructional materials and developmentally appropriate screening and diagnostic assessments of student competency in math.	Ky. Rev. Stat. Ann. § 158.840
Louisiana	Not specified in statute or regulation.	
Maine	Not specified in statute or regulation.	
Maryland	Teacher Preparation: to receive certification in early childhood education (Pre-Kindergarten to Grade 3), applicant must earn a bachelor's or higher degree, which includes a minimum of 12 semester hours of coursework in both math and science. Professional Development: tuition reimbursement is available for teacher retraining in math and science.	Md. Code Regs. 13A.12.02.03 Md. Code Regs. 13A.07.07.01
Massachusetts	Not specified in statute or regulation.	
Michigan	Not specified in statute or regulation.	
Minnesota	Teacher Preparation: requires the Professional Educator Licensing and Standards Board to adopt rules requiring teaching candidates to demonstrate a passing score in math.	Minn. Stat. Ann. § 122A.185

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Mississippi	Not specified in statute or regulation.	
Missouri	Teacher Preparation: content knowledge requirements for elementary education include a minimum of six semester hours in mathematics. For certification in early childhood education (birth-grade 3), methods of teaching and differentiated instruction in math is required.	5 Mo. Code Regs. Ann. 20-400.510 5 Mo. Code Regs. Ann. 20-400.520
Montana	Teacher Preparation: early childhood education programs require that successful candidates demonstrate knowledge, understanding, and use of the major concepts, and procedures, and reasoning processes of mathematics that define number systems and number sense.	MT ADC 10.58.531
Nebraska	Teacher Preparation: course work for both the ECE and EC inclusive endorsements must include the identification of deficiencies and effective instructional and intervention strategies related to mathematics.	92 Neb. Admin. Code Ch. 24, 006
Nevada	Teacher Preparation: nine semester hours of credit in methods of teaching elementary subjects, including, but not limited to, mathematics and science. Coursework in technology is one of the option for required additional instruction. Professional Development: must have access to professional development in academic standards and curriculum in science, technology, engineering and mathematics.	Nev. Admin. Code 391.095 Nev. Rev. Stat. Ann. § 391A.370
New Hampshire	Teacher Preparation: conceptual and procedural knowledge with counting and cardinality; operations and algebraic thinking; number and operations; measurement and data; geometry; ratios and proportional relationships; number systems; expressions and equations; statistics and probability; and mathematical practices.	N.H. Code Admin R. Ed 507.11
New Jersey	Professional Development: teachers in high need school districts in which less than 85 percent of total students have achieved proficiency in mathematics on the New Jersey Assessment of Skills and Knowledge (NJ ASK) 4 shall implement a comprehensive program for mathematics education that prepares students in grades three through four for success in higher order mathematics; with a focus on professional development in math literacy.	N.J. Admin. Code § 6A:13-3.5
New Mexico	Teacher Preparation: six semester hours in mathematics are required for those seeking a Pre-K-12 grade license.	N.M. Admin. Code 6.61.5.

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New York	Teacher Preparation: the provisional certificate in Pre-K-6 includes a requirement of the successful completion of at least six semester hours of college-level credit in each of the following subjects: English, mathematics, science and social studies.	N.Y. Comp. Codes R. & Regs. tit. 8, § 80-2.12
North Carolina	Teacher Preparation: training for elementary education teachers shall include the following: adequate coursework in the teaching of mathematics and assessment prior to licensure to determine if a student possesses the requisite knowledge in scientifically based mathematics instruction that is aligned with the State Board's expectations.	N.C. Gen. Stat. Ann. § 115C-269.20
North Dakota	Teacher Preparation: elementary teachers must complete at least 12 semester hours of coursework in teaching a range of elementary content, including mathematics and science.	N.D. Admin. Code 67.1-02-03-01
Ohio	Not specified in statute or regulation. (References requirements for mathematics specialist. It appears the specialist supports professional development activities rather than teaching students).	Ohio Admin. Code 3301-24-05
Oklahoma	Teacher Preparation: teacher candidates must understand and apply several mathematics, science and technology competencies including: matching curricula to current knowledge; understanding the relationships and sequences of important mathematical ideas; use a variety of appropriate experiences and activities for children to explore and manipulate mathematical ideas; plan an inquiry-based science program; integrates technology into the learning environment; and promotes equitable access to technology for all children.	Okla. Admin. Code 210:20-9-172
Oregon	Not specified in statute or regulation.	
Pennsylvania	Not specified in statute or regulation.	
Rhode Island	Not specified in statute or regulation.	
South Carolina	Teacher Preparation: training programs must ensure that teachers must have basic skills in mathematics.	S.C. Code Ann. Regs 59-26-10
South Dakota	Not specified in statute or regulation.	
Tennessee	Not specified in statute or regulation.	

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Texas	Professional Development: Teacher Mathematics Achievement Categories are available for teachers who provide mathematics instruction to students in kindergarten through third grade. The academy must include training in effective and systematic instructional practices in mathematics, including problem solving, the place value system, whole number operations and fractions.	Tex. Educ. Code Ann. § 21.4553
Utah	Not specified in statute or regulation.	Utah Admin. Code r. R277-500-3
Vermont	Not specified in statute or regulation.	
Virginia	Teacher Preparation: the candidate for the early/primary preK-3 endorsement must take 12 semester hours in mathematics. 15 semester hours is required for the preK-6 endorsement.	8 Va. Admin. Code 20-23-150 8 Va. Admin. Code 20-23-160
Washington	Professional Development: professional growth plans for teachers, in elementary education through secondary education, seeking licensure renewal must include specific focus on the integration of science, mathematics, technology, and engineering instruction.	Wash. Admin. Code 181-85-075 Wash. Admin. Code 181-79A-251
West Virginia	Teacher Preparation: elementary teacher preparation programs require teacher candidates to complete 3 hours of college algebra or verify a college algebra equivalency and 6 hours of college-level mathematics courses as well as three-hour course in mathematical methods.	W. Va. Code R. 126-114-6.3.c
Wisconsin	Teacher Preparation: general education programs for teacher preparation must demonstrate that all candidates completing the program and applying for an initial license have knowledge and understand of mathematics, among other subjects.	Wis. Adm. Code EAB 34.15
Wyoming	Not specified in statute or regulation.	