

**505-3-.92 K-5 MATHEMATICS ENDORSEMENT PROGRAM**

**(1) Purpose.**

(a) This rule describes requirements and field-specific content standards for approving endorsement programs that prepare mathematics specialists for teaching students in grades K-5 and supplements requirements in Rule 505-3-.01, REQUIREMENTS AND STANDARDS FOR APPROVING PROFESSIONAL EDUCATION UNITS AND EDUCATOR PREPARATION PROGRAMS.

(b) This endorsement program is optional and is designed to strengthen and enhance educator competency levels. Individuals teaching mathematics in grades K-5 who hold a valid, level 4 or higher Induction, Professional, Advanced Professional, or Lead Professional teaching certificate and this endorsement will be eligible to earn salary incentives when funded by the General Assembly. The endorsement applies to educators teaching within grades K-5 but it does not modify the grade levels of the base certificate. For example, educators with the Middle Grades Mathematics (4-8) certificate and this K-5 endorsement are only in-field to teach mathematics in grades 4-8. They will be eligible for salary incentives only if they are assigned to teach mathematics in grades 4 or 5.

(c) Individuals with the following certificates will be eligible for pay incentives if they are assigned to teach mathematics in the grade levels defined below:

1. Elementary Education (P-5) certificate holders will be eligible to earn pay incentives if they are assigned to teach mathematics to children in grades K-5.

2. Middle Grades Mathematics (4-8) certificate holders will be eligible to earn pay incentives if they are assigned to teach mathematics to children in grades 4-5.

3. Special Education General Curriculum/Elementary Education (P-5) certificate holders will be eligible to earn pay incentives if they are assigned to teach mathematics to children in grades K-5.

4. Educators holding the following certificates and a core academic content concentration in mathematics will be eligible to earn pay incentives if they are assigned to teach mathematics to children in grades K-5:

- (i) Special Education General Curriculum (P-12)
- (ii) Special Education Adapted Curriculum (P-12)
- (iii) Special Education Behavior Disorders (P-12)
- (iv) Special Education Learning Disabilities (P-12)
- (v) Special Education Deaf Education (P-12)
- (vi) Special Education Physical and Health Disabilities (P-12)
- (vii) Special Education Visual Impairment (P-12)
- (viii) Gifted Education (P-12)

**(2) Requirements.**

(a) To be eligible to enroll in this endorsement program, the educator must have:

1. A valid, level 4 or higher Induction, Professional, Advanced Professional, or Lead Professional teaching certificate, in one of the following fields:

- (i) Elementary Education (P-5);
- (ii) Middle Grades Mathematics (4-8);
- (iii) Special Education General Curriculum/Elementary Education (P-5); or

(iv) any of the following certificates combined with a core academic content concentration in mathematics:

- (I) Special Education General Curriculum (P-12);
- (II) Special Education Adapted Curriculum (P-12);
- (III) Special Education Behavior Disorders (P-12);
- (IV) Special Education Learning Disabilities (P-12);
- (V) Special Education Deaf Education (P-12);
- (VI) Special Education Physical and Health Disabilities (P-12);
- (VII) Special Education Visual Impairment (P-12); or
- (VIII) Gifted Certificate (P-12); and

2. a minimum of one year of teaching experience.

(b) The program may be offered only by a GaPSC-approved educator preparation provider.

(c) The program shall be offered as a post-baccalaureate endorsement and may not be embedded in an initial preparation program.

(d) The program shall require candidates to complete an authentic residency. An authentic residency is defined as a supervised and coordinated series of real applications of knowledge and skills occurring in actual classroom settings that allow candidates to further develop and demonstrate the knowledge and skills acquired in coursework. Residency experiences shall require demonstration of the content knowledge and pedagogical skills delineated in program content standards. Authentic residency experiences shall occur in candidates' assigned classrooms, as well as in settings other than candidates' assigned classrooms to ensure experiences with diverse students and with students in the grade levels of the candidate's base certificate. The authentic residency must include a portfolio component.

(e) Prior to the creation of this rule a certificate known as the Early Childhood Mathematics Endorsement was available. Those holding the Early Childhood Mathematics Endorsement issued prior to June 30, 2010 may keep the endorsement; however, it will not result in eligibility for salary incentives. The K-5 Mathematics Endorsement program shall include a process by which educators holding the Early Childhood Mathematics Endorsement may add the K-5 Mathematics Endorsement and thereby become eligible to earn salary incentives without repeating the full endorsement program. The process shall include but not be limited to the submission of a portfolio which will be assessed by the program provider. Based on the assessment of the portfolio, the program provider may prescribe coursework or performance-based assessments as necessary to ensure that all standards and requirements herein are met before notifying the GaPSC the candidate has met all requirements for the K-5 Mathematics Endorsement.

(f) The portfolio shall include but not be limited to: evidence of observations by supervisors, student work samples including analysis of student work, self reflection and evidence of the effective use of technology to assist in student learning.

(g) The preparation program described in program planning forms, catalogs, and syllabi shall require a minimum of three courses of which two courses shall be focused on the advancement of content knowledge and one course shall be focused on content-specific pedagogy and proven strategies that address the following standards:

1. The program shall prepare candidates who demonstrate conceptual understanding and procedural fluency regarding major concepts of mathematics appropriate for grades K-5. Candidates shall:

(i) demonstrate knowledge of the development, use and multiple representation of numbers and number systems;

(ii) demonstrate number sense and knowledge of number systems, not limited to base ten;

(iii) model the use of the four basic operations in multiple contexts;

(iv) use a variety of mental computation techniques;

(v) apply estimation strategies to quantities, measurements, and computation to determine the reasonableness of results;

(vi) model, explain, and develop a variety of computational algorithms;

(vii) apply the process of measurement to two- and three-dimensional objects using nonstandard, customary and geometric units;

(viii) use geometric concepts and relationships to describe and model mathematical ideas and real world constructs;

(ix) collect, organize, represent, analyze, and interpret data;

(x) apply concepts of probability to real-world situations; and

(xi) describe and represent mathematical relationships.

2. The program shall prepare candidates who have knowledge of historical developments in mathematics that includes the contributions of underrepresented groups and diverse cultures.

3. The program shall prepare candidates who use their knowledge of student diversity to affirm and support full participation and continued study of mathematics by all students. This diversity includes gender, ethnicity, socioeconomic background, language, special needs, and mathematical learning styles.

4. The program shall prepare candidates who use appropriate technology to support the learning of mathematics.

5. The program shall prepare candidates who use appropriate assessment methods to assess student learning and program effectiveness.

(i) The program shall prepare candidates who use formative and summative methods to determine students' understanding of mathematics and to monitor their own teaching effectiveness.

(ii) The program shall prepare candidates who use formative assessment to monitor student learning and to adjust instructional strategies and activities.

(iii) The program shall prepare candidates who use summative assessment to determine student achievement and to evaluate the mathematics program.

6. The program shall prepare candidates who can facilitate problem solving in grades K-5.

7. The program shall prepare candidates who use a variety of physical, visual, and digital materials for exploration and development of:

(i) prenumeration concepts;

(ii) numbers (whole numbers, fractions, decimals, percents) and their relationships;

(iii) four basic operations with positive and negative rational numbers;

(iv) geometric concepts and spatial visualization;

(v) measurement concepts and procedures;

(vi) algebraic concepts;

(vii) logical conjectures and conclusions using quantifiers such as “all”, “some”, and “none”; and

(viii) concepts of probability and elementary data analysis.

8. The program shall prepare candidates who use a variety of print, electronic, and online resources.

9. The program shall prepare candidates who know when and how to use student groupings such as collaborative groups, cooperative learning, and peer teaching.

10. The program shall prepare candidates who use instructional strategies based on current research as well as national, state, and local standards relating to mathematics instruction.

11. The program shall prepare candidates who can work on an interdisciplinary team and in an interdisciplinary environment.

12. The program shall prepare candidates who participate actively in the professional community of mathematics educators.

[Authority O.C.G.A. § 20-2-200](#)