

# Higher Education Teacher Preparation Standards



General Mathematics Grades 6-12



*Kansas leads the world in the success of each student.*

# GENERAL MATHEMATICS

Late Childhood through Early Adolescence

Grades 6-12 Standards July 14, 2026

## Standard 1: Mathematics Content Knowledge

*The teacher candidate understands the conceptual foundations of mathematics and can demonstrate and apply knowledge of major mathematics concepts, connections, applications, and how conceptual understanding leads to an understanding of algorithms and procedures, within and among number and quantity, algebra, Euclidean and non-Euclidean geometry, right triangle and unit circle trigonometry, statistics and probability, basic concepts of calculus, and basic concepts of discrete mathematics.*

### Function 1: Number and Operations

The teacher candidate demonstrates and applies an understanding of major mathematics concepts, procedures, knowledge, and applications within the mathematical domain of number and operations, including fundamental ideas of number theory, fractions, ratios, rates, proportions, vectors, and matrix operations.

#### Content Knowledge

- 1.1.1 Understands fundamental ideas of number theory; composition and decomposition of numbers which leads to divisors, factors and factorization, primes, composite numbers, common factors (including GCF), common multiples (including LCM), and modular arithmetic.
- 1.1.2 Understands quantitative reasoning and relationships that include fractions, ratio, rate, and proportion and the use of units in problem situations, including unit rate reasoning, ratio tables, double number lines, and tape diagrams, understand the unit rate is the slope of the graph of the proportional relationship and the constant of proportionality, identify the constant of proportionality in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
- 1.1.3 Understands vector and matrix operations, modeling, and applications.

#### Professional Skills

None

### Function 2: Algebra and Functions

The teacher candidate demonstrates and applies an understanding of major mathematics concepts, procedures, knowledge, and applications within the mathematical domain of algebra and functions, including algebraic notation and structure, traits and patterns of various function families, as well as the relationship

between a function's table, graph, and equation.

### **Content Knowledge**

- 1.2.1 Understands algebraic notation, symbols, expressions, equations, inequalities, and proportional relationships, and their use in describing, interpreting, modeling, generalizing, and justifying relationships and operations understanding and explaining the link between concepts and standard algorithms, and explaining the relationships between quantities in the context of the situation. Solving equations using multiple strategies, including explaining each step as following from the equality of numbers asserted at the previous step, using tables of values, and solving one variable equations by graphing.
- 1.2.2 Interprets the structure of an expression in terms of its context; choose and produce equivalent forms to reveal and explain properties and key features using algebraic reasoning, factoring, completing the square, and exponent properties; understand the key features and appropriate use of the various forms of a function within a function family and transforming from one form to another to reveal new properties, including but not limited to linear- standard, slope-intercept, point-slope; quadratic- standard, factored, and vertex form.
- 1.2.3 Understands function families including polynomial, exponential and logarithmic, absolute value, rational, and trigonometric, including those with discrete domains (e.g., sequences), and how the choices of parameters determine particular cases and model specific situations.
- 1.2.4 Understands functional representations (tables, graphs, equations, descriptions, recursive definitions, and finite differences), characteristics (e.g., zeros, intervals of increase or decrease, extrema, average rates of change, domain and range, and end behavior), and notations as a means to describe, reason, interpret, and analyze relationships and to build new functions.
- 1.2.5 Understands patterns of change in linear, quadratic, polynomial, and exponential functions and in proportional and simple rational relationships and types of real-world relationships these functions can model.
- 1.2.6 Understands the two schemas for organizing algebra and functions concepts (equations-based approach to algebra or functions-based approach to algebra) and its relation to K-8 curriculum.

### **Professional Skills**

None

### **Function 3: Statistics and Probability**

The teacher candidate demonstrates and applies an understanding of major mathematics concepts, procedures, knowledge, and applications within the

mathematical domain of statistics and probability, including statistical variability, randomness, statistical inference, univariate and bivariate data distributions, and theoretical probability of both simple and compound events.

### Content Knowledge

- 1.3.1 Understands statistical variability and its sources and the role of randomness in statistical inference.
- 1.3.2 Can create and implement surveys and perform investigations using sampling methods and statistical designs, statistical inference (estimation of population parameters and hypotheses testing), justification of conclusions, and generalization of results.
- 1.3.3 Understands univariate and bivariate data distributions for categorical data and for discrete and continuous random variables, including representations, construction and interpretation of graphical displays (e.g., box plots, histograms, cumulative frequency plots, scatter plots, two-way categorical frequency tables), summary measures, and comparisons of distributions.
- 1.3.4 Understands Empirical and theoretical probability (discrete, continuous, and conditional) for both simple and compound events.
- 1.3.5 Understands random (chance) phenomena, simulations, and probability distributions and their application as models of real phenomena and to decision making.

### Professional Skills

None

## Function 4: Geometry

The teacher candidate demonstrates and applies an understanding of major mathematics concepts, procedures, knowledge, and applications within the mathematical domain of analytical geometry, including core concepts of Euclidean and non-euclidean geometry, transformations, formulas of two and three-dimensional objects, geometric constructions, and coordinate geometry.

### Content Knowledge

- 1.4.1 Understands core concepts and principles of Euclidean geometry in two and three dimensions and two-dimensional non-Euclidean geometries.
- 1.4.2 Understands and can perform transformations including dilations, translations, rotations, reflections, glide reflections; compositions of transformations; and the expression of symmetry in terms of transformations.
- 1.4.3 Understands congruence, similarity and scaling, and their development and expression in terms of transformations.
- 1.4.4 Understands identification, classification into categories, visualization, representation of two- and three-dimensional objects (triangles, quadrilaterals,

regular polygons, prisms, pyramids, cones, cylinders, and spheres), two dimensional objects that result from the cross section of three dimensional objects, and three dimensional objects that result from rotating a two dimensional object about an axis.

1.4.5 Understands formula rationale (perimeter, area, surface area, and volume) of two- and three-dimensional objects (triangles, quadrilaterals, regular polygons, rectangular prisms, pyramids, cones, cylinders, and spheres), with attention to units, unit comparison, and the iteration, additivity, and invariance related to measurements.

1.4.6 Understands and can perform geometric constructions and demonstrates inductive and deductive reasoning, axiomatic reasoning, and proof.

1.4.7 Understands analytic and coordinate geometry including algebraic proofs (e.g., the Pythagorean Theorem and its converse) and equations of lines and planes, and expressing geometric properties of conic sections with equations.

#### **Professional Skills**

None

### **Function 5: Trigonometry**

The teacher candidate demonstrates and applies an understanding of major mathematics concepts, procedures, knowledge, and applications within the mathematical domain of trigonometry, including right triangle and unit circle trigonometry, trigonometric identities, and trigonometric equations.

#### **Content Knowledge**

1.5.1 Understands right triangle trigonometry.

1.5.2 Understands, applies, and verifies trigonometric identities.

1.5.3 Graphs trigonometric functions and understands their periodic properties.

1.5.4 Understands and can graph trigonometric functions with polar coordinates.

1.5.5 Understands the unit circle, radians, and their relationship to the coordinate plane.

1.5.6 Solves trigonometric equations.

#### **Professional Skills**

None

### **Function 6: Calculus**

The teacher candidate demonstrates and applies an understanding of major mathematics concepts, procedures, knowledge, and applications within the mathematical domain of calculus, including limits, continuity, rates of change, differentiation, and integration.

**Content Knowledge**

1.6.1 Understands limits, continuity, rates of change, the Fundamental Theorem of Calculus, and the meanings and techniques of differentiation and integration.

1.6.2 Solves calculus problems by applying concepts of function, geometry, and trigonometry.

**Professional Skills**

None

**Function 7: Discrete Mathematics**

The teacher candidate demonstrates and applies an understanding of major mathematics concepts, procedures, knowledge, and applications within the mathematical domain of discrete mathematics, including sets and set theory, permutations and combinations, logic, and applications of discrete mathematics.

**Content Knowledge**

1.7.1 Understands discrete structures including sets, relations, functions, graphs, tables of values, trees, and networks.

1.7.2 Understands enumeration including permutations, combinations, iteration, recursion, and finite differences.

1.7.3 Understands propositional and predicate logic as a foundation of proof.

1.7.4 Understands and can apply discrete structures.

**Professional Skills**

None

**Standard 2: Mathematical Processes**

*The teacher candidate demonstrates, within or across mathematical domains, essential mathematical processes. These mathematical processes are demonstrated by their knowledge of and ability to: represent mathematical ideas, apply the mathematical processes of problem solving, reason and communicate mathematically, engage in mathematical modeling, generalize, and make connections. Candidates apply technology appropriately within these mathematical processes.*

**Function 1:** Preservice teacher candidates will reason abstractly, reflectively, and quantitatively with attention to units, constructing viable arguments and proofs, and critiquing the reasoning of others; represent and model generalizations using mathematics; recognize structure and express regularity in patterns of mathematical reasoning; use multiple representations to model and describe mathematics; and utilize appropriate mathematical vocabulary and symbols to communicate mathematical ideas to others.

**Content Knowledge**

- 2.1.1 Reason abstractly, reflectively, and quantitatively with attention to units, constructing viable arguments and proofs, and critiquing the reasoning of others.
- 2.1.2 Represent and model generalizations using mathematics.
- 2.1.3 Recognize structure and express regularity in patterns of mathematical reasoning.
- 2.1.4 Use appropriate mathematical vocabulary and symbols to communicate mathematical ideas to others.
- 2.1.5 Demonstrate an appreciation for mathematical rigor and inquiry.

**Professional Skills**

- 2.1.6 Understand and utilize research-based techniques and strategies to engage students and colleagues in effective math conversations that increase student learning about concepts.
- 2.1.7 Actively seek problems with multiple entry points and encourage students to use, discuss, and justify solution methods with multiple representations and strategies that are mathematically appropriate to the concept.

**Function 2:** Preservice teacher candidates will use problem solving to develop conceptual understanding, make sense of a wide variety of problems and persevere in solving them, apply and adapt a variety of strategies in solving problems confronted within the field of mathematics and other contexts, and formulate and test conjectures in order to frame generalizations.

**Content Knowledge**

- 2.2.1 Use problem solving to develop conceptual understanding and to

formulate and test generalizations.

2.2.2 Make sense of a wide variety of problems and persevere in solving them.

2.2.3 Apply and adapt a variety of strategies in solving problems confronted within the field of mathematics and other contexts.

2.2.4 Formulate and test conjectures in order to frame generalizations

2.2.5 Monitor and reflect on the process of mathematical problem solving

**Professional Skills**

None

**Function 3:** Preservice teacher candidates will model how the development of mathematical understanding within and among mathematical domains intersects with the mathematical practices of problem solving, reasoning, communicating, connecting, and representing.

**Content Knowledge**

2.3.1 Demonstrate the interconnectedness of mathematical ideas and how they build on one another and recognize and apply mathematical connections among mathematical ideas and across various content areas and real-world contexts.

2.3.2 Reflect on how the mathematical practices of problem solving, reasoning, communicating, connecting, and representing impact mathematical understanding.

2.3.3 Organize mathematical thinking and use the language of mathematics to express ideas precisely, both orally and in writing to multiple audiences.

2.3.4 Formulate, represent, analyze, and interpret mathematical models derived from real-world contexts or mathematical problems.

**Professional Skills**

None

### **Standard 3: History and Context of Mathematics**

*The teacher candidate demonstrates knowledge that the social, historical, and institutional contexts of mathematics affect teaching and learning. As a result, they create learning environments and experiences that are non-discriminatory and accessible through commitment to their role as advocates for every student.*

**Function 1:** Understand the historical development of mathematics across multiple cultural contexts.

#### **Content Knowledge**

- 3.1.1 Understands the historical development and perspectives of number, number systems, and quantity including contributions of significant individuals and multiple cultures.
- 3.1.2 Understands the historical development and perspectives of algebra including contributions of significant individuals and multiple cultures.
- 3.1.3 Understands the historical development and perspectives of statistics and probability including contributions of significant figures and multiple cultures.
- 3.1.4 Understands the historical development and perspectives of geometry and trigonometry including contributions of significant figures and multiple cultures.
- 3.1.5 Understands the historical development and perspectives of calculus including contributions of significant figures and multiple cultures
- 3.1.6 Understands the historical development and perspectives of discrete mathematics including contributions of significant figures and multiple cultures.

#### **Professional Skills**

None

**Function 2:** Recognize the roles of discrimination and distribution of resources in the history of mathematics education and are equipped to analyze and evaluate existing educational systems that persistently fail to serve particular populations and communities.

#### **Content Knowledge**

- 3.2.1 Recognize schools do not exist in a vacuum; administrators and teachers implement policies and practices on the basis of the historical contexts of their schools and communities.
- 3.2.2 Stay abreast of professional standards documents and how these documents have evolved to include more (or less) attention to teaching practices that support all students.
- 3.2.3 Understand that mathematics education is part of a broader system of mechanisms used to determine what is valued, what is right, and what is

normal in society.

- 3.2.4 Stay familiar with literature that presents strategies for providing high quality mathematics learning and success for students who have historically not experienced either.

### **Professional Skills**

- 3.2.5 Engage in conversations to address or question learning experiences that do not serve all students, especially with current challenges in mathematics education.

- 3.2.6 Critically examine the demographic trends in school districts, segregation and re-segregation policies that result in unequal educational experiences, and the adoption of various textbook and instruction policies.

- 3.2.7 Analyze how students are recommended and placed in extension/enrichment and remedial/intervention programs, whether the placement of students across various programs is representative of the school population, who determines the type of instructional materials that are available to students to support their learning of rigorous mathematics, and how information regarding various mathematics programs is communicated to parents.

**Function 3:** Advocate for all students to ensure every student has access and opportunity for advancement in their learning of mathematics.

### **Content Knowledge**

- 3.3.1 Know and believe that all students are capable of success in mathematics, given the right supports and opportunities.

- 3.3.2 Know that access to engaging and rigorous mathematics is essential for mathematics education that supports all students; requires all students to have the opportunity to learn important mathematics from qualified teachers; and that access is threatened when false hurdles are inherent in the system.

- 3.3.3 Recognize that mathematics teachers have power to shape the mathematical experiences of students, and that professional actions can affect them beyond the classroom to their families, communities, and educational trajectories.

### **Professional Skills**

- 3.3.4 Identify when curriculum and/or instruction is insufficient for a particular student or population and work to adapt and develop materials and practices that better serve those students.

- 3.3.5 Use curriculum materials that include high-quality, meaningful tasks that go beyond the basic skills often tied to standardized testing.

- 3.3.6 Exercise ethical practice in decision making and teaching when working with children, families, and colleagues, including the elimination of deficit-

based thinking, integration of family/community funds of knowledge into lesson design and implementation, attention to cultural differences, and protection of the rights of privacy.

- 3.3.7 Advocate for proportional representation of all students in advanced placement, recognizing the inadequacy of defining success solely by the teacher or standardized tests but also additional data points, for example, students' own academic and career goals.

#### **Standard 4: Planning for Mathematical Learning**

*The teacher candidate uses knowledge of students and mathematics to plan rigorous and engaging mathematics instruction. This instruction is informed by knowledge of adolescent development and leverages students' existing assets and prior knowledge to support their access and learning. The mathematics instruction developed provides meaningful and responsive opportunities for all students to learn and apply mathematics concepts, skills, and practices.*

**Function 1:** Using knowledge of students and mathematics to plan rigorous and engaging instruction that provides all students opportunities to learn and apply mathematics concepts, skills, and practices.

##### **Content Knowledge**

- 4.1.1 Know how students construct knowledge, develop skills and processes that support learning, and apply mathematical ideas to tasks and contexts.
- 4.1.2 Know how the mathematics content intersects with real-world contexts.
- 4.1.3 Understands that in mathematics there are multiple representations and often many solution pathways to solve a particular task.

##### **Professional Skills**

- 4.1.4 In lesson planning, exhibits understanding of how students construct knowledge that includes inquiry and problem-solving.
- 4.1.5 Through planning and teaching, provides opportunities for mathematics content to be seen in the world and for the world to be modeled by mathematics.
- 4.1.6 Through planning and instruction, provides opportunities for students to explore and utilize multiple representations and multiple solution strategies.
- 4.1.7 Can identify and teach a "low-floor, high-ceiling" task without lowering cognitive demand or limiting opportunities for extension.

**Function 2:** Understanding of adolescent development.

##### **Content Knowledge**

- 4.2.1 Understand that adolescence is a unique time period of development and that students are rapidly developing cognitively and socially, as they develop their sense of self and place in the community and world at large.

##### **Professional Skills**

- 4.2.2 Demonstrate responsiveness to the cognitive, social, and identity-focused challenges of teaching adolescents.

**Function 3:** Leverages students' existing assets and prior knowledge to support learning.

**Content Knowledge**

- 4.3.1 Understands the importance of building new content and concepts from those that a student already knows and understands.
- 4.3.2 Understands the interconnected nature of mathematics topics across and throughout the curriculum.
- 4.3.3 Understands that students come to schools with differing mathematical resources and experiences, but that it is the responsibility of the school and teacher to ensure that regardless of these differences, all students are provided high quality mathematical experiences and opportunities.

**Professional Skills**

- 4.3.4 Can identify the mathematical funds of knowledge in a community and/or individual student.
- 4.3.5 Given a particular mathematical topic within the curriculum, can identify the prior knowledge that it builds upon.
- 4.3.6 Can identify and/or evaluate unanticipated solutions to a mathematics task and determine the validity and/or limitations of the solution pathway.
- 4.3.7 Has a positive disposition to students' creative solution strategies.
- 4.3.8 Can adapt curriculum/materials to incorporate students' existing assets and resources to improve instructional quality and engagement for all students.
- 4.3.9 Advocates for high quality mathematics instruction for all students.
- 4.3.10 Continuously seeks to learn and understand more about students and communities from all backgrounds to better support the learning of all students.

**Standard 5: Content Pedagogy**

*The teacher candidate implements teaching practices to support rigorous mathematical learning for a full range of students by incorporating multiple instructional strategies and mathematics-specific tools and technology. Through theoretical and real-world contexts, candidates establish rigorous mathematics learning goals, engage students in high cognitive demand learning, demonstrate positive and productive dispositions toward teaching mathematics, elicit and use student responses, develop conceptual understanding and procedural fluency, and pose purposeful questions to facilitate student discourse.*

**Function 1:** Prepare and teach lessons and units that incorporate a variety of strategies, differentiated instruction for all students, and mathematics-specific and instructional technologies in building all students' conceptual understanding and procedural proficiency.

**Content Knowledge**

5.1.1 Include mathematics-specific instructional technologies in planned lessons and units.

5.1.2 Include in planned lessons and units multiple opportunities and solution avenues for students to demonstrate conceptual understanding and procedural proficiency.

**Professional Skills**

5.1.3 Plan lessons and units that incorporate a variety of instructional strategies.

5.1.4 Plan lessons and units addressing student differences, realizing how these differences influence student learning of mathematics.

5.1.5 Build all students' conceptual understanding and procedural proficiency in planned lessons and units.

**Function 2:** Provide students with opportunities to communicate about mathematics and make connections among mathematics, other content areas, everyday life, and the workplace.

**Content Knowledge**

5.2.1 Design and implement activities and investigations that develop communication about mathematics.

5.2.2 Design and implement activities and investigations that foster students making mathematical connections with other content areas, everyday life events, and the workplace.

**Professional Skills**

5.2.3 Encourage students to employ a variety of forms of communication that target varied audiences and purposes across content areas.

**Function 3:** Implement techniques related to student engagement and communication including selecting high quality tasks, guiding mathematical discussions, identifying key mathematical ideas, identifying and addressing student misconceptions, and employing a range of questioning strategies.

**Content Knowledge**

- 5.3.1 Implement techniques for actively engaging students in learning and doing mathematics.
- 5.3.2 Provide instruction that incorporates high quality tasks and a range of questioning strategies.
- 5.3.3 Engage students in communicating about mathematics.

**Professional Skills**

- 5.3.4 Guide productive mathematical discussion in classrooms centered on key mathematical ideas
- 5.3.5 Select and apply instructional techniques that assist in identifying and addressing student misconceptions as opportunities for learning

**Function 4:** Foster a positive and productive disposition toward teaching mathematics by creating an encouraging learning environment, engaging in reflective practice, and demonstrating enthusiasm.

**Content Knowledge**

- 5.4.1 Provide positive reinforcement and constructive feedback to build students' confidence and motivation in learning mathematics.
- 5.4.2 Engage in continuous self-reflection to improve teaching practices.
- 5.4.3 Communicate high expectations for all students and provide differentiated instruction needed to achieve those expectations.

**Professional Skills**

- 5.4.4 Encourage students to persist, take risks, and build a growth mindset in mathematics.
- 5.4.5 Exhibit passion and enthusiasm for mathematical problem solving.

**Standard 6: Assessing Student Learning**

*The teacher candidate assesses and uses evidence of students' learning of rigorous mathematics to improve instruction and student learning. They analyze learning gains by implementing formal and informal assessments, as well as formative and summative assessments. The results of these assessments are disaggregated and analyzed to adjust for planning and teaching. They demonstrate that students are engaged in mathematical assessments that are developmentally appropriate and require active engagement.*

**Function 1:** Preservice teacher candidates will verify that students demonstrate conceptual understanding; procedural fluency; logical reasoning and the application of mathematics in a variety of contexts.

**Content Knowledge**

- 6.1.1 Verify that students demonstrate conceptual understanding.
- 6.1.2 Verify that students demonstrate procedural fluency.
- 6.1.3 Verify that students demonstrate logical reasoning.
- 6.1.4 Verify that students can apply mathematics in a variety of contexts.

**Professional Skills**

- 6.1.5 Create assessments that document student conceptual understanding
- 6.1.6 Create assessments that document student procedural fluency
- 6.1.7 Create assessments that document logical reasoning
- 6.1.8 Create assessments that document student understanding of the application of mathematics

**Function 2:** Preservice teacher candidates will collect, organize, analyze, and reflect on diagnostic, formative, and summative assessment evidence and determine the extent to which students' mathematical proficiencies have increased as a result of their instruction.

**Content Knowledge**

- 6.2.1 Understand the difference between a formative and summative assessment.
- 6.2.2 Know when to use a diagnostic, formative, and summative assessment.
- 6.2.3 Use diagnostic, formative, and summative assessment results to determine student growth in mathematical proficiencies modify future group and individual instruction.

**Professional Skills**

- 6.2.4 Create formative and summative assessments to assess student learning outcomes.
- 6.2.5 Effectively uses diagnostic, formative, and summative assessments at appropriate points in the learning.

6.2.6 Demonstrate sustained and meaningful use of data to inform instructional practice.

6.2.7 Collect, organize, analyze, and reflect on diagnostic, formative, and summative assessment data.

**Standard 7: Field Experiences and Clinical Practice**

*The teacher candidate engages in a planned sequence of field experiences and clinical practice that occur across middle and high school settings with practicing mathematics teachers. These experiences include varied groupings of students and diverse populations, which may include race, gender, social economic status, language status, disability status, and/or family status. Candidates experience a full-time clinical practice with an experienced secondary mathematics cooperating teacher and supervised by higher education faculty with secondary mathematics teaching experience or equivalent knowledge base. They develop a broad experiential base of knowledge, skills, and professional behaviors, including collaborating with families and other advocates for student success. They develop effective and research-based instructional practice for the teaching and learning of mathematics.*

**Function 1:** The teacher candidate engages in a planned sequence of field experiences that occur across middle and high school settings with practicing mathematics teachers. These experiences include varied groupings of students and multiple populations.

**Content Knowledge**

7.1.1 Develop a broad experiential base of knowledge, skills, effective approaches to mathematics teaching and learning, and professional behaviors across middle and high school settings that involve a diverse range and varied groupings of students.

**Professional Skills**

None

**Function 2:** The teacher candidate experiences a full-time clinical practice with an experienced secondary mathematics cooperating teacher while being supervised by higher education faculty with secondary mathematics teaching experience or equivalent knowledge base.

**Content Knowledge**

7.2.1 Experience working with various stakeholders for student success, including student family members, colleagues, and other school staff members (i.e. paraeducators, librarians, school counselors, and building principals).

**Professional Skills**

7.2.2 Utilize effective, research-based instructional practices and student performance data to inform instructional planning and delivery of mathematics content.

### **Standard 8: Professionalism**

*The teacher candidate recognizes that professional learning is collaborative with colleagues and other stakeholders. They participate in educational experiences beyond the teacher preparation program that are specific to mathematics and mathematics education, draw upon mathematics education research, and utilize resources from professional mathematics education organizations to reflect on their own practices and growth.*

**Function 1:** Recognizes that continual growth and development requires professional learning that is collaborative and engages multiple stakeholders in students' education. This includes family, community leaders, colleagues, and other school professionals.

#### **Content Knowledge**

- 8.1.1 Can communicate student strengths and areas for growth to relevant adult family members.
- 8.1.2 Can identify community members whose expertise and influence are relevant to the classroom.
- 8.1.3 Can identify the strengths and expertise of various colleagues and building-based professionals to support individual students as needed.

#### **Professional Skills**

- 8.1.4 Communicates effectively with families about students' learning.
- 8.1.5 Communicates effectively with community members about students' needs and assets.
- 8.1.6 Leverages colleagues and other building-based professionals to support students as whole humans.

**Function 2:** Is engaged in the community of professional mathematics educators beyond their school; this includes engagement with the community of mathematics teachers and mathematics education researchers at state and/or national levels to continually grow and improve their mathematics teaching practice.

#### **Content Knowledge**

- 8.2.1 Use resources from professional mathematics education organizations such as print, digital, and virtual resources and collections.
- 8.2.2 Use research-based resources from professional mathematics education organizations that target positively impacting student learning.

#### **Professional Skills**

- 8.2.3 Participate in professional development experiences that directly relate to the learning and teaching of mathematics
- 8.2.4 Incorporate into their teaching new learning acquired from professional development experiences related to mathematical pedagogy.

For more information, contact:

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