

NCTM CAEP Standards (2012) Reviewer Rubrics–Elementary Mathematics Specialist (Advanced Preparation)

Standard 1: Content Knowledge

Standard 1: Effective elementary mathematics specialists demonstrate and apply knowledge of major mathematics concepts, algorithms, procedures, connections, and applications within and among mathematical content domains.

Program evidence of completers' attainment of Standard 1:

- Assessments are aligned to mathematical domain competencies of *NCTM CAEP Mathematics Content for Elementary Mathematics Specialist*.
- Assessments, rubrics, and data charts are aligned with standard elements.
- Alignment to standard element(s) is provided within assessment rubrics per criterion.
- Data charts are aligned with an assessment rubric and report completer/candidate performance by the level (individually scored items) at which it is collected.
- Assessment rubrics contain discernible levels of performance.
- Assessments are required of all candidates.

Decision Criteria: Attainment of Standard 1 is based on three considerations:

- At least two assessments accompanied by completer/candidate performance data from a minimum of two applications for an initial report or a minimum of one application for a response to conditions or revised report. Assessments can be selected from:
 - o Grades in required mathematics or mathematics education courses aligned to elements of *NCTM CAEP Standards (2012)* and to mathematical domain competencies of *NCTM CAEP Mathematics Content for Elementary Mathematics Specialist* and overall mathematics GPAs in required mathematics coursework accompanied by **completer performance data**.
 - Transcript analysis (required for completers where mathematics or equivalent coursework was not taken at program's institution) that includes required undergraduate content major coursework alignment to *NCTM CAEP Mathematics Content for Elementary Mathematics Specialist*
 - o Content-based assessment such as projects, course or clinical practice portfolio, or other course products aligned to mathematical domain competencies of *NCTM CAEP Mathematics Content for Elementary Mathematics Specialist* accompanied by candidate performance data.
- Content-based assessments (course grades, projects, course portfolio, or other course products) collectively demonstrating at least an 80% alignment to each domain of *NCTM CAEP Mathematics Content for Elementary Mathematics Specialist*.
- A preponderance of evidence drawn from the elements
 - o SASB policy defines preponderance of evidence as “an overall confirmation that candidates meet standards in the strength, weight, or quality of evidence,” rather than satisfactory performance for each element. A commonly accepted definition of preponderance of evidence is a requirement that more than 50% of the evidence favors a given outcome. NCTM program review decisions are based on the preponderance of evidence at the standard level. Specifically, more than 50% of the elements (essential and required additional) of each standard must be met at the acceptable or target level.
 - o Essential element 1a must be met at the acceptable or target level in order to satisfy the preponderance of evidence for Standard 1.

<p>NCTM Element</p> <p>Elementary mathematics specialist candidates:</p>	<p>Unacceptable</p> <p>Fewer than two assessments collectively demonstrate at least an 80% alignment to each domain of the <i>NCTM CAEP Mathematics Content for Elementary Mathematics Specialist</i> or assessments and provide little or no evidence that elementary mathematics specialist candidates:</p>	<p>Acceptable</p> <p>At least two assessments collectively demonstrate at least an 80% alignment to each domain of the <i>NCTM CAEP Mathematics Content for Elementary Mathematics Specialist</i> and provide evidence that elementary mathematics specialist candidates:</p>	<p>Target</p> <p>At least two assessments collectively demonstrate at least an 80% alignment to each domain of the <i>NCTM CAEP Mathematics Content for Elementary Mathematics Specialist</i> and provide evidence that elementary mathematics specialist candidates:</p>
<p>Element 1a</p> <p>Demonstrate and apply knowledge of major mathematics concepts, algorithms, procedures, applications in varied contexts, and connections within and among mathematical domains (Number and Operations, Algebra, Geometry and Measurement, and Statistics and Probability) as outlined in the <i>NCTM CAEP Mathematics Content for Elementary Mathematics Specialist</i>.</p>	<ul style="list-style-type: none"> - Demonstrate knowledge of major concepts, algorithms, and procedures within and among mathematical domains (Number and Operations, Algebra, Geometry and Measurement, and Statistics and Probability) as outlined in the <i>NCTM CAEP Mathematics Content for Elementary Mathematics Specialist</i>. - Apply knowledge of concepts, algorithms, procedures, applications in varied contexts, and connections within and among mathematical domains as outlined in the <i>NCTM CAEP Mathematics Content for Elementary Mathematics Specialist</i>. - Explain how concepts, algorithms, procedures, and applications have developed. 	<ul style="list-style-type: none"> - Demonstrate knowledge of major concepts, algorithms, and procedures within and among mathematical domains (Number and Operations, Algebra, Geometry and Measurement, and Statistics and Probability) as outlined in the <i>NCTM CAEP Mathematics Content for Elementary Mathematics Specialist</i>. - Apply knowledge of major concepts, algorithms, procedures, applications in varied contexts, and connections within and among mathematical domains as outlined in the <i>NCTM CAEP Mathematics Content for Elementary Mathematics Specialist</i>. - Explain how concepts, algorithms, procedures, and applications have developed. 	<ul style="list-style-type: none"> - Demonstrate knowledge of major concepts, algorithms, and procedures within and among mathematical domains (Number and Operations, Algebra, Geometry and Measurement, and Statistics and Probability) as outlined in the <i>NCTM CAEP Mathematics Content for Elementary Mathematics Specialist</i>. - Apply knowledge of major concepts, algorithms, procedures, applications in varied contexts, and connections within and among mathematical domains as outlined in the <i>NCTM CAEP Mathematics Content for Elementary Mathematics Specialist</i>. - Explain how concepts, algorithms, procedures, and applications have developed. - Apply conceptual and procedural knowledge of major concepts, algorithms, and applications in building new knowledge from prior knowledge and experiences.

Standard 2: Mathematical Practices

Standard 2: Effective elementary mathematics specialists solve problems, represent mathematical ideas, reason, prove, use mathematical models, attend to precision, identify elements of structure, generalize, engage in mathematical communication, and make connections as essential mathematical practices. They understand that these practices intersect with mathematical content and that understanding relies on the ability to demonstrate these practices within and among mathematical domains and in their teaching and mathematics leadership.

Program evidence of candidates' attainment of Standard 2:

- Assessments, rubrics, and data charts are aligned with standard elements.
- Alignment to standard element(s) is provided within assessment rubrics per criterion.
- Data charts are aligned with assessment rubric and report candidate performance by the level (individually scored items) at which it is collected.
- Assessment rubrics contain discernible levels of performance.
- Assessments are required of all candidates.

Decision Criteria: Attainment of Standard 2 is based on two considerations:

- At least two assessments aligned to elements of *NCTM CAEP Standards (2012)* and accompanied by candidate performance data from a minimum of two applications for an initial report or a minimum of one application for a response to conditions or revised report. Assessments can be selected from:
 - o Grades in required mathematics or mathematics education courses and overall mathematics GPAs for completers
 - Transcript analysis (required for candidates where mathematics or equivalent coursework was not taken at program's institution) that includes course data reported by individual completer
 - o Projects, course or clinical practice portfolio, or other course products and accompanied by candidate performance data
- A preponderance of evidence drawn from the elements
 - o SASB policy defines preponderance of evidence as "an overall confirmation that candidates meet standards in the strength, weight, or quality of evidence," rather than satisfactory performance for each element. A commonly accepted definition of preponderance of evidence is a requirement that more than 50% of the evidence favors a given outcome. NCTM program review decisions are based on the preponderance of evidence at the standard level using this definition. Specifically, more than 50% of the elements (essential and required additional) of each standard must be met at the acceptable or target level.
 - o Essential elements 2a, 2b, and at least 2 additional elements must be met at the acceptable or target level in order to satisfy the preponderance of evidence for Standard 2.

NCTM Element	Unacceptable	Acceptable	Target
In their role as teacher, lead teacher, and/or coach/mentor, elementary mathematics specialist candidates:	Fewer than two assessments or assessments provide little or no evidence that elementary mathematics specialist candidates:	At least two assessments provide evidence that elementary mathematics specialist candidates:	At least two assessments provide evidence that elementary mathematics specialist candidates:
<p>Element 2a</p> <p>Use problem solving to develop conceptual understanding, make sense of a wide variety of problems and persevere in</p>	- Use problem solving to develop conceptual understanding and to formulate and test generalizations.	- Use problem solving to develop conceptual understanding and to formulate and test generalizations.	<p>- Use problem solving to develop conceptual understanding and to formulate and test generalizations.</p> <p>- Make sense of a wide variety of problems and persevere in solving them.</p>

<p>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.</p>	<ul style="list-style-type: none"> - 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. - Formulate and test conjectures in order to frame generalizations. 	<ul style="list-style-type: none"> - 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. - Formulate and test conjectures in order to frame generalizations. 	<ul style="list-style-type: none"> - Apply and adapt a variety of strategies in solving problems confronted within the field of mathematics and other contexts. - Formulate and test conjectures in order to frame generalizations. - Monitor and reflect on the process of mathematical problem solving.
<p>Element 2b</p> <p>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.</p>	<ul style="list-style-type: none"> - 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. - Use appropriate mathematical vocabulary and symbols to communicate mathematical ideas to others. 	<ul style="list-style-type: none"> - 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. - Use appropriate mathematical vocabulary and symbols to communicate mathematical ideas to others. 	<ul style="list-style-type: none"> - 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. - Use appropriate mathematical vocabulary and symbols to communicate mathematical ideas to others. - Demonstrate an appreciation for mathematical rigor and inquiry.
<p>Element 2c</p> <p>Formulate, represent, analyze, interpret, and validate mathematical models derived from real-world contexts or mathematical problems.</p>	<ul style="list-style-type: none"> - Formulate, represent, analyze, and interpret mathematical models derived from real-world contexts or mathematical problems. 	<ul style="list-style-type: none"> - Formulate, represent, analyze, and interpret mathematical models derived from real-world contexts or mathematical problems. 	<ul style="list-style-type: none"> - Formulate, represent, analyze, interpret, and validate mathematical models derived from real-world contexts or mathematical problems. - Demonstrate flexibility in mathematical modeling when confronted with different purposes or contexts.

<p>Element 2d</p> <p>Organize mathematical thinking and use the language of mathematics to express ideas precisely, both orally and in writing to multiple audiences.</p>	<ul style="list-style-type: none"> - Organize mathematical thinking. - Use the language of mathematics to express ideas precisely, both orally and in writing to peers, teachers, or students. 	<ul style="list-style-type: none"> - Organize mathematical thinking. - Use the language of mathematics to express ideas precisely, both orally and in writing to peers, teachers, or students. 	<ul style="list-style-type: none"> - Organize mathematical thinking. - Use the language of mathematics to express ideas precisely, both orally and in writing to multiple audiences including peers, teachers, students, school professionals, and/or other stakeholders.
<p>Element 2e</p> <p>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.</p>	<ul style="list-style-type: none"> - Demonstrate the interconnectedness of mathematical ideas and how they build on one another. - Recognize and apply mathematical connections among mathematical ideas and across various content areas and real-world contexts. 	<ul style="list-style-type: none"> - Demonstrate the interconnectedness of mathematical ideas and how they build on one another. - Recognize and apply mathematical connections among mathematical ideas and across various content areas and real-world contexts. 	<ul style="list-style-type: none"> - Demonstrate the interconnectedness of mathematical ideas and how they build on one another. - Recognize and apply mathematical connections among mathematical ideas and across various content areas and real-world contexts. - Seek opportunities to promote linkages of mathematical ideas in their teaching.
<p>Element 2f</p> <p>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.</p>	<ul style="list-style-type: none"> - 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. 	<ul style="list-style-type: none"> - 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. 	<ul style="list-style-type: none"> - 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. - Reflect on how the mathematical practices of problem solving, reasoning, communicating, connecting, and representing impact mathematical understanding.

Standard 3: Content Pedagogy

Standard 3: Effective elementary mathematics specialists apply knowledge of curriculum standards for mathematics and their relationship to student learning within and across mathematical domains in teaching elementary students and coaching/mentoring elementary classroom teachers. They incorporate research-based mathematical experiences and include multiple instructional strategies and mathematics-specific technological tools in their teaching and coaching/mentoring to develop all students’ mathematical understanding and proficiency. As teacher, lead teacher, and coach/mentor, they provide and assist teachers in providing students with opportunities to do mathematics – talking about it and connecting it to both theoretical and real-world contexts. They plan, select, implement, interpret, and assist teachers in the incorporation of formative and summative assessments for monitoring student learning, measuring student mathematical understanding, and informing practice.

Program evidence of candidates’ attainment of Standard 3:

- Assessments, rubrics, and data charts are aligned with standard elements.
- Alignment to standard element(s) is provided within assessment rubrics per criterion.
- Data charts are aligned with assessment rubric and report candidate performance by the level (individually scored items) at which it is collected.
- Assessment rubrics contain discernible levels of performance.
- Assessments are required of all candidates.

Decision Criteria: Attainment of Standard 3 is based on two considerations:

- At least two assessments based on course products or clinical practice artifacts such as lesson and/or unit plan(s), clinical practice evaluation, or portfolio and accompanied by candidates’ performance data and accompanied by candidate performance data from a minimum of two applications for an initial report or a minimum of one application for a response to conditions or revised report.
- A preponderance of evidence drawn from the elements
 - o SASB policy defines preponderance of evidence as “an overall confirmation that candidates meet standards in the strength, weight, or quality of evidence,” rather than satisfactory performance for each element. A commonly accepted definition of preponderance of evidence is a requirement that more than 50% of the evidence favors a given outcome. NCTM program review decisions are based on the preponderance of evidence at the standard level using this definition. Specifically, more than 50% of the elements (essential and required additional) of each standard must be met at the acceptable or target level.
 - o Essential elements 3a, 3c, and 3f and at least 1 additional element must be met at the acceptable or target level in order to satisfy the preponderance of evidence for Standard 3.

<p>NCTM Element</p> <p>In their role as teacher, lead teacher, and/or coach/mentor, elementary mathematics specialist candidates:</p>	<p>Unacceptable</p> <p>Fewer than two assessments or assessments provide little or no evidence that elementary mathematics specialist candidates:</p>	<p>Acceptable</p> <p>At least two assessments provide evidence that elementary mathematics specialist candidates:</p>	<p>Target</p> <p>At least two assessments provide evidence that elementary mathematics specialist candidates:</p>
<p>Element 3a</p> <p>Apply knowledge of curriculum standards for elementary mathematics and their relationship to student learning within and</p>	<p>- Apply knowledge of mathematics curriculum standards for elementary within and across mathematical domains.</p>	<p>- Apply knowledge of mathematics curriculum standards for elementary within and across mathematical domains.</p>	<p>- Apply knowledge of mathematics curriculum standards for elementary within and across mathematical domains.</p> <p>- Relate mathematics curriculum standards to student learning.</p>

<p>across mathematical domains in teaching elementary students and coaching/mentoring elementary classroom teachers.</p>	<ul style="list-style-type: none"> - Relate mathematics curriculum standards to student learning. 	<ul style="list-style-type: none"> - Relate mathematics curriculum standards to student learning. 	<ul style="list-style-type: none"> - Demonstrate how mathematics curriculum standards and learning progressions impact the teaching of elementary students at different developmental levels and coaching/mentoring elementary classroom teachers.
<p>Element 3b</p> <p>Analyze and consider research in planning for and leading students and the teachers they coach/mentor in rich mathematical learning experiences.</p>	<ul style="list-style-type: none"> - Analyze and consider research in planning for mathematics instruction. - Incorporate research-based methods when leading students and the teachers they coach/mentor in rich mathematical learning experiences. 	<ul style="list-style-type: none"> - Analyze and consider research in planning for mathematics instruction. - Incorporate research-based methods when leading students and the teachers they coach/mentor in rich mathematical learning experiences. 	<ul style="list-style-type: none"> - Analyze and consider research in planning for mathematics instruction. - Incorporate research-based methods when leading students and the teachers they coach/mentor in rich mathematical learning experiences. - Extend their repertoire of research-based instructional methods that address students' and teachers' diverse learning needs through participation in opportunities such as conferences, use of journals and on-line resources, and engagement with professional organizations.
<p>Element 3c</p> <p>Plan and assist others in planning lessons and units incorporating a variety of strategies, differentiated instruction for diverse populations, and mathematics-specific and instructional technologies in building all students' conceptual understanding and procedural proficiency.</p>	<ul style="list-style-type: none"> - Plan lessons and units that incorporate a variety of strategies. - Plan lessons and units addressing student differences and diverse populations and how these differences influence student learning of mathematics. - Include mathematics-specific and instructional technologies in planned lessons and units. - Build all students' conceptual understanding and procedural proficiency in planned lessons and units. - Assist others in planning lessons and units that incorporate multiple strategies, differentiated instruction for diverse populations, and 	<ul style="list-style-type: none"> - Plan lessons and units that incorporate a variety of strategies. - Plan lessons and units addressing student differences and diverse populations and how these differences influence student learning of mathematics. - Include mathematics-specific and instructional technologies in planned lessons and units. - Build all students' conceptual understanding and procedural proficiency in planned lessons and units. - Assist others in planning lessons and units that incorporate multiple strategies, differentiated instruction for diverse populations, and 	<ul style="list-style-type: none"> - Plan lessons and units that incorporate a variety of strategies. - Plan lessons and units addressing student differences and diverse populations and how these differences influence student learning of mathematics. - Include mathematics-specific and instructional technologies in planned lessons and units. - Build all students' conceptual understanding and procedural proficiency in planned lessons and units. - Assist others in planning lessons and units that incorporate multiple strategies, differentiated instruction for diverse populations, and mathematics-specific and instructional technologies to build all students' conceptual understanding and procedural proficiency.

	<p>mathematics-specific and instructional technologies to build all students' conceptual understanding and procedural proficiency.</p>	<p>mathematics-specific and instructional technologies to build all students' conceptual understanding and procedural proficiency.</p>	<ul style="list-style-type: none"> - Include in planned lessons and units multiple opportunities and solution avenues for students to demonstrate conceptual understanding and procedural proficiency.
<p>Element 3d</p> <p>Provide students and teachers with opportunities to communicate about mathematics and make connections among mathematics, other content areas, everyday life, and the workplace.</p>	<ul style="list-style-type: none"> - Design and implement activities and investigations that require communication about mathematics. - Design and implement activities and investigations that foster students and teachers making mathematical connections with other content areas, everyday life events, and the workplace. 	<ul style="list-style-type: none"> - Design and implement activities and investigations that require communication about mathematics. - Design and implement activities and investigations that foster students and teachers making mathematical connections with other content areas, everyday life events, and the workplace. 	<ul style="list-style-type: none"> - Design and implement activities and investigations that require communication about mathematics. - Design and implement activities and investigations that foster students and teachers making mathematical connections with other content areas, everyday life events, and the workplace. - Encourage students and teachers to employ a variety of forms of communication that target varied audiences and purposes and spread across content areas.
<p>Element 3e</p> <p>Implement and promote 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.</p>	<ul style="list-style-type: none"> - Implement and promote techniques for actively engaging students in learning and doing mathematics. - Provide instruction that incorporates high quality tasks and a range of questioning strategies. - Guide productive mathematical discussions in classrooms centered on key mathematical ideas. - Select and apply instructional techniques that assist in identifying and addressing student misconceptions. - Engage students in communicating about mathematics. 	<ul style="list-style-type: none"> - Implement and promote techniques for actively engaging students in learning and doing mathematics. - Provide instruction that incorporates high quality tasks and a range of questioning strategies. - Guide productive mathematical discussions in classrooms centered on key mathematical ideas. - Select and apply instructional techniques that assist in identifying and addressing student misconceptions. - Engage students in communicating about mathematics. 	<ul style="list-style-type: none"> - Implement and promote techniques for actively engaging students in learning and doing mathematics. - Provide instruction that incorporates high quality tasks and a range of questioning strategies. - Guide productive mathematical discussions in classrooms centered on key mathematical ideas. - Select and apply instructional techniques that assist in identifying and addressing student misconceptions. - Engage students and teachers in communicating about mathematics. - Use students' misconceptions as opportunities for learning.
<p>Element 3f</p>	<ul style="list-style-type: none"> - Plan, select, implement, interpret, and use formative and summative assessments to inform instruction by 	<ul style="list-style-type: none"> - Plan, select, implement, interpret, and use formative and summative assessments to inform instruction by 	<ul style="list-style-type: none"> - Plan, select, implement, interpret, and use formative and summative assessments to inform instruction by

<p>Plan, select, implement, interpret and assist teachers in using formative and summative assessments to inform instruction by reflecting on mathematical proficiencies essential for all students.</p>	<p>reflecting on mathematical proficiencies essential for all students.</p> <ul style="list-style-type: none"> - Assist teachers in using formative and summative assessments addressing essential mathematical proficiencies. 	<p>reflecting on mathematical proficiencies essential for all students.</p> <ul style="list-style-type: none"> - Assist teachers in using formative and summative assessments addressing essential mathematical proficiencies. 	<p>reflecting on mathematical proficiencies essential for all students.</p> <ul style="list-style-type: none"> - Assist teachers in using formative and summative assessments addressing essential mathematical proficiencies. - Use assessment results for subsequent instructional planning.
<p>Element 3g</p> <p>Monitor students' progress and assist others, including family members, administrators and other stakeholders, in making instructional decisions and in measuring and interpreting students' mathematical understanding and ability using formative and summative assessments.</p>	<ul style="list-style-type: none"> - Use both formative and summative assessment data in making instructional decisions. - Assist others, including family members, administrators and other stakeholders, in using both formative and summative assessment data in making instructional decisions. - Monitor students' progress using a variety of assessment tools that gauge advancement toward stated learning goals. - Use both formative and summative assessments to measure students' mathematical understanding and ability. 	<ul style="list-style-type: none"> - Use both formative and summative assessment data in making instructional decisions. - Assist others, including family members, administrators and other stakeholders, in using both formative and summative assessment data in making instructional decisions. - Monitor students' progress using a variety of assessment tools that gauge advancement toward stated learning goals. - Use both formative and summative assessments to measure students' mathematical understanding and ability. 	<ul style="list-style-type: none"> - Use both formative and summative assessment data in making instructional decisions. - Assist others, including family members, administrators and other stakeholders, in using both formative and summative assessment data in making instructional decisions. - Monitor students' progress using a variety of assessment tools that gauge advancement toward stated learning goals. - Use, modify, and/or design both formative and summative assessments based upon students' prior knowledge and experiences to measure students' mathematical understanding and ability. - Design assessment processes that distinguish among developmental levels of students' mathematical knowledge and skills.

Standard 4: Mathematical Learning Environment

<p>Standard 4: Effective elementary mathematics specialists exhibit knowledge of child, pre-adolescent, and adult learning, development, and behavior. They use this knowledge to plan, create, and assist teachers in planning and creating sequential learning opportunities grounded in mathematics education research where students are actively engaged in the mathematics they are learning and building from prior knowledge and skills. They demonstrate, promote, and assist teachers in demonstrating and promoting a positive disposition toward mathematical practices and learning and exhibit and support the equitable and ethical treatment of and high expectations for all students. They include and assist teachers in embracing culturally relevant perspectives in teaching, in recognizing individual student differences, and in using instructional tools such as manipulatives, digital tools, and virtual resources to enhance student learning, while recognizing the possible limitations of such tools.</p>			
<p>Program evidence of candidates’ attainment of Standard 4:</p> <ul style="list-style-type: none"> - Assessments, rubrics, and data charts are aligned with standard elements. - Alignment to standard element(s) is provided within assessment rubrics per criterion. - Data charts are aligned with assessment rubric and report candidate performance by the level (individually scored items) at which it is collected. - Assessment rubrics contain discernible levels of performance. - Assessments are required of all candidates. <p>Decision Criteria: Attainment of Standard 4 is based on two considerations:</p> <ul style="list-style-type: none"> - At least two assessments based on course products or clinical practice artifacts such as lesson and/or unit plan(s), clinical practice evaluation, or portfolio and accompanied by candidate performance data from a minimum of two applications for an initial report or a minimum of one application for a response to conditions or revised report. - A preponderance of evidence drawn from the elements <ul style="list-style-type: none"> o SASB policy defines preponderance of evidence as “an overall confirmation that candidates meet standards in the strength, weight, or quality of evidence,” rather than satisfactory performance for each element. A commonly accepted definition of preponderance of evidence is a requirement that more than 50% of the evidence favors a given outcome. NCTM program review decisions are based on the preponderance of evidence at the standard level using this definition. Specifically, more than 50% of the elements (essential and required additional) of each standard must be met at the acceptable or target level. o Essential elements 4b, 4d, and 4e must be met at the acceptable or target level in order to satisfy the preponderance of evidence for Standard 4. 			
NCTM Element	Unacceptable	Acceptable	Target
<p>In their role as teacher, lead teacher, and/or coach/mentor, elementary mathematics specialist candidates:</p>	<p>Fewer than two assessments or assessments provide little or no evidence that elementary mathematics specialist candidates:</p>	<p>At least two assessments provide evidence that elementary mathematics specialist candidates:</p>	<p>At least two assessments provide evidence that elementary mathematics specialist candidates:</p>
<p>Element 4a Exhibit knowledge of child, pre-adolescent, and adult learning, development, and behavior and demonstrate and promote a positive disposition toward</p>	<ul style="list-style-type: none"> - Exhibit knowledge of child, pre-adolescent, and adult learning, development, and behavior. - Demonstrate and promote a positive disposition toward mathematical processes and learning. 	<ul style="list-style-type: none"> - Exhibit knowledge of child, pre-adolescent, and adult learning, development, and behavior. - Demonstrate and promote a positive disposition toward mathematical processes and learning. 	<ul style="list-style-type: none"> - Exhibit knowledge of child pre-adolescent and adult learning, development, and behavior. - Demonstrate and promote a positive disposition toward mathematical processes and learning. - Know how students construct knowledge, acquire skills, and develop disciplined thinking processes.

<p>mathematical processes and learning.</p>			
<p>Element 4b Plan, create, and coach/mentor teachers in creating developmentally appropriate, sequential, and challenging learning opportunities grounded in mathematics education research in which students are actively engaged in building new knowledge from prior knowledge and experiences.</p>	<ul style="list-style-type: none"> - Plan and create sequential learning opportunities in which students connect new learning to prior knowledge and experiences. - Coach/mentor teachers in creating developmentally appropriate, sequential, and challenging learning opportunities in which students connect new learning to prior knowledge and experiences. - Create a sequence of developmentally appropriate and challenging learning opportunities grounded in mathematics education research in which students are actively engaged in building new knowledge. 	<ul style="list-style-type: none"> - Plan and create sequential learning opportunities in which students connect new learning to prior knowledge and experiences. - Coach/mentor teachers in creating developmentally appropriate, sequential, and challenging learning opportunities in which students connect new learning to prior knowledge and experiences. - Create a sequence of developmentally appropriate and challenging learning opportunities grounded in mathematics education research in which students are actively engaged in building new knowledge. 	<ul style="list-style-type: none"> - Plan and create sequential learning opportunities in which students connect new learning to prior knowledge and experiences. - Coach/mentor teachers in creating developmentally appropriate, sequential, and challenging learning opportunities in which students connect new learning to prior knowledge and experiences. - Create a sequence of developmentally appropriate and challenging learning opportunities grounded in mathematics education research in which students are actively engaged in building new knowledge. - Create a developmentally appropriate and challenging sequence of instruction for all students that shows a progression of learning over time toward proficiency and understanding.
<p>Element 4c Incorporate knowledge of individual differences and the cultural and language diversity that exists within classrooms and include and assist teachers in embracing culturally relevant perspectives as a means to motivate and engage students.</p>	<ul style="list-style-type: none"> - Incorporate individual differences and the cultural and language diversity that exists within classrooms to motivate and engage students. - Include culturally relevant perspectives as a means to motivate and engage students. - Assist teachers in embracing culturally relevant perspectives as motivational and engagement tools. 	<ul style="list-style-type: none"> - Incorporate individual differences and the cultural and language diversity that exists within classrooms to motivate and engage students. - Include culturally relevant perspectives as a means to motivate and engage students. - Assist teachers in embracing culturally relevant perspectives as motivational and engagement tools. 	<ul style="list-style-type: none"> - Incorporate individual differences and the cultural and language diversity that exists within classrooms to motivate and engage students. - Include culturally relevant perspectives as a means to motivate and engage students. - Assist teachers in embracing culturally relevant perspectives as motivational and engagement tools. - Access information about and incorporate resources related to cultural, ethnic, linguistic, gender, and learning differences in their teaching.
<p>Element 4d Demonstrate and encourage equitable and ethical treatment of</p>	<ul style="list-style-type: none"> - Demonstrate and encourage equitable and ethical treatment of all students. 	<ul style="list-style-type: none"> - Demonstrate and encourage equitable and ethical treatment of all students. 	<ul style="list-style-type: none"> - Demonstrate and encourage equitable and ethical treatment of all students.

and high expectations for all students.	- Have high expectations for all students.	- Have high expectations for all students.	<ul style="list-style-type: none"> - Have high expectations for all students and persist in helping each student reach his/her full potential. - Demonstrate respect for and responsiveness to the cultural backgrounds and differing perspectives students bring to the classroom.
<p>Element 4e</p> <p>Apply mathematical content and pedagogical knowledge in the selection, use, and promotion of instructional tools such as manipulatives and physical models, drawings, virtual environments, spreadsheets, presentation tools, and mathematics-specific technologies(e.g., graphing tools and interactive geometry software); and make and nurture sound decisions about when such tools enhance teaching and learning, recognizing both the insights to be gained and possible limitations of such tools.</p>	<ul style="list-style-type: none"> - Apply mathematical content and pedagogical knowledge to select and use tools such as manipulatives and physical models, drawings, virtual environments, spreadsheets, presentation tools, and mathematics-specific technologies. - Coach/mentor teachers in applying mathematical content and pedagogical knowledge to select and use tools such as manipulatives and physical models, drawings, virtual environments, spreadsheets, presentation tools, and mathematics-specific technologies. - Make and nurture sound decisions about when instructional tools enhance teaching and learning and recognize both the insights to be gained and possible limitations of such tools. 	<ul style="list-style-type: none"> - Apply mathematical content and pedagogical knowledge to select and use instructional tools such as manipulatives and physical models, drawings, virtual environments, spreadsheets, presentation tools, and mathematics-specific technologies. - Coach/mentor teachers in applying mathematical content and pedagogical knowledge to select and use tools such as manipulatives and physical models, drawings, virtual environments, spreadsheets, presentation tools, and mathematics-specific technologies. - Make and nurture sound decisions about when instructional tools enhance teaching and learning and recognize both the insights to be gained and possible limitations of such tools. 	<ul style="list-style-type: none"> - Apply mathematical content and pedagogical knowledge to select and use instructional tools such as manipulatives and physical models, drawings, virtual environments, spreadsheets, presentation tools, and mathematics-specific technologies. - Coach/mentor teachers in applying mathematical content and pedagogical knowledge to select and use tools such as manipulatives and physical models, drawings, virtual environments, spreadsheets, presentation tools, and mathematics-specific technologies. - Make and nurture sound decisions about when instructional tools enhance teaching and learning and recognize both the insights to be gained and possible limitations of such tools. - Participate in learning opportunities that address current and emerging technologies in support of mathematics learning and teaching.

Standard 5: Impact on Student Learning

<p>Standard 5: Elementary mathematics specialists provide evidence that as a result of their instruction or coaching/mentoring of teachers, elementary students’ conceptual understanding, procedural fluency, strategic competence, adaptive reasoning, and application of major mathematics concepts in varied contexts have increased. Elementary mathematics specialists support the continual development of a positive disposition toward mathematics. These mathematics specialists show that new student mathematical knowledge has been created as a consequence of their ability to engage students or coach/mentor teachers in mathematical experiences that are developmentally appropriate, require active engagement, and include mathematics-specific technology in building new knowledge.</p>			
<p>Program evidence of candidates’ attainment of Standard 5:</p> <ul style="list-style-type: none"> - Assessments, rubrics, and data charts are aligned with standard elements. - Alignment to standard element(s) is provided within assessment rubrics per criterion. - Data charts are aligned with assessment rubric and report candidate performance by the level (individually scored items) at which it is collected. - Assessment rubrics contain discernible levels of performance. - Assessments are required of all candidates. <p>Decision Criteria: Attainment of Standard 5 is based on two considerations:</p> <ul style="list-style-type: none"> - At least two assessments based on course products or clinical practice artifacts such as lesson and/or unit plan(s), clinical practice evaluation, or portfolio and accompanied by candidate performance data from a minimum of two applications for an initial report or a minimum of one application for a response to conditions or revised report. - A preponderance of evidence drawn from the elements <ul style="list-style-type: none"> o SASB policy defines preponderance of evidence as “an overall confirmation that candidates meet standards in the strength, weight, or quality of evidence,” rather than satisfactory performance for each element. A commonly accepted definition of preponderance of evidence is a requirement that more than 50% of the evidence favors a given outcome. NCTM program review decisions are based on the preponderance of evidence at the standard level using this definition. Specifically, more than 50% of the elements (essential and required additional) of each standard must be met at the acceptable or target level. o Essential element 5c and at least 1 additional element must be met at the acceptable or target level in order to satisfy the preponderance of evidence for Standard 5. 			
NCTM Element	Unacceptable	Acceptable	Target
<p>In their role as teacher, lead teacher, and/or coach/mentor, elementary mathematics specialist candidates:</p>	<p>Fewer than two assessments or assessments provide little or no evidence that elementary mathematics specialist candidates:</p>	<p>At least two assessments provide evidence that elementary mathematics specialist candidates:</p>	<p>At least two assessments provide evidence that elementary mathematics specialist candidates:</p>
<p>Element 5a</p> <p>Verify that elementary students demonstrate conceptual understanding; procedural fluency; the ability to formulate, represent, and solve problems; logical reasoning and continuous reflection on that reasoning;</p>	<ul style="list-style-type: none"> - Verify that elementary students demonstrate conceptual understanding and procedural fluency. - Verify that elementary students have the ability to formulate, represent, and solve problems. 	<ul style="list-style-type: none"> - Verify that elementary students demonstrate conceptual understanding and procedural fluency. - Verify that elementary students demonstrate the ability to formulate, represent, and solve problems. 	<ul style="list-style-type: none"> - Verify that elementary students demonstrate conceptual understanding and procedural fluency. - Verify that elementary students demonstrate the ability to formulate, represent, and solve problems. - Verify that elementary students reason logically and reflect on their reasoning.

<p>productive disposition toward mathematics; and the application of mathematics in a variety of contexts within major mathematical domains.</p>	<ul style="list-style-type: none"> - Verify that elementary students reason logically and reflect on their reasoning. - Verify that elementary students have a productive disposition toward mathematics. - Verify that elementary students apply the mathematics they learn in a variety of contexts within major mathematical domains. 	<ul style="list-style-type: none"> - Verify that elementary students reason logically and reflect on their reasoning. - Verify that elementary students demonstrate a productive disposition toward mathematics. - Verify that elementary students apply the mathematics they learn in a variety of contexts within major mathematical domains. 	<ul style="list-style-type: none"> - Verify that elementary students demonstrate a productive disposition toward mathematics. - Verify that elementary students apply the mathematics they learn in a variety of contexts within major mathematical domains. - Demonstrate sustained and meaningful use of data to inform practice.
<p>Element 5b Engage students and coach/mentor teachers in using developmentally appropriate mathematical activities and investigations that require active engagement and include mathematics-specific technology in building new knowledge.</p>	<ul style="list-style-type: none"> - Engage students in developmentally appropriate mathematical activities and investigations that require active engagement in building new knowledge. - Coach/mentor teachers in using developmentally appropriate mathematical activities and investigations that require active student engagement in building new knowledge. - Engage students in developmentally appropriate mathematical activities and investigations that include mathematics-specific technology in building new knowledge. 	<ul style="list-style-type: none"> - Engage students in developmentally appropriate mathematical activities and investigations that require active engagement in building new knowledge. - Coach/mentor teachers in using developmentally appropriate mathematical activities and investigations that require active student engagement in building new knowledge. - Engage students in developmentally appropriate mathematical activities and investigations that include mathematics-specific technology in building new knowledge. 	<ul style="list-style-type: none"> - Engage students in developmentally appropriate mathematical activities and investigations that require active engagement in building new knowledge. - Coach/mentor teachers in using developmentally appropriate mathematical activities and investigations that require active student engagement in building new knowledge. - Engage students in developmentally appropriate mathematical activities and investigations that include mathematics-specific technology in building new knowledge. - Facilitate students' ability to develop future inquiries based on current analyses.
<p>Element 5c Collect, organize, analyze, and reflect on diagnostic, formative, and summative assessment</p>	<ul style="list-style-type: none"> - Collect, organize, analyze, and reflect on diagnostic, formative, and summative assessment data. 	<ul style="list-style-type: none"> - Collect, organize, analyze, and reflect on diagnostic, formative, and summative assessment data. 	<ul style="list-style-type: none"> - Collect, organize, analyze, and reflect on diagnostic, formative, and summative assessment data.

<p>evidence and determine the extent to which students' mathematical proficiencies have increased as a result of their instruction or their efforts in coaching/mentoring teachers.</p>	<ul style="list-style-type: none"> - Determine the extent to which students' mathematical proficiencies have increased as a result of their instruction or their efforts in coaching/mentoring teachers. 	<ul style="list-style-type: none"> - Determine the extent to which students' mathematical proficiencies have increased as a result of their instruction or their efforts in coaching/mentoring teachers. 	<ul style="list-style-type: none"> - Determine the extent to which students' mathematical proficiencies have increased as a result of their instruction or their efforts in coaching/mentoring teachers. - Use assessment results as a basis for designing and modifying their instruction as a means to meet group and individual needs and increase student performance.
---	---	---	--

Standard 6: Professional Knowledge and Skills

Standard 6: Effective elementary mathematics specialists are lifelong learners and recognize that learning is often collaborative. They participate in and plan mathematics-focused professional development experiences at the school and/or district level, draw upon mathematics education research to inform their practice and the practice of colleagues, continuously reflect on their practice, use and assist teachers in using resources from professional mathematics organizations, and demonstrate mathematics-focused instructional leadership.

Program evidence of candidates' attainment of Standard 6:

- Assessments, rubrics, and data charts are aligned with standard elements.
- Alignment to standard element(s) is provided within assessment rubrics per criterion.
- Data charts are aligned with assessment rubric and report candidate performance by the level (individually scored items) at which it is collected.
- Assessment rubrics contain discernible levels of performance.
- Assessments are required of all candidates.

Decision Criteria: Attainment of Standard 6 is based on two considerations:

- At least two assessments based on course products or clinical practice artifacts such as clinical practice evaluation or professional development portfolio and accompanied by candidate performance data from a minimum of two applications for an initial report or a minimum of one application for a response to conditions or revised report.
- A preponderance of evidence drawn from the elements
 - o SASB policy defines preponderance of evidence as “an overall confirmation that candidates meet standards in the strength, weight, or quality of evidence,” rather than satisfactory performance for each element. A commonly accepted definition of preponderance of evidence is a requirement that more than 50% of the evidence favors a given outcome. NCTM program review decisions are based on the preponderance of evidence at the standard level using this definition. Specifically, more than 50% of the elements of each standard (essential and required additional) must be met at the acceptable or target level.
 - o Essential elements 6c and 6d and at least 1 additional element must be met at the acceptable or target level in order to satisfy the preponderance of evidence for Standard 6.

NCTM Element In their role as teacher, lead teacher, and/or coach/mentor, elementary mathematics specialist candidates:	Unacceptable Fewer than two assessments or assessments provide little or no evidence that elementary mathematics specialist candidates:	Acceptable At least two assessments provide evidence that elementary mathematics specialist candidates:	Target At least two assessments provide evidence that elementary mathematics specialist candidates:
<p>Element 6a</p> <p>Take an active role in their professional growth by participating in professional development experiences that directly relate to the learning and teaching of mathematics and to</p>	<ul style="list-style-type: none"> - Participate in professional development experiences that directly relate to the learning and teaching of mathematics. - Participate in professional development experiences that directly 	<ul style="list-style-type: none"> - Participate in professional development experiences that directly relate to the learning and teaching of mathematics. - Participate in professional development experiences that directly relate to their development 	<ul style="list-style-type: none"> - Participate in professional development experiences that directly relate to the learning and teaching of mathematics. - Participate in professional development experiences that directly relate to their development as a mathematics instructional leader.

their development as a mathematics instructional leader.	relate to their development as a mathematics instructional leader.	as a mathematics instructional leader.	- Assist their colleagues in developing a plan for implementing new learning from professional development or other experiences in their classrooms.
<p>Element 6b</p> <p>Engage in and facilitate continuous and collaborative learning that draws upon research in mathematics education to inform practice; enhance learning opportunities for all students' and teachers' mathematical knowledge development; involve colleagues and other school professionals, families, and various stakeholders; and advance the development in themselves and others as reflective practitioners.</p>	<ul style="list-style-type: none"> - Engage in and facilitate continuous and collaborative learning as a means of enhancing students' and teachers' learning opportunities in mathematics. - Use research in mathematics education to inform practice. - Enhance all students' and teachers' knowledge of mathematics. - Involve colleagues and other school professionals, families, and various stakeholders in the educational process. - Continue development in themselves and others as reflective practitioners. 	<ul style="list-style-type: none"> - Engage in and facilitate continuous and collaborative learning as a means of enhancing students' and teachers' learning opportunities in mathematics. - Use research in mathematics education to inform practice. - Enhance all students' and teachers' knowledge of mathematics. - Involve colleagues and other school professionals, families, and various stakeholders in the educational process. - Continue development in themselves and others as reflective practitioners. 	<ul style="list-style-type: none"> - Engage in and facilitate continuous and collaborative learning as a means of enhancing students' and teachers' learning opportunities in mathematics. - Use research in mathematics education to inform practice. - Enhance all students' and teachers' knowledge of mathematics. - Involve colleagues and other school professionals, families, and various stakeholders in the educational process. - Continue development in themselves and others as reflective practitioners. - Use resources, analyses of instruction, and professional development experiences to enhance students' and teachers' learning of mathematics.
<p>Element 6c</p> <p>Plan, develop, implement, and evaluate mathematics-focused professional development programs at the school and/or district level; use and assist teachers in using resources from professional mathematics education organizations such as teacher/leader discussion groups, teacher networks, and print, digital, and virtual resources/collections; and support</p>	<ul style="list-style-type: none"> - Plan, develop, implement, and evaluate mathematics-focused professional development programs at the school and/or district level. - Use resources from professional mathematics education organizations such as teacher/leader discussion groups, networks, and print, digital, and virtual resources/collections. - Support teachers in systematically reflecting on and learning from their mathematical practice. 	<ul style="list-style-type: none"> - Plan, develop, implement, and evaluate mathematics-focused professional development programs at the school and/or district level. - Use resources from professional mathematics education organizations such as teacher/leader discussion groups, networks, and print, digital, and virtual resources/collections. 	<ul style="list-style-type: none"> - Plan, develop, implement, and evaluate mathematics-focused professional development programs at the school and/or district level. - Use resources from professional mathematics education organizations such as teacher/leader discussion groups, networks, and print, digital, and virtual resources/collections. - Use and share research-based resources from professional mathematics education organizations that positively impact student and teacher learning. - Support teachers in systematically reflecting on and learning from their mathematical practice.

<p>teachers in systematically reflecting on and learning from their mathematical practice.</p>		<p>- Support teachers in systematically reflecting on and learning from their mathematical practice.</p>	<p>- Assist teachers in the implementation of newly acquired knowledge and professional practices in their mathematics teaching.</p>
<p>Element 6d</p> <p>Demonstrate mathematics-focused instructional leadership through actions such as coaching/mentoring; building and navigating relationships with teachers, administrators, and the community; establishing and maintaining learning communities; analyzing and evaluating educational structures and policies that affect students' equitable access to high quality mathematics instruction; leading efforts to assure that all students have opportunities to learn important mathematics; evaluating the alignment of mathematics curriculum standards, textbooks, and required assessments and making recommendations for addressing learning and achievement gaps; developing appropriate classroom or school-level learning environments; and collaborating with school-based professionals to develop evidence-based interventions for high- and low-achieving students.</p>	<p>- Demonstrate mathematics-focused instructional leadership through actions such as</p> <ul style="list-style-type: none"> o coaching/mentoring; o building and navigating relationships with teachers, administrators, and the community; o establishing and maintaining learning communities; o analyzing and evaluating educational structures and policies that affect students' equitable access to high quality mathematics instruction; o leading efforts to assure that all students have opportunities to learn important mathematics; o evaluating the alignment of mathematics curriculum standards, textbooks, and required assessments and making recommendations for addressing learning and achievement gaps; o developing appropriate classroom or school-level learning environments; and o collaborating with school-based professionals to develop evidence based interventions for high- and low-achieving students. 	<p>- Demonstrate mathematics-focused instructional leadership through actions such as</p> <ul style="list-style-type: none"> o coaching/mentoring; o building and navigating relationships with teachers, administrators, and the community; o establishing and maintaining learning communities; o analyzing and evaluating educational structures and policies that affect students' equitable access to high quality mathematics instruction; o leading efforts to assure that all students have opportunities to learn important mathematics; o evaluating the alignment of mathematics curriculum standards, textbooks, and required assessments and making recommendations for addressing learning and achievement gaps; o developing appropriate classroom or school-level learning environments; and o collaborating with school-based professionals to develop evidence based interventions for high- and low-achieving students. 	<p>- Demonstrate mathematics-focused instructional leadership through actions such as</p> <ul style="list-style-type: none"> o coaching/mentoring; o building and navigating relationships with teachers, administrators, and the community; o establishing and maintaining learning communities; o analyzing and evaluating educational structures and policies that affect students' equitable access to high quality mathematics instruction; o leading efforts to assure that all students have opportunities to learn important mathematics; o evaluating the alignment of mathematics curriculum standards, textbooks, and required assessments and making recommendations for addressing learning and achievement gaps; o developing appropriate classroom or school-level learning environments; and o collaborating with school-based professionals to develop evidence based interventions for high- and low-achieving students. <p>- Promote and facilitate the improvement of mathematics programs at the school and district levels.</p>

Standard 7: Elementary Mathematics Specialist Field Experiences and Clinical Practice

Standard 7: Elementary mathematics specialists engage in a planned sequence of field experiences and clinical practice under the supervision of an experienced and highly qualified mathematics educator. They develop a broad experiential base of knowledge and skills working with a range of student and adult learners including elementary students (e.g., primary, intermediate, struggling, gifted, and English language learners) and elementary school teachers, both novice and experienced, in a variety of school and professional development settings. They develop and use interpersonal and leadership skills to engage school-based and other professionals in the improvement of mathematics programs at the school and/or district levels.

Program evidence of candidates’ attainment of Standard 7:

- Descriptions of field experiences and clinical practice that include sequencing, levels, candidate responsibilities, qualifications of supervisors, and diversity of settings and students and that clearly address Elements 7a and 7b are included.
- Assessments, rubrics, and data charts are aligned with standard elements.
- Alignment to standard element(s) is provided within assessment rubrics per criterion.
- Data charts are aligned with assessment rubric and report candidate performance by the level (individually scored items) at which it is collected.
- Assessment rubrics contain discernible levels of performance.
- Assessments are required of all candidates.

Decision Criteria: Attainment of Standard 7 is based on three considerations:

- Information provided in Section I - Context #2 (Description of the field and clinical experiences required for the program) of the program report
- At least one assessment based on course or clinical practice products such as professional development plans, case work related to mentoring teachers, lesson and/or unit plan(s), clinical practice evaluation, and clinical practice or professional portfolio and accompanied by candidates’ performance data from a minimum of two applications for an initial report or a minimum of one application for a response to conditions or revised report.
- A preponderance of evidence drawn from the elements
 - o SASB policy defines preponderance of evidence as “an overall confirmation that candidates meet standards in the strength, weight, or quality of evidence,” rather than satisfactory performance for each element. A commonly accepted definition of preponderance of evidence is a requirement that more than 50% of the evidence favors a given outcome. NCTM program review decisions are based on the preponderance of evidence at the standard level using this definition. Specifically, more than 50% of the elements (essential and required additional) of each standard must be met at the acceptable or target level.
 - o Essential elements 7a and 7b must be met at the acceptable or target level in order to satisfy the preponderance of evidence for Standard 7.

<p>NCTM Element</p> <p>Elementary mathematics specialist candidates:</p>	<p>Unacceptable</p> <p>Information included in Section I – Context #2 of the program report and assessments provide little or no evidence that elementary mathematics specialist candidates:</p>	<p>Acceptable</p> <p>Information included in Section I – Context #2 of the program report and at least one assessment provides evidence that elementary mathematics specialist candidates:</p>	<p>Target</p> <p>Information included in Section I – Context #2 of the program report and at least one assessment provides evidence that elementary mathematics specialist candidates:</p>
<p>Element 7a</p> <p>Engage in a sequence of planned field experiences and clinical practice under the supervision of</p>	<p>- Engage in a sequence of planned field experiences and clinical practice in an elementary setting.</p>	<p>- Engage in a sequence of planned field experiences and clinical practice in an elementary setting.</p>	<p>- Engage in a sequence of planned field experiences and clinical practice in an elementary setting.</p>

<p>an experienced and highly qualified mathematics educator that involves the development of a broad experiential base of knowledge and skills working with a range of student and adult learners in a variety of school and professional development settings and the development of interpersonal skills critical for mentoring other teachers and working with school-based personnel, district administrators, and others.</p>	<ul style="list-style-type: none"> - Are supervised by an experienced and highly qualified mathematics educator. - Demonstrate a broad experiential base of knowledge and skills working with a range of student and adult learners in varied school and professional development settings. - Demonstrate interpersonal skills critical for mentoring other teachers and working with school-based personnel, district administrators, and others. 	<ul style="list-style-type: none"> - Are supervised by an experienced and highly qualified mathematics educator. - Demonstrate a broad experiential base of knowledge and skills working with a range of student and adult learners in varied school and professional development settings. - Demonstrate interpersonal skills critical for mentoring other teachers and working with school-based personnel, district administrators, and others. 	<ul style="list-style-type: none"> - Are supervised by an experienced and highly qualified mathematics educator. - Demonstrate a broad experiential base of knowledge and skills working with a range of student and adult learners in varied school and professional development settings. - Demonstrate interpersonal skills critical for mentoring other teachers and working with school-based personnel, district administrators, and others. - Gain an in-depth understanding of the mathematical development of students across all of the elementary grades. - Observe and analyze a variety of diverse instructional settings in order to analyze and assist teachers in analyzing students' mathematical understanding and proficiency.
<p>Element 7b</p> <p>Develop and use leadership skills to improve mathematics programs at the school and/or district level, e.g., coaching/mentoring new and experienced teachers to better serve students; sharing critical issues, policy initiatives, and curriculum trends related to mathematics teaching; keeping abreast of local, state, or national policy decisions related to mathematics education; communicating to educational constituents about students, curriculum, instruction, and assessment; collaborating to</p>	<ul style="list-style-type: none"> - Develop and use leadership skills to improve mathematics programs at the school and/or district level, e.g., <ul style="list-style-type: none"> o coaching/mentoring new and experienced teachers to better serve students; o sharing critical issues, policy initiatives, and curriculum trends related to mathematics teaching; o keeping abreast of local, state, or national policy decisions related to mathematics education; o communicating to educational constituents about students, curriculum, instruction, and assessment; o collaborating to create a shared vision and to develop an action 	<ul style="list-style-type: none"> - Develop and use leadership skills to improve mathematics programs at the school and/or district level, e.g., <ul style="list-style-type: none"> o coaching/mentoring new and experienced teachers to better serve students; o sharing critical issues, policy initiatives, and curriculum trends related to mathematics teaching; o keeping abreast of local, state, or national policy decisions related to mathematics education; o communicating to educational constituents about students, curriculum, instruction, and assessment; 	<ul style="list-style-type: none"> - Develop and use leadership skills to improve mathematics programs at the school and/or district level, e.g., <ul style="list-style-type: none"> o coaching/mentoring new and experienced teachers to better serve students; o sharing critical issues, policy initiatives, and curriculum trends related to mathematics teaching; o keeping abreast of local, state, or national policy decisions related to mathematics education; o communicating to educational constituents about students, curriculum, instruction, and assessment; o collaborating to create a shared vision and to develop an action plan for school improvement; and

<p>create a shared vision and to develop an action plan for school improvement; and partnering with school-based professionals to improve each student's achievement.</p>	<p>plan for school improvement; and</p> <ul style="list-style-type: none"> ○ partnering with school-based professionals to improve each student's achievement. 	<ul style="list-style-type: none"> ○ collaborating to create a shared vision and to develop an action plan for school improvement; and ○ partnering with school-based professionals to improve each student's achievement. 	<ul style="list-style-type: none"> ○ partnering with school-based professionals to improve each student's achievement. - Participate and encourage teachers to participate in innovative or transformative initiatives, partnerships, or research projects related to the teaching of elementary mathematics.
---	---	--	---