**University of South Carolina Aiken**

**Teaching Evaluation NCTM Addendum for Secondary Mathematics Education**

(Adapted from Henderson State University)

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| **Intern name** |  | **University Supervisor** |  |
| **School name** |  | **Cooperating Teacher** |  |
| **Date** |  |  |  |
| **Grade Level** |  | **Subject(s)** |  |

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| **(NCTM CAEP**  **Sub Element Alignment)** | **Unacceptable (1)** | **Acceptable (2)** | **Target (3)** |
| *Effective teachers of secondary mathematics 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.*  **Mathematical Practices - Problem Solving.** Effective teachers solve problems. Intern can design and use a variety of stimulating curricula that provide experiences that   * 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. * Formulate and test conjectures in order to frame generalizations. | | | |
| **2a.1** | Use of problem solving to develop conceptual understanding is limited or unclear. | Regularly uses problem solving to develop conceptual understanding. | Always effectively uses mathematical activities and investigations with problem solving to develop conceptual understanding. |
| **2a.2** | Communication of problem solving strategies is limited or unclar. | Makes sense of a wide variety of problems and perseveres in solving them. Utilizes a variety of problem solving strategies and encourages students to make sense of problems and persevere in solving them. | Makes sense of a wide variety of problems and perseveres in solving them. Creates opportunities to showcase a variety of students’ problem solving strategies and encourages students to make sense of problems and persevere in solving them. |
| **2a.3** | Students are not engaged in problem solving activities or the activities only include context within the field of mathematics. | Students participate in problem solving activities within the field of mathematics. Candidate illustrates (provides) examples of connections to real world contexts. | Students are engaged in problem solving activities within the field of mathematics and making connections to real world contexts. |
| **2a.4** | Does not design experiences that allow for students to formulate and test conjectures in order to frame generalizations. | Includes experiences that allow for student discovery but lacks the proper foundation for students to frame generalizations. | Mathematical activities and investigations allow for students to formulate and test conjectures in order to frame generalizations. |

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| **(NCTM CAEP**  **Sub Element Alignment)** | | **Unacceptable (1)** | | **Acceptable (2)** | **Target (3)** |
| **Mathematical Practices - Reasoning.** Effective teachers reason abstractly. Intern can design and use a variety of stimulating curricula that provide experiences that require   * Abstract, reflective and quantitative reasoning with attention to units, constructing viable arguments and proofs and critiquing the reasoning of others; * Representing and modeling generalizations using mathematics; recognizing structure and expressing regularity in patterns of mathematical reasoning; * Using multiple representations to model and describe mathematics; and * Utilizing appropriate mathematical vocabulary and symbols to communicate mathematical ideas to others. | | | | | |
| **2b.1** | Communicates mathematical reasoning using inappropriate strategies or flawed arguments that are vague or imprecise. | | Proficiently reasons abstractly, reflectively and quantitatively with attention to units, constructing viable arguments and proofs. Effectively critiques the reasoning of others. | | Always reasons abstractly, reflectively and quantitatively with attention to units, constructing viable arguments and proofs. Effectively critiques the reasoning of others. |
| **2b.2** | No evidence of understanding the mathematical reasoning and strategies of others. | | Able to understand, critique, and respond coherently to the mathematical reasoning and strategies of others. Able to understand correct components of student thinking and offers guidance as needed. | | Effectively and skillfully understands, critiques, and responds coherently to the mathematical reasoning and strategies of others. Able to understand correct components of student thinking and offers guidance as needed. |
| **2b.3** | Neither represents nor models generalizations using mathematics. | | Represents and models generalizations using mathematics while recognizing patterns of mathematical reasoning. | | Represents and models generalizations using mathematics while providing opportunities for students to recognize patterns of mathematical reasoning. |
| **2b.4** | Communicates mathematical ideas using a single representation. | | Communicates mathematical ideas using more than one type of representation but and recognizes and clarifies the connections between the representations. | | Effectively and skillfully communicates mathematical ideas using a variety of representations and recognizes and clarifies the connections between the representations. |
| **2b.5** | Does not use appropriate vocabulary and symbols to communicate mathematical ideas to others. | | Uses appropriate vocabulary and symbols to communicate mathematical ideas to others. | | Uses appropriate vocabulary and symbols to communicate mathematical ideas to others, and clearly communicates to students that they are expected to communicate their reasoning precisely. |

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| **(NCTM CAEP**  **Sub Element Alignment)** | **Unacceptable (1)** | **Acceptable (2)** | **Target (3)** |
| **Mathematical Practices - Modeling.** Effective teachers formulate, represent, analyze, and interpret mathematical models derived from real world contexts or mathematical problems. | | | |
| **2c** | Does not recognize mathematical models derived from variety of real world contexts. | Formulates, represent, analyzes, and interprets mathematical models derived from real-world contexts or mathematical problems. | Formulates, represent, analyzes, and interprets mathematical models derived from real-world contexts or mathematical problems. Designs meaningful math experiences for students derived from a variety of real world contexts. |
| **Mathematical Practices – Communication.** Effective teachers organize mathematical thinking and use the language of mathematics to express ideas precisely, both orally and in writing to multiple audiences. | | | |
| **2d** | Mathematical thinking is not organized and mathematical ideas are imprecise. | Consistently organizes mathematical thinking and uses the language of mathematics to express ideas precisely to multiple audiences, both orally and in writing. | Always organizes mathematical thinking and uses the language of mathematics to express ideas precisely to multiple audiences, both orally and in writing. |

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| **(NCTM CAEP**  **Sub Element Alignment)** | | **Unacceptable (1)** | | **Acceptable (2)** | | **Target (3)** |
| **Content Pedagogy - Curriculum Standards.** Effective teachers apply knowledge of curriculum standards for secondary mathematics and their relationship to student learning within and across mathematical domains. | | | | | | |
| **3a** | Goals of instruction are vague, unclear or not appropriate. | | Candidate applies knowledge of curriculum standards and their relationship to student learning within and across mathematical domains. Instruction is developmentally appropriate and clearly communicates student learning outcomes based on math curriculum standards. | | Candidate applies knowledge of curriculum standards and their relationship to student learning within and across mathematical domains. Instruction engages students in developmentally appropriate investigations and clearly communicates how learning relates within and across mathematical domains. | |
| **Content Pedagogy – Lesson Planning**. Effective teachers plan lessons and units that incorporate a variety of strategies, differentiated for diverse populations, and mathematics specific and instructional technologies in building all students’ conceptual understanding and procedural proficiency. | | | | | | |
| **3c.1** | Lesson plan does not include a variety of instructional strategies. | | Lesson plan includes more than one instructional strategy that could be differentiated for diverse populations. | | Lesson plans and units include a variety of instructional strategies that are differentiated for diverse populations and building all students’ conceptual understanding and procedural proficiency. | |
| **3c.2** | Lesson plans have limited or no mathematics specific and/or instructional technology. Fails to build students’ conceptual understanding and procedural proficiency. | | Lesson plans and units proficiently incorporate mathematics specific and instructional technologies to build all students’ conceptual understanding and procedural proficiency. | | Lesson plans and units expertly utilize mathematics specific and instructional technologies to effectively build all students’ conceptual understanding and procedural proficiency. | |
| **3d** | Candidate provides students with limited or no opportunities to communicate about mathematics and make connections among mathematics, other content areas, everyday life, and the workplace. | | Candidate provides students with adequate opportunities to communicate about mathematics and make connections among mathematics, other content areas, everyday life, and the workplace. | | Provide students with frequent and optimal opportunities to communicate about mathematics and make connections among mathematics, other content areas, everyday life, and the workplace. | |
| **3g** | Lesson plan does not provide students with opportunities to communicate about mathematics and make connections among mathematics, other content areas, everyday life, and the workplace. | | Lesson plan provides students with at least one opportunity to communicate about mathematics and make connections among mathematics, other content areas, everyday life, and the workplace. | | Lesson plan provides students with a variety of opportunities to communicate about mathematics and make connections among mathematics, other content areas, everyday life, and the workplace. | |

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| **(NCTM CAEP**  **Sub Element Alignment)** | | | | **Unacceptable (1)** | | | | **Acceptable (2)** | | | **Target (3)** | | |
| **Content Pedagogy – Assessment Plan.** Effective teachers plan, select, implement, interpret, and use formative and summative assessments to inform instruction by reflecting on mathematical proficiencies for all students. | | | | | | | | | | | | | |
| **3f.1** | Assessments do not measure student proficiencies associated to the student learning outcomes. | | | | | Candidate plans, selects, implements, interprets, and uses formative and summative assessments to inform instruction by reflecting on mathematical proficiencies for all students. | | | | Candidate expertly develops and effectively implements both formative and summative assessments to effectively measure student proficiencies associated to all student learning outcomes. | | | |
| **3f.2** | Candidate is unable to appropriately describe how assessment results were used to inform instruction. | | | | | Candidate reflects on and describes how assessment results were used to inform instruction. | | | | Candidate reflectively describes how assessment results were used to inform instruction and provides specific examples. | | | |
| **(NCTM CAEP**  **Sub Element Alignment)** | | | | | **Unacceptable (1)** | | | | **Acceptable (2)** | | | | **Target (3)** |
| **Mathematical Learning Environment – Lesson Planning.** Effective teachers plan and create developmentally appropriate sequential, and challenging learning opportunities grounded in mathematics education research in which students are actively engage in building new knowledge for prior knowledge experiences. | | | | | | | | | | | | | |
| **3b** | | Plans have little or no connection to research. | | | | | Candidate proficiently analyzes and considers research in planning for and leading students in rich mathematical learning experiences. | | | | | Candidate expertly analyzes and considers research in planning for and leading students in rich mathematical learning experiences. | |
| **4a** | | Candidate lacks knowledge of adolescent learning, development, and behavior and/or does not demonstrate a positive disposition toward mathematical processes and learning. | | | | | Candidate exhibits knowledge of adolescent learning, development, and behavior and demonstrates a positive disposition toward mathematical processes and learning. | | | | | Candidate exhibits substantial knowledge of adolescent learning, development, and behavior and demonstrates a positive disposition toward mathematical processes and learning that inspires students. | |
| **4b.1** | | Lessons do not create challenging learning opportunities or are not developmentally appropriate. | | | | | Candidate plans and creates developmentally appropriate, sequential, and challenging learning opportunities. | | | | | Lessons are sequenced to create challenging learning opportunities that are developmentally appropriate with the highest potential for impact on learning. | |
| **4b.2** | | Lesson plans are not grounded in mathematics education research. | | | | | Instructional strategies are grounded in mathematics education research in which students are actively engaged. | | | | | Instructional strategies are grounded in mathematics education research in which students are actively engaged in a highly collaborative environment. | |
| **4b.3** | | Lessons do not build new knowledge from prior knowledge and experiences. | | | | | Candidate plans and creates learning opportunities that actively engage students in building new knowledge from prior knowledge and experiences. | | | | | Lessons are optimal in actively engaging students in building new knowledge from prior knowledge and experiences. | |
| **Mathematical Learning Environment.** Effective teachers demonstrate equitable and ethical treatment of and high expectations for all students. | | | | | | | | | | | | | |
| **4d** | | No evidence of equitable and ethical treatment of and high expectations for all students. | | | | | Equitable and ethical treatment of and high expectations for all students is demonstrated during lesson or observed by cooperating teacher during internship. | | | | | Equitable and ethical treatment of and high expectations for all students is demonstrated during lesson and observed by cooperating teacher during internship. | |
| **Mathematical Learning Environment – Instructional Tools and Mathematics Specific Technologies.** Effective teachers apply mathematical content and pedagogical knowledge to select and use instructional tools and make sound decisions about when such tools enhance teaching and learning, recognizing both the insights to be gained and possible limitations of such tools. | | | | | | | | | | | | | |
| **4e.1** | | | No attempt to use ***instructional tools*** and no reasonable explanation why the limitations of the tools do not enhance learning. | | | | ***Instructional tools*** are appropriately used to enhance teaching and learning, lesson plan clarifies both the insights to be gained and possible limitations of such tools. | | | | | ***Instructional tools*** are expertly utilized to enhance teaching and learning, lesson plan clarifies both the insights to be gained and possible limitations of such tools. | |
| **4e.2** | | | No attempt to use ***mathematics specific technologies*** and no reasonable explanation regarding the possible limitations of technologies. | | | | ***Mathematics specific technologies*** are appropriately used to enhance teaching and learning, lesson plan clarifies the insights to be gained. | | | | | ***Mathematics specific technologies*** are expertly integrated to enhance teaching and learning, lesson plan clarifies the insights to be gained. | |

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| **Impact on Student Learning - Student Engagement.** Effective teachers show that new student knowledge has been created as a consequence of their ability to engage students in mathematical experiences that are developmentally appropriate, require active engagement, and include mathematics specific technology. | | | |
| **5b.1** | There is no documentation addressing the engagement of students in developmentally appropriate mathematical investigations. | Candidate engages students in developmentally appropriate mathematical activities and investigations that require active engagement in building new knowledge. | Candidate consistently engages students in developmentally appropriate mathematical activities and investigations that require active engagement in building new knowledge.  Lessons capture a high level of perplexity and active engagement methodology. |
| **5b.2** | Students do not use mathematics specific technology and explanation for lack of use not based in sound pedagogy. | Candidate engages students in using mathematics specific technologies appropriate in building new knowledge. | Candidate fully integrates students in using mathematics specific technologies appropriate in building new knowledge. |
| **Impact on Student Learning - Assessment Results.** Effective teachers 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. At the conclusion of the lesson, students should be given the opportunity to reflect. | | | |
| **5c.1** | Assessment is flawed or assessment results are inaccurately interpreted. | Candidate collects, organizes, analyzes, and reflects on diagnostic, formative, and summative assessment evidence. | Candidate accurately and explicitly interprets assessment results from diagnostic, formative, and summative assessments and describes how the assessment evidence will inform future instruction. |
| **5c.2** | Assessment does not provide evidence demonstrating a positive impact on student learning on most of the student learning outcomes. | Assessment evidence determines the extent to which students’ mathematical proficiencies have increased as a result of candidate’s instruction. | Assessments provide substantial evidence of a positive impact on student learning for each student learning outcome of the lesson. |

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| **(NCTM CAEP**  **SubElement Alignment)** | **Unacceptable (1)** | **Acceptable (2)** | **Target (3)** |
| **Professional Knowledge and Skills.** Effective teachers of secondary mathematics are lifelong learners and recognize that learning is often collaborative. They participate in professional development experiences specific to mathematics and mathematics education, draw upon mathematics education research to inform practice, continuously reflect on their practice, and utilize resources from professional mathematics organizations. *Observational tools, conferences associated with the observation (with candidate and cooperating teacher), and all supporting documents will inform the below ratings. This rating will be scored only on the summative observation.* | | | |
| **6b.1** | Candidate does not provide evidence that he/she uses research in mathematics education to inform practice. | Candidate provides evidence that he/she engages in continuous and collaborative learning that draws upon research in mathematics education to inform practice. | Candidate provides clear, strong evidence that he/she uses an abundance of research in mathematics education to inform practice. |
| **6b.2** | Candidate does not provide evidence that he/she enhances all students’ knowledge of mathematics. | Candidate provides evidence that he/she uses research in mathematics education to enhance learning opportunities for all students’ mathematical knowledge development. | Candidate provides clear, strong evidence that he/she uses an abundance of research in mathematics education to significantly enhance learning opportunities for all students’ mathematical knowledge development. |
| **6b.3** | Candidate does not provide evidence that he/she involves colleagues, other school professionals, families, or various stakeholders in the educational process. | Candidate provides evidence that he/she uses research in mathematics education to involve other stakeholders (colleagues, other school professionals, families, and various stakeholders) in the educational process. | Candidate demonstrates a high level of involvement of a variety of stakeholders in the educational process. The candidates work is grounded in research in mathematics education. |
| **6b.4** | Candidate does not provide evidence of continuous development as a reflective practitioner. | Candidate provides evidence of continuous development as a reflective practitioner. | Candidate demonstrates strong growth as a reflective practitioner and emerging leadership potential. |
| **6c** | Candidate does not provide evidence that he/she utilizes resources from professional mathematics education organizations such as print, digital, and virtual resources/collections. | Candidate provides evidence that he/she utilizes resources from professional mathematics education organizations such as print, digital, and virtual resources/collections. | Candidate provides evidence that he/she utilizes information from and contributes to professional mathematics resources. |

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| **(NCTM CAEP**  **Sub Element Alignment)** | | **Unacceptable (1)** | **Acceptable (2)** | **Target (3)** |
| **Secondary Mathematics Field Experiences and Clinical Practice –** Effective teachers develop a broad experiential base of knowledge, skills, effective approaches to mathematics teaching and learning, and professional behaviors that involve a diverse range and varied groupings of students.  Observational tools, conferences associated with the observation (with candidate and cooperating teacher), and all supporting documents will inform the below ratings. This rating will be scored only on the summative observation. | | | | |
| **7c.1** | Observations do not provide evidence the teacher candidate has developed the knowledge, skills or professional behaviors necessary to examine the nature of mathematics, how mathematics should be taught, and how students learn mathematics. | | Observations provide evidence the teacher candidate has developed the knowledge, skills and professional behaviors necessary to examine the nature of mathematics, how mathematics should be taught, and how students learn mathematics. Evidence spans both middle and high school mathematics. | Observations provide evidence the teacher candidate has developed the knowledge, skills and professional behaviors necessary to examine the nature of mathematics, how mathematics should be taught, and how students learn mathematics. Evidence documents specific ways in which candidate has drawn upon research in mathematics education and professional development to inform practice. |
| **7c.2** | Observations do not provide evidence that the candidate has developed the knowledge, skills or professional behaviors necessary to analyze approaches to mathematics teaching and learning, tasks, discourse, environment, or assessment. | | Observations provide evidence the teacher candidate has developed the knowledge, skills and professional behaviors necessary to analyze a range of approaches to mathematics teaching and learning, focusing on tasks, discourse, environment, and assessment. | Observations provide evidence the teacher candidate has developed the knowledge, skills and professional behaviors necessary to analyze a range of approaches to mathematics teaching and learning, focusing on tasks, discourse, environment, and assessment. Candidate documents specific collaborations with cooperating teacher, peers, *and* university supervisors. |

**Please sign and write any additional comments on the back of this page.**

# Comments:

Signatures

Intern Date:

Cooperating Teacher Date:

University Supervisor Date: