Mathematics Student Teaching Evaluation Form (_____ MID TERM) (_____ FINAL)

Student Teacher _____ Cooperating Teacher _____ Date _____

Field Supervisor _____ School Site _____

Signature of Evaluator _____ Grade/Subject _____

Standard 1 – Knowledge of Mathematical Problem Solving			
1. Apply and adapt a variety of appropriate strategies to solve problems	**1-Unacceptable** ▪ Unable to consistently apply and adapt a variety of appropriate strategies to solve problems ▪ Fails to demonstrate application and adaptation of appropriate strategies to solve problems in the classroom	**2-Acceptable** ▪ Consistently applies and adapts a variety of appropriate strategies to solve problems ▪ Demonstrates consistent application and adaptation of appropriate strategies to solve problems in the classroom	**3-Target** ▪ Surpasses expectations in application and adaptation of a variety of appropriate strategies to solve problems ▪ Demonstrates exceptional application and adaptation of appropriate strategies to solve problems in the classroom
1.2 Solve problems that arise in mathematics and those involving mathematics in other contexts	**1-Unacceptable** ▪ Unable to consistently solve problems that arise in mathematics and those involving mathematics in other contexts ▪ Fails to demonstrate the ability consistently solve problems that arise in mathematics and those involving mathematics in other contexts in the classroom	**2-Acceptable** • Consistently solves problems that arise in mathematics and those involving mathematics in other contexts ▪ Demonstrates consistent effort in solving problems that arise in mathematics and those involving mathematics in other contexts	**3-Target** ▪ Demonstrates the outstanding ability to solve problems that arise in mathematics and those involving mathematics in other contexts ▪ Reveals unique ability to solve problems that arise in mathematics and those involving mathematics in other contexts in the classroom
1.3 Build new mathematical knowledge through problem solving	**1-Unacceptable** ▪ Shows little or no ability to build new mathematical knowledge through problem solving ▪ Demonstrates no attempt to build new mathematical knowledge using problem solving strategies in the classroom	**2-Acceptable** ▪ Exhibits appropriate ability to build new mathematical knowledge through problem solving ▪ Uses a variety of problem solving strategies to build new mathematical knowledge in the classroom	**3-Target** ▪ Exhibits exceptional ability to build new mathematical knowledge through problem solving ▪ Continually uses a variety of problem solving strategies to build new mathematical knowledge in the classroom
1.4 Monitor and reflect on the process of mathematical problem solving	**1-Unacceptable** ▪ Unable to monitor and reflect on the process of mathematical problem solving ▪ Fails to demonstrate the ability to monitor and reflect on the process of mathematical problem solving in the classroom	**2-Acceptable** ▪ Exhibits appropriate ability to monitor and reflect on the process of mathematical problem solving ▪ Uses a variety of assessment strategies to monitor and reflect on the process of mathematical problem solving in the classroom	**3-Target** ▪ Exhibits exceptional ability to monitor and reflect on the process of mathematical problem solving ▪ Continually uses a variety of assessment strategies monitor and reflect on the process of mathematical problem solving in the classroom
			Overall Standard 1 Score =

Standard 2 - Knowledge of Reasoning and Proof			
2.1 Recognize reasoning and proof as fundamental aspects of mathematics	**1-Unacceptable** ▪ Unable to consistently recognize reasoning and proof as fundamental aspects of mathematics ▪ Fails to demonstrate application of reasoning and proof as fundamental aspects of mathematics in the classroom	**2-Acceptable** ▪ Consistently recognizes reasoning and proof as fundamental aspects of mathematics ▪ Consistently demonstrates application of reasoning and proof as fundamental aspects of mathematics in the classroom	**3-Target** ▪ Surpasses expectations in ability to recognize reasoning and proof as fundamental aspects of mathematics ▪ Demonstrates exceptional understanding of the application of reasoning and proof as fundamental aspects of mathematics in the classroom
2.2 Make and investigate mathematical conjectures	**1-Unacceptable** ▪ Unable to make and investigate mathematical conjectures ▪ Fails to demonstrate the ability to make and investigate mathematical conjectures in the classroom	**2-Acceptable** ▪ Displays the appropriate ability to make and investigate mathematical conjectures ▪ Consistently displays the ability to make and investigate mathematical conjectures in the classroom	**3-Target** ▪ Displays the outstanding ability to make and investigate mathematical conjectures ▪ Displays outstanding ability to make and investigate mathematical conjectures in the classroom
2.3 Develop and evaluate mathematical arguments and proofs	**1-Unacceptable** ▪ Unable to consistently develop and evaluate mathematical arguments and proofs ▪ Fails to consistently develop and evaluate mathematical arguments and proofs in the classroom	**2-Aceptable** ▪ Displays the appropriate ability to consistently develop and evaluate mathematical arguments and proofs ▪ Consistently displays the ability develop and evaluate mathematical arguments and proofs in the classroom	**3-Target** ▪ Displays the outstanding ability to develop and evaluate mathematical arguments and proofs ▪ Displays exceptional ability develop and evaluate mathematical arguments and proofs in the classroom
2.4 Select and use various types of reasoning and methods of proof	**1-Unacceptable** ▪ Unable to select and use various types of reasoning and methods of proof ▪ Fails to demonstrate the ability to select and use various types of reasoning and methods of proof in the classroom	**2-Acceptable** ▪ Displays the appropriate ability to consistently select and use various types of reasoning and methods of proof ▪ Consistently displays the ability to select and use various types of reasoning and methods of proof in the classroom	**3-Target** ▪ Displays exceptional ability to select and use various types of reasoning and methods of proof ▪ Displays outstanding ability to select and use various types of reasoning and methods of proof in the classroom
			Overall Standard 2 Score =

Standard 3 – Knowledge of Mathematical Communication			
3.1 Communicate their mathematical thinking coherently and clearly to peers, faculty, and others	**1-Unacceptable** ▪ Unable to communicate their mathematical thinking coherently and clearly to peers, faculty, and others ▪ Demonstrates inability to communicate their mathematical thinking coherently and clearly to students and others in the classroom	**2-Acceptable** ▪ Demonstrates the appropriate ability to communicate their mathematical thinking coherently and clearly to peers, faculty, and others ▪ Consistently demonstrates ability to communicate their mathematical thinking coherently and clearly to students and others in the classroom	**3-Target** ▪ Demonstrates exceptional ability to communicate their mathematical thinking coherently and clearly to peers, faculty, and others ▪ Demonstrates excellent ability to communicate their mathematical thinking coherently and clearly to students and others in the classroom
3.2 Use the language of mathematics to express ideas precisely	**1-Unacceptable** ▪ Unable to consistently use the language of mathematics to express ideas precisely ▪ Demonstrates inability to consistently use the language of mathematics to express ideas precisely in the classroom	**2-Acceptable** ▪ Consistently uses the language of mathematics to express ideas precisely ▪ Demonstrates consistent ability to use the language of mathematics to express ideas precisely in the classroom	**3-Target** ▪ Demonstrates exceptional ability to use the language of mathematics to express ideas precisely ▪ Demonstrates unique ability to use the language of mathematics to express ideas precisely in the classroom
3.3 Organize mathematical thinking through communication	**1-Unacceptable** ▪ Unable to consistently organize mathematical thinking through communication ▪ Demonstrates inability to consistently organize mathematical thinking through communication in the classroom	**2-Acceptable** ▪ Consistently organizes mathematical thinking through communication ▪ Demonstrates consistent ability to organize mathematical thinking through communication in the classroom	**3-Target** ▪ Demonstrates exceptional ability to organize mathematical thinking through communication ▪ Demonstrates outstanding ability to organize mathematical thinking through communication in the classroom
3.4 Analyze and evaluate the mathematical thinking and strategies of others	**1-Unacceptable** ▪ Unable to analyze and evaluate the mathematical thinking and evaluate the strategies of others ▪ Demonstrates inability to consistently analyze and evaluate the mathematical thinking and evaluate the strategies of others in teaching and learning	**2-Acceptable** ▪ Consistently demonstrates the ability to analyze and evaluate the mathematical thinking and evaluate the strategies of others ▪ Demonstrates consistent ability to analyze and evaluate the mathematical thinking and evaluate the strategies of others in teaching and learning	**3-Target** ▪ Demonstrates exceptional ability to analyze and evaluate the mathematical thinking and evaluate the strategies of others ▪ Demonstrates outstanding ability to analyze and evaluate the mathematical thinking and evaluate the strategies of others in teaching and learning
			Overall Standard 3 Score =

Standard 4 – Knowledge of Mathematical Connections			
4.1 Recognize and use connections among mathematical ideas	**1-Unacceptable** ▪ Unable to recognize and use connections among mathematical ideas ▪ Demonstrates inability to consistently recognize and use connections among mathematical ideas in the classroom	**2-Acceptable** ▪ Consistently exhibits the ability to recognize and use connections among mathematical ideas ▪ Demonstrates consistent ability to recognize and use connections among mathematical ideas in teaching and learning	**3-Target** ▪ Displays exceptional ability to recognize and use connections among mathematical ideas ▪ Demonstrates outstanding ability to recognize and use connections among mathematical ideas in teaching and learning
4.2 Recognize and apply mathematics in contexts outside of mathematics	**1-Unacceptable** ▪ Unable to recognize and apply mathematics in contexts outside of mathematics ▪ Demonstrates inability to consistently recognize and apply mathematics in contexts outside of mathematics classrooms	**2-Acceptable** ▪ Consistently exhibits the ability recognize and apply mathematics in contexts outside of mathematics ▪ Demonstrates consistent ability to recognize and apply mathematics in contexts outside of mathematics classrooms	**3-Target** ▪ Displays exceptional ability to recognize and apply mathematics in contexts outside of mathematics ▪ Demonstrates outstanding ability to recognize and apply mathematics in contexts outside of mathematics classrooms
4.3 Demonstrate how mathematical ideas interconnect and build on one another to produce a coherent whole	**1-Unacceptable** ▪ Unable to demonstrate how mathematical ideas interconnect and build on one another to produce a coherent whole ▪ Demonstrates inability to consistently teach how mathematical ideas interconnect and build on one another to produce a coherent whole	**2-Acceptable** ▪ Consistently exhibits the ability to demonstrate how mathematical ideas interconnect and build on one another to produce a coherent whole ▪ Demonstrates consistent ability to teach how mathematical ideas interconnect and build on one another to produce a coherent whole	**3-Target** ▪ Displays exceptional ability to demonstrate how mathematical ideas interconnect and build on one another to produce a coherent whole ▪ Demonstrates outstanding ability to teach how mathematical ideas interconnect and build on one another to produce a coherent whole
			Overall Standard 4 Score =

Standard 5 - Knowledge of Mathematical Representations			
5.1 Use representations to model and interpret physical, social, and mathematical phenomena	**1-Unacceptable** ▪ Unable to use representations to model and interpret physical, social, and mathematical phenomena ▪ Demonstrates inability to consistently use representations to model and interpret physical, social, and mathematical phenomena in the classroom	**2-Acceptable** ▪ Consistently demonstrates the ability to use representations to model and interpret physical, social, and mathematical phenomena ▪ Demonstrates consistent ability to use representations to model and interpret physical, social, and mathematical phenomena in the classroom	**3-Target** ▪ Displays exceptional ability to use representations to model and interpret physical, social, and mathematical phenomena ▪ Demonstrates outstanding ability to use representations to model and interpret physical, social, and mathematical phenomena in the classroom
5.2 Create and use representations to organize, record, and communicate mathematical ideas	**1-Unacceptable** ▪ Unable to create and use representations to organize, record, and communicate mathematical ideas ▪ Demonstrates inability to consistently create and use representations to organize, record, and communicate mathematical ideas in the classroom	**2-Acceptable** ▪ Consistently demonstrates the ability to create and use representations to organize, record, and communicate mathematical ideas ▪ Demonstrates consistent ability to create and use representations to organize, record, and communicate mathematical ideas in the classroom	**3-Target** ▪ Displays exceptional ability to create and use representations to organize, record, and communicate mathematical ideas ▪ Demonstrates outstanding ability to create and use representations to organize, record, and communicate mathematical ideas in the classroom
5.3 Select, apply, and translate among mathematical representations to solve problems	**1-Unacceptable** ▪ Unable to consistently select, apply, and translate among mathematical representations to solve problems ▪ Demonstrates inability to consistently select, apply, and translate among mathematical representations to solve problems in the classroom	**2-Acceptable** ▪ Consistently demonstrates the ability to select, apply, and translate among mathematical representations to solve problems ▪ Demonstrates consistent ability to select, apply, and translate among mathematical representations to solve problems in the classroom	**3-Target** ▪ Displays exceptional ability to select, apply, and translate among mathematical representations to solve problems ▪ Demonstrates outstanding ability to select, apply, and translate among mathematical representations to solve problems in the classroom
			Overall Standard 5 Score =

Standard 6 - Knowledge of Technology			
6.1 Use knowledge of mathematics to select and use appropriate technological tools, such as but not limited to, spreadsheets, dynamic graphing tools, computer algebra systems, dynamic statistical packages, graphing calculators, data-collection devices, and presentation software	**1-Unacceptable** ▪ Unable to consistently use knowledge of mathematics to select and use appropriate technological tools, such as but not limited to, spreadsheets, dynamic graphing tools, computer algebra systems, dynamic statistical packages, graphing calculators, data-collection devices, and presentation software ▪ Demonstrates inability to consistently use knowledge of mathematics to select and use appropriate technological tools, such as but not limited to, spreadsheets, dynamic graphing tools, computer algebra systems, dynamic statistical packages, graphing calculators, data-collection devices, and presentation software in the classroom	**2-Acceptable** ▪ Consistently uses knowledge of mathematics to select and use appropriate technological tools, such as but not limited to, spreadsheets, dynamic graphing tools, computer algebra systems, dynamic statistical packages, graphing calculators, data-collection devices, and presentation software ▪ Demonstrates inability to consistently use knowledge of mathematics to select and use appropriate technological tools, such as but not limited to, spreadsheets, dynamic graphing tools, computer algebra systems, dynamic statistical packages, graphing calculators, data-collection devices, and presentation software in the classroom	**3-Target** ▪ Displays exceptional to select and use appropriate technological tools, such as but not limited to, spreadsheets, dynamic graphing tools, computer algebra systems, dynamic statistical packages, graphing calculators, data-collection devices, and presentation software ▪ Demonstrates outstanding ability to select and use appropriate technological tools, such as but not limited to, spreadsheets, dynamic graphing tools, computer algebra systems, dynamic statistical packages, graphing calculators, data-collection devices, and presentation software in the classroom
			Overall Standard 6 Score =

Standard 7 - Dispositions			
7.1 Attention to equity	**1-Unacceptable** ▪ Unable to acquire and demonstrate the knowledge, skills, and professional dispositions to help all students learn. ▪ Displays inconsistency in knowledge and ability to teach students with exceptionalities. ▪ Displays inconsistency in knowledge and ability to work with students from diverse ethnic/racial, linguistic, gender, and socioeconomic backgrounds ▪ Unable to demonstrate mastery of content, pedagogical, and professional knowledge to all students	**2-Acceptable** ▪ Consistently able to acquire and demonstrate the knowledge, skills, and professional dispositions to help all students learn. ▪ Displays consistency in knowledge and ability to teach students with exceptionalities. ▪ Displays consistency in knowledge and ability to work with students from diverse ethnic/racial, linguistic, gender, and socioeconomic backgrounds ▪ Consistently able to demonstrate mastery of content, pedagogical, and professional knowledge to all students	**3-Target** ▪ Demonstrates exceptional ability to acquire and demonstrate the knowledge, skills, and professional dispositions to help all students learn. ▪ Displays outstanding knowledge and ability to teach students with exceptionalities. ▪ Exhibits exceptional knowledge and ability to work with students from diverse ethnic/racial, linguistic, gender, and socioeconomic backgrounds ▪ Possess excellent knowledge, concern, and ability to enhance mastery of content, pedagogical, and professional knowledge to all students
7.2 Use of stimulating curricula	**1-Unacceptable** ▪ Unable to create and use curricula that engages and stimulates students interest in content matter ▪ Demonstrates inability to consistently create and use curricula that makes content material relevant to students ▪ Unable to develop lessons that make curricula part of the students real world	**2-Acceptable** ▪ Consistently able to create and use curricula that engages and stimulates students interest in content matter ▪ Demonstrates knowledge and skills to consistently create and use curricula that makes content material relevant to students ▪ Consistently seeks to develop lessons that make curricula part of the students real world	**3-Target** ▪ Displays exceptional ability to create and use curricula that engages and stimulates students interest in content matter ▪ Demonstrates outstanding knowledge and skills to consistently create and use curricula that makes content material relevant to students ▪ Demonstrates unique ability to consistently develop lessons that make curricula part of the students real world
7.3 Effective Teaching	**1-Unacceptable** ▪ Unable to select or use appropriate pedagogy that meets student learning styles to promote maximum teaching and learning ▪ Demonstrates inability to plan and present appropriate lesson plans ▪ Lacks the knowledge and skill to develop a safe learning environment designed to engage students in the lesson	**2-Acceptable** ▪ Consistently selects and uses appropriate pedagogy that meets student learning styles to promote maximum teaching and learning ▪ Consistently demonstrates the ability to plan and present appropriate lesson plans ▪ Constantly demonstrates knowledge and skill to develop a safe learning environment designed to engage students in the lesson	**3-Target** ▪ Displays unique ability to select and use outstanding pedagogy that meets student learning styles to promote maximum teaching and learning ▪ Demonstrates exceptional ability to plan and present appropriate lesson plans ▪ Demonstrates outstanding knowledge and skill to develop a safe learning environment designed to engage students in the lesson
7.4 Commitment to learning with	**1-Unacceptable** ▪ Unable to understand the connection between theory and	**2-Acceptable** ▪ Able to understand the connection between theory and practice.	**3-Target** ▪ Displays exceptional understanding of the connection between theory and practice.

understanding	practice. ▪ Demonstrates inconsistent content knowledge to utilize multiple explanations for understanding ▪ Unable to develop learning experiences based on developmental levels and background of students ▪ Unable to make appropriate adjustments to instruction, monitor classroom environment, and have positive effect upon student learning	▪ Demonstrates sufficient content knowledge to utilize multiple explanations for understanding ▪ Seeks to continually develop learning experiences based on developmental levels and background of students ▪ Consistently able to make appropriate adjustments to instruction, monitor classroom environment, and have positive effect upon student learning	▪ Exhibits outstanding content knowledge to utilize multiple and clear explanations for understanding ▪ Develops outstanding learning experiences based on developmental levels and background of students ▪ Impressive in ability to make appropriate adjustments to instruction, monitor classroom environment, and have positive effect upon student learning
7.5 Use of various assessments	**1-Unacceptable** ▪ Lacks knowledge and expertise to develop multiple and diverse assessments to perform authentic assessments ▪ Unable to utilize results of assessments to improve teaching and learning ▪ Gives no feedback on assessments that allow students to reach more understanding ▪ Keeps insufficient records of assessments to determine progress of teaching and learning	**2-Acceptable** ▪ Demonstrates sufficient knowledge and expertise to develop multiple and diverse assessments to perform authentic assessments ▪ Consistently utilizes results of assessments to improve teaching and learning ▪ Gives prompt and meaningful feedback on assessments that allow students to reach more understanding ▪ Keeps sufficient records of assessments to determine progress of teaching and learning	**3-Target** ▪ Demonstrates excellent knowledge and expertise to develop multiple and diverse assessments to perform authentic assessments ▪ Seeks to utilize results of assessments to provide maximum efforts in teaching and learning ▪ Give outstanding feedback on assessments that allow students to reach more understanding ▪ Keeps meaningful records of assessments to examine and maximize teaching and learning
7.6 Use of various teaching tools including technology	1-**Unacceptable** ▪ Lacks knowledge and expertise to utilize technology to enhance teaching and learning in the mathematics classroom ▪ Inconsistent in planning and preparation for utilization of appropriate technology and mathematical software ▪ Unable to utilize manipulatives and hands on activities in teaching and learning ▪ Unable to utilize mathematical tools to teach problem solving and abstract concepts	**2-Acceptable** ▪ Demonstrates knowledge and expertise to consistently utilize technology to enhance teaching and learning in the mathematics classroom ▪ Consistent in planning and preparation for utilization of appropriate technology and mathematical software ▪ Seeks to utilize manipulatives and hands on activities in teaching and learning ▪ Consistently able to utilize mathematical tools to teach problem solving and abstract concepts	**3-Target** ▪ Demonstrates excellent knowledge and expertise to continually utilize technology to enhance teaching and learning in the mathematics classroom ▪ Outstanding in planning and preparation for utilization of appropriate technology and mathematical software ▪ Continually seeks to present lessons involving manipulatives and hands on activities to maximize teaching and learning ▪ Exceptional in use of mathematical tools to teach problem solving and abstract concepts
			Overall Standard 7 Score =

Standard 8 - Knowledge of Mathematics Pedagogy			
8.1 Selects, uses, and determines suitability of a wide variety of available mathematics curricula and teaching materials for all students including those with special needs such as the gifted, challenged, and speakers of other languages	**1-Unacceptable** ▪ Unable to select, use, and determine suitability of a wide variety of available mathematics curricula and teaching materials for all students including those with special needs such as the gifted, challenged, and speakers of other languages ▪ Demonstrates very little respect for student's diverse interests and linguistic, cultural, and socioeconomic background ▪ Unable to match curriculum to State and national standards, NCTM standards, and needs of students	**2-Acceptable** ▪ Able to select, use, and determine suitability of a wide variety of available mathematics curricula and teaching materials for all students including those with special needs such as the gifted, challenged, and speakers of other languages ▪ Demonstrates respect for student's diverse interests and linguistic, cultural, and socioeconomic background ▪ Demonstrates consistent ability to match curriculum to State and national standards, NCTM standards, and needs of students	**3-Target** ▪ Demonstrates special ability to select, use, and determine suitability of a wide variety of available mathematics curricula and teaching materials for all students including those with special needs such as the gifted, challenged, and speakers of other languages ▪ Demonstrates profound respect and understanding for student's diverse interests and linguistic, cultural, and socioeconomic background ▪ Demonstrates exceptional ability to match curriculum to State and national standards, NCTM standards, and needs of students
8.2 Selects and uses appropriate concrete materials for learning mathematics	**1-Unacceptable** ▪ Unable to select and use appropriate concrete materials for learning mathematics ▪ Demonstrates inability to use hands-on materials and manipulatives in teaching and learning ▪ Unable to create learning experiences that combine problem solving with physical representations of problems	**2-Acceptable** ▪ Consistently able to select and use appropriate concrete materials for learning mathematics ▪ Demonstrates consistent ability to use hands-on materials and manipulatives in teaching and learning ▪ Consistently creates learning experiences that combine problem solving with physical representations of problems	**3-Target** ▪ Displays outstanding ability to select and use appropriate concrete materials for learning mathematics ▪ Demonstrates excellent ability to use hands-on materials and manipulatives in teaching and learning ▪ Able to create exceptional learning experiences that combine problem solving with physical representations of problems
8.3 Uses multiple strategies, including listening to and understanding the ways students think about mathematics, to assess students' mathematical	**1-Unacceptable** ▪ Unable to consistently use multiple strategies, including listening to and understanding the ways students think about mathematics, to assess students' mathematical knowledge ▪ Unable to use multiple assessment strategies to determine true insight into the quality of teaching and learning that has taken place in the classroom	**2-Acceptable** ▪ Consistently able to use multiple strategies, including listening to and understanding the ways students think about mathematics, to assess students' mathematical knowledge ▪ Demonstrates consistent ability to use multiple assessment strategies to determine true insight into the quality of teaching and learning that has taken place in the classroom ▪ Consistently able to match assessment methods with the developmental level, the mathematical maturity, and cultural	**3-Target** ▪ Continually makes excellent use of multiple strategies, including listening to and understanding the ways students think about mathematics, to assess students' mathematical knowledge ▪ Utilizes exceptional, multiple assessment strategies to determine true insight into the quality of teaching and learning that has taken place in the classroom ▪ Demonstrates exceptional ability to match assessment methods with the developmental

knowledge	▪ Unable to match assessment methods with the developmental level, the mathematical maturity, and cultural background of the student ▪ Unable to create assessments of students' understanding of and disposition to do mathematics	background of the student ▪ Consistently creates assessments of students' understanding of and disposition to do mathematics	level, the mathematical maturity, and cultural background of the student ▪ Continually creates assessments of students' understanding of and disposition to do mathematics
8.4 Plans, lessons, units, and courses that address appropriate learning goals, including those that address local, state, and national mathematics standards and legislative mandates	**1-Unacceptable** ▪ Unable to develop plans, lessons, units, and courses that address appropriate learning goals, including those that address local, state, and national mathematics standards and legislative ▪ Unable to create lesson plans, units and courses that address the standards while helping students to understand concepts, structures, and procedures of school mathematics and the connections among them ▪ Unable to develop lesson plans, units, and courses that help students utilize local, state, and national standards and legislature to understand and appreciate the changing nature of school mathematics, its relationships to other school subjects, and its applications in society	**2-Acceptable** ▪ Able to consistently develop plans, lessons, units, and courses that address appropriate learning goals, including those that address local, state, and national mathematics standards and legislative ▪ Consistently creates lesson plans, units and courses that address the standards while helping students to understand concepts, structures, and procedures of school mathematics and the connections among them ▪ Consistently develops lesson plans, units, and courses that help students utilize local, state, and national standards and legislature to understand and appreciate the changing nature of school mathematics, its relationships to other school subjects, and its applications in society	**3-Target** ▪ Able to consistently develop excellent plans, lessons, units, and courses that address appropriate learning goals, including those that address local, state, and national mathematics standards and legislative ▪ Demonstrates excellence in creating lesson plans, units and courses that address the standards while helping students to understand concepts, structures, and procedures of school mathematics and the connections among them ▪ Develops exceptional lesson plans, units, and courses that help students utilize local, state, and national standards and legislature to understand and appreciate the changing nature of school mathematics, its relationships to other school subjects, and its applications in society
8.5 Participates in professional mathematics organizations and uses their print and on-line resources	**1-Unacceptable** ▪ Does not participates in professional mathematics organizations and uses their print and on-line resources ▪ Unable to use resources from professional mathematics organizations to develop lesson plans and units	**2-Acceptable** ▪ Regularly participates in professional mathematics organizations and uses their print and on-line resources ▪ Utilizes resources on a consistent basis from professional mathematics organizations to develop lesson plans and units	**3-Target** ▪ Demonstrates multi level participation in professional mathematics organizations and displays unique adaptations of their print and on-line resources ▪ Utilizes resources on a consistent basis from professional mathematics organizations to develop creative lesson plans and units
8.6 Demonstrates knowledge of research results in the teaching	**1-Unacceptable** ▪ Unable to demonstrate knowledge of research results in the teaching and learning of mathematics ▪ Fails to utilize research results to	**2-Acceptable** ▪ Consistently demonstrates knowledge of research results in the teaching and learning of mathematics ▪ Utilizes research results to implement new	**3-Target** ▪ Consistently demonstrates excellent knowledge of research results in the teaching and learning of mathematics ▪ Committed to utilizing research results to

and learning of mathematics	implement new forms of pedagogy, assessments, planning, classroom management, and technology ▪ Failure to display a long term commitment to continually improving teaching and learning through experimentation and assessment of results	forms of pedagogy, assessments, planning, classroom management, and technology ▪ Always displays a long term commitment to continually improving teaching and learning through experimentation and assessment of results	implement new forms of pedagogy, assessments, planning, classroom management, and technology ▪ Is exceptional in his/her long term commitment to continually improving teaching and learning through experimentation and assessment of results
8.7 Uses knowledge of different types of instructional strategies in planning mathematics knowledge	**1-Unacceptable** • Unable to use knowledge of different types of instructional strategies in planning mathematics knowledge ▪ Unable to utilize the instructional resources including technology, available to the teacher of mathematics ▪ Unable to determine which pedagogy based on the nature or the students, class size, and goals and expectations of the family, community, and school will improve teaching and learning	**2-Acceptable** • Regularly uses knowledge of different types of instructional strategies in planning mathematics knowledge ▪ Works hard to utilize the instructional resources including technology, available to the teacher of mathematics ▪ Demonstrates commitment to determining which pedagogy based on the nature or the students, class size, and goals and expectations of the family, community, and school will improve teaching and learning	**3-Target** • Is exceptional in the use of knowledge of different types of instructional strategies in planning mathematics knowledge ▪ Committed to constantly utilizing the instructional resources including technology, available to the teacher of mathematics ▪ Demonstrates significant commitment to determining which pedagogy based on the nature or the students, class size, and goals and expectations of the family, community, and school will improve teaching and learning
8.8 Demonstrates the ability to lead classes in mathematical problem solving and in developing in-depth conceptual understanding, and to help students develop and test generalizations	**1-Unacceptable** ▪ Unable to lead classes in mathematical problem solving and in developing in-depth conceptual understanding, and to help students develop and test generalizations ▪ Unable to create a safe learning environment that fosters respecting and valuing students' ideas and problems. ▪ Fails to create a social and intellectual community that encourages students to raise questions and formulate conjectures necessary for developing mathematical proficiency ▪ Does not provide the context for enhancing problem solving and inquiry by validating and supporting ideas with	**2-Acceptable** ▪ Continually leads classes in mathematical problem solving and in developing in-depth conceptual understanding, and to help students develop and test generalizations ▪ Strives to create a safe learning environment that fosters respecting and valuing students' ideas and problems. ▪ Continually works to create a social and intellectual community that encourages students to raise questions and formulate conjectures necessary for developing mathematical proficiency ▪ Always provides the context for enhancing problem solving and inquiry by validating and supporting ideas with mathematical discourse	**3-Target** ▪ Demonstrates exceptional talent in leading classes in mathematical problem solving and in developing in-depth conceptual understanding, and to help students develop and test generalizations ▪ Exceptional in ability to create a safe learning environment that fosters respecting and valuing students' ideas and problems. ▪ Creates an excellent social and intellectual community that encourages students to raise questions and formulate conjectures necessary for developing mathematical proficiency ▪ Always provides the context for enhancing problem solving and inquiry by validating and supporting ideas by constantly encouraging students to engage mathematical discourse

	mathematical discourse		
8.9 Develop lessons that use technology's potential for building understanding of mathematical concepts and developing important mathematical ideas	**1-Unacceptable** • Unable to develop lessons that use technology's potential for building understanding of mathematical concepts and developing important mathematical ideas ▪ Unable to facilitate problem solving, mathematical discourse, and inquiry in the classrooms by utilizing mathematical technology and software ▪ Fails to encourage the use of technological tools to establish mathematical discourse that is focused not just reporting the correct answer but on exploring mathematical ideas through mathematical communication and reasoning	**2-Acceptable** • Consistently able to develop lessons that use technology's potential for building understanding of mathematical concepts and developing important mathematical ideas ▪ Facilitates problem solving, mathematical discourse, and inquiry in the classrooms by utilizing mathematical technology and software ▪ Often encourages and models the use of technological tools to establish mathematical discourse that is focused not just reporting the correct answer but on exploring mathematical ideas through mathematical communication and reasoning	**3-Target** • Displays special ability to develop lessons that use technology's potential for building understanding of mathematical concepts and developing important mathematical ideas ▪ Facilitates exceptional problem solving, mathematical discourse, and inquiry in the classrooms by cleverly utilizing mathematical technology and software ▪ Continually encourages and models the use of technological tools to establish mathematical discourse that is focused not just reporting the correct answer but on exploring mathematical ideas through mathematical communication and reasoning
			Overall Standard 8 Score =
Standard 9 - Knowledge of Number and Operations			
9.1 Analyze and explain the mathematics that underlies the procedures used for operations involving integers, rational, real, and complex numbers	**1-Unacceptable** ▪ Lacks sufficient knowledge and understanding to analyze and explain the mathematics that underlies the procedures used for operations involving integers, rational, real, and complex numbers	**2-Acceptable** ▪ Consistently demonstrates sufficient knowledge and understanding to analyze and explain the mathematics that underlies the procedures used for operations involving integers, rational, real, and complex numbers	**3-Target** ▪ Displays exceptional ability to analyze and explain the mathematics that underlies the procedures used for operations involving integers, rational, real, and complex numbers
9.2 Use properties involving number and operations, mental computation, and	**1-Unacceptable** ▪ Unable to use properties involving number and operations, mental computation, and computational estimation	**2-Acceptable** ▪ Demonstrates consistent ability to use properties involving number and operations, mental computation, and computational estimation	**3-Target** ▪ Demonstrates outstanding ability to use properties involving number and operations, mental computation, and computational estimation

computational estimation			
9.3 Provide equivalent representations for fractions, decimals, and percents	**1-Unacceptable** ▪ Unable to consistently provide equivalent representations for fractions, decimals, and percents ▪ Demonstrates inability to consistently provide equivalent representations for fractions, decimals, and percents in the classroom	**2-Acceptable** ▪ Consistently able to provide equivalent representations for fractions, decimals, and percents ▪ Demonstrates ability to consistently provide equivalent representations for fractions, decimals, and percents in the classroom	**3-Target** ▪ Exhibits exceptional ability to provide equivalent representations for fractions, decimals, and percents ▪ Demonstrates outstanding ability to consistently provide equivalent representations for fractions, decimals, and percents in the classroom
9.4 Create, solve and apply proportions	**1-Unacceptable** ▪ Unable to consistently create, solve, and apply proportions ▪ Demonstrates inability to consistently create, solve, and apply proportions in the classroom	**2-Acceptable** ▪ Consistently creates, solves, and applies proportions ▪ Demonstrates ability to consistently create, solve, and apply proportions in the classroom	**3-Target** ▪ Exceptional in ability to create, solve, and apply proportions ▪ Demonstrates unique ability to consistently create, solve, and apply proportions in the classroom
9.5 Apply the fundamental ideas of number theory	**1-Unacceptable** ▪ Unable to consistently apply the fundamental ideas of number theory ▪ Demonstrates inability to consistently apply the fundamental ideas of number theory in the classroom	**2-Acceptable** ▪ Consistently applies the fundamental ideas of number theory ▪ Demonstrates ability to consistently apply the fundamental ideas of number theory in the classroom	**3-Target** ▪ Exceptional in ability to apply the fundamental ideas of number theory ▪ Demonstrates unique ability to consistently apply the fundamental ideas of number theory in the classroom
9.6 Make sense of large and small numbers and use scientific notation	**1-Unacceptable** ▪ Unable to consistently make sense of large and small numbers and use scientific notation ▪ Demonstrates inability to consistently make sense of large and small numbers and use scientific notation in the classroom	**2-Acceptable** ▪ Consistently makes sense of large and small numbers and uses scientific notation ▪ Demonstrates the ability to consistently make sense of large and small numbers and use scientific notation in the classroom	**3-Target** ▪ Exceptional in ability to make sense of large and small numbers and use scientific notation ▪ Demonstrates unique ability make sense of large and small numbers and use scientific notation in the classroom
9.7 Compare and contrast properties of numbers and number systems	**1-Unacceptable** ▪ Unable to consistently compare and contrast properties of numbers and number systems ▪ Demonstrates inability to consistently compare and contrast properties of numbers and number systems in the classroom	**2-Acceptable** ▪ Consistently compares and contrasts properties of numbers and number systems ▪ Demonstrates the ability to consistently compare and contrast properties of numbers and number systems in the classroom	**3-Target** ▪ Consistently compares and contrasts properties of numbers and number systems in unique demonstrations to enhance teaching and learning ▪ Demonstrates the outstanding ability to consistently compare and contrast properties of numbers and number systems in the classroom
9.8 Represent, use, and apply complex	**1-Unacceptable** ▪ Unable to consistently represent, use, and apply complex numbers	**2-Acceptable** ▪ Consistently represents, uses, and applies complex numbers	**3-Target** ▪ Outstanding in ways to represent, use, and apply complex numbers

numbers	▪ Demonstrates inability to represent, use, and apply complex numbers in the classroom	▪ Consistently demonstrates the ability to represent, use, and apply complex numbers in the classroom	▪ Consistently demonstrates exceptional ability to represent, use, and apply complex numbers in the classroom
9.9 Recognize matrices and vectors as systems that have some properties of the real number system	**1-Unacceptable** ▪ Unable to consistently recognizes matrices and vectors as systems that have some properties of the real number system	**2-Acceptable** ▪ Consistently recognizes matrices and vectors as systems that have some properties of the real number system	**3-Target** ▪ Consistently demonstrates exceptional ability to recognize matrices and vectors as systems that have some properties of the real number system
9.10 Demonstrate knowledge of the historical development of number and number systems including contributions from diverse cultures	**1-Unacceptable** ▪ Unable to consistently demonstrate knowledge of the historical development of number and number systems including contributions from diverse cultures	**2-Acceptable** ▪ Able to consistently demonstrate knowledge of the historical development of number and number systems including contributions from diverse cultures	**3-Target** ▪ Consistently demonstrates outstanding knowledge of the historical development of number and number systems including contributions from diverse cultures
			Overall Standard 9 Score =
Standard 10 - Knowledge of Different Perspectives on Algebra			
10.1 Analyze patterns, relations and functions of one and two variables	**1-Unacceptable** ▪ Lacks sufficient knowledge and understanding to analyze patterns, relations and functions of one and two variables ▪ Demonstrates inability to consistently teach students to analyze patterns, relations and functions of one and two variables in the classroom	**2-Acceptable** ▪ Consistently demonstrates sufficient knowledge and understanding to analyze patterns, relations and functions of one and two variables ▪ Demonstrates ability to consistently teach students to analyze patterns, relations and functions of one and two variables in the classroom	**3-Target** ▪ Displays exceptional ability to analyze and explain patterns, relations and functions of one and two variables ▪ Demonstrates ability to inspire and engage students to analyze patterns, relations and functions of one and two variables in the classroom
10.2 Apply fundamental ideas of linear algebra	**1-Unacceptable** ▪ Lacks sufficient knowledge and understanding to apply fundamental ideas of linear algebra ▪ Demonstrates inability to consistently teach students to apply fundamental ideas of linear algebra in the classroom	**2-Acceptable** ▪ Consistently demonstrates knowledge and understanding necessary to apply fundamental ideas of linear algebra ▪ Demonstrates sufficient ability to teach students to apply fundamental ideas of linear algebra in the classroom	**3-Target** ▪ Consistently demonstrates exceptional knowledge and understanding necessary to apply fundamental ideas of linear algebra ▪ Demonstrates outstanding ability to teach students to apply fundamental ideas of linear algebra in the classroom
10.3 Apply the major concepts	**1-Unacceptable** ▪ Unable to apply the major concepts	**2-Acceptable** ▪ Consistently able to apply the major concepts	**3-Target** ▪ Demonstrates exceptional ability to apply the

of abstract algebra to justify algebraic operations and formally analyze algebraic	of abstract algebra to justify algebraic operations and formally analyze algebraic ▪ Demonstrates inability to teach students to apply the major concepts of abstract algebra to justify algebraic operations and formally analyze algebraic	of abstract algebra to justify algebraic operations and formally analyze algebraic ▪ Demonstrates ability to consistently teach students to apply the major concepts of abstract algebra to justify algebraic operations and formally analyze algebraic	major concepts of abstract algebra to justify algebraic operations and formally analyze algebraic ▪ Demonstrates outstanding skills to enhance students' ability to apply the major concepts of abstract algebra to justify algebraic operations and formally analyze algebraic
10.4 Use mathematical models to represent and understand quantitative relationships	**1-Unacceptable** ▪ Unable to consistently use mathematical models to represent and understand quantitative relationships ▪ Demonstrates inability to teach students to use mathematical models to represent and understand quantitative relationships	**2-Acceptable** ▪ Demonstrates competence in using mathematical models to represent and understand quantitative relationships ▪ Demonstrates ability to teach students to use mathematical models to represent and understand quantitative relationships	**3-Target** ▪ Exceptional in ability to use mathematical models to represent and understand quantitative relationships ▪ Demonstrates unique ability to teach students to use mathematical models to represent and understand quantitative relationships
10.5 Use technological tools to explore algebraic ideas and representations of information and in solving problems	**1-Unacceptable** ▪ Unable to use technological tools to explore algebraic ideas and representations of information and in solving problems ▪ Demonstrates inability to teach students to use technological tools to explore algebraic ideas and representations of information and in solving problems	**2-Acceptable** ▪ Consistently able to use technological tools to explore algebraic ideas and representations of information and in solving problems ▪ Demonstrates ability to consistently teach students use technological tools to explore algebraic ideas and representations of information and in solving problems	**3-Target** ▪ Demonstrates exceptional ability to use technological tools to explore algebraic ideas and representations of information and in solving problems ▪ Demonstrates outstanding skills to build students' ability use technological tools to explore algebraic ideas and representations of information and in solving problems
10.6 Demonstrate knowledge of the historical development of algebra including contributions from diverse cultures	**1-Unacceptable** ▪ Unable to utilize knowledge of the historical development of algebra including contributions from diverse cultures ▪ Demonstrates inability to teach students to utilize knowledge of the historical development of algebra including contributions from diverse cultures	**2-Acceptable** ▪ Demonstrates competence in using knowledge of the historical development of algebra including contributions from diverse cultures ▪ Demonstrates ability to teach students to utilize knowledge of the historical development of algebra including contributions from diverse cultures	**3-Target** ▪ Exceptional in ability to use knowledge of the historical development of algebra including contributions from diverse cultures ▪ Demonstrates unique ability to teach students knowledge of the historical development of algebra including contributions from diverse cultures
			Overall Standard 10 Score =
Standard 11 - Knowledge of Geometries			
11.1 Demonstrate knowledge of core concepts and principles	**1-Unacceptable** • Lacks sufficient knowledge and understanding to demonstrate knowledge of core concepts and principles of Euclidean and non-	**2-Acceptable** • Consistently demonstrates sufficient knowledge and understanding to demonstrate knowledge of core concepts and principles of Euclidean and non-Euclidean geometries in	**3-Target** • Displays exceptional ability to demonstrate knowledge of core concepts and principles of Euclidean and non-Euclidean geometries in two and three dimensions from both formal

of Euclidean and non-Euclidean geometries in two and three dimensions from both formal and informal perspectives	Euclidean geometries in two and three dimensions from both formal and informal perspectives • Demonstrates inability to consistently demonstrate knowledge of core concepts and principles of Euclidean and non-Euclidean geometries in two and three dimensions from both formal and informal perspectives in the classroom	two and three dimensions from both formal and informal perspectives • Possesses ability to consistently demonstrate knowledge of core concepts and principles of Euclidean and non-Euclidean geometries in two and three dimensions from both formal and informal perspectives in the classroom	and informal perspectives • Demonstrates ability to inspire and engage students to utilize knowledge of core concepts and principles of Euclidean and non-Euclidean geometries in two and three dimensions from both formal and informal perspectives
11.2 Exhibit knowledge of the role of axiomatic systems and proofs in geometry	**1-Unacceptable** ▪ Lacks sufficient knowledge and understanding to exhibit knowledge of the role of axiomatic systems and proofs in geometry ▪ Demonstrates inability to consistently teach students to utilize knowledge of the role of axiomatic systems and proofs in geometry in the classroom	**2-Acceptable** ▪ Consistently demonstrates knowledge and understanding necessary to exhibit knowledge of the role of axiomatic systems and proofs in geometry ▪ Demonstrates sufficient ability to teach students to utilize knowledge of the role of axiomatic systems and proofs in geometry in the classroom	**3-Target** ▪ Consistently demonstrates exceptional knowledge and understanding necessary to exhibit knowledge of the role of axiomatic systems and proofs in geometry ▪ Demonstrates outstanding ability to teach students to utilize knowledge of the role of axiomatic systems and proofs in geometry in the classroom
11.3 Analyze characteristics and relationships of geometric shapes and structures	**1-Unacceptable** ▪ Unable to analyze characteristics and relationships of geometric shapes and structures Demonstrates inability to teach students to analyze characteristics and relationships of geometric shapes and structures	**2-Acceptable** ▪ Consistently able to analyze characteristics and relationships of geometric shapes and structures ▪ Demonstrates ability to consistently teach students to analyze characteristics and relationships of geometric shapes and structures	**3-Target** ▪ Demonstrates exceptional ability to analyze characteristics and relationships of geometric shapes and structures ▪ Demonstrates outstanding skills to enhance students' ability to analyze characteristics and relationships of geometric shapes and structures in the classroom
11.4 Build and manipulate representations of two- and three-dimensional objects and visualize objects from different perspectives	**1-Unacceptable** ▪ Unable to build and manipulate representations of two- and three-dimensional objects and visualize objects from different perspectives ▪ Demonstrates inability to teach students to build and manipulate representations of two- and three-dimensional objects and visualize objects from different perspectives	**2-Acceptable** ▪ Demonstrates competence in building and manipulating representations of two- and three- dimensional objects and visualizing objects from different perspectives ▪ Demonstrates ability to teach students to use mathematical models to represent and understand quantitative relationships	**3-Target** ▪ Exceptional in ability to use mathematical models to represent and understand quantitative relationships ▪ Demonstrates unique ability to teach students to use mathematical models to represent and understand quantitative relationships
11.5 Specify locations and describe spatial relationships using coordinate geometry,	**1-Unacceptable** ▪ Unable to specify locations and describe spatial relationships using coordinate geometry, vectors, and other representational systems Demonstrates inability to teach	**2-Acceptable** ▪ Consistently able to specify locations and describe spatial relationships using coordinate geometry, vectors, and other representational systems ▪ Demonstrates ability to consistently teach	**3-Target** ▪ Demonstrates exceptional ability to specify locations and describe spatial relationships using coordinate geometry, vectors, and other representational systems ▪ Demonstrates outstanding skills to enhance

vectors, and other representational systems	students to specify locations and describe spatial relationships using coordinate geometry, vectors, and other representational systems	students to specify locations and describe spatial relationships using coordinate geometry, vectors, and other representational systems	students' ability to specify locations and describe spatial relationships using coordinate geometry, vectors, and other representational systems
11.6 Apply transformations and use symmetry, similarity, and congruence to analyze mathematical situations	**1-Unacceptable** ▪ Unable to apply transformations and use symmetry, similarity, and congruence to analyze mathematical situations ▪ Demonstrates inability to teach students apply transformations and use symmetry, similarity, and congruence to analyze mathematical situations	**2-Acceptable** ▪ Demonstrates competence in applying transformations and using symmetry, similarity, and congruence to analyze mathematical situations ▪ Demonstrates ability to teach students to apply transformations and use symmetry, similarity, and congruence to analyze mathematical situations	**3-Target** ▪ Exceptional in ability to apply transformations and use symmetry, similarity, and congruence to analyze mathematical situations ▪ Demonstrates unique ability to teach students to apply transformations and use symmetry, similarity, and congruence to analyze mathematical situations
11.7 Use concrete models, drawings, and dynamic geometric software to explore geometric ideas and their applications in real-world contexts	**1-Unacceptable** ▪ Demonstrates inability to use concrete models, drawings, and dynamic geometric software to explore geometric ideas and their applications in real-world contexts ▪ Demonstrates inability to use concrete models, drawings, and dynamic geometric software to explore geometric ideas and their applications in real-world contexts in the classroom	**2-Acceptable** ▪ Consistently to use concrete models, drawings, and dynamic geometric software to explore geometric ideas and their applications in real-world contexts ▪ Demonstrates ability to use concrete models, drawings, and dynamic geometric software to explore geometric ideas and their applications in real-world contexts in the classroom	**3-Target** ▪ Demonstrates exceptional ability to use concrete models, drawings, and dynamic geometric software to explore geometric ideas and their applications in real-world contexts ▪ Demonstrates outstanding skills to enhance students' ability to use concrete models, drawings, and dynamic geometric software to explore geometric ideas and their applications in real-world contexts
11.8 Demonstrate knowledge of the historical development of Euclidean and non-Euclidean geometries including contributions from diverse cultures	**1-Unacceptable** ▪ Unable to demonstrate knowledge of the historical development of Euclidean and non-Euclidean geometries including contributions from diverse cultures ▪ Demonstrates inability to teach students to utilize knowledge of the historical development of Euclidean and non-Euclidean geometries including contributions from diverse cultures	**2-Acceptable** ▪ Demonstrates competence in utilizing knowledge of the historical development of Euclidean and non-Euclidean geometries including contributions from diverse cultures ▪ Illustrates ability to teach students to demonstrate knowledge of the historical development of Euclidean and non-Euclidean geometries including contributions from diverse cultures	**3-Target** • Exceptional in ability to demonstrate knowledge of the historical development of Euclidean and non-Euclidean geometries including contributions from diverse cultures • Demonstrates unique ability to teach students to use mathematical models to represent and understand quantitative relationships
			Overall Standard 10 Score =
Standard 11 - Knowledge of Calculus			
12.1 Demonstrate a conceptual understanding	**1-Unacceptable** ▪ Unable to demonstrate a conceptual understanding of and procedural facility with basic	**2-Acceptable** ▪ Consistently able to demonstrate a conceptual understanding of and procedural facility with basic calculus concepts	**3-Target** ▪ Demonstrates exceptional ability to demonstrate a conceptual understanding of and procedural facility with basic calculus

of and procedural facility with basic calculus concepts	calculus concepts ▪ Demonstrates inability to teach students to demonstrate a conceptual understanding of and procedural facility with basic calculus concepts	▪ Demonstrates ability to consistently teach students to exhibit a conceptual understanding of and procedural facility with basic calculus concepts	concepts ▪ Demonstrates outstanding skills to enhance students' ability to demonstrate a conceptual understanding of and procedural facility with basic calculus concepts in the classroom
12.2 Apply concepts of function, geometry, and trigonometry in solving problems involving calculus	**1-Unacceptable** ▪ Unable to apply concepts of function, geometry, and trigonometry in solving problems involving calculus ▪ Demonstrates inability to teach students to apply concepts of function, geometry, and trigonometry in solving problems involving calculus	**2-Acceptable** ▪ Demonstrates competence in applying concepts of function, geometry, and trigonometry in solving problems involving calculus ▪ Demonstrates ability to teach students to apply concepts of function, geometry, and trigonometry in solving problems involving calculus	**3-Target** ▪ Exceptional in ability to apply concepts of function, geometry, and trigonometry in solving problems involving calculus ▪ Demonstrates unique ability to teach students to apply concepts of function, geometry, and trigonometry in solving problems involving calculus
12.3 Use the concepts of calculus and mathematical modeling to represent and solve problem s taken from real-world contexts	**1-Unacceptable** ▪ Unable to use the concepts of calculus and mathematical modeling to represent and solve problem s taken from real-world contexts ▪ Demonstrates inability to teach students to use the concepts of calculus and mathematical modeling to represent and solve problem s taken from real-world contexts	**2-Acceptable** ▪ Consistently able to use the concepts of calculus and mathematical modeling to represent and solve problem s taken from real-world contexts ▪ Demonstrates consistent desire and ability to teach students to use the concepts of calculus and mathematical modeling to represent and solve problem s taken from real-world contexts	**3-Target** ▪ Demonstrates exceptional ability to use the concepts of calculus and mathematical modeling to represent and solve problem s taken from real-world contexts ▪ Demonstrates outstanding skills to enhance students' ability to use the concepts of calculus and mathematical modeling to represent and solve problem s taken from real-world contexts
12.4 Use technological tools to explore and represent fundamental concepts of calculus	**1-Unacceptable** ▪ Unable to use technological tools to explore and represent fundamental concepts of calculus ▪ Demonstrates inability to teach students use technological tools to explore and represent fundamental concepts of calculus	**2-Acceptable** ▪ Demonstrates competence in using technological tools to explore and represent fundamental concepts of calculus Demonstrates ability to teach students to use technological tools to explore and represent fundamental concepts of calculus	**3-Target** ▪ Exceptional in ability to use technological tools to explore and represent fundamental concepts of calculus ▪ Demonstrates unique ability to teach students to use technological tools to explore and represent fundamental concepts of calculus
12.5 Demonstrate knowledge of the historical development of calculus including contributions from diverse	**1-Unacceptable** ▪ Demonstrates inability to use knowledge of the historical development of calculus including contributions from diverse cultures ▪ Demonstrates inability to use knowledge of the historical development of calculus including contributions from diverse cultures	**2-Acceptable** ▪ Consistently able to use knowledge of the historical development of calculus including contributions from diverse cultures Demonstrates ability to use knowledge of the historical development of calculus including contributions from diverse cultures in the classroom	**3-Target** ▪ Demonstrates exceptional ability to use knowledge of the historical development of calculus including contributions from diverse cultures ▪ Demonstrates outstanding skills to enhance students' ability to use knowledge of the historical development of calculus including contributions from diverse cultures

cultures			
			Overall Standard 12 Score =
Standard 13 - Knowledge of Discrete Mathematics			
13.1 Demonstrate knowledge of basic elements of discrete mathematics such as graph theory, recurrence relations, finite difference approaches, linear programming, and combinatorics	**1-Unacceptable** ▪ Unable to demonstrate knowledge of basic elements of discrete mathematics such as graph theory, recurrence relations, finite difference approaches, linear programming, and combinatorics ▪ Demonstrates inability to teach students to demonstrate knowledge of basic elements of discrete mathematics such as graph theory, recurrence relations, finite difference approaches, linear programming, and combinatorics	**2-Acceptable** ▪ Consistently able to demonstrate knowledge of basic elements of discrete mathematics such as graph theory, recurrence relations, finite difference approaches, linear programming, and combinatorics ▪ Demonstrates consistent ability to teach students to demonstrate knowledge of basic elements of discrete mathematics such as graph theory, recurrence relations, finite difference approaches, linear programming, and combinatorics	**3-Target** ▪ Demonstrates exceptional ability to demonstrate knowledge of basic elements of discrete mathematics such as graph theory, recurrence relations, finite difference approaches, linear programming, and combinatorics ▪ Demonstrates outstanding skills to enhance students' ability to demonstrate knowledge of basic elements of discrete mathematics such as graph theory, recurrence relations, finite difference approaches, linear programming, and combinatorics
13.2 Apply the fundamental ideas of discrete mathematics in the formulation and solution of problems arising from real-world situations	**1-Unacceptable** ▪ Unable to apply the fundamental ideas of discrete mathematics in the formulation and solution of problems arising from real-world situations ▪ Demonstrates inability to teach students to apply the fundamental ideas of discrete mathematics in the formulation and solution of problems arising from real-world situations	**2-Acceptable** ▪ Demonstrates competence in applying the fundamental ideas of discrete mathematics in the formulation and solution of problems arising from real-world situations ▪ Demonstrates ability to teach students to apply the fundamental ideas of discrete mathematics in the formulation and solution of problems arising from real-world situations	**3-Target** ▪ Exceptional in ability to apply the fundamental ideas of discrete mathematics in the formulation and solution of problems arising from real-world situations ▪ Demonstrates unique ability to teach students to apply the fundamental ideas of discrete mathematics in the formulation and solution of problems arising from real-world situations
13.3 Use technological tools to solve problems involving the use of discrete structures and the application of algorithms	**1-Unacceptable** ▪ Unable to use technological tools to solve problems involving the use of discrete structures and the application of algorithms ▪ Demonstrates inability to teach students to use technological tools to solve problems involving the use of discrete structures and the application of algorithms	**2-Acceptable** ▪ Consistently able to use technological tools to solve problems involving the use of discrete structures and the application of algorithms ▪ Demonstrates consistent desire and ability to teach students to use technological tools to solve problems involving the use of discrete structures and the application of algorithms	**3-Target** ▪ Demonstrates exceptional ability to use technological tools to solve problems involving the use of discrete structures and the application of algorithms ▪ Demonstrates outstanding skills to enhance students' ability to use technological tools to solve problems involving the use of discrete structures and the application of algorithms
13.4 Demonstrate knowledge of	**1-Unacceptable** ▪ Unable to demonstrate knowledge of the historical development of	**2-Acceptable** ▪ Demonstrates competence in using knowledge of the historical development of	**3-Target** ▪ Exceptional in ability to demonstrate knowledge of the historical development of

the historical development of discrete mathematics including contributions from diverse cultures	discrete mathematics including contributions from diverse cultures ▪ Demonstrates inability to teach students to demonstrate knowledge of the historical development of discrete mathematics including contributions from diverse cultures	discrete mathematics including contributions from diverse cultures ▪ Demonstrates ability to teach students to use knowledge of the historical development of discrete mathematics including contributions from diverse cultures	discrete mathematics including contributions from diverse cultures ▪ Demonstrates unique ability to teach students to utilize knowledge of the historical development of discrete mathematics including contributions from diverse cultures
			Overall Standard 13 Score =
Standard 14 - Knowledge of Data Analysis, Statistics, and Probability			
14.1 Design investigations, collect data, and use a variety of ways to display data and interpret data representations that may include bivariate data, conditional probability and geometric probability	**1-Unacceptable** ▪ Unable to design investigations, collect data, and use a variety of ways to display data and interpret data representations that may include bivariate data, conditional probability and geometric probability ▪ Demonstrates inability to teach students to design investigations, collect data, and use a variety of ways to display data and interpret data representations that may include bivariate data, conditional probability and geometric probability	**2-Acceptable** ▪ Consistently able to design investigations, collect data, and use a variety of ways to display data and interpret data representations that may include bivariate data, conditional probability and geometric probability ▪ Demonstrates consistent ability to teach students to design investigations, collect data, and use a variety of ways to display data and interpret data representations that may include bivariate data, conditional probability and geometric probability	**3-Target** ▪ Demonstrates exceptional ability to design investigations, collect data, and use a variety of ways to display data and interpret data representations that may include bivariate data, conditional probability and geometric probability ▪ Demonstrates outstanding skills to enhance students' ability to design investigations, collect data, and use a variety of ways to display data and interpret data representations that may include bivariate data, conditional probability and geometric probability
14.2 Use appropriate methods such as random sampling or random assignment of treatments to estimate population characteristics, test conjectured relationships among variables, and analyze data	**1-Unacceptable** ▪ Unable to use appropriate methods such as random sampling or random assignment of treatments to estimate population characteristics, test conjectured relationships among variables, and analyze data ▪ Demonstrates inability to teach students to use appropriate methods such as random sampling or random assignment of treatments to estimate population characteristics, test conjectured relationships among variables, and analyze data	**2-Acceptable** ▪ Demonstrates competence in using appropriate methods such as random sampling or random assignment of treatments to estimate population characteristics, test conjectured relationships among variables, and analyze data ▪ Demonstrates ability to teach students to use appropriate methods such as random sampling or random assignment of treatments to estimate population characteristics, test conjectured relationships among variables, and analyze data	**3-Target** ▪ Exceptional in ability to use appropriate methods such as random sampling or random assignment of treatments to estimate population characteristics, test conjectured relationships among variables, and analyze data ▪ Demonstrates unique ability to teach students to use appropriate methods such as random sampling or random assignment of treatments to estimate population characteristics, test conjectured relationships among variables, and analyze data

14.3 Use appropriate statistical methods and technological tools to describe shape and analyze spread and center	**1-Unacceptable** ▪ Unable to use appropriate statistical methods and technological tools to describe shape and analyze spread and center ▪ Demonstrates inability to teach students to use appropriate statistical methods and technological tools to describe shape and analyze spread and center	**2-Acceptable** ▪ Consistently able to use appropriate statistical methods and technological tools to describe shape and analyze spread and center ▪ Demonstrates consistent desire and ability to teach students to use appropriate statistical methods and technological tools to describe shape and analyze spread and center	**3-Target** ▪ Demonstrates exceptional ability to use appropriate statistical methods and technological tools to describe shape and analyze spread and center ▪ Demonstrates outstanding skills to enhance students' ability use appropriate statistical methods and technological tools to describe shape and analyze spread and center
14.4 Use statistical inference to draw conclusions from data	**1-Unacceptable** ▪ Unable to use statistical inference to draw conclusions from data ▪ Demonstrates inability to teach students to use statistical inference to draw conclusions from data	**2-Acceptable** ▪ Demonstrates competence in using statistical inference to draw conclusions from data ▪ Demonstrates ability to teach students to use statistical inference to draw conclusions from data	**3-Target** ▪ Exceptional in ability to use statistical inference to draw conclusions from data ▪ Demonstrates unique ability to teach students to utilize statistical inference to draw conclusions from data
14.5 Identify misuses of statistics and invalid conclusions from probability	**1-Unacceptable** ▪ Unable to identify misuses of statistics and invalid conclusions from probability ▪ Demonstrates inability to teach students to identify misuses of statistics and invalid conclusions from probability	**2-Acceptable** ▪ Consistently able to identify misuses of statistics and invalid conclusions from probability ▪ Demonstrates consistent ability to teach students to identify misuses of statistics and invalid conclusions from probability	**3-Target** ▪ Demonstrates exceptional ability to identify misuses of statistics and invalid conclusions from probability ▪ Demonstrates outstanding skills to enhance students' ability to identify misuses of statistics and invalid conclusions from probability
14.6 Draw conclusions involving uncertainty by using hand-on and computer-based simulation for estimating probabilities and gathering data to make inferences and conclusions	**1-Unacceptable** ▪ Unable to draw conclusions involving uncertainty by using hand-on and computer-based simulation for estimating probabilities and gathering data to make inferences and conclusions ▪ Demonstrates inability to teach students to draw conclusions involving uncertainty by using hand-on and computer-based simulation for estimating probabilities and gathering data to make inferences and conclusions	**2-Acceptable** ▪ Demonstrates competence in drawing conclusions involving uncertainty by using hand-on and computer-based simulation for estimating probabilities and gathering data to make inferences and conclusions ▪ Demonstrates ability to teach students to draw conclusions involving uncertainty by using hand-on and computer-based simulation for estimating probabilities and gathering data to make inferences and conclusions	**3-Target** ▪ Exceptional in ability to draw conclusions involving uncertainty by using hand-on and computer-based simulation for estimating probabilities and gathering data to make inferences and conclusions ▪ Demonstrates unique ability to teach students to draw conclusions involving uncertainty by using hand-on and computer-based simulation for estimating probabilities and gathering data to make inferences and conclusions
14.7 Determine and interpret confidence intervals	**1-Unacceptable** ▪ Unable to determine and interpret confidence intervals ▪ Demonstrates inability to teach	**2-Acceptable** ▪ Consistently able to determine and interpret confidence intervals ▪ Demonstrates consistent desire and ability to	**3-Target** ▪ Demonstrates exceptional ability to determine and interpret confidence intervals Demonstrates outstanding skills to enhance

	students to determine and interpret confidence intervals	teach students to determine and interpret confidence intervals	students' ability to determine and interpret confidence intervals
14.8 Demonstrate knowledge of historical development of statistics and probability including contributions from diverse cultures	**1-Unacceptable** ▪ Unable to demonstrate knowledge of historical development of statistics and probability including contributions from diverse cultures ▪ Demonstrates inability to teach students to demonstrate knowledge of historical development of statistics and probability including contributions from diverse cultures	**2-Acceptable** ▪ Demonstrates competence in demonstrating knowledge of historical development of statistics and probability including contributions from diverse cultures ▪ Demonstrates ability to inspire students to demonstrate knowledge of historical development of statistics and probability including contributions from diverse cultures	**3-Target** ▪ Exceptional in ability to demonstrate knowledge of historical development of statistics and probability including contributions from diverse cultures ▪ Demonstrates unique ability to teach students to demonstrate knowledge of historical development of statistics and probability including contributions from diverse cultures
			Overall Standard 14 Score =
Standard 15 - Knowledge of Measurement			
15.1 Recognize the common representations and uses of measurement and choose tools and units for measuring	**1-Unacceptable** ▪ Unable to recognize the common representations and uses of measurement and choose tools and units for measuring ▪ Demonstrates inability to teach students to recognize the common representations and uses of measurement and choose tools and units for measuring	**2-Acceptable** ▪ Consistently able to recognize the common representations and uses of measurement and choose tools and units for measuring ▪ Demonstrates consistent ability to teach students to recognize the common representations and uses of measurement and choose tools and units for measuring	**3-Target** ▪ Demonstrates exceptional ability to recognize the common representations and uses of measurement and choose tools and units for measuring ▪ Demonstrates outstanding skills to recognize the common representations and uses of measurement and choose tools and units for measuring
15.2 Apply appropriate techniques, tools, and formulas to determine measurements and their application in a variety of contexts	**1-Unacceptable** ▪ Unable to apply appropriate techniques, tools, and formulas to determine measurements and their application in a variety of contexts ▪ Demonstrates inability to teach students to apply appropriate techniques, tools, and formulas to determine measurements and their application in a variety of contexts	**2-Acceptable** ▪ Demonstrates competence in applying appropriate techniques, tools, and formulas to determine measurements and their application in a variety of contexts ▪ Demonstrates ability to teach students to apply appropriate techniques, tools, and formulas to determine measurements and their application in a variety of contexts	**3-Target** ▪ Exceptional in ability to apply appropriate techniques, tools, and formulas to determine measurements and their application in a variety of contexts ▪ Demonstrates unique ability to apply appropriate techniques, tools, and formulas to determine measurements and their application in a variety of contexts
15.3 Completes error analysis through determining the reliability of the numbers obtained from measures	**1-Unacceptable** ▪ Unable to complete error analysis through determining the reliability of the numbers obtained from measures ▪ Demonstrates inability to teach students to complete error analysis through determining the reliability	**2-Acceptable** ▪ Consistently able to complete error analysis through determining the reliability of the numbers obtained from measures ▪ Demonstrates consistent desire and ability to teach students to complete error analysis through determining the reliability of the numbers obtained from measures	**3-Target** ▪ Demonstrates exceptional ability to complete error analysis through determining the reliability of the numbers obtained from measures ▪ Demonstrates outstanding skills to enhance students' ability to complete error analysis through determining the reliability of the

	of the numbers obtained from measures		numbers obtained from measures
15.4 Demonstrate knowledge of the historical development of measurement and measurement systems including contributions from diverse cultures	**1-Unacceptable** ▪ Unable to demonstrate knowledge of the historical development of measurement and measurement systems including contributions from diverse cultures ▪ Demonstrates inability to teach students to demonstrate knowledge of the historical development of measurement and measurement systems including contributions from diverse cultures	**2-Acceptable** ▪ Demonstrates competence in knowledge of the historical development of measurement and measurement systems including contributions from diverse cultures Demonstrates ability to teach students to utilize knowledge of the historical development of measurement and measurement systems including contributions from diverse cultures	**3-Target** ▪ Exceptional in ability to demonstrate knowledge of the historical development of measurement and measurement systems including contributions from diverse cultures Demonstrates unique ability to teach students to utilize knowledge of the historical development of measurement and measurement systems including contributions from diverse cultures
			Overall Standard 15 Score =
Standard 16 - Field-Based Experiences			
16.1 Engage in a sequence of planned opportunities prior to student teaching that includes observing and participating in both middle and secondary mathematics classrooms under the supervision of experienced and highly qualified teachers	**1-Unacceptable** ▪ Did not engage in a sequence of planned opportunities prior to student teaching that includes observing and participating in both middle and secondary mathematics classrooms under the supervision of experienced and highly qualified teachers	**2-Acceptable** ▪ Consistently engaged in a sequence of planned opportunities prior to student teaching that includes observing and participating in both middle and secondary mathematics classrooms under the supervision of experienced and highly qualified teachers	**3-Target** ▪ Engaged in an exceptional sequence of planned opportunities prior to student teaching that includes observing and participating in both middle and secondary mathematics classrooms under the supervision of experienced and highly qualified teachers
16.2 Experience full-time student teaching in secondary mathematics that is supervised by a highly qualified teacher and a	**1-Unacceptable** ▪ Did not experience full-time student teaching in secondary mathematics that was supervised by a highly qualified teacher and a university or college supervisor with secondary mathematics teaching experience	**2-Acceptable** ▪ Consistently experienced full-time student teaching in secondary mathematics that was supervised by a highly qualified teacher and a university or college supervisor with secondary mathematics teaching experience	**3-Target** ▪ Engaged in an exceptional full-time student teaching in secondary mathematics that was supervised by a highly qualified teacher and a university or college supervisor with secondary mathematics teaching experience ▪

university or college supervisor with secondary mathematics teaching experience			
16.3 Demonstrates the ability to increase students' knowledge of mathematics	**1-Unacceptable** ▪ Unable to demonstrate the ability to increase students' knowledge of mathematics	**2-Acceptable** ▪ Consistently able to demonstrate the ability to increase students' knowledge of mathematics	**3-Target** ▪ Demonstrates exceptional ability to demonstrate the ability to increase students' knowledge of mathematics
			Overall Standard 16 Score =