

Methods Mathematics Project Rubric

Attributes: K (Knowledge); S (Skills); (D) Dispositions; (I) Impact on Student Learning

Steps & Point Range	Needs Improvement	Meets Expectations	Exceptional	Attributes & Standards
<u>STEP I. PLANNING AND PREPARATION</u> A. Research the topic. (1-6 pts.) Points Earned: _____	Few resources explored. Summary essentially a list of learning resources focused heavily on skills. Bibliography minimal and not completed in correct APA style. 1-3 pts.	Met with CT and took into account the needs of the students, used a variety of resources to enhance understanding of the topic (texts, Web resources, a children's book). Summary showed understanding of the content of the unit, of connections to other content areas, and of the historical origin of the math concept. Annotated bibliography in APA style with few errors. Five different resources used. 4-5 pts.	Met with CT and took into account diverse needs of the students. Used a variety of resources to enhance understanding of the topic (texts, Web resources, a children's book). Summary showed in depth understanding of the content of the unit, connections to other content areas and the history/cultural origin of the math concept. Annotated bibliography in correct APA style. Six different resources used. 6 pts.	K, S Standards: 1, 2.1, 2.3, 2.8, 3.1, 3.3, 3.5, 5.1, 5.3, 5.4
B. Determine learning outcomes and develop corresponding assessments. (1-6 pts.) Points Earned: _____	Learning outcomes not articulated to the extent needed. Little development of connections to other content areas and NCTM process standards. Assessments are minimal, mostly skills focused, and/or not appropriately aligned with learning outcomes. 1-3 pts.	Learning outcomes meet the needs of the majority of students, address concepts as well as skills. Some development of connections to other content areas and NCTM process standards. Formative and summative assessments feature some alignment with intended outcomes. 4-5 pts.	Learning outcomes meet the needs of <i>all</i> learners, are culturally appropriate, thoroughly articulated and express concepts, skills and process competencies with connections to other content areas and NCTM process standards. Both formative and summative assessment tools are appropriate to intended outcomes and clearly articulated. 6 pts.	K, S Standards: 1, 2.3, 3.1, 3.2, 3.4, 4, 5.1
<u>STEP II. INSTRUCTION</u> A. Micro-teach your lesson to your peers and meet with your Methods supervisor. (1-3 pts.) Points Earned: _____	Micro-taught a lesson to peers. Several elements of lesson were incomplete and/or underdeveloped. Review of micro-teaching showed little analysis and few modifications. 1 pt.	Micro-taught an age-appropriate, thorough lesson to peers. Review of micro-teaching included modifications made based on feedback. 2 pts.	Micro-taught a carefully-prepared, age appropriate and engaging lesson to peers. Wrote a thoughtful, in depth review of this experience featuring modifications made based on feedback. 3 pts.	K, S D, I Standards: 1, 2.3, 3.5, 5.1, 5.2, 5.4
B. Develop three consecutive lessons and teach at least one. (1-6 pts.) Points Earned: _____	Some components of the Methods Lesson Plan format missing and little detail included. Student work samples and final reflection show little analysis. 1-3 pts.	Most components of the Methods Lesson Plan format addressed in a basic manner. Some components addressed at a deeper level. Lessons involve multiple ways to explore and present math concepts. Student work samples and final reflection both demonstrate some analysis of the effectiveness of the lesson and the teaching in terms of student learning. 4-5 pts.	All components of the Methods Lesson Plan format addressed in a detailed/thoughtful manner for each lesson. Lessons involve multiple ways to explore and present math concepts. Student work samples and final reflection demonstrate careful and in-depth analysis of the effectiveness of the lesson in terms of student learning. 6 pts.	K, S D, I Standards: 1, 2.1, 2.3, 2.8, 3.1, 3.2, 3.4, 3.5, 4, 5.1, 5.2, 5.4

STEP III. INTERVIEW A STUDENT A. Meet with one student to discuss understanding of mathematics concepts. (1-3 pts.) Points Earned: _____	Interview questions do not determine effectiveness of lessons in terms of student learning. Little reflection on ways to improve the lessons in the future. 1 pt.	Interview questions adequately determine effectiveness of lessons. Written response to interview demonstrates candidate's basic ability to adjust lessons to enhance student learning in the future. 2 pts.	In-depth interview questions determine effectiveness of lessons in terms of student engagement and understanding of targeted math concepts. Response to interview includes analysis of ways to adjust lessons to enhance student learning of math concepts. 3 pts.	K, S D, I Standards: 1, 2.3, 4, 5.1, 5.2
STEP IV. PROFESSIONAL CONSIDERATIONS A. Presentation and completion of scoring rubric. (1-3 pts.) Points Earned: _____	Did not meet all project expectations and requirements. Editing needed. Included little analysis of teaching effectiveness and/or growth as a mathematics educator. Project did not reflect adequate understanding of the teaching of mathematics. Scoring rubric not completed. 1 pt.	Met project expectations and requirements. Basic analysis of candidate's growth as a math educator. Presented project neatly - few editorial issues. Pseudonyms & professional terminology. Demonstrated basic understanding of the teaching of math. Scoring rubric completed. 2 pts.	Met and/or exceeded all project expectations and requirements. Used pseudonyms and professional terminology throughout. Presented project neatly with no editorial issues. Demonstrated in depth understanding of the teaching of mathematics. Scoring rubric completed. 3 pts.	K, S D Standards: 5.1, 5.2, 5.4
B. Final Reflection (1-3 pts.) Points Earned: _____	Discussion of the value of the Math Project experience is minimal and does not include comments on the effect of the lessons on student and/or candidate growth. 1 pt.	Basic analysis of effectiveness of the development and teaching of the lessons in light of student learning. Analysis of candidate's own growth as a mathematics educator demonstrates the value of the Math Project experience. 2 pts.	In depth analysis of the development and teaching of the math lessons in light of student learning. Reflection of candidate's own growth as a mathematics educator fully explores the value of the Math Project experience. 3 pts.	K, S D, I Standards: 1, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 4, 5.1, 5.2, 5.4

Grading: A=(30); AB=(27-29); B=(23-26); BC=(19-22); C=(13-18); CD=(9-12); D=(8) Total Score: _____

ALIGNMENT WITH PROFESSIONAL STANDARDS

The project aligns with the following Association for Childhood Education International (ACEI) Standards:

1. Development, Learning, and Motivation—Candidates know, understand, and use the major concepts, principles, theories, and research related to development of children and young adolescents to construct learning opportunities that support individual students' development, acquisition of knowledge, and motivation.

Content/Curriculum

2.1 English language arts—Candidates demonstrate a high level of competence in use of English language arts and they know, understand, and use concepts from reading, language and child development, to teach reading, writing, speaking, viewing, listening, and thinking skills and to help students successfully apply their developing skills to many different situations, materials, and ideas.

2.3 Mathematics—Candidates know, understand, and use the major concepts, procedures, and reasoning processes of mathematics that define number systems and number sense, geometry, measurement, statistics and probability, and algebra in order to foster student understanding and use of patterns, quantities, and spatial relationships that can represent phenomena, solve problems, and manage data.

2.8 Connections across the curriculum—Candidates know, understand, and use the connections among concepts, procedures, and applications from content areas to motivate elementary students, build understanding, and encourage the application of knowledge, skills, and ideas to real world issues.

Instruction

3.1 Integrating and applying knowledge for instruction—Candidates plan and implement instruction based on knowledge of students, learning theory, subject matter, curricular goals, and community.

3.2 Adaptation to diverse students—Candidates understand how elementary students differ in their development and approaches to learning, and create instructional opportunities that are adapted to diverse students.

3.3 Development of critical thinking, problem solving, performance skills—Candidates understand and use a variety of teaching strategies that encourage elementary students' development of critical thinking, problem solving, and performance skills.

3.4 Active engagement in learning—Candidates use their knowledge and understanding of individual and group motivation and behavior among students at the K-6 level to foster active engagement in learning, self motivation, and positive social interaction and to create supportive learning environments.

3.5 Communication to foster collaboration—Candidates use their knowledge and understanding of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the elementary classroom.

4. Assessment for instruction—Candidates know, understand, and use formal and informal assessment strategies to plan, evaluate and strengthen instruction that will promote continuous intellectual, social, emotional, and physical development of each elementary student.

Professionalism

5.1 Practices and behaviors of developing career teachers—Candidates understand and apply practices and behaviors that are characteristic of developing career teachers.

5.2 Reflection and evaluation—Candidates are aware of and reflect on their practice in light of research on teaching and resources available for professional learning; they continually evaluate the effects of their professional decisions and actions on students, parents, and other professionals in the learning community and actively seek out opportunities to grow professionally.

5.3 Collaboration with families—Candidates know the importance of establishing and maintaining a positive collaborative relationship with families to promote the academic, social and emotional growth of children.

5.4 Collaboration with colleagues and the community—Candidates foster relationships with school colleagues and agencies in the larger community to support students' learning and well-being.