Assessment 5— Assessment of Candidate Effect on Student Learning
Teacher Work Sample

1. Description and Use.
The Teacher Work Sample is designed to measure the degree to which the students of mathematics student teachers learn what they are taught. This assessment requires the mathematics student teacher to create a unit plan that consists of a minimum of three lesson plans. The first lesson plan includes a pre-test that assesses student knowledge of the material to be learned. The intervening lesson plan(s) must include, among other required elements, formative assessments that determine students' progress toward achieving unit learning outcomes. The concluding lesson plan includes a post-test that measures students' increased learning on the covered material. Between the two, the mathematics student teacher uses the aggregated data from the pre-test to design or modify instruction to teach the intended material to his or her students. The Teacher Work Sample also requires the student teacher to evaluate his or her assessments against a quality-control standard to determine the degree to which the assessments are fair, accurate, consistent, and free from bias.

2. Alignment with Standards.
The Teacher Work Sample is aligned with NCTM standards 3 and 5. A table showing the relationship between NCTM standards and individual assessment elements is located in the attachment for this assessment.

3. Brief Analysis of Data Findings.
The Teacher Work Sample assessment was revised during the summer of 2012. Since that time, thirteen mathematics education candidates completed the Teacher Work Sample in the 2012-2013 and 2013-2014 assessment cycles. Of these candidates:

- Twelve of the thirteen Teacher Work Sample assessments were determined to be either Outstanding or Competent;
- One was judged to be Outstanding (95 – 100% mastery), and eleven were judged to be Competent (80 – 94% mastery) on this assessment.[1] One candidate's performance was determined to be Emerging Competence (65 – 79% mastery).[2]
- The aggregate score for the assessment elements aligned with NCTM standards included in the Teacher Work Sample was 3.44 on a 4.0 scale (86% mastery).

4. Interpretation of how Data Provides Evidence for Meeting NCTM Standards.
The Teacher Work Sample is designed to determine the degree to which students learn as a result of the instruction provided by mathematics education student teaching candidates. Because

- The Teacher Work Sample is aligned with elements of NCTM Standards 3 and 5; and

[1] Competent for the TESOL education Teacher Work Sample assessment is defined as a minimum of 80% mastery of the assessment element; Outstanding is defined as a minimum of 95% mastery of the assessment element. The following footnote explains how competence levels are calculated.

[2] Aggregate assessment instrument scores are used to define expected scoring levels for each quality descriptor. For this assessment, with 52 possible points (13 elements; 4 scoring levels), Outstanding is defined as a score of 47-52; Competent is defined as a score of 36-46; Emerging Competence is defined as 32-35; Needs improvement is defined as a score between 0 and 31. Range medians are used for summative descriptions of mastery levels for an assessment. Range medians are calculated by taking the midpoint of each scoring range and dividing by the total number of points possible in the assessment, as follows. Outstanding: 49.4/52 = 95% mastery; Competent: 41.6/52 = 80% mastery; Emerging Competence: 33.8/52 = 65% mastery. The Needs Improvement competence level is defined as any score below 32, or < 65% mastery.

because

- Two years of aggregated data show that twelve of thirteen mathematics education candidates achieved a minimum rating of Competent (80% mastery) on their Teacher Work Sample Assessments (the thirteenth candidate's TWS was rated at 71.1% mastery); and because
- The aggregate score for each of the assessment elements aligned with NCTM standards exceeded 85% mastery on the Teacher Work Sample Assessment;

The evidence suggests that mathematics education candidates are meeting NCTM standards as indicated.

5. Assessment 5 Attachments

- 4.5a Standards Alignment Chart
- 4.5b NCTM Standards Data Table
- 4.5c Teacher Work Sample Assignment Description and Assessment Rubric
- 4.5d Data Table

Attachment 4.5

Assessment 5—Assessment of candidate effect on student learning
Teacher Work Sample

Attachment 4.5a
Standards Alignment Chart

NCTM Standard	Teacher Work Sample Assessment Rubric Element
Standard 3.f	NCTM Standards: Formative and summative assessments
Standard 5.a	NCTM Standards: Students' conceptual understanding
Standard 5.b	NCTM Standards: Student engagement in developmentally appropriate activities
Standard 5.c	NCTM Standards: Documentation of student learning

Attachment 4.5b
Assessment Data

Table A: Mathematics Education Teacher Work Sample Assessment Data, Disaggregated by NCTM Standard and 2012-2013 (N=[redacted]) and 2013-2014 (N=[redacted]) Assessment Cycles.

NCTM Standard	Assessment Cycle	Needs Improvement < 65% Mastery		Emerging Competence 65-79% Mastery		Competent 80-94% Mastery		Outstanding 95-100% Mastery	
Standard 3.f	2012-2013	N	%	N	%	N	%	N	%
		0	0%	0	0%	[redacted]	83.3%	[redacted]	16.7%
	2013-2014	N	%	N	%	N	%	N	%
		0	0%	0	0%	[redacted]	42.9%	[redacted]	57.1%
Standard 5.a	2012-2013	N	%	N	%	N	%	N	%
		0	0%	[redacted]	14.3%	[redacted]	57.1%	[redacted]	16.7%
	2013-2014	N	%	N	%	N	%	N	%
		0	0%	0	0%	[redacted]	42.9%	[redacted]	57.1%
Standard 5.b	2012-2013	N	%	N	%	N	%	N	%
		0	0%	0	0%	[redacted]	66.7%	[redacted]	33.3%
	2013-2014	N	%	N	%	N	%	N	%
		0	0%	0	0%	[redacted]	42.9%	[redacted]	57.1%
Standard 5.c	2012-2013	N	%	N	%	N	%	N	%
		0	0%	0	0%	[redacted]	50.0%	[redacted]	50.0%
	2013-2014	N	%	N	%	N	%	N	%
		0	0%	0	0%	[redacted]	28.6%	[redacted]	71.4%

Attachment 4.5c

[redacted]

Mathematics Education—2012 NCTM Standards
Teacher Work Sample

Assignment description. The premise behind this assignment is that teachers need to not only be deliberative and purposeful in designing instruction that enables students to meet learning standards and goals, but they also need to be able to document the degree to which that happens in their classrooms as a result of their teaching. Given that understanding, the purpose of this assignment is to provide pre-service teachers with a deliberate, step-by-step process by which they design a unit of instruction along with an assessment plan designed to measure the growth in student learning that results from the planned instruction.

Tasks and procedures

1. Design an instructional sequence that includes a unit plan, an assessment plan, and a minimum of four lesson plans, which must be part of the unit plan instructional sequence.
2. Design and administer a pre-assessment to students.
3. Aggregate and analyze data from the pre-assessment.
4. Develop and/or adjust instructional plans based on pre-assessment data.
5. Deliver instruction.
6. Design and administer a post-assessment to students.
7. Aggregate and analyze data.
8. Construct a data display showing both pre- and post-assessment data.
9. Write a reflective commentary on the process, focusing how data were used to adapt and modify instruction to meet student-learning deficiencies identified in the assessment process.
10. Provide evidence that you have carried out your plans and have implemented them successfully.

NOTE: You must provide evidence that the following NCTM standards have been met as a result of your planning and teaching within the context of your Teacher Work Sample:

NCTM Standard 5a Verify that secondary students demonstrate conceptual understanding; procedural fluency; the ability to formulate, represent, and solve problems; logical reasoning and continuous reflection on that reasoning; productive disposition toward mathematics; and the application of mathematics in a variety of contexts within major mathematical domains.

NCTM Standard 5b Engage students in developmentally appropriate mathematical activities and investigations that require active engagement and include mathematics-specific technology in building new knowledge.

Instructional Plan. Considerations and required elements:

1. Student characteristics. Discuss the characteristics of students in your classroom that must be addressed in your instructional and assessment plans. Include factors such as age, gender, race/ethnicity, special needs, achievement/developmental levels, unusual cultural or community characteristics, languages other than English, and other factors that should be considered in the design of instruction and assessment. *This description must express your knowledge of diversity, specifically how the students in your class differ in their development and approaches to learning.*

2. Unit Plan. Include the lesson plans that include the pre-test and the post-test. Also include 2 or more additional lesson plans that show how instruction was implemented using pre-test data.
3. Lesson Plans. A minimum of 4 lesson plans that include the elements described in the assessment plan instructions. The lessons may be spread over more than 4 class periods and/or days.
4. Reflection and self-analysis. Use the lesson plan post-lesson self-analysis questions to guide your reflections and responses.
    a. Provide examples of instructional decision making based on pre-assessment data and on students' learning or responses during the lessons. Analyze the feasibility of implementing the strategies you chose based on student pre-test data.
    b. Describe the instructional strategies and activities that contributed most to student learning. Describe why you think these strategies and/or activities were effective in helping your students reach the learning objectives of the lesson(s).
    c. Describe what you believe were the two greatest barriers to learning for your students in this unit. Focus only on factors you can control.
    d. Discuss the assessment options you considered for your Teacher Work Sample, and provide rationale for the assessment instruments you chose to develop.
    e. Describe how you utilized your pre- and post-test assessment results to guide future instruction.

<u>Assessment Plan</u>.
NCTM Standard 3f Plan, select, and implement formative and summative assessments reflecting mathematical knowledge, skills, understanding, and performance that are essential for all students

1. *Pre-test*. Considerations and required elements:
    a. aligned with unit plan standards and learning objectives;
    b. appropriate for the level and subject area;
    c. clear criteria for assessment of student performance. If the assessment of student performance is subjective, a rubric must be developed that includes the essential elements of the performance, and descriptors of unacceptable, acceptable, and exemplary levels for each element.
    d. Data analysis and description. The pre-test data must be aggregated and displayed in a form that can be readily analyzed and described, and from which conclusions can be drawn about student understanding and mastery of the learning outcomes.

    NOTE: the pre-test must be included as part of the TWS instructional sequence.

2. *Formative Assessment*. Considerations and required elements:
    a. informal assessments designed to monitor student learning and mastery of knowledge and skill outcomes during instruction.
    b. formative assessments may include questions and answers (checking for understanding), games, guided and individual practice assignments, among others.

NOTE: The formative assessment element of the assessment plan must be included as a separate, stand-alone element in the assessment plan.

3. *Post-test*. Considerations and required elements:
   a. To ensure that accurate conclusions can be drawn about the degree to which student learning has increased as a result of the instructional intervention, the post-test must be either the same as or equivalent to the pre-test.
   b. Data analysis and description. The post-test data must be aggregated and displayed in a form that can be compared to pre-test data, allowing for ready analysis and description of the differences. *NOTE: see Reporting Results, below*.

   NOTE: The post-test must be included in a lesson plan in the TWS instructional sequence.

4. *Quality control*. The last section of the assessment plan requires an analysis of the planned assessments to ensure that they are fair, accurate, consistent, and free from bias.
   a. Fairness. Assessments are fair when they assess what students have been taught, and when the assessments and scoring criteria are accurately described and clearly understood. Respond to the following prompts:
      1.) Using alignment charts or curriculum maps, document how students have been taught the knowledge and/or skills upon which they will be tested.
      2.) Using assessment descriptions and scoring rubrics, document how students understand what is expected of them on the assessments in your assessment plan.
   b. Accuracy. Assessments are accurate when they measure what they are designed to measure. Respond to the following prompts:
      1.) Using alignment charts or maps, document how assessments are aligned with unit goals and standards and learning objectives.
      2.) Demonstrate that the complexity of the assessment is similar to the standard(s) with which it is aligned, and that the cognitive demands and skill requirements are similar.
      3.) Demonstrate that the level of effort or degree of difficulty is consistent with the standard(s) and is reasonable for students at this age/developmental level.
   c. Consistency. Assessments are consistent when they produce dependable results or results that would remain constant on repeated trials. Respond to the following prompt:
      1.) using your observations of students' performances in similar situations, and/or by using comparisons of results from assessments administered in similar circumstances, document the degree to which the results from this assessment are consistent with these other findings.
   d. Freedom from bias. Assessments are free of bias when contextual distractions are removed from the testing situation and when they are free of racial and ethnic stereotypes, poorly conceived language and task situations, and other forms of insensitivity that might interfere with student performance. Respond to the following prompts:
      1.) Describe the conditions under which the assessment is administered, taking into consideration

a.) extraneous noise levels, lighting conditions, any condition that would cause student discomfort, and the functionality of any equipment necessary for the assessment situation.
b.) technical considerations, such as proper instructions, well-worded questions, and appropriate materials reproduction.

2.) Document the review process that determined that the assessment is free of racial and ethnic bias, stereotypes, poorly written or ungrammatical test questions, unfair task situations, and other forms of bias.

Reporting Results Documentation of Candidate Effect on Student Learning.

NCTM Standard 5c Collect, organize, analyze, and reflect on diagnostic, formative, and summative assessment evidence and determine the extent to which students' mathematical knowledge, skills, understandings, and performance have increased as a result of their instruction

Focusing question. How will you organize, describe and present your Teacher Work Sample data to demonstrate the degree to which your instruction resulted in improved student learning?

The purpose of the culminating data display is to document the growth that occurred in student learning as a result of your instruction. It might be helpful to remember your audience as you plan and develop this section. Initially, your audience is your student-teaching supervisor who will use the information you present here to assign a final grade to your Teacher Work Sample. Ultimately, however, your audience might well be a principal to whom you present this work as part of your application for a teaching position. One of the things the principal wants to know about you and all prospective candidates is whether or not you have the ability to produce expected student learning outcomes in the students entrusted to you. The work you do here might well be your best opportunity to separate yourself from other applicants and demonstrate you are the best-of-the-best, prepared for the teaching position you really want. Proceed accordingly.

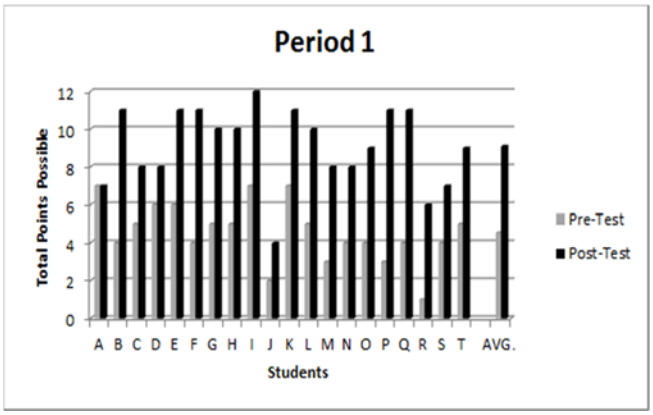
Minimum expectations for this section: data must be included in a table or graph for each student's pre- and post-test results. Pre- and post-test results may be reported in separate data tables, but your ultimate goal is to document the extent to which student learning improved as a result of your instruction, so your task is to present the results thoroughly, yet as clearly and concisely as possible. Required elements include:

a. Pre/post test instrument(s);
b. Data table(s) comparing pre-test scores and post-test scores for individual students;
c. Summary statistical tables and/or charts showing:
   (1) Initial percent of mastery for individual students on the pre-test;
   (2) Final percent of mastery for individual students on the post-test;
   (3) Average degree of improvement for all students from pre-test to post-test;
   (4) Number and percentage of students whose learning increased, stayed the same, or decreased.

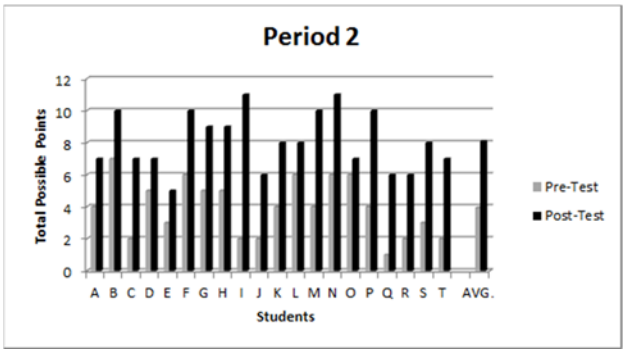
NOTE: The following two pages show you how to set up your tables in Microsoft Excel in order to produce the charts necessary for your data display.

Period 1		
Students	Pre-Test	Post-Test
A	7	7
B	4	11
C	5	8
D	6	8
E	6	11
F	4	11
G	5	10
H	5	10
I	7	12
J	2	4
K	7	11
L	5	10
M	3	8
N	4	8
O	4	9
P	3	11
Q	4	11
R	1	6
S	4	7
T	5	9
AVG.	4.5	9.1

This page shows how to construct display charts in Microsoft Excel from your pre- and post-test data.

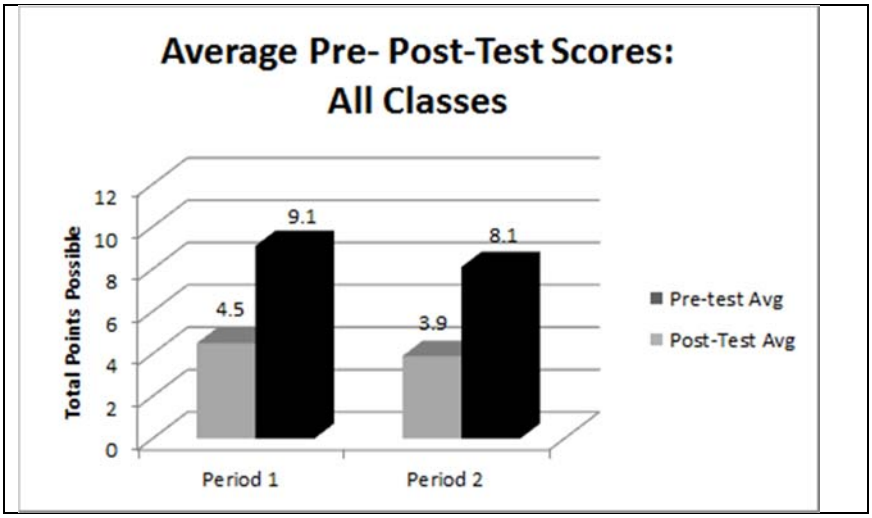


Period 2		
Students	Pre-Test	Post-Test
A	4	7
B	7	10
C	2	7
D	5	7
E	3	5
F	6	10
G	5	9
H	5	9
I	2	11
J	2	6
K	4	8
L	6	8
M	4	10
N	6	11
O	6	7
P	4	10
Q	1	6
R	2	6
S	3	8
T	2	7
AVG.	3.9	8.1

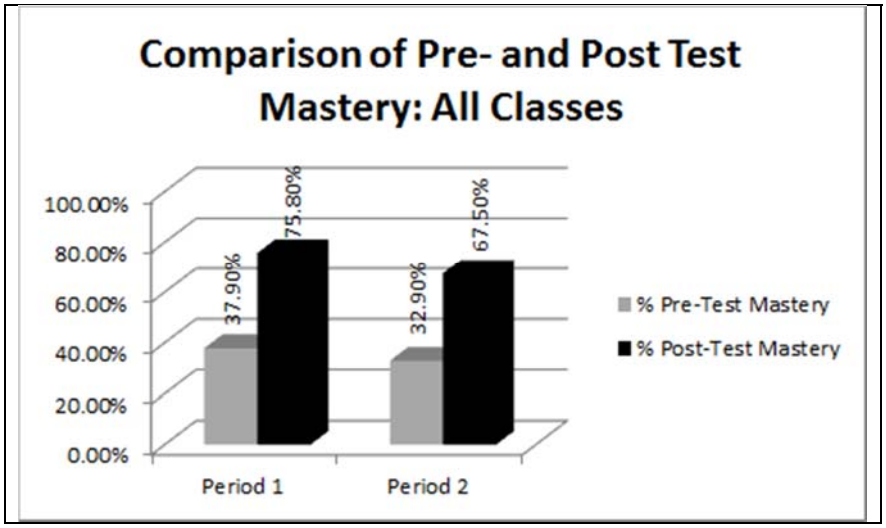


This page shows you how to construct simple data tables to (a) create a chart comparing class averages for pre- and post-tests, and (b) create a chart showing the percent of class mastery for both pre- and post-tests for both classes.

	Period 1	Period 2
Pre-test Avg	4.5	3.9
Post-Test Avg	9.1	8.1



	Period 1	Period 2
% Pre-Test Mastery	37.90%	32.90%
% Post-Test Mastery	75.80%	67.50%



Revised June 21, 2012
2012 NCTM Standards

Mathematics Education Teacher Work Sample Design and Assessment Rubric

Instructional Plan

	Needs Improvement 1	Emerging Competence 2	Competent 3	Outstanding 4
Student Characteristics	Student characteristics are not included in the instructional plan and/or the characteristics are not well considered or written.	Student characteristics are included in the instructional plan, but the correlation with unit standards, goals, and learning activities could be stronger.	All student characteristics relevant to the planned unit of instruction are included. Student characteristics are considered in terms of unit standards, goals, and learning activities.	The student characteristics section is thorough and complete; consideration of students' special learning needs is highly correlated with the standards, goals, and learning activities of the instructional unit.
Unit Plan	The unit plan is poorly developed and does not address the expectations and requirements of the Unit Plan Design and Assessment Rubric.	The unit plan needs additional work to meet the expectations and requirements of the Unit Plan Design and Assessment Rubric.	The unit plan meets the expectations of the Unit Plan Design and Assessment Rubric.	The unit plan exceeds the expectations of the Unit Plan Design and Assessment Rubric.
Lesson Plans	The lessons plans are poorly developed; Teacher Work Sample expectations are not included or are poorly developed.	Lesson plans meet minimal expectations of the Lesson Plan Development and Design Rubric and/or the additional TWS expectations are addressed but are under developed.	The lesson plans in the TWS instructional sequence meet the expectations of the Lesson Plan Development and Design Rubric, and include all required elements for the Teacher Work Sample.	The TWS lesson plans exceed the expectations of the Lesson Plan Development and Design Rubric; the additional TWS elements are thoughtfully and carefully designed to high standards of quality.
Reflection and Self-Evaluation	The reflection and self-evaluation section is not included or is poorly developed.	The reflection and self-evaluation section is included, but not all self-answer questions are addressed and/or the analysis could be developed in more depth.	The reflection and self-evaluation section is well developed; all LP self-answer questions are addressed in the response.	The reflection and self-evaluation section is exemplary for the depth of thought and the level of analysis of the instructional and assessment issues involved in the TWS process.

Assessment Plan

	Needs Improvement 1	Emerging Competence 2	Competent 3	Outstanding 4
Pre-test Post-test	The pre-test and post-test assessments are haphazardly developed; little thought has been given to alignment with lesson objectives; assessments are not appropriate for the knowledge and/or skills being assessed.	Pre- and post-test assessments are included in the assessment plan; the alignment between assessments and lesson objectives is weak and/or the assessments may not be appropriate for the knowledge and/or skills being assessed.	The pre-test post-test assessments are well developed, are aligned with lesson objectives, and are appropriate for the knowledge and/or skills being assessed.	The pre- and post-tests are skillfully developed and are highly correlated with lesson objectives. The alignment between assessments and lesson objectives is strong and clear.
Formative Assessment	Formative assessments are not included in the LP and/or are not well developed; little correlation exists between assessments and lesson objectives.	Formative assessments are included in the lesson, but there are too few for the breadth or depth of the knowledge and/or skills being taught; the correlation between assessments and lesson objectives could be stronger.	Formative assessments are well developed; essential questions are written out in the LP; a variety of assessments are included, each related to the instructional objectives.	Formative assessments are skillfully developed and planned. A wide variety of assessments are included, with consideration given for students of varying abilities and circumstances. All assessments are highly correlated with instructional objectives.

Assessment Plan, con't.

	Needs Improvement 1	Emerging Competence 2	Competent 3	Outstanding 4
Quality Control	Some quality control elements are missing and/or some elements are poorly or incompletely addressed.	Each quality control element is addressed in the assessment plan. Some elements are underdeveloped; additional thought and reflection is necessary to ensure high-quality assessments.	Each quality control element—fairness, accuracy, consistency, and freedom from bias—is included in the assessment plan. Thoughtful consideration is given to the quality and appropriateness of each assessment.	Each quality control element is addressed in depth; it is evident that considerable thought and effort has gone into ensuring that the assessments are fair, accurate, consistent, and free from bias and are of high quality.
Documentation of Candidate Effect on Student Learning	The candidate demonstrates limited ability to use data to improve student learning. Data tables comparing post-test to pre-test learning results indicate 1. < 25% of students' scores improved from pretest to posttest; ***OR*** 2. average improvement for all students was less than 10% ***or*** final class mastery < 50% on posttest.	The candidate demonstrates potential ability to improve student learning. Data tables comparing post-test to pre-test learning results indicate 1. 25-49% of students' scores improved from pretest to posttest; ***AND*** 2. average improvement for all students exceeded 10%, ***or*** final class mastery exceeded 50% on posttest.	The candidate demonstrates the ability to improve student learning. Data tables comparing post-test to pre-test learning results indicate 1. 50-74% of students' scores improved from pretest to posttest; ***AND*** 2. average improvement for all students exceeded 15% ***or*** final class mastery exceeded 75% on posttest.	The candidate demonstrates significant ability to improve student learning. Data tables comparing post-test to pre-test learning results indicate 1. 75-100% of students' scores improved from pretest to posttest; ***AND*** 2. average improvement for all students exceeded 20% ***or*** final class mastery exceeded 85% on posttest.
Reporting Results	Significant elements are missing in this section. Data tables and descriptions are not clear; students' pre-test and post-test scores are not paired or are not displayed appropriately. Group summary statistics are missing.	Most elements are included, Data tables and descriptions are confusing and/or not consistently clear; group summary statistics are included in the final report.	All required elements in this section are included. Data tables and descriptions are clear and appropriate; students' pre-test and post-test scores are paired; group summary statistics are appropriate and well-displayed.	All required elements are included; additional elements document an extended analysis of student-learning data. Group summary statistics include results of analyses to determine significance of paired pre- and post-test data.

NCTM STANDARDS

	Needs Improvement	Emerging Competence	Competent	Outstanding
Formative and summative assessments NCTM 3f	The candidate does not plan, select, and implement formative and summative assessments.	The candidate plans formative and summative assessments, but his or her implementation does not consistently reflect essential mathematical knowledge, skills, understanding, and performances.	The candidate plans and implements formative and summative assessments reflecting essential mathematical knowledge, skills, understanding, and performances.	The candidate plans and implements formative and summative assessments reflecting essential mathematical knowledge, skills, understanding, and performances, and uses the resulting data to modify instruction to improve learning outcomes for all students.
Students' conceptual understanding NCTM 5a	The candidate's students do not demonstrate conceptual understanding and fluency in mathematical procedures; they do not use logical reasoning to solve problems or have productive dispositions toward mathematics.	The candidate's students have limited understanding and fluency in mathematical procedures; their use of logical reasoning to solve problems is inconsistent; they have productive dispositions toward mathematics, but do not consistently reflect on their work.	The candidate's students demonstrate conceptual understanding and fluency in mathematical procedures; they use logical reasoning to solve problems; they have productive dispositions toward mathematics and reflect on their work; they apply mathematics in a variety of contexts within major mathematical domains.	The candidate's students demonstrate a highly-developed conceptual understanding and fluency in mathematical procedures; they consistently use logical reasoning to solve problems; they have enthusiastic dispositions toward mathematics and regularly reflect on their work; they apply mathematics in a variety of contexts within major mathematical domains.

NCTM STANDARDS, CON'T.

	Needs Improvement	Emerging Competence	Competent	Outstanding
Student engagement in developmentally appropriate activities NCTM 5b	The candidate does not engage students in developmentally appropriate mathematical activities and investigations.	The candidate's mathematical activities and investigations are not consistently developmentally appropriate, or do not require active engagement of all students.	The candidate engages students in developmentally appropriate mathematical activities and investigations that require active engagement and include mathematics-specific technology in building new knowledge.	The candidate regularly and consistently engages students in developmentally appropriate mathematical activities and investigations that require the active engagement of all students and includes mathematics-specific technology in building new knowledge.
Documentation of student learning NCTM 5c	The candidate does not collect summative assessment evidence or determine the extent to which students' mathematical knowledge, skills, understandings, and performance have increased as a result of his or her instruction.	The candidate collects formative, and summative assessment evidence, but does not consistently use the resulting data to determine the extent to which students' mathematical knowledge, skills, understandings, and performance have increased as a result of his or her instruction.	The candidate collects, organizes, analyzes, and reflects on diagnostic, formative, and summative assessment evidence and determines the extent to which students' mathematical knowledge, skills, understandings, and performance have increased as a result of his or her instruction.	The candidate systematically collects, organizes, analyzes, and reflects on diagnostic, formative, and summative assessment evidence and uses the resulting data to modify instructional processes and activities to enable all students to meet expected learning outcomes.

Attachment 4.5d

[redacted]

Mathematics Education Teacher Work Sample Design and Assessment Rubric
Data Table

NOTE: The data reported below represent a two-year summary of student performance on the Teacher Work Sample assessment for the 2012-2013 and 2013-2014 assessment cycles (N=13). See Table A, above, for data for individual cohort years.

Instructional Plan

	Needs Improvement < 65% Mastery	Emerging Competence 65-79% Mastery	Competent 80-94% Mastery	Outstanding 95-100% Mastery
Student Characteristics	N=0	N=1 7.7%	N=5 38.5%	N=7 53.8%
Unit Plan	N=0	N=1 7.7%	N=6 46.2%	N=6 46.2%
Lesson Plans	N=0	N=1 7.7%	N=5 38.5%	N=7 53.8%
Reflection and Self- Evaluation	N=0	N=2 15.4%	N=4 30.8%	N=7 53.8%

Assessment Plan

	Needs Improvement < 65% Mastery	Emerging Competence 65-79% Mastery	Competent 80-94% Mastery	Outstanding 95-100% Mastery
Pre-test Post-test	N=0	N=0	N=6 46.2%	N=7 53.8%
Formative Assessment	N=0	N=1 7.7%	N=7 53.8%	N=5 38.5%
Quality Control	N=0	N=0	N=5 38.5%	N=8 61.5%
Documentation of Candidate Effect on Student Learning	N=0	N=0	N=5 38.5%	N=8 61.5%
Reporting Results	N=0	N=0	N=5 38.5%	N=8 61.5%

NCTM STANDARDS

	Needs Improvement < 65% Mastery	Emerging Competence 65-79% Mastery	Competent 80-94% Mastery	Outstanding 95-100% Mastery
Formative and summative assessments NCTM 3f	*Number and percentage of mathematics education candidates scoring at each competence level for NCTM Standard 3.f (N=13)*			
	N=0	N=0	N=8 61.5%	N=5 38.5%
Students' conceptual understanding NCTM 5a	*Number and percentage of mathematics education candidates scoring at each competence level for NCTM Standard 5.a (N=13)*			
	N=0	N=1 7.7%	N=7 53.8%	N=5 38.5%
Student engagement in developmentally appropriate activities NCTM 5b	*Number and percentage of mathematics education candidates scoring at each competence level for NCTM Standard 5.b (N=13)*			
	N=0	N=1 7.7%	N=7 53.8%	N=5 38.5%
Documentation of student learning NCTM 5c	*Number and percentage of mathematics education candidates scoring at each competence level for NCTM Standard 5.c (N=13)*			
	N=0	N=0	N=5 38.5%	N=8 61.5%