Secondary Mathematics Student (Apprentice) Teaching Rubric and Guide - Candidate Work Sample (CWS) NAUTeach & CMOST-Mathematics

The requirements for your teacher preparation degrees and subsequent teaching certifications are governed by a complex web of multiple organizations including the Council for Accreditation of Educator Preparation (NCATE/CAEP), the National Council of Teachers of Mathematics (NCTM), Interstate Teacher Assessment and Support Consortium (InTASC) and the State of Arizona. You have already completed many of the requirements during your time in our programs and the remaining requirements will be met through your student teaching experience. Some of these requirements are met through observations of your in-class instruction, student teaching portfolio/notebook, weekly reflections, and the below assignment - Candidate Work Sample (CWS) completes one of the last requirements.

Description

Effect on Student Learning: Knowledge and skills are exemplified in the candidate's ability to effect learning with secondary students. This type of assessment usually involves the use of pre and posttest results that match the standards and allows the candidate to reflect on their teaching. Addresses InTASC Standards 1-10.

(https://www.nctm.org/Standards-and-Positions/CAEP-Standards/)

(https://ccsso.org/sites/default/files/2017-11/InTASC Model Core Teaching Standards 2011.pdf)

The requirements are clarified in the CWS rubric, with explanations of what is required to receive a passing score. You need to receive a score of 2 or 3 for *each item on the rubric*. A final score of 1 for any of these categories would prevent you from passing the student teaching course! You may need to work with the CWS faculty evaluator to have the opportunity to revise your paper. Please make sure read through the rubric to gain a general understanding of the requirements for your CWS. Be sure to note what constitutes a passing score and the emphasis on providing *evidence through student work and quantifiable data* as a common requirement.

Directions: The purpose of this Key Assessment is to engage you in the work of teaching. The goal of this assignment is for you to reflect on your planned interactions with students and how these interactions pushed student ideas forward. You will reflect on your effectiveness of responding to student thinking through planning "what, why and how" to teach in a manner that will impact student learning. This assessment provides evidence that you are ready to begin your professional career as an educator. More importantly, this process reflects best practices that help build a habit of mind that you, as an educator, will use to grow professionally throughout your career.

This assessment requires you to focus on what **your students learned** during a unit of instruction provided by you. You will analyze the effect of your planning and teaching on student learning through documentation with student work. You will document your planning, teaching and analysis in a narrative format. This format should be approximately 15-20 pages, single-spaced, 1-inch margins, and 12-point font. You must follow an APA format for citations, style, tables, etc. and address six sections. **Your paper needs to be organized with the bolded sections below.** Within each section, describe or answer specific information as listed in the directions.

- Title Page
- Part 1: Overview/Introduction (~1-page max)
- Part 2: Planning the Unit (~5-7 pages)
 - Planning Table
 - Planning Narrative
- Part 3: Evidence of Student Learning (~6-8 pages)
 - o Instructional Narrative
 - o Objective Analysis
- Part 4: Reflecting and Moving Forward (~3-5 pages)
- Appendices

Title page:

- Title of your unit
- Name
- Date (when CWS was implemented)
- Course Number TSM 495c

Part 1: Overview/Introduction (~1 page max)

This section provides space for an overview and introduction of where you will be teaching your CWS unit. Please provide details explaining:

- Implementation information School name, dates of implementation, topic of CWS, characteristics of the community and school that may affect learning?
- Class characteristics Level of class (i.e. Algebra, Honors Geometry, Biology, A.P. Physics), number of students, and characteristics of classroom that *may affect learning*?
- Class demographics (describe each class separately) Identify student and course differences (do not give student names) in your classes and how that may affect learning (i.e. diversity, special Ed IEPs, ESL students, students in athletic programs, 504s, gifted program students, AP class, remedial class, etc.)
- Instruction and assessment implications List specific implications for instruction and assessment based on the individual students, community, school, and classroom characteristics you are working with? (i.e. How might you need to adjust instruction if you have a diverse population? How might your instruction be adjusted if your school is in a rural vs. urban setting. What do you need to be aware of when planning your unit?)

Part 2: Planning the Unit: (~5-7 pages)

Provide a table outlining your instructional unit. Identify the topic(s) and main activity(ies) for each instructional day of your CWS. Indicate the alignment between the standards and practices, objectives, assessments (pre/post tests and formative), and instructional activities. This is not to be written at the detailed level of lesson plans; rather it is a brief overview of your instructional unit. This helps to get some big picture ideas for your unit and make sure you are addressing *all* of the required content. (Below is an example table)

- <u>Day</u> this indicates the instructional day #(s) of your CWS
- State Standard write out the full content standard and math practice for each instructional day(s)
- <u>Topic & Objective</u> list the instructional day(s) topic and then in a different line list the objective in the SWBAT form you may have the same objective for multiple instructional days.
 - Objectives (SWBAT): In collaboration with your cooperating teacher and university supervisor identify 3-5
 objectives for the topic(s) that you are teaching. Be sure to:
 - Align with Arizona State Mathematics Content and Practice Standards
 - All eight Mathematical Practice Standards must be addressed in your unit.
 - Include a measurable skill or task that students should be able to complete as a result of instruction
- <u>Assessments</u> label the pre and post questions per instructional day and how that day's content will be formatively assessed.
 - Indicate the conditions under which students will complete the objective formatively and summative
 - summative: a performance assessment, traditional exam question #'s
 - formative: exit tickets, quizzes, KWL charts, graphic organizers, writing probe, etc.
 - Pre-assessment needs to be given before teaching your unit. This will give you time to modify instructional plans based on pre-assessment results.
 - Post-assessment needs to closely align the pre-assessment allowing a comparison of "apples to apples", and measures student learning for <u>each</u> objective. *Remember* in order to provide evidence of student learning, you should collect quantifiable data during the entire unit. This will be used to justify the descriptive or qualitative data.

In the appendix, include a copy of the pre and post assessments and formative assessments used to measure student learning for each objective.

- <u>Instructional Activity(ies)</u> provide a brief title or description of the instructional activity for each objective. Make sure to identify when technology will be used to enhance student learning. The instructional activities should include the task (or what students will *do* during the class period) and any homework assigned.
- <u>Alignment to rubric</u> For this section, look at the rubric part 3. Identify in your planning table where you will collect data to address each row and sub-rows.

NOTE: <u>Planning Table with Narrative</u> must be approved by your TSM 496 instructor before you give the pre-assessment of your unit.

Sample Planning Table

Day	State Standards Arizona Content & Mathematical Practice Standards (MP)	Topic & Objective(s)	Assessments (summative & formative)	Instructional Activity(ies)	Alignment to rubric Part 3 rows 1a & b, 2 a-d, and 3 a-c
1	7.RP.2: Recognize and represent proportional relationships between quantities. b.) Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. 7.MP.1: Make sense of problems and persevere in problem solving	Introduction of proportions through discussion SWBAT describe and analyze proportionality.	Pre-Test: #1 Post-Test: #3 Formative Assessment: Exit Slip Question asking students to compute a constant of proportionality.	Music Company Task Book problems: p. 123 – 8, 11, 12, 14, 16	The candidate facilitates student 1a) communication about mathematics The candidate will allow time for students to 2d) implement techniques to identify mathematical ideas The candidate is able to successfully 2d) implement techniques to employ a range of questioning strategies
2	abstractly and quantitatively 7.RP.2: Recognize and represent proportional relationships between quantities. b.) Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. 7.MP.2: Reason abstractly and quantitatively	Find Identify the constant of proportionality SWBAT compute the constant of proportionality using a table.	Pre-Test: #2 Post-Test: #5 Formative Assessment: I use to think, but now I know slip	Music Company Task Part 2 (Tables, Graphs, & Equations) Book problems: p. 123 – 18, 21, 24, 37	The candidate is able to successfully 2d) implement techniques to employ a range of questioning strategies The candidate is able to successfully 3a) monitor students' progress and make instructional decisions The candidate is able to successfully 3a) measure students math understanding by using formative assessments
3 & 4	7.RP.3: Use proportional relationships to solve multi-step ratio and percent problems. 7.MP.1: Make sense of problems and persevere in problem solving 7.MP.4: Model with mathematics	Use proportional relationships to solve single and multi-step ratio problems SWBAT use ratios to solve single and multi-step ratio problems.	Pre-Test: #6-8 Post-Test: #12-14 Formative Assessment: Informal – questioning during class Formal – Quiz A #1, 2	Technology – Desmos Discovery Task	The candidate allows time for students to 1b) make connections among mathematics, other content areas

	7.RP.3: Use proportional	Use proportional relationships to solve	Pre-Test: #10	Problem Solving Round Robin	The candidate engages students in 2b)
	relationships to solve	percent problems	Post-Test: #15, 16		identifying key
	multi-step ratio and				mathematical ideas
	percent problems.	SWBAT use	Formative Assessment:	Book problems: p. 127	
-		proportional	Informal – closed eye 1,	- 3, 5, 6, 11, 15, 18	The candidate is able to
5	7.MP.1: Make sense of	relationships to solve	2, 3, scale		successfully 3a)
	problems and persevere	multi-step ratio and			monitor students'
	in problem solving	percent problems			progress and make
					instructional decisions
	7.MP.4: Model with				
	mathematics				

Below the table, write a short narrative describing the overall unit and the learning experiences your students will encounter. Topics to include:

- Explain cognitive levels of tasks
- Describe how students will experience conceptual understanding and procedural proficiencies throughout the unit –
 how many days of the unit are dedicated to conceptual understanding or procedural proficiencies
- How is technology enhancing students' conceptual understanding?
- How will you meet the needs of *all* students during each day of the unit and overall?
- Explain the sequential learning opportunity for students. Where do they connect new learning to prior knowledge and experiences?
- Explain why the unit is developmentally appropriate yet creates challenging learning opportunities for students who are actively engaged in building new knowledge.

Part 3: Evidence of Student Learning (~6-8 pages)

This part has two sections: instructional narrative and objective analysis --- though these two parts are directly related to each other we are separating the information for the NCTM standards and teaching licensure.

Section 1: Instructional Narrative

Organize your paper with a section/paragraph corresponding to <u>each of the required rows in section 3 of the rubric</u>. Each subsection is written as a narrative description of your instruction in the classroom related to that particular sub-rows. It needs to include 1) how you taught/met that rubric sub-row(s) through your instruction, 2) how/when mathematical practices were addressed as related to the sub-row, and 4) reference evidence that supports your statement of student learning through given instructional method. (Evidence = student work samples or personal journal placed in the appendices). Title each of these sections/paragraphs in bold followed by your narrative. Your evaluator will look in your narrative for evidence to evaluate if your instructional decisions are pedagogically sound.

Example (Part 3, Row 1a):

The candidate is able to provide students with opportunities to communicate about mathematics.

The students communicated about mathematics during their music company task that asked them to identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams. Students were asked to verbally describe the proportional relationships represented by each guitar stores profit over each year in business (what/how you taught). After assigning a pre-assessment, I began this unit with a music task where students had to draw conclusions from different music companies profit chart. Each chart was presented in a different form – including two tables, one graph, two equations, and one diagram. Prior to receiving instruction on the formula for finding unit rate, the students compared the different companies to determined what they felt was the most profitable and why. Students were asked to individually and in groups talk and write about the different visual representations. (evidence of student learning through communication about mathematics; Appendix B) Next, students put the different companies in what they predicted to be the least to most profitable company on the front board. They debated their reasoning as a class before turning in a final sheet that was to be graded.... During this time, students were asked to reason abstractly and quantitatively (mathematical practice – reason abstractly & quantitatively). Finally, I have included pictures of posters that students made (Appendix B) demonstrating their understanding by successfully visualizing proportionality (evidence of student learning through communication about mathematics).

Section 2: Objective Analysis

Analyze the results of your pre/posttests **by whole class and learning objective** and discuss the students' growth. Calculate the percent of overall improvement by the class and objective and provide a pre/posttest analysis using graphs that demonstrate quantifiable growth <u>according to objective</u>.

To do this:

- <u>Whole class</u>: Use the spreadsheet to create a double-bar graph that show's every student's percentage. Copy and paste the graph into this section of the CWS. Under the graph, explain the gains made by the whole class as well as specific students who made exceptional growth and/or below average growth.
- <u>Each objective</u>: Include pre/post assessment pie charts for **each** objective that show the percentage of students who demonstrated 70% or better. Clearly label the objective, then copy and paste the pie charts into this section of the CWS. Under **each** pie chart, explain why/why not the students achieved 70% or better on the objective. During the short paragraph, discuss individual student growth as related to the 70% or above scores (i.e., student earned 65% on post assessment but grew 50%) and reference the overview/introduction of the class to describe how the student demographics affected student learning outcomes.

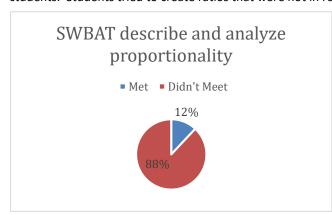
Under each chart summarize your instruction in the classroom related to that objective. It needs to include 1) how you taught/met that objective through your instruction, 2) what students learned, 3) how/when mathematical practices were addressed and 4) reference to the corresponding evidence that supports your statement of student learning. (Evidence = student work samples placed in the appendices). Title each objective analysis in bold followed by your narrative. Your evaluator will look in your narrative for evidence to evaluate if your instructional decisions are pedagogically sound.

While brainstorming for this narrative think about the following questions to help guide your writing:

- Explain any modifications you made to your lessons and/or unit.
- How did you provide students the opportunities to communicate and make connections about mathematics?
- Based on your pre-assessment results, how did you modify your instructional unit or daily lesson?
- What modifications of the instructional plan were made to address individual student needs and improve entire class progress?
- How effective were your formative assessments in directing your daily instruction?
 - o Did you collect appropriate student data to make effective instructional decisions?
- How did you identify misconceptions?
- In what ways were student's misconceptions addressed and how did you modify your instruction to provide students opportunities to master the objectives?
- Explain how you used questioning and discussions to enhance student learning.

Example – SWBAT describe and analyze proportionality:

SWBAT describe and analyze proportionality: The students recognized and represented proportional relationships between quantities while forming different relationships from the different music companies. This was taught through group work where students were given question prompts and open-ended directions on how to analyze each stores representation (what/how you taught). Many different misconceptions arose during conversations among the students. Students tried to create ratios that were not in relationship with each other, relate different companies in



the same ratio, and solve in a manner that represented adding/subtracting fractions (*mathematical practice: make sense and persevere...*). During this task, students worked through their misconceptions and were able to appropriately represent the constant of proportionality (exit slip included in Appendix A) (*evidence of student learning*). The overall average growth was 40% on the pre-test to an 95% on the post-test, demonstrating 55% improvement based upon the classroom instruction. Question 3 (included in the graph to the side) demonstrates an 88% of the students were able to achieve 70% or better on the posttest.

The 12% (or 4 students) not achieving 70% is attributed to several points. One student was absent 8 of the 13 days of instruction. Though I tried to get them into the classroom during lunch, I was never able fully devote the time needed to catch the student up. Two of the students really persevered in working towards understanding the content. One of the students went from a 5% of the pretest to a 72% on the posttest; however, still missing this question on the test. The other student had a similar experience going from a 11% to a 68%. The last student made a mathematical error causing them to miss the problem.

Part 4: Reflecting and Moving Forward: (~3-5 pages)

This section is for further analyzing and reflecting upon the unit you taught. *Be sure to also provide* an insightful reflection on how you have effectively demonstrated (or not) **professional responsibilities** such as interacting effectively with colleagues, parents and students, the completion of professional duties and the application of ethics of the profession in order to improve your daily professional practice. What specific professional development needs do you plan on addressing early in your teaching career and why?

Write a narrative that addresses the above paragraph and some of the following questions:

- Did all of your students learn?
- How well did your special populations do?
- Which learning activities were effective or not effective and why?
- What changes could you make to your unit or your practice that could improve results of student learning?
- What is the connection between successful student learning and the alignment of standards, learning objectives, assessment and instruction?
- Should other data to be considered?
- Should achievement be determined by mastery of objectives alone?
- How well did the formative assessments characterize your student learning DURING implementation of the unit?
- What changes would you make to improve the formative assessment of your unit?
- How well did the summative assessment characterize student learning as a result of the unit instruction?
- What changes would you make to your unit or your instructional practice that would improve results of student learning?
- Identify areas of your professional development that you still need to learn more about or need more practice (classroom management, time management, giving good directions, questioning strategies, etc.).

Appendices: Organize the Appendices, providing evidence to support your analysis.

- Appendix A: A full copy of the pre and post-assessments, indicating the objective(s) addressed by each question.
- Appendix B: Other referenced evidence such as student work samples (do not reveal the identification of any specific student), examples of formative assessments or exemplary lesson plans.
- Appendix C: Other supporting documentation such as handouts, photos, etc.

The above are the absolute minimum requirements to successfully pass your CWS. We have found there are a number of things you can do that will be helpful towards your success, primarily thoughtful and thorough planning.

Secondary Mathematics Student (Apprentice) Teaching: Rubric and Guide - Candidate Work Sample (CWS)

Item		Descriptors: NCTM & InTASC	Emerging 1	Basic 2	Professional 3
Part 1: Overview of the School and Classroom Implications for Instruction		Overview & Introduction The Teacher Candidate uses information about the learning-teaching context and student individual differences to plan instruction and establish a learning environment.	The Teacher Candidate demonstrates limited or incomplete evidence of understanding how school community, classroom, and individual characteristics of students influence instructional decisions and/or the learning environment.	The Teacher Candidate clearly articulates information about the school community, classroom, and individual characteristics of the students, and how this information was used to plan instruction and create a learning environment.	The Teacher Candidate clearly articulates information about the school community, classroom, and-individual characteristics of the students, and how this information was used to plan instruction and create a learning environment. Selected instructional strategies demonstrate high-level understanding of how to address classroom contextual factors to create a supportive learning environment.
		Plan lessons and units that incorporate a variety of strategies, differentiated instruction for diverse populations that use content specific and instructional technologies in building all students' conceptual understanding and procedural proficiency. (NCTM 3c) (INTASC 1, 3, 7)	Plans unit that incorporates limited instructional strategies addressing student's differences and diverse populations. Does not implement content specific instructional technologies.	Plans unit to incorporate 3 different instructional strategies addressing student's differences and diverse populations. Implements 1 content specific instructional technology.	Plans unit to incorporate 4 or more different instructional strategies addressing student's differences and diverse populations. Implements 2 or more different content specific instructional technologies.
Part 2: Planning	Table	Plan and create developmentally appropriate, sequential, and challenging learning opportunities grounded in education research where students are actively engaged in building new knowledge from prior knowledge and experiences. (NCTM 4b) (INTASC 2, 7, 8)	Does not incorporate a sequence of developmentally appropriate learning opportunities based on Arizona content and practice standards which students are actively engaged in building new knowledge. Minimal alignment of instruction to the learning goals/ objectives with the Arizona content and practice standards	Incorporates a sequence of developmentally appropriate and challenging learning opportunities based on Arizona content and practice standards which students are actively engaged in building new knowledge. Aligns instruction to the learning goals/objectives of the Arizona content and practice standards	Incorporates a sequence of developmentally appropriate and challenging learning opportunities based on Arizona content and practice standards which students are actively engaged in building new knowledge. Aligns instruction to the learning goals/objectives of the Arizona content and practice standards. Creates a developmentally appropriate and challenging sequence of instruction for all students that show a progression of learning over time toward proficiency and understanding.

		Plan lessons and units	Describe how unit provides 1	Describe how unit provides	Describe how unit provides
		that incorporate a	or 2 opportunities and	multiple opportunities and	multiple opportunities and
		variety of strategies,	solution avenues for students'	solution avenues for students'	solution avenues for students'
		differentiated	inquiry, exploration, and	inquiry, exploration, and	inquiry, exploration, and
		instruction for diverse	conceptual understanding of	conceptual understanding of	conceptual understanding of
		populations that use	content.	content.	content.
		content specific and			Describes how technology
		instructional			enhances learning.
		technologies in			0
		building all students'			
		conceptual			
		understanding and			
		procedural proficiency.			
		(NCTM 3c)			
Part 2:		(InTASC 1, 3, 7)			
Planning	a	Plan and create	Does not describe how	Describes how sequential	Clearly and thoroughly
Fiaililling	Narrative	developmentally	sequential learning	learning opportunities will be	describes how sequential
	rra	appropriate,	opportunities will be	provided to connect students	learning opportunities will be
	Na	sequential, and	provided to connect students	new learning to prior	provided to connect students
				knowledge and experiences.	
		challenging learning	new learning to prior	knowledge and experiences.	new learning to prior
		opportunities	knowledge and experiences.		knowledge and experiences.
		grounded in education			
		research where			
		students are actively			
		engaged in building			
		new knowledge from			
		prior knowledge and			
		experiences.			
		(NCTM 4b)			
		(InTASC 2, 7, 8)			
				Row 1 ↓	
		1a)	Design and implement	Design and implement	Design and implement activities
		Provide students with	activities and investigations	activities and investigations	and investigations that:
		Provide students with opportunities to	activities and investigations that:	activities and investigations that:	and investigations that: require (individual, written and
		Provide students with opportunities to communicate about	activities and investigations that: require one form of	activities and investigations that: require one form of	and investigations that: require (individual, written and verbal) communication about
		Provide students with opportunities to communicate about mathematics and	activities and investigations that: require one form of communication about	activities and investigations that: require one form of communication about	and investigations that: require (individual, written and verbal) communication about mathematics that meets the
		Provide students with opportunities to communicate about mathematics and 1b)	activities and investigations that: require one form of communication about mathematics that meets the	activities and investigations that: require one form of communication about mathematics that meets the	and investigations that: require (individual, written and verbal) communication about mathematics that meets the needs of all students; make
		Provide students with opportunities to communicate about mathematics and 1b) make connections	activities and investigations that: require one form of communication about	activities and investigations that: require one form of communication about	and investigations that: require (individual, written and verbal) communication about mathematics that meets the
		Provide students with opportunities to communicate about mathematics and 1b)	activities and investigations that: require one form of communication about mathematics that meets the	activities and investigations that: require one form of communication about mathematics that meets the	and investigations that: require (individual, written and verbal) communication about mathematics that meets the needs of all students; make cross-curricular and real-world connections;
		Provide students with opportunities to communicate about mathematics and 1b) make connections	activities and investigations that: require one form of communication about mathematics that meets the needs of students and makes	activities and investigations that: require one form of communication about mathematics that meets the needs of students; make	and investigations that: require (individual, written and verbal) communication about mathematics that meets the needs of all students; make cross-curricular and real-world
		Provide students with opportunities to communicate about mathematics and 1b) make connections among mathematics,	activities and investigations that: require one form of communication about mathematics that meets the needs of students and makes cross-curricular or real-world	activities and investigations that: require one form of communication about mathematics that meets the needs of students; make cross-curricular or real-world	and investigations that: require (individual, written and verbal) communication about mathematics that meets the needs of all students; make cross-curricular and real-world connections;
		Provide students with opportunities to communicate about mathematics and 1b) make connections among mathematics, other content areas,	activities and investigations that: require one form of communication about mathematics that meets the needs of students and makes cross-curricular or real-world	activities and investigations that: require one form of communication about mathematics that meets the needs of students; make cross-curricular or real-world connections;	and investigations that: require (individual, written and verbal) communication about mathematics that meets the needs of all students; make cross-curricular and real-world connections; and reflects the alignment of
		Provide students with opportunities to communicate about mathematics and 1b) make connections among mathematics, other content areas, everyday life, and the	activities and investigations that: require one form of communication about mathematics that meets the needs of students and makes cross-curricular or real-world	activities and investigations that: require one form of communication about mathematics that meets the needs of students; make cross-curricular or real-world connections; and reflects the alignment of	and investigations that: require (individual, written and verbal) communication about mathematics that meets the needs of all students; make cross-curricular and real-world connections; and reflects the alignment of instruction relating to the
		Provide students with opportunities to communicate about mathematics and 1b) make connections among mathematics, other content areas, everyday life, and the workplace.	activities and investigations that: require one form of communication about mathematics that meets the needs of students and makes cross-curricular or real-world	activities and investigations that: require one form of communication about mathematics that meets the needs of students; make cross-curricular or real-world connections; and reflects the alignment of instruction relating to the	and investigations that: require (individual, written and verbal) communication about mathematics that meets the needs of all students; make cross-curricular and real-world connections; and reflects the alignment of instruction relating to the learning goals/objectives and
Part 3:		Provide students with opportunities to communicate about mathematics and 1b) make connections among mathematics, other content areas, everyday life, and the workplace. (NCTM 3d)	activities and investigations that: require one form of communication about mathematics that meets the needs of students and makes cross-curricular or real-world	activities and investigations that: require one form of communication about mathematics that meets the needs of students; make cross-curricular or real-world connections; and reflects the alignment of instruction relating to the learning goals/objectives and	and investigations that: require (individual, written and verbal) communication about mathematics that meets the needs of all students; make cross-curricular and real-world connections; and reflects the alignment of instruction relating to the learning goals/objectives and
	ive	Provide students with opportunities to communicate about mathematics and 1b) make connections among mathematics, other content areas, everyday life, and the workplace. (NCTM 3d)	activities and investigations that: require one form of communication about mathematics that meets the needs of students and makes cross-curricular or real-world	activities and investigations that: require one form of communication about mathematics that meets the needs of students; make cross-curricular or real-world connections; and reflects the alignment of instruction relating to the learning goals/objectives and	and investigations that: require (individual, written and verbal) communication about mathematics that meets the needs of all students; make cross-curricular and real-world connections; and reflects the alignment of instruction relating to the learning goals/objectives and
Part 3: Evidence of Student	rrative	Provide students with opportunities to communicate about mathematics and 1b) make connections among mathematics, other content areas, everyday life, and the workplace. (NCTM 3d)	activities and investigations that: require one form of communication about mathematics that meets the needs of students and makes cross-curricular or real-world	activities and investigations that: require one form of communication about mathematics that meets the needs of students; make cross-curricular or real-world connections; and reflects the alignment of instruction relating to the learning goals/objectives and	and investigations that: require (individual, written and verbal) communication about mathematics that meets the needs of all students; make cross-curricular and real-world connections; and reflects the alignment of instruction relating to the learning goals/objectives and
Evidence of	Narrative	Provide students with opportunities to communicate about mathematics and 1b) make connections among mathematics, other content areas, everyday life, and the workplace. (NCTM 3d)	activities and investigations that: require one form of communication about mathematics that meets the needs of students and makes cross-curricular or real-world	activities and investigations that: require one form of communication about mathematics that meets the needs of students; make cross-curricular or real-world connections; and reflects the alignment of instruction relating to the learning goals/objectives and the Mathematical Practices.	and investigations that: require (individual, written and verbal) communication about mathematics that meets the needs of all students; make cross-curricular and real-world connections; and reflects the alignment of instruction relating to the learning goals/objectives and
Evidence of Student	nal Narrative	Provide students with opportunities to communicate about mathematics and 1b) make connections among mathematics, other content areas, everyday life, and the workplace. (NCTM 3d) (InTASC 5, 8)	activities and investigations that: require one form of communication about mathematics that meets the needs of students and makes cross-curricular or real-world connections;	activities and investigations that: require one form of communication about mathematics that meets the needs of students; make cross-curricular or real-world connections; and reflects the alignment of instruction relating to the learning goals/objectives and the Mathematical Practices.	and investigations that: require (individual, written and verbal) communication about mathematics that meets the needs of all students; make cross-curricular and real-world connections; and reflects the alignment of instruction relating to the learning goals/objectives and the Mathematical Practices.
Evidence of Student	tional Narrative	Provide students with opportunities to communicate about mathematics and 1b) make connections among mathematics, other content areas, everyday life, and the workplace. (NCTM 3d) (InTASC 5, 8)	activities and investigations that: require one form of communication about mathematics that meets the needs of students and makes cross-curricular or real-world connections; Discusses different	activities and investigations that: require one form of communication about mathematics that meets the needs of students; make cross-curricular or real-world connections; and reflects the alignment of instruction relating to the learning goals/objectives and the Mathematical Practices. Row 2 Discusses different	and investigations that: require (individual, written and verbal) communication about mathematics that meets the needs of all students; make cross-curricular and real-world connections; and reflects the alignment of instruction relating to the learning goals/objectives and the Mathematical Practices. Discusses different techniques
Evidence of Student	uctional Narrative	Provide students with opportunities to communicate about mathematics and 1b) make connections among mathematics, other content areas, everyday life, and the workplace. (NCTM 3d) (InTASC 5, 8)	activities and investigations that: require one form of communication about mathematics that meets the needs of students and makes cross-curricular or real-world connections; Discusses different techniques, questioning	activities and investigations that: require one form of communication about mathematics that meets the needs of students; make cross-curricular or real-world connections; and reflects the alignment of instruction relating to the learning goals/objectives and the Mathematical Practices. Row 2 Discusses different techniques used to actively	and investigations that: require (individual, written and verbal) communication about mathematics that meets the needs of all students; make cross-curricular and real-world connections; and reflects the alignment of instruction relating to the learning goals/objectives and the Mathematical Practices. Discusses different techniques used to actively engage
Evidence of Student	istructional Narrative	Provide students with opportunities to communicate about mathematics and 1b) make connections among mathematics, other content areas, everyday life, and the workplace. (NCTM 3d) (InTASC 5, 8)	activities and investigations that: require one form of communication about mathematics that meets the needs of students and makes cross-curricular or real-world connections; Discusses different techniques, questioning strategies, and	activities and investigations that: require one form of communication about mathematics that meets the needs of students; make cross-curricular or real-world connections; and reflects the alignment of instruction relating to the learning goals/objectives and the Mathematical Practices. Row 2 Discusses different techniques used to actively engage students in learning	and investigations that: require (individual, written and verbal) communication about mathematics that meets the needs of all students; make cross-curricular and real-world connections; and reflects the alignment of instruction relating to the learning goals/objectives and the Mathematical Practices. Discusses different techniques used to actively engage students in learning and doing
Evidence of Student	Instructional Narrative	Provide students with opportunities to communicate about mathematics and 1b) make connections among mathematics, other content areas, everyday life, and the workplace. (NCTM 3d) (InTASC 5, 8) Implement techniques 2a) related to student engagement and	activities and investigations that: require one form of communication about mathematics that meets the needs of students and makes cross-curricular or real-world connections; Discusses different techniques, questioning strategies, and misconceptions were used to	activities and investigations that: require one form of communication about mathematics that meets the needs of students; make cross-curricular or real-world connections; and reflects the alignment of instruction relating to the learning goals/objectives and the Mathematical Practices. Row 2 Discusses different techniques used to actively engage students in learning mathematics.	and investigations that: require (individual, written and verbal) communication about mathematics that meets the needs of all students; make cross-curricular and real-world connections; and reflects the alignment of instruction relating to the learning goals/objectives and the Mathematical Practices. Discusses different techniques used to actively engage students in learning and doing mathematics.
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		identifying and addressing student misconceptions, and 2d) employing a range of questioning strategies. (NCTM 3e) (INTASC 4, 8)		and addressing student's misconceptions.	misconceptions and uses these ideas as opportunities for learning.
		3a) Monitor students' progress, make instructional decisions, and 3b) measure students' mathematical understanding and ability using formative assessments and 3c) summative assessments. (NCTM 3g) (InTASC 4, 6)	Monitor students' progress and makes instructional decisions toward learning goals using limited formative assessments.	Monitor students' progress and makes instructional decisions toward learning goals using data from 3 different formative assessments. Assessments utilized distinguish between developmental levels of students' mathematical knowledge and skills.	Monitor students' progress and makes instructional decisions toward learning goals using data from 4 or more different formative assessments. Assessments utilized distinguish between developmental levels of students' mathematical knowledge and skills.
	Objective Analysis	Collect, organize, analyze, and reflect on diagnostic (preassessment), formative, and summative assessment evidence and determine the extent to which students' mathematical proficiencies have increased as a result of their instruction. (NCTM 5c) (InTASC 6)	Visually documents individual student understanding. Does not analyze individual student understanding of the unit. Did not discuss how the preassessment, formative, or summative assessment data modified instruction.	Visually documents individual student understanding of the unit through bar graphs or pie charts. Analyzes individual student understanding of the unit. Discuss how the preassessment, formative, or summative assessment data modified instruction to meet group and individual needs or increased student mathematical understanding.	Visually documents individual student and whole class understanding of the unit through bar graphs and pie charts. Analyzes individual student and whole class understanding of the unit. Discuss how the preassessment, formative, and summative assessment data modified instruction to meet group and individual needs and increased student mathematical understanding.
Part 4: Reflecting & Moving Forward		Plan, select, implement, interpret, and use formative and summative assessments to inform instruction by reflecting on mathematical proficiencies essential for all students. (NCTM 3f) (InTASC 6, 9)	Analyzes formative or summative data to guide instructional decisions for future lessons/units. Articulate the results of the assessments posing reasons and implications for future teaching or professional development.	Analyzes formative and summative data to guide instructional decisions for future lessons/units. Articulate the results of the assessments posing reasons and implications for future teaching and professional development.	Evaluates the overall effectiveness of the unit based on post-assessment results. Analyzes formative and summative data to guide instructional decisions for future lessons/units. Articulate the results of the assessments posing reasons and implications for future teaching and professional development.