*Reflection:*

 *This artifact demonstrates my ability to design and conduct a performance assessment to measure small number fluency in a new first grader.*

 *This was the first formal assessment I’ve executed as a pre-service teacher. I needed to use the NYS Math Standards for first grade and figure out how to assess whether or not a first grade student met specific standards. While designing the assessment, I learned the importance of choosing my questions carefully in order to avoid leading students to the right answer. I also now appreciate the insights that can be gained by conducting a performance assessment. By watching the student solve each question, I was able to deviate from my scripted questions when I felt it was necessary to pursue in greater depth a math concept based on the student’s response. This type of assessment provided me with a very clear picture of the small number fluency that this specific first grader possessed at that time.*

**Performance Assessment Assignment**

(Download this file to write the information *using this* format)

**PART 1- Preparation for the Performance Assessment**

**Your name: \_\_\_Mike Cecere\_\_\_\_\_\_\_\_\_ Host Teacher’s name/Grade: \_\_\_Mr. Bell / 1\_\_\_\_\_\_\_\_\_**

**Student’s age: \_\_\_\_\_\_\_6\_\_\_\_\_ F \_\_\_ M \_\_X\_**

1. **What concepts, procedures and/or process do you expect to assess?**

Number recognition

 Counting on

 10-family facts

 Conservation of quantity of 10

1. **What NY State standards relate to your assessment? (include grade level standards, both content and processes that apply)**

 K.N.1 Count the items in a collection and know the last counting word tells how many items are in the

 collection (1 to 10)

 K.N.10 Visually determine how many more or less, and then using the verbal counting sequence, match

 and count 1-10

 1.PS.5 Use informal counting strategies to find solutions

 1.PS.8 Use manipulatives (e.g., tiles, blocks) to model the action in problems

 1.N.18 Use a variety of strategies to compose and decompose one-digit numbers

 1.N.25 Represent addition and subtraction word problems and their solutions as number sentences

 1.N.28 Demonstrate fluency and apply addition and subtraction facts to and including 10

1. **Description of the task or problem** (It should be a task that would allow you to assess the student’s content knowledge, problem solving strategies and the ability explain his/her reasoning)
2. I will show the ten frame to the student and ask if he knows what it is. If not, I will explain what it is and ask the student questions about the ten frame:
* How many cells does it have?
* How many cells on each side?
* How could you count the 10 cells?
1. Once the student is comfortable with the 10 frame, I will give him a spinner with numbers 1 to 10.
2. I will explain to him the task – He will spin the spinner and write the number obtained on a piece of paper. Then he will place that number of beans on the ten frame (1 bean per cell). I will then ask him – How many beans do you need now to fill up the ten frame?
3. I will observe him to see how he tries to find out the solution:
	* 1. Counting empty cells?
		2. Placing the beans and counting them?
		3. Thinking and coming up with the solution?
		4. Counting on with fingers?
		5. Knowing family facts of ten (i.e. 3+7=10)?
4. Once he finds the solution, I will ask him to write the number sentence (i.e. 3+7=10).
5. We will repeat steps c-e a few more times.
6. Then I will pose 2-3 word problems and ask him to solve them.

 You had 3 fish in your tank. Several more fish were added to your tank. You now have 10 fish

 all together. How many fish were added to your tank?

 You brought 3 bak-u-gons to school. While at school, your friend gave you 4 more bak-u-gons.

 How many bak-u-gons do you have all together?

 You had 10 chocolate chip cookies. You gave 7 away. How many chocolate chip cookies do

 you have left?

1. **Materials that you and the student will use** (e.g., tiles, counters, cubes, paper and pencil, chart, ditto, written word problem, spinner, …)

Ten frame

 Beans

 Spinner with numbers 1 to 10, a paper clip, a pencil

 Paper and pencil

1. **What questions do you expect to ask your students throughout the performance assessment time?** (Write a kind of script of the questions you *COULD*  pose, although you will change the questions somehow based on the students’ answer.)
2. How many beans do you need now to fill up the ten frame?
3. How did you figure out your answer (if it wasn’t obvious)?
4. Can you show me using the beans how to solve the word problems (assuming he didn’t use the beans to solve them the first time)?
5. **KEEP all students’ papers**, draft papers, work: computation, drawings, diagrams, even if the student erases the work or wants to through it away. This is good material for you to interpret students’ understanding.

**PART 2 - Performance Assessment Reflection**

1. How did the child respond to the activity or problem? Did the student understand the problem/task?

 He responded well. He understood the problems I posed to him and used various approaches to

 solve them.

1. What prior knowledge did the students demonstrate while solving the problem?

 Counting from 1 to 10 by 1s, 2s, and 5s

 Counting on

 The word “more” in a word problem means additional

 Using manipulatives to represent a basic addition or subtraction problem

1. Explain what the student did and how the student answered your questions.
2. The first question (after rolling a 1) he answered immediately since he knew that 10-1=9.
3. The second question (after rolling a 8) he answered pretty quickly since he saw that only two beans hadn’t been put on the ten frame after rolling an 8 (I had brought exactly 10 beans).
4. The third question (after rolling a 4) he answered by individually counting the empty cells (6).
5. The first word problem he did in his head and answered correctly (7). When I asked him how he figured out the answer he responded, “I guessed. I thought I was going to be right.” He couldn’t further explain how he came up with that answer.
6. He answered the second word problem by counting on from 4 to 7.
7. The final word problem he solved by putting up 10 fingers and then taking 7 away.
8. What strategies did the student use to solve the problem?
9. Knew 10-1 = 9
10. Quickly counting the two beans that weren’t on the ten frame
11. Counting all (the empty cells)
12. Guessed that 10-3=7
13. Counting on from 4 to 7
14. Counting all the cookies he gave away from the amount he started with.
15. Do you think the student was learning *throughout* the process of solving the problem?

 I don’t think so. He had a pretty good understanding of the concepts being assessed and was

 able to figure out the answers quickly.

1. What evidence do you have for this?

 He never struggled during the assessment. And I never saw his eyes light up which would

 indicate to me that he just learned something new or something related to what he already knew.

1. Was the student able to explain the procedure and justify the answer?

 Yes, except for the first word problem where he said he guessed the answer (although he thought

 his answer was going to be correct).

1. Look at the standards suggested on Part 1. Tell which standards the student has **achieved, excelled** or **has not achieved yet** and say why you think so.

 K.N.1 Count the items in a collection and know the last counting word tells how many items are in the

 collection (1 to 10) **Yes, he excelled in this area.**

 K.N.10 Visually determine how many more or less, and then using the verbal counting sequence, match

 and count 1-10 **Yes, he excelled in this area.**

 1.PS.5 Use informal counting strategies to find solutions **He counted on with his fingers. I would say he achieved in this area.**

 1.PS.8 Use manipulatives (e.g., tiles, blocks) to model the action in problems **Yes, he modeled the last**

 **word problem using beans to represent the cookies. He was very comfortable using manipulatives**

 **so I would say he excelled in this area.**

 1.N.18 Use a variety of strategies to compose and decompose one-digit numbers **Yes, he used**

 **subtraction to solve an addition problem, counted on to both add and subtract, and counted all.**

 **He definitely achieved this standard.**

 1.N.25 Represent addition and subtraction word problems and their solutions as number sentences. **Yes,**

 **after explaining how to represent problem number one as a number sentence, he was able to write**

 **number sentences for the remaining problems. I would say he achieved in this area.**

 1.N.28 Demonstrate fluency and apply addition and subtraction facts to and including 10 **Not achieved**

 **yet.**

1. What other insights about students’ knowledge and thinking processes (including communication) did you have from this performance assessment activity? Other comments?

I was surprised that Jack answered the first question by doing a quick subtraction. That was a key reminder for me not to underestimate a child’s ability to creatively solve math problems. He also surprised me during the 2nd word problem. He originally had 3 items and was given four more, but instead of counting on from 3, he chose to count on from 4. He couldn’t verbalize why he counted that way, so I’m not certain if it was a strategic decision. Other than that, I was reminded how difficult it is for a primary student to write on unlined paper.