Instruction Commentary Directions: Respond to the prompts below (no more than 6 single-spaced pages, including prompts) by typing your responses within the brackets following each prompt. Do not delete or alter the prompts; both the prompts and your responses are included in the total page count allowed. Refer to the evidence chart in the handbook to ensure that this document complies with all format specifications. Pages exceeding the maximum will not be scored.

1. Which lesson or lessons are shown in the clip(s)? Identify the lesson(s) by lesson plan number.

[ Lesson two and lesson four are shown in the clips. ]

2. Promoting a Positive Learning Environment

Refer to scenes in the video clip(s) where you provided a positive learning environment.

- How did you demonstrate mutual respect for, rapport with, and responsiveness to students with varied needs and backgrounds, and challenge students to engage in learning?

[ During the portion of the video clip showing lesson two (video clip #1: 0:18 – 1:05), I provided a positive learning environment by allowing students to share answers to my questions in a free, open environment. The students knew that when one person was talking they were to listen quietly and not talk to their neighbor. No one was ever ridiculed because they incorrectly answered a question. This set the tone for a respectful and positive learning environment for everyone.

During the video clip showing lesson four (video clip #2: 0:05-1:47), I show how I created a positive learning environment for my students. During this clip of time students were working on completing the stations throughout the room. Each of these stations reviewed a key concept about probability that had been covered during one of the three previous lessons. The clip shows me working closely with two students who were working on station six. It was apparent that these students’ needed extra assistance in solving this problem about simulations. After I first went to them they asked for a visual, specifically a deck of cards, to aid them in solving the problem. I immediately went to get them a deck of cards because I too felt that could be of great assistance to them. After I gave them the deck of cards I helped a few other students who had come to me with a question before returning to the two boys I was helping in the beginning (video clip #2: 2:30-3:20). While I was helping students who needed a little extra help, all the other students were engaged in learning as they worked towards completing the required number of stations prior to the end of the period. Students began working at the stations knowing this would serve as their graded assignment for the week and therefore they became focused on the task. I demonstrated mutual respect and rapport with the students by getting down to their level while answering questions they proposed to me and then although I gave them much of their feedback in question form, I worded the questions in such a way that coincided with their current level of understanding of the concept.]

3. Engaging Students in Learning

Refer to examples from the clip(s) in your explanations.

a. Explain how your instruction engaged students in developing

- conceptual understanding
- procedural fluency
- mathematical reasoning and/or problem solving skills
[ Students are engaged in conceptual understanding when they are asked to predict (video clip #1: 0:05-1:10) how many different combinations they can make with the choices. This is placed in the lesson so that students may begin to develop connections between their current knowledge of probability and future knowledge they are beginning to learn now. Incorporating this type of question into the lesson engages the students by drawing connections between old and new knowledge.

Procedural fluency is beginning to develop within my students when we begin to talk about tree diagrams (video clip #1: 1:19-2:38). In creating these tree diagrams and sample spaces students are shown the correct way to construct such diagrams. This allows for everyone’s diagrams to be similar since they are all showing the same information. During this clip students are given time to practice their procedural fluency of this task of creating both a tree diagram and sample space.

The portion of the video clip showing the two boys working at station six (video clip #2: 0:10-1:45 and 3:28-4:50) demonstrates how my students were engaged in developing mathematical reasoning and problem solving skills. This question asked students to design a simulation to determine how many questions they would get right if they were to guess on a fifty question multiple choice exam. Students were asked to determine which “tool” would be the best choice for creating this simulation. This required students to problem solve as they had to determine the chance of getting a question correct and what “tool” would replicate this probability, which in this case in one-fourth. ]

b. Describe how your instruction linked students’ prior academic learning and personal, cultural, and community assets with new learning.

[ In lesson two where I taught students how to create a tree diagram and sample space to represent all the outcomes for the ice cream sundae problem I was really only activating their prior knowledge of these graphic organizers as they have used similar tree diagrams and sample spaces in other classes such as science. When we began talking about sample spaces several students commented about how it related to creating a list of genotypes in science class. Additionally, this second lesson was designed to revolve around something students could relate to. I figured that all the students have at one point or another walked into an ice cream shop and ordered ice cream. But what I figured they had never done was actually thought about all the different combinations one can make out of their ice cream sundae given several options.

Lesson four allowed students to work at their own pace as they practiced several of the topics discussed the previous three days. This allowed students’ to develop a deeper understanding of the material as they looked back in their notes for helpful hints at how to perform various tasks as well as problem solve with their learning partner in order to find the solution to the problem in front of them. By allowing students the freedom to work with their learning partner at stations, I enable them to work at a level they feel comfortable with students who have similar mathematical ability as themselves, making the situation less stressful. Additionally, it is during this time that students who need extra attention from me can receive the assistance they need in deepening their understanding of the content. Although there was no direct instruction being given to the entire class I was able to lead an inquiry based learning environment as students strived to learn more. This was accomplished through questioning students as I lead them to the answer they are searching for without explicitly saying “you need to do this…” This type of situation can be seen in the video clip#2 from 2:30 to 3:15. In this scene three students are at station four trying to develop situations that would have a probability of 0, ½, and 1 using a pre-determined bag of marbles. During class I never explicitly went over this, however it was discussed briefly as we discussed our warm up the first day when we classified events as extremely likely to happen, a 50/50 chance of happening, and extremely unlikely to happen. As shown in the video I ask the students what it means if the probability of... ]
4. Deepening Student Learning during Instruction

Refer to examples from the clip(s) in your explanations.

a. Explain how you elicited and responded to student responses to promote thinking and develop conceptual understanding, procedural fluency, and mathematical reasoning and/or problem solving skills.

[ In video clip #1 from time 0:05 to 0:48, I can be seen responding to student responses in the form of questioning. At times I reworded the question by breaking it down into smaller parts. I first asked the students what type of situation the question was describing to allow them to further understand the problem. Once they realized they were talking about a situation that was describing taking a multiple choice test where one may guess at every answer, where there are only four choices for each question, I was able to redirect them to the second part of the question which indicates the students must create a simulation by saying they need to design an experiment. Therefore through questioning I allowed the students to make the connection between designing an experiment and a simulation. From that point (video clip #2 0:48-1:45) I was able to question them into creating a simulation where they decided to use a deck of cards. This scenario promoted thinking, developed conceptual understanding of the content in my students, developed their procedural fluency by allowing them extra practice in developing a simulation, and increased their problem solving skills as they had to pick a simulation tool and decide how to use it based on what they know about it and the probability they are trying to represent from the scenario.

In video clip #2 from time 2:30 to 3:15 I can be seen responding to a group of students asking a question about what the probability of one means. Instead of telling them that means that the event is certain to happen I decided to first ask if a probability of an event has a probability of one then what does that mean for the event. In this case I was hoping hearing me say it would trigger a memory, but since it did not I then went on to asking a question about probabilities in general looking for a response that the probability of any event happening is always a ratio between zero and one. Eventually I told them this bit of information but seeing as they were still confused I redirected them towards their warm-up from earlier in the week so where they could find an explanation of what the probability of 0, ½, and 1 means.

In the video clip #1 from 8:58 to 9:29 I can be seen showing students on the board how to create their sample space. It was during this time I had asked the students how I would represent chocolate ice cream, fudge, and chocolate sprinkles as a choice in my sample space. In this case Nyziah had mumbled under her breath the correct answer and in order to increase her self-confidence I called on her to repeat her answer louder. She has a disability in math and I wanted her to know that she was correct and that I had heard her.

b. Explain how you used representations to support students’ understanding and use of mathematical concepts and procedures.

[ In the video clip #2 from time 3:25 to 5:25 the students are shown using a deck of cards in order to support their understanding and the use of mathematical concepts and procedures. Prior to this scene students had asked for a deck of cards so they could determine how to create a simulation for this multiple choice test scenario. By looking at the deck of cards the two students saw that there are four suits (video clip #2 5:52-6:55) in one deck and that each suit could represent one of the answer choices. Matt is the one who finally established that by... ]
drawing a heart it would be determined that they chose the correct answer. By using a deck of cards the students were able to see the situation visually and work through the process of creating their simulation.

In video clip #1 from time 1:43 to 2:30 I am showing the students how to create a tree diagram to aid them in analyzing how many ice cream sundae combinations there actually are. This graphical representation assists students’ in understanding where all the combinations are established as it lists possible combinations one by one. The procedure of creating a tree diagram is fairly simple once you begin creating it. This is a procedure that my students should be familiar with as it will aid them in the next part which is where they create a sample space listing all of the combinations shown in their tree diagram.

5. Analyzing Teaching

Refer to examples from the clip(s) in your explanations.

a. How did your instruction support learning for the whole class and students who need greater support or challenge?

Consider the variety of learners in your class who may require different strategies/support (e.g., students with IEPs, English language learners, struggling readers, underperforming students or those with gaps in academic knowledge, and/or gifted students).

Between times 1:20 and 2:30 in video clip #1 I had created the skeleton needed for my entire class to create a tree diagram on their own. It was at this time that I had the first combination listed to show them the proper way of creating a full tree diagram. I then told them they would have a few minutes to finish creating the tree diagram on their own. This move allowed my higher ability students to move at their own pace as many of them already knew what to do next. At the same time it allowed me to work with students who needed a little extra guidance through one on one time with the teacher. Unfortunately on this day the special education teacher was not in the room as there was a substitute there for her, therefore giving the special education students even less needed support as I was only one person and could not assist everyone at once. But when I was talking to a student I would speak loud enough for everyone to hear our conversation hoping it would help them out in one way or another.

The entire fourth lesson shown in video clip #2 gave my students who needed extra support in understanding concepts about probability the time to receive that assistance; and my students who needed an extra challenge to receive that as well. During this lesson students worked in stations with their learning partners. This opportunity allowed for the students who needed extra support to receive it. Although it is not shown in the video, it can be heard at times, the special education teacher was actually working with a small group of students in the front of the room with their station work. This group of students stayed with her throughout the majority of the period in order to complete the necessary number of stations they needed completed prior to the end of class. Students who needed a greater challenge were told that if they correctly completed the number of necessary stations and then some they would receive extra credit. Of course these students strive for extra credit and did everything in their power to finish more stations than were considered necessary prior to the end of the period. During this time I was able to walk around and listen to students conversations to gauge their understanding of the content they had been working on at that moment. Additionally, this was a time where they could feel free to ask me questions about any part of the content in order to deepen their understanding of the content.

b. What changes would you make to your instruction to better support student learning of the central focus (e.g., missed opportunities)?
In video clip #1 from time 1:20 to 1:45 I asked the class what a tree diagram is and how I would set one up. Looking back on this scenario Matt gave me an idea of how to start it as he said that I should have the ice cream flavors going across. After reviewing this I realize I kind of discouraged his correct answer by saying “well, I am going to do it going down.” Either method would have been correct but because he suggested we write it going across I should have done it that way because that was the way he visualized it and others may have as well.

Looking back on this particular lesson covering tree diagrams I feel as though I did not spend a sufficient amount of time on them as I noticed many students still having difficulty with the concept a few days later. If I were to do this lesson again, I would either have the students complete an exit slip prior to leaving class where I would ask them what are three things they learned today, two things they are confused about, and one thing they still want to know. This would give me guidance as to what I need to review the following day when we discuss the homework assignment in the beginning of class where they had to create a tree diagram and sample space on their own.

Another thing I might change in order to aid my students learning of the central focus is discuss the difference between simple and compound events a little more in that lesson on tree diagrams. If I were to reteach this I may ask the students to find a simple event in the ice cream problem even before I begin talking about tree diagrams. Then we could later on talk about what a compound event is and they could find an example of a compound event in the problem.

During my simulation lesson (lesson #3) I saw the following day that a few groups had a misunderstanding about the trials. If I were to reteach this lesson I may think about bringing all my groups together sooner prior to the end of the period so we can discuss the meaning of the trials to eliminate all misunderstandings.

c. Why do you think these changes would improve student learning? Support your explanation with evidence of student learning and principles from theory and/or research as appropriate.

I feel that the above mentioned changes would improve student learning because I would be giving my students additional supports and chances to practice their procedural fluency of the content. Additionally, with the addition of the exit slip on my second lesson I am incorporating reflection into my lesson which forces each student to truly look back on the previous forty minutes and reflect on what they really learned, what they will take from that lesson. This reflection will alert me as to what my students truly took from that lesson and what major concepts I wanted them to understand but for whatever reason they didn’t. This then allows me to reflect on my lesson and improve it for next time while at the same time making necessary changes to the next day’s planned lesson.]