EDUC 5031 Formative Task Planning Template

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PART I: Plan the Launch and Work Time

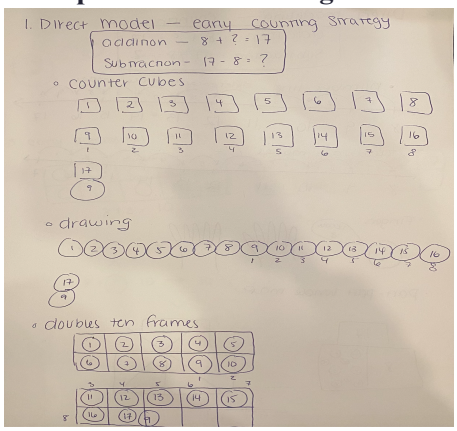
Math goal (in your own words):
I want students to be able to collaboratively discuss and solve a put together/take apart word problem with the addend unknown.

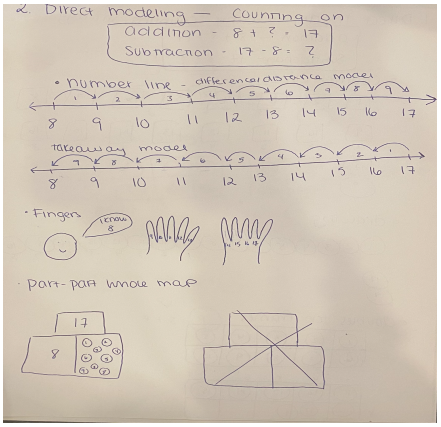
Content standard: 1.OA.A.1 - use addition and subtraction within 20 to solve, word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

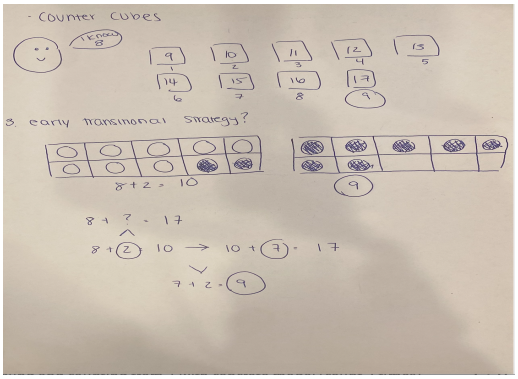
Practice standard: try to give carefully formulated explanations to others.

TASK:
Elijah has 17 toy cars.
8 of them are red toy cars and the rest are blue.
How many blue toy cars does Elijah have?
Explain your answer.

Anticipate Student Strategies:







Possible Errors/misconceptions:

1. Think that they are adding together 17 + 8
2. Students think that 17 + 8 = 25. But this is solving how many cars total Elijah would have if he had 17 blue cars and 8 red cars.
3. Because my placement school emphasizes key word instruction the students may confuse "how many" as denoting addition. I wonder how many students will also think that they could use subtraction to solve this problem.

LAUNCH (10 minutes)

How will you launch this task to provide access for your students?

- Help students make sense of the task

Elicit prior knowledge:
Numberless word problem opening routine is something that the students have already done. They are, therefore, used to this model of introducing a word problem.

without telling them or showing them what to do ● Elicit prior knowledge ● Clarify context and vocabulary ● Post important information ● Set expectations for working on the task	**Read the word problem:** Elijah has 17 toy cars. Some are red and some are blue *Q: What are you picturing in your mind when you read these sentences?* I will have the students think-pair-share with their elbow partner on their right (2 minutes) → **I will model this with one other student to outline my expectations for the turn-pair-share.** I will give students 30 seconds to think, 30 seconds for discussion and 1 minute for share out. Elijah has 17 toy cars. 8 of them are red toy cars and the rest are blue. *Q: What do we know now from this new information?* I will have the students think-pair-share with their elbow partner (2 minutes). I will give students 30 seconds to think, 30 seconds for discussion and 1 minute for share out. Elijah has 17 toy cars. 8 of them are red toy cars and the rest are blue. How many blue toy cars does Elijah have? Explain your answer. *Q: Do you think the answer will be bigger or smaller than 17? Why?* I will have the students think-pair-share with their elbow partner (2 minutes). I will give students 30 seconds to think, 30 seconds for discussion and 1 minute for share out. **Set expectations for working:** You will start out working independently. I will circulate around the room to help, if needed. I do not want students to call out my name or to get out of their seats to ask me a question. I will ask students to stop and think, try another strategy or way of figuring out the problem or ask someone next to them before asking me if they have a question. After about seven minutes of work, I will then have the students share their answer with their partners and how they got their answer for three minutes.
WORK (10 minutes)	
How will you facilitate your students' productive struggle? ● Support learner thinking without lowering the cognitive demand when students get stuck or can't get started ● Structure and scaffold opportunities for collaboration ● Plan for students who need extensions ● Look for student strategies (or parts of student work) to share during class discussion	**Student collaboration** Although the students will each be working on their own worksheet for the problem, I will set expectations and norms that allow the students to discuss with their tablemate's when they are struggling with the problem. In this way, I can center the students making meaning of the problem together rather than depending on me to help guide and support them. **Students who can't get started** For students who can not get started they could be directed to engage with the problem in a different manner. That is, provide the student hands-on manipulatives or have them a draw part-part-whole mat and try to fill it in themselves. In this way the students can either have a more "hands-on" entry point into the problem or a scaffolded map that is specifically structured around having students better visualize change unknown problems. Focusing on having the students understand that they will start with 8 blue cars, they don't know how many red cars Elijah has and that 17 is the total number of red and blue cards put together. **Students who get stuck** 1. Try another strategy or way to solve the problem -- number line, drawing, part-part whole mat.

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	2. Ask a neighbor for help 3. Put a silent hand up to signal for individualized feedback/coaching from the teacher as they circulate around the room. **Students who need an extension** Can you think of another strategy for solving this problem? Try beyond 20 -- how many blue cars would Elijah have if he had 23 cars in total? I want you to think about how you could convince someone not learning this and is not in our class that you found the right answer. Draw a picture to help you explain. **Student strategies** Use a number line -- all my students seem to have a good grasp of this concept so it could be a good entry strategy that all my students can conceptualize Emphasizing a strategy they just learned in math class -- part-part-whole mat or ten frames The student uses subtraction to solve the problem I.e. 17 - 8 = ? **Eliciting student thinking** **Independent work** *Draw the learner's ideas out* 1. "Here, I see you are a little stuck. Could you tell me what you have figured out so far?" 2. "I see you did_____, can you show or tell me why you did that? *Focus attention on important ideas underlying the task/text?* 1. "Let's look back at the board and the task. Do you remember what we said about_____?" *Coach learners to develop a strategy for the task (learners maintain ownership)* 1. "What could you try to help you figure out the problem?" 2. "Is there a strategy you could use to help you?" **Partner work** *Prompt learners to articulate thinking or construct a complete, cohesive explanation* 1. "How would you explain your answer to someone who is not in this class and has not seen this problem?" *Prompt learners to develop ways to represent their thinking or strategy* 1. "How could you draw a picture of you/your partner's work?" *Orient learners to each other's thinking and focus on joint work* 1. "Can you explain your thinking to your partner?"

PLAN THE DEBRIEF		
How will you discuss learner thinking to connect to the math goal? ● Intentionally select and sequence the student work you share ● Use questioning and annotation to help students make sense of shared work ● Bridge to important mathematical ideas including mathematical language, notation, and concept-to-procedure connections		
Solution Strategy	Concepts to highlight	Specific Questions to Ask

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1	The student used a part-part-whole mat to find the answer of 9.	I will highlight that the student knew they were trying to find the unknown change needed to reach the total of 17 toy cars from 8 red cars.	Can anyone explain what this student did? What in the problem told them that they needed to figure out the number of blue cars Elijah needed to have 17 total cars? Why did they stop at 17?
2	The student solved the problem 17 + 8 = 25.	I will highlight that the student did correctly use addition to add 17 and 8. However, the student solved the problem of how many cars Elijah would have if he had 17 and then added 8 more, not how many blue cars he has.	What question is this student answering? Is it the same or different as what the problem wanted you to figure out? Explain why you think it is the same/different?
3	The student solved the problem using subtraction, 17 - 8 = 9.	This is a higher ceiling strategy. I will highlight that the students can flexibly use both additions and subtraction to solve the problem. I will also highlight how to better represent students' thinking through drawing.	How could we show this student's way of figuring out the problem by drawing a picture? What is alike and what is different about this way of solving the problem and how the other two students solved the problem? Why? How could what you have learned about related facts help you solve this problem?

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