VIDEO NOTES: ***2nd Grade Math Lesson on Word Problems***

Video Links: Word Problems (Part 1), Word Problems (Part 2)
Common Core State Standard: Operations and Algebraic Thinking CCSS.Math.Content.2.OA.A.1
Numbers in Base Ten CCSS.Math.Content.2.NBT.B.9
Compass Component and Rating: Questioning and Using Discussion Techniques (3b), *Effective Emerging*
Engaging Students in Learning (3c), *Effective Emerging*
Lesson Objective: Use evidence/cues from the word problems to solve the problem.

Common Core State Standard(s)
CCSS.Math.Content.2.OA.A.1: Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **CCSS.Math.Content.2.NBT.B.9:** Explain why addition and subtraction strategies work, using place value and the properties of operations.

Compass Component 3b: Questioning and Using Discussion Techniques (Rating: *Effective Emerging*)		
Indicators	**Evidence**	**Common Core Connection**
Teacher frames some questions to promote student thinking, but only a few students are involved.	• During the lesson, the teacher asks several questions that promote student thinking. For example, "*You noticed base 10 blocks…what category would that fall under? Is that pictures, numbers, or is that words?" "What do you think this is?"* • Teacher attempts to involve students using cold call and student volunteers. She asks, *"Can you tell what they did, Isaiah?" (*Part 2, 2:12) and monitors which students have responded when she says, *"I heard from you, you, you…"* (Part 2, 5:40) • However, the majority of questions require short-answer,	This lesson is an example of students applying what they have learned about number sentences and solving word problems in a contextual situation. Students are provided with one-step word problems which require addition and subtraction to solve. (CCSS.Math.Content.2.OA.A.1) As students critique sample work on the board, they are practicing and developing their fluency in arithmetic. Students discuss how the sample

	choral response, *"Evidence"* (1:01); few students are given the opportunity to respond to higher level questions.	problem could have been solved better, explaining the thoughts or methods they would have used instead. (CCSS.Math.Practice.MP3) Students apply the use of base ten numbers to discuss how the number sentences provided display correct, or incorrect, use of addition and subtraction strategies. (CCSS.Math.Content.2.NBT.B.9)
Teacher invites students to respond directly to one another's ideas, but few students respond.	• Teacher invites students to respond to sample student work on the board, but students are not responding to, or adding to, their classmates' responses. • Students have one opportunity to engage in discussion with classmates, *"Turn to a neighbor and talk."* (3:36); they primarily answer questions posed by the teacher.	
Teacher makes effective use of wait time. (*Effective Proficient* indicator)	• The teacher provides wait time appropriate for the age group For example, in Part 1, the teacher gives students about 30 seconds to review the sample work before responding.	
Teacher builds on uses student responses to questions effectively. (*Effective Proficient* indicator)	• Teacher asks, "*Did this mathematician answer the question?"* A student responds, "*Yes."* The teacher asks additional questions: "*Let's take a look at number 1. They said that there were 82 people. How did they answer this question?"* Student: "*... they actually used numbers, and words, and they used a picture to figure out. They told us how they did it, and they used base 10 blocks."* (Part 2, 0:02)	

Compass Component 3c: Engaging Students in Learning (Rating: *Effective Emerging*)

Indicators	Evidence	Common Core Connection
Learning tasks are a mix of those requiring thinking and recall.	• Analyzing the sample student work requires students to use both critical thinking and recall. • Students identify the use of number sentences within the solution (recall), but also identify errors in the solution, requiring more critical thinking from students.	

Students have no choice in how they complete tasks.	• There is no choice provided during this lesson in terms of how students can complete tasks, respond to the questions or engage in the discussion.	
The teacher uses different instructional groupings; these are partially successful in achieving the lesson objectives.	• Students have occasional opportunity to discuss with a partner what they noticed about the sample problem. • During the majority of the lesson, students are working as a whole-class, primarily answering the teacher's questions. This limits the students' opportunities to truly engage with the material and practice the skills needed to master the objective.	

WHAT COULD THIS TEACHER DO TO IMPROVE?

What did the teacher do in this lesson?	*Effective Proficient* Indicators	What could the teacher do to move to *Effective Proficient*? (example actions)
The discussion about the word problems is teacher-centered, providing minimal opportunity for students to converse amongst themselves.	Discussions enable students to talk to one another, without ongoing mediation by the teacher. (Questioning – 3b) AND Many students actively engage in the discussion. (Questioning – 3b)	Give students a sample problem to discuss and analyze in small groups. This would increase the number of students actively engaged in the discussion, and create a more student-centered learning environment.
The questioning and problem solving completed in this lesson often has one solution and requires limited higher-order thinking from students.	Learning tasks have multiple correct responses or approaches and/or demand higher-order thinking. (Engaging –3c)	In the small groups, encourage students to utilize various methods for solving the problem to increase the level of thinking required. Students can then compare and contrast the methods and analyze which method would be the most effective or efficient, which requires even higher-level cognitive skills.
Students work almost exclusively as a whole-class during this lesson, which limits students' opportunities to show development within the skill set being taught.	There is a mix of different types of groupings, suitable to the lesson objectives. (Engaging – 3c)	In addition to using pairs and small groups (suggested above), mix up the groups throughout the lesson to ensure students are learning from a variety of student perspectives. Finally, allow students to present their findings to the whole group.