Evaluation Overview

**4th Grade Math**

Multiplicative Comparisons

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| **Evidence Notes** | **Indicator** | **Score** |
| The teacher communicates to the students throughout the lesson that today’s lesson is about multiplicative comparisons. However, she does not tell the students what they were going to know and be able to do with multiplicative comparison. She connects to what they previously learned about the communicative property. This lesson is an introductory lesson, and the teacher provides the students with the opportunity to brainstorm what multiplicative comparisons mean. She does not set clear expectations for students’ discussions other than asking them to talk about what they thought it means. Because it is unclear what the objective is other than the word “multiplicative comparisons,” it is also unclear if students are able to demonstrate mastery of the objective. There is a student at the end of the lesson that is able to explain the definition of multiplicative comparisons, but there is no evidence that most of the students were able to define multiplicative comparisons. | **Standards and Objectives** | **2** |
| Through the visualizing work at the beginning of the lesson, the teacher develops a learning experience where curiosity and exploration are valued. The lesson includes regular reinforcement and rewards for effort through students sharing explanations and coming to the board to work. The teacher uses student names in the word problem, but otherwise there is not evidence to support that the work is relevant to students. The teacher encourages the students to hypothesize about the meaning of words (based on prior knowledge) before explaining them. The students are engaged in the lesson and are curious to figure out what multiplicative comparisons mean. They raise their hands and they discuss their ideas at their tables. | **Motivating Students** | **3** |
| There is logical sequencing to the lesson. The teacher uses the smart board as the main visual for this lesson. The math visualization activity at the beginning of the lesson establishes the purpose of the lesson. Students use the example to review previously relevant material. The main lesson includes internal summaries (asking students to state the equation, why they chose it, and how they got the answer), plenty of illustrations (beginning visual and apple visual with moving circles), modeling by the teacher as examples. The teacher gives directions for the student volunteers that came up to work the problems, and she models how to pull down 7 apples in the first story problem. There is concise communication, but at times her questions seemed to confuse the students. The teacher did model her thinking and gave students the opportunity to model their thinking with one another during think/pair/share. | **Presenting Instructional Content** | **2** |

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| The lesson begins with introduction of concept/new term (multiplicative comparison), a whole-class activity using a word problem, and a review. There is a clear beginning with the math visualization activity and surmising the definition of the new term, a middle of the lesson with whole-class work on the Smartboard with apple word problems, and a closing (“to sum it up, I can say…”). The teacher has prepared notes ready to review the apple word problem on the board for students to see and read aloud. Pacing is brisk and holds students’ attention during the lesson. Opportunities for students to progress at different rates are present through repeated instruction, explaining in a new way, and teacher questioning during independent work. No instructional time is lost during transitions in the video as no materials are distributed to students. Routines for answering questions and participating in turn and talk are well-established. There is no time provided for individual student reflection. | **Lesson Structure and Pacing** | **3** |
| The activities in the lesson support the objective of the lesson, and they are challenging to the students as evidenced by occasional incorrect answers from the students. Usually after re-direction students arrive at the correct answer. There is time for students to think-pair-share in small groups throughout the lesson The Smart Board is used to facilitate learning. The activities in this lesson are designed to elicit a variety of thinking: the teacher seeks multiple perspectives on what a problem asks, how to solve it, and explanations throughout the lesson. Students interact with other students frequently throughout the lesson, which includes technology with the Smartboard and student hands-on learning through use of Smartboard tools. Tasks are appropriately complex and scaled as needed based on student responses. Students using the Smartboard to illustrate the numbers of apples is an example of the use of technological manipulatives. There is limited time for student reflection in groups. The two different word problems presented give an opportunity for some students reflect on their thinking but not all of the students. | **Activities and Materials** | **3** |
| The teacher’s questions are purposeful and occasionally ask students to cite evidence. There are a few times the teacher asks for a group response (thumbs up). The teacher calls on several students – mostly volunteers – and some wait time is provided. The teacher’s questions: “What have you got?”, “How do you know?”, “Are you sure?” “Does anyone want to share what you said in your group?”, “Who can tell me what multiplicative comparison means?” are mostly knowledge and comprehension types. Questions are asked to a variety of students in the room—most all volunteer. The teacher questions the whole class and asks students to speak with their peers. She says, “prove it with evidence just like when we infer in readying- we must prove it with evidence.” Students are not able to do this. | **Questioning** | **3** |
| The teacher provides some specific oral feedback such as “I love the way you always give examples to help me understand.” The teacher encourages more than one way of thinking / solving problems. Students are praised for correct answers and asked to repeat summative responses. During instructional activities, the teacher circulates to support student learning by checking in on small group or paired work, often providing probing questions or answering questions from students. Student feedback—through correct and incorrect responses—is used to adjust instruction and invite student participants. | **Academic Feedback** | **3** |
| The class is arranged in whole group with the opportunity for small group think-pair-share. There is little accountability for students within the groups to know their roles, even though they did understand the task for discussion. Groups appear to be mixed between boys and girls and varied ethnicities. All students seem to share speaking roles. Students are only held accountable as far as whole-class sharing is concerned. The opportunity for students to discuss their thoughts in the groups enhances the student’s understanding of the lesson. | **Grouping** | **2** |
| The teacher appears to struggle explaining the concept of multiplicative comparisons, along with mispronouncing *multiplicative* throughout the lesson. In this lesson the teacher uses subject-specific instructional strategies to teach and reinforce math concepts, such as encouraging students to create groupings to represent factors in a math problem. She does not give inaccurate information, but she also did not highlight the inaccurate information students were giving when asked “What are multiplicative comparisons?” The teacher’s ability to enhance student learning is hampered by the lack of instructional strategies implemented throughout the lesson. | **Teacher Content Knowledge** | **2** |
| The teacher is very open and encouraging to students’ differing ways of interpreting the lesson, and she involves many students individually within the lesson. Think-pair-share allows students to discuss the problems with peers to support the thinking of all students. The teacher’s practices throughout the lesson incorporate a variety of students, called on by name. In this lesson, instructional methods are somewhat differentiated through student understanding and explanation, but differentiation in instruction is not regular. There is no evidence of the teacher anticipating learning difficulties, nor is there evidence of student cultural heritage or student interest. There is no evidence that all of the students have the opportunity to master the lesson. | **Teacher Knowledge of Students** | **2** |
| The students practice analytical thinking to compare and contrast two different word problems and explain the information. Students are asked to generate various ways of solving a problem (how to turn the opening visualization activity into an array based on different ways of multiplying numbers, how to apply mathematical concepts to the apple picking word problem—visualization, multiplication, etc.). Students also monitor their own thinking as they explain responses to a classmate—or share that they don’t know what to do. | **Thinking** | **3** |
| The think-pair-share activity allows all students the opportunity to generate ideas and justify solutions. Individual students may demonstrate other types of thinking, but the actions of the teacher lead the majority of students through generating ideas and justifying solutions. | **Problem Solving** | **3** |

**Lesson Average: 2.58**

1. Possible areas of reinforcement:
2. **Motivating students** – There is evidence that students feel comfortable engaging with the teacher and with challenging tasks; therefore, they are willing to take academic risks in their learning. The teacher rewards and reinforces student effort regularly.
3. **Questioning** – There is evidence that the teacher uses a variety of question types, engages with a variety of students, and that students are actively and willingly involved in conversations.
4. **Academic Feedback** – There is evidence that the teacher gives clear and frequent feedback while encouraging students to give feedback to each other by repeating summative statements for each other.
5. Possible areas of refinement:
6. **Standards and Objectives** – Evidence supports the lack of a clearly communicated objective that is aligned to the state grade level standards. Without a clear objective, the lesson lacks focus; therefore students are unable to make meaning or progress toward mastery of the required standards. As a result, student outcomes and understanding are weak.
7. **Teacher Content Knowledge** – There is evidence that the teacher struggles to accurately share basic content vocabulary or identify when students are not accurately grasping the concept being taught. This puts student progress and depth of understanding in jeopardy.
8. **Teacher Knowledge of Students** – There is little evidence that the lesson is designed to identify where and when students are struggling or developing misconceptions. There is little differentiation built into the lesson, indicating a lack of understanding of individual student needs. The outcomes for different student types are hindered due to lack of differentiation.