

# EQuIP Review Feedback



**Lesson/Unit Name:**

**Content Area:** Mathematics

**Grade Level:**

**Overall Rating:**

**E**

Exemplar

## Dimension I – Alignment to the Depth of the CCSS

<p><i>The lesson/unit aligns with the letter and spirit of the CCSS:</i></p> <ul style="list-style-type: none"> <li>✓ Targets a set of grade-level CCSS mathematics standard(s) to the full depth of the standards for teaching and learning.</li> <li>✓ Standards for Mathematical Practice that are central to the lesson are identified, handled in a grade-appropriate way, and well connected to the content being addressed.</li> <li>✓ Presents a balance of mathematical procedures and deeper conceptual understanding inherent in the CCSS.</li> </ul>	<p><b>Grade Level Standards:</b> This lesson targets 7th grade math standard 7.RP.A.2a to the full depth of the standard. Through this lesson, students learn about proportional relationships by testing for equivalent ratios in a table. Students are provided many opportunities to determine if relationships are proportional and to apply their learning to new situations. It does not address observing graphs to see if it is a straight line through the origin, which could be addressed in a subsequent lesson.</p> <p><b>Standards for Mathematical Practice:</b> The lesson cites SMP 2, reason abstractly and quantitatively, as the SMP that connects to this lesson. Students do reason about the proportionality of relationships and are asked to use information provided to them to make determinations about relationships. Students also construct viable arguments during the discussion by justifying why they believe the item is a widget or a sprocket. A recommendation is to also include SMP 1, as students do have to persevere in their thinking and reasoning as they figure out strategies they can use to determine the costs of widgets and sprockets.</p> <p><b>Balance of procedure and deeper conceptual understanding:</b> This lesson has a strong balance of activities that allow students to develop procedural understanding as well as a deeper conceptual understanding of proportional relationships through the open-ended questions and the additional activities provided. Using division as well as finding unit rate to do so is one procedural method that students get practice with throughout the lesson.</p>
<p><b>Rating: 3 – Meets most to all of the criteria in the dimension</b></p>	

## Dimension II – Key Shifts the CCSS

<p><i>The lesson/unit reflects evidence of key shifts that are reflected in the CCSS:</i></p> <ul style="list-style-type: none"> <li>✓ <b>Focus:</b> Lessons and units targeting the major work of the grade provide an especially in-depth treatment, with especially high expectations. Lessons and units targeting supporting work of the grade have visible connection to the major work of the grade and are sufficiently brief. Lessons and units do not hold students responsible for material from later grades.</li> <li>✓ <b>Coherence:</b> The content develops through reasoning about the new concepts on the basis of previous understandings. Where appropriate, provides opportunities for</li> </ul>	<p><b>Focus:</b> This lesson focuses on 7.RP.A.2a, identifying proportional relationships, which is part of the major work of the grade. This lesson gives careful attention to one of the standards in this domain, really spending time on the concept of deciding if two quantities are in a proportional relationship. There are many opportunities for students to develop understanding through the activities provided. Notes are made about connections to other content in 7th grade and students are not held responsible for material from later grades.</p> <p><b>Coherence:</b> Clear connections to content learned in 6th grade and future 7th grade content, particularly unit rates, are made in the teacher notes throughout the lesson. Students get enough practice to develop procedural fluency in finding unit rates, but the focus of the lesson is conceptual in nature - what makes two quantities have a proportional relationship. Students are able to make connections from other domains,</p>
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<p>students to connect knowledge and skills within or across clusters, domains and learning progressions.</p> <p>✓ <b>Rigor:</b> Requires students to engage with and demonstrate challenging mathematics with appropriate balance among the following:</p> <ul style="list-style-type: none"> <li>– <b>Application:</b> Provides opportunities for students to independently apply mathematical concepts in real-world situations and solve challenging problems with persistence, choosing and applying an appropriate model or strategy to new situations.</li> <li>– <b>Conceptual Understanding:</b> Develops students' conceptual understanding through tasks, brief problems, questions, multiple representations and opportunities for students to write and speak about their understanding.</li> <li>– <b>Procedural Skill and Fluency:</b> Expects, supports and provides guidelines for procedural skill and fluency with core calculations and mathematical procedures (when called for in the standards for the grade) to be performed quickly and accurately.</li> </ul>	<p>including the use of multiplication, division, or other strategies to solve the problems.</p> <p>Rigor: The concepts in this lesson are presented to students through a real world scenario. Students are able to reason independently and in groups about the solution to the problem. The launch problem is open-ended and students need to use mathematical reasoning and strategies of their choosing to determine the cost of the widgets. They then use this information to solve additional problems throughout the lesson. Conceptual understanding develops throughout the lesson through the use of different problems that increase in complexity. The problems are brief and sufficiently challenging for students as they continue to develop their understanding of proportional relationships. Ample opportunities are available for students to build their procedural skill and fluency in working with proportional relationships and determining whether two quantities are in a proportional relationship. This lesson builds on 6th grade work on unit rates. While the lesson doesn't require unit rates (the questions can be answered in multiple ways), students are likely to use unit rates since they had extensive experience with it in 6th grade. This leads to work in 8th grade extending to relationships that are linear, but not proportional.</p>
<p>Rating: <b>3 – Meets most to all of the criteria in the dimension</b></p>	

### Dimension III – Instructional Supports

<p><i>The lesson/unit is responsive to varied student learning needs:</i></p> <ul style="list-style-type: none"> <li>✓ Includes clear and sufficient guidance to support teaching and learning of the targeted standards, including, when appropriate, the use of technology and media.</li> <li>✓ Uses and encourages precise and accurate mathematics, academic language, terminology and concrete or abstract representations (e.g., pictures, symbols, expressions, equations, graphics, models) in the discipline.</li> <li>✓ Engages students in productive struggle through relevant, thought-provoking questions, problems and tasks that stimulate interest and elicit mathematical thinking.</li> <li>✓ Addresses instructional expectations and is easy to understand and use.</li> <li>✓ Provides appropriate level and type of scaffolding, differentiation, intervention and support for a broad range of learners. <ul style="list-style-type: none"> <li>– Supports diverse cultural and linguistic backgrounds, interests and styles.</li> <li>– Provides extra supports for students working below grade level.</li> </ul> </li> </ul>	<p>Clear and sufficient guidance: Teacher notes, suggested questions and possible student answers are provided throughout the lesson to guide teachers as they implement this lesson. In addition, there is information about possible student misconceptions that may develop or have already been developed prior to the lesson. The lesson includes slides for the teacher to use in the classroom.</p> <p>Precise and accurate mathematics: This lesson encourages the use of precise and accurate mathematics and mathematical language. The lesson defines the idea of unit rate, attends to mathematical language, and uses tables to represent the scenarios. Further lessons could follow up on this with representing the same information in graphs.</p> <p>Productive struggle: Students are definitely engaged in productive struggle throughout the lesson because it opens with an open-ended question that forces students to struggle to determine the answer. The context, though real-world, could be something that is more relevant to a 7th grade student than a widget or sprocket. (perhaps skateboard wheels and skateboard trucks)</p> <p>Instructional Expectations: The expectations of the lesson are clear. The pieces of the lesson are easy to use and understand, even for a novice teacher.</p> <p>Instructional Supports: Support is provided both through the teacher notes and through the leveled activities at the end of the lesson that allow teachers to address the various needs of students. A suggestion is to</p>
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<p>– Provides extensions for students with high interest or working above grade level.</p> <p><u>A unit or longer lesson should:</u></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Recommend and facilitate a mix of instructional approaches for a variety of learners such as using multiple representations (e.g., including models, using a range of questions, checking for understanding, flexible grouping, pair-share).</li> <li><input type="checkbox"/> Gradually remove supports, requiring students to demonstrate their mathematical understanding independently.</li> <li><input type="checkbox"/> Demonstrate an effective sequence and a progression of learning where the concepts or skills advance and deepen over time.</li> <li><input type="checkbox"/> Expect, support and provide guidelines for procedural skill and fluency with core calculations and mathematical procedures (when called for in the standards for the grade) to be performed quickly and accurately.</li> </ul>	<p>include guidance for teachers who may have ELL students who will need additional support in learning and connecting to the content. The lesson is clearly laid out and there are easy to follow instructions for carrying out the lesson. It is clear what the teacher should be doing at each point in the lesson. One suggestion for clarification would be additional teacher notes about using slide 7 about "A common misunderstanding", because the teacher notes in that slide seem to refer to the previous two slides.</p> <p>One of the real strengths of this lesson is the differentiated practice. There are 3 levels of problems - one for students who don't quite have the big idea, one for students who do, and one for students who are ready to advance more deeply. A supplemental video is included for students who need more guided instruction with the material. In addition, there are suggestions in the lesson plan that support English Language Learners, such as reading the task together and clarifying the vocabulary and situation for the class although this should be explicitly pointed out as a strategy for ELL's</p>
<p><b>Rating: 3 – Meets most to all of the criteria in the dimension</b></p>	

**Dimension IV – Assessment**

<p><i>The lesson/unit regularly assesses whether students are mastering standards-based content and skills:</i></p> <ul style="list-style-type: none"> <li>✓ Is designed to elicit direct, observable evidence of the degree to which a student can independently demonstrate the targeted CCSS.</li> <li>✓ Assesses student proficiency using methods that are accessible and unbiased, including the use of grade-level language in student prompts.</li> <li>✓ Includes aligned rubrics, answer keys and scoring guidelines that provide sufficient guidance for interpreting student performance.</li> </ul> <p><u>A unit or longer lesson should:</u></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use varied modes of curriculum-embedded assessments that may include pre-, formative, summative and self-assessment measures.</li> </ul>	<p>This lesson provides a formative assessment task at the end, which could be done as an exit slip. One suggestion for improvement would be to ask students to explain their thinking on the exit slip. Also, the teacher could use the student individual practice assignments to assess student mastery of the standard. Finally, the "possible student approaches" resource allows the teacher to track, in real time, where students are in their understanding. The assessment in this lesson is entirely formative, which makes sense since this is a single lesson that is clearly part of a series of lessons that will develop the concepts of proportionality and unit rates. There are many opportunities for the teacher to assess understanding through the activities presented on the slides, questioning, student discussion, and the leveled worksheet activities at the end of the lesson.</p> <p>There is no concern about accessibility or bias in the assessment components. The prompts seem appropriate for 7th grade.</p> <p>Answer keys are provided for each activity and assessment. The "possible student approaches" resource provides teachers with another way to interpret student performance and identify misconceptions.</p>
<p><b>Rating: 3 – Meets most to all of the criteria in the dimension</b></p>	

**Summary Comments**

This lesson meets all of the criteria of an exemplary lesson. The format, content, and teacher supports are all in line with the framework of the rubric. The lesson reflects all of the shifts called for in the CCSS. The leveled formative assessments are aimed at the struggling, on target, and advanced learners. Teachers at any experience level would find this lesson easy to use and implement and it thoroughly develops student understanding of proportional relationships through a short, effective lesson. A couple small changes could be made to enhance the lesson, such as clearly defining and perhaps even adding additional supports for ELLs and considering a context that may be more relevant to a 7th grade student (which would also support ELLs).

### **Rating Scales**

#### **Rating Scale for Dimensions I, II, III, IV:**

- 3:** Meets most to all of the criteria in the dimension  
**2:** Meets many of the criteria in the dimension
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- 1:** Meets some of the criteria in the dimension  
**0:** Does not meet the criteria in the dimension

#### **Overall Rating for the Lesson/Unit:**

- E:** Exemplar – Aligned and meets most to all of the criteria in dimensions II, III, IV (**total 11 – 12**)  
**E/I:** Exemplar *if* Improved – Aligned and needs some improvement in one or more dimensions (**total 8 – 10**)
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- R:** Revision Needed – Aligned partially and needs significant revision in one or more dimensions (**total 3 – 7**)  
**N:** Not Ready to Review – Not aligned and does not meet criteria (**total 0 – 2**)

### **Rating Descriptors**

#### **Descriptors for Dimensions I, II, III, IV:**

- 3: Exemplifies CCSS Quality** - meets the standard described by criteria in the dimension, as explained in criterion-based observations.  
**2: Approaching CCSS Quality** - meets many criteria but will benefit from revision in others, as suggested in criterion-based observations.
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- 1: Developing toward CCSS Quality** - needs significant revision, as suggested in criterion-based observations.  
**0: Not representing CCSS Quality** - does not address the criteria in the dimension.

#### **Descriptor for Overall Ratings:**

- E: Exemplifies CCSS Quality** – Aligned and exemplifies the quality standard and exemplifies most of the criteria across Dimensions II, III, IV of the rubric.  
**E/I: Approaching CCSS Quality** – Aligned and exemplifies the quality standard in some dimensions but will benefit from some revision in others.
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- R: Developing toward CCSS Quality** – Aligned partially and approaches the quality standard in some dimensions and needs significant revision in others.  
**N: Not representing CCSS Quality** – Not aligned and does not address criteria.