EQuIP Review Feedback

Lesson/Unit Name: The Intensity of Chocolate Milk
Content Area: Mathematics
Grade Level: 6

Overall Rating:

E/I

Exemplar if Improved

Dimension I – Alignment to the Depth of the CCSS

The lesson/unit aligns with the letter and spirit of the CCSS: ✓ Targets a set of grade-level CCSS mathematics standard(s) to the full depth of the standards for teaching and learning. ❒ 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. ✓ Presents a balance of mathematical procedures and deeper conceptual understanding inherent in the CCSS.	Targets a set of grade-level standards: This lesson states that it targets 6.RP.1 and 6RP.3. It is clear that the lesson does target 6.RP.3, however, 6.RP.3 a and b. 6.RP.3 c and d are not clearly targeted in this lesson and a suggestion is to clarify that for teachers. Standards for Mathematical Practice (SMP): Connections to the SMPs are not made in the lesson. There are several opportunities for these connections, however, and identifying these connections will strengthen the lesson. For example, SMP3 could be identified in relation to the student poster problem on page 6 and also in the instance in which students respond to each other's' posted using comments on the stick notes. Balance of procedures: Through the activities the students complete, the videos, graphics and the various models presented for students as well as the questions asked of students by the teacher, there is a clear balance of procedure and deeper understanding throughout this lesson.
Rating: **2 – Meets many of the criteria in the dimension**	

Dimension II – Key Shifts the CCSS

The lesson/unit reflects evidence of key shifts that are reflected in the CCSS: ✓ **Focus:** 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. ❒ **Coherence:** The content develops through reasoning about the new concepts on the basis of previous understandings. Where appropriate, provides opportunities for students to connect knowledge and skills within or across clusters, domains and learning progressions. ✓ **Rigor:** Requires students to engage with and demonstrate challenging mathematics with appropriate balance among the following: – **Application:** Provides opportunities for students to independently apply	Focus: This lesson is focused on the major work of 6th grade in understanding proportions and ratios. The power of this lesson lies in its simplicity. The connections to the major work of the grade are very clear and succinctly presented. The learning tasks and student products all hold students to high expectations. Students are not held responsible for material from later grades. Coherence: the author might consider referring to understandings from pervious grades and within 6th grade. Examples include equivalent fractions, part- to-whole and part-to-part relationships that differentiate ratios to fractions. There is a link to background information for the teacher, but connections to these concepts for students, perhaps in the lesson launch or even in a pre-assessment, would help to strengthen the lesson. Rigor: Rigor as required by the shifts in the Common Core State Standards is apparent throughout this lesson. Students develop and apply their understanding of ratios through the real world context of making chocolate milk. The tasks and handouts included in the lesson allow students to develop their conceptual understanding of ratios. Procedural skill and fluency are developed through handouts 1 and 2, and the focus problem allows students to further demonstrate their conceptual understanding of ratios.

mathematical concepts in real-world situations and solve challenging problems with persistence, choosing and applying an appropriate model or strategy to new situations. – **Conceptual Understanding:** Develops students' conceptual understanding through tasks, brief problems, questions, multiple representations and opportunities for students to write and speak about their understanding. – **Procedural Skill and Fluency:** 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.	
Rating: **2 – Meets many of the criteria in the dimension**	

Dimension III – Instructional Supports

The lesson/unit is responsive to varied student learning needs: ✓ Includes clear and sufficient guidance to support teaching and learning of the targeted standards, including, when appropriate, the use of technology and media. ✓ 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. ✓ Engages students in productive struggle through relevant, thought-provoking questions, problems and tasks that stimulate interest and elicit mathematical thinking. ✓ Addresses instructional expectations and is easy to understand and use. ❒ Provides appropriate level and type of scaffolding, differentiation, intervention and support for a broad range of learners. – Supports diverse cultural and linguistic backgrounds, interests and styles. – Provides extra supports for students working below grade level. – Provides extensions for students with high interest or working above grade level. <u>*A unit or longer lesson should:*</u> ❒ 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).	Clear and sufficient guidance: The author should be commended for the very simple and usable presentation of the lesson sequence for teachers. The use of the online site, the links available to the videos, PowerPoint, the segments of the lessons, and the PDFs are all easy to use and follow. The author may consider adding labels to the student handout links on the lesson site that define them as the student versions versus the answer keys. There are some situations where the author might consider providing more guidance to less experienced teachers. For example on page 5, which is the Workshop, newer teachers may need more direction as to how students might be grouped for the poster task. Likewise in Step 5 - Strategic Teacher-Led Discussion on page 7, the author may want to provide some direction as to "how" to structure the presentation of the posters. For example, should it be done as a gallery walk, or should the teacher take photos of the posters to present to the class? Precise, accurate mathematics: The lesson uses correct mathematical representations and terminology. There are some refinements that the author may want to make. One of these is that because at the beginning of the lesson the students should consider the similarities and differences between fractions and ratios, they should also be able to move between both the colon and fraction notation. The lesson only presents colon notation. There are opportunities for students to use other representations of ratios through the poster problem, but they are not explicitly taught in the lesson. There is a typographical error in the last sentence of page 5 that the author will want to correct. It is thought the author intended the last sentence to read "...- some numbers will be easier to work with than others." Also, it may be useful for students to explore and discuss why this statement is true. There is also a typo at the top of page 6 - "During this time, teachers should be reviewing all of the posters and considering which to highlight in the Strategic Teacher-Led Discussion." Productive Struggle: Productive struggle is evident in the tasks included in the lesson, particularly the poster task and the focus problem which allows

❒ Gradually remove supports, requiring students to demonstrate their mathematical understanding independently. ❒ Demonstrate an effective sequence and a progression of learning where the concepts or skills advance and deepen over time. ❒ 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.	students to apply their learning in a new context. As mentioned above, the statement about some numbers being easier to work with than others may give students an "easy out" in terms of struggling with some numbers and it may be more effective to leave this statement out and then discuss with students later should the situation of more difficult numbers arise. Ease of use: Overall, this lesson is easy to use and understand. Scaffolding: The lesson is naturally differentiated through the workshop section on page 5 when students are allowed to choose their own intensity for chocolate milk and through the poster problem in which students are able to choose their own representations. A suggestion is to include supports for struggling learners, such as a review of equivalent fractions or other "troubleshooting" recommendations, especially for new teachers, who may appreciate the guidance.
Rating: **2 – Meets many of the criteria in the dimension**	

Dimension IV – Assessment

The lesson/unit regularly assesses whether students are mastering standards-based content and skills: ✓ Is designed to elicit direct, observable evidence of the degree to which a student can independently demonstrate the targeted CCSS. ✓ Assesses student proficiency using methods that are accessible and unbiased, including the use of grade-level language in student prompts. ✓ Includes aligned rubrics, answer keys and scoring guidelines that provide sufficient guidance for interpreting student performance. *A unit or longer lesson should:* ❒ Use varied modes of curriculum-embedded assessments that may include pre-, formative, summative and self-assessment measures.	Direct Evidence: The author is to be commended for the multiple types of appropriate formative and summative assessments provided throughout the lesson. There are two learning task/handouts (Handouts #1 and #2-poster) which teachers can use to diagnose the level of student understanding with the lesson concepts. The tasks allow students to engage in discussions with each other as well as demonstrate their independent ability to work with ratios. For the poster task, the author may consider including in the instructions for the teacher a recommendation to list the requirements for the poster in a place that students are able to refer back to them as they work through the task. - The student prompts on products are appropriate for the grade level and are unbiased. - Answer keys are provided. A suggestion is to include the "look fors" on page 7 in the list of criteria students will refer to as they create their posters. Perhaps a rubric that includes all of the required poster elements and the "look fors" can be created and shared with students prior to creating the posters.
Rating: **3 – Meets most to all of the criteria in the dimension**	

Summary Comments

This lesson is a good example of a brief, common core aligned lesson appropriate for grade 6. The major suggestions for improvement include:

1. Inclusion of the appropriate Standards for Mathematical Practice when they are directly related to the content and student processes of the lesson.
2. Coherence - How is this lesson connected to within grade and previous grade concepts?
3. Additional supports for a broad range of learners.
4. Where the lesson might provide more guidance to less-experienced teachers.

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

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)**

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.

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.

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.