EQuIP Review Feedback

Lesson/Unit Name: What is a Fraction?
Content Area: Mathematics
Grade Level: 3

Overall Rating:

E

Exemplar

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.	3.NF.A.1, 2, 3a. b. and c. comprise the set of CCSS mathematics standards targeted in this unit. The unit addresses all of the standards to the full depth of the content standards. Standards for Mathematical Practice are identified clearly in the unit overview and in each lesson. They are well connected to the content of each lesson and develop students' ability to persevere in problem-solving, construct viable arguments, and make use of structure. The unit contains tasks that balance mathematical procedures and deeper conceptual understanding. The use of questioning, visual models, and productive partner talk work together to develop students' conceptual understanding. This is balanced with the extensive work with number lines. Suggestion: It is suggested that the unit could incorporate more occasions of the use of multiple representations of fractional models in addition to the tape diagrams and number line models that are extensively used (i.e. circle graphs sectioned into different fractional amounts, rectangular arrays). The use of multiple representations is essential to mathematical understanding.
Rating: **3 – Meets most to all 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:	This unit focuses on the major work of third grade in developing students' understanding of fractions as numbers and their understanding of unit fractions. Providing more opportunities for students to work with fractions using area models and rectangular arrays would be beneficial in addition to the work using number lines already present in this unit. Coherence is clearly outlined in the “unit overview” section as well as at the beginning of each lesson connecting the current work to work in grades 2 and 4. Opportunities for students to connect knowledge and skills from lesson to lesson are evident. Throughout the unit, students engage in a variety of tasks that target application, conceptual understanding, and procedural skill and fluency. As a whole, the tasks place a stronger emphasis on conceptual understanding and procedural skill (largely limited to creating, indicating and naming equal parts). These are evident from the opportunities for students to discuss their reasoning using precise language, and tasks involving fraction strips and number lines. Suggestions: A recommendation is to include tasks that are more rigorous. For example, by expanding the repertoire of tasks to include ones that require students to apply their understanding of fractions as numbers, the

– **Application:** 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. – **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.	level of rigor would be increased. There is an attempt in Lesson 6 to incorporate more representations through the Math Playground puzzle game. A concern is that students would focus on completing the puzzle based on the pictures on the square pieces rather than on finding the fractional representation. This activity, therefore, should be used with careful consideration in the classroom if it is meant to target mathematical skills and content. Also, some students may make the connection to multiplication/division of the numerator and denominator as a way to make equivalent fractions. Perhaps as an extension activity, some attention should be paid to that understanding and linked back to what students have already learned in Grade 3 about multiplication/division of whole numbers.
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	This unit contains clear guidance to support the teaching and learning of the targeted standards. The directions are clear and concise with commentary included throughout to support teachers. The lessons are easy to understand and use and therefore address instructional expectations. They are well laid-out and include explicit ways to address the content standards, Standards for Mathematical Practice, and possible student misconceptions. One suggestion is that since there is much repetition of process in the first several lessons using the tape diagrams/area models, some notation should be included to differentiate for the students who pick up quickly on the idea of naming fractional parts within the same representation and do not need as many repetitions of the process. It should be noted that this IS an introduction to fractions for third grade students and the repetitive nature of the early lessons unit may be necessary and justified.

models, using a range of questions, checking for understanding, flexible grouping, pair-share). ✓ 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.	
Rating: **3 – Meets most to all 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.	Assessment is designed to elicit observable evidence of the degree to which a student can independently demonstrate the targeted CCSS. The observation checklist is a useful tool, but would be more useful if it contained scoring guidelines with indicators /descriptors for each of the levels of proficiency. Most tasks have an answer key.
Rating: **3 – Meets most to all of the criteria in the dimension**	

Summary Comments

This unit is well written, easy to follow and does an exemplary job of addressing the Standards for Mathematical Practice. It is also strong in developing students' understanding of fractions as equal parts and unit fractions. Dedicating additional time earlier on in the unit to address the need to specify the whole is a strong recommendation. Including additional opportunities early on in the unit to apply their understanding of fractions to contexts other than fraction strips and number lines is another recommendation.

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.