EQuIP Review Feedback

Lesson/Unit Name: Congruence, Proof, and Constructions
Content Area: Mathematics
Grade Level: 10

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.	The Standards for Mathematical Practice were mentioned in the overview. Also, in some lessons there are brackets that indicate the intended math practice. Although the practices are alluded to throughout the activities, there is very little explicit mention of the practices throughout the unit as a whole. Teachers could benefit greatly from very clear examples of how to engage students in the 8 Standards for Mathematical Practice.
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 mathematical concepts in real-world situations and solve challenging problems with persistence, choosing and applying an appropriate model or strategy to new situations.	This unit provides students with multiple opportunities to explore the targeted CCSS. The unit also extends 8th grade work with transformations appropriately. Throughout the unit, application of the standards was required to show mastery. The individual lessons also address previously learned standards and allow students the opportunity to apply their previous knowledge. As a body of work, rigor was evident. However, there was some concern that some of the tasks were too rigorous and others were not rigorous enough. Overall, there was a good balance of rigorous activities.

– **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: **3 – Meets most to all 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). ❒ 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.	In general, this unit needs more scaffolding and intervention strategies. This unit provides complete lessons without explicit, frequent direction on how to tailor this lesson to meet the needs of the students working below or above grade level. The lesson plans are easy to follow. There is a video embedded into one of the lessons and opportunities for students to use different tools to complete constructions and transformations. There could be opportunities to embed other forms of technology into the unit and some mention of other suggestions might be useful to a teacher. The students are encouraged to work through new and difficult problem sets or tasks that do not necessarily mimic the problems presented in class. They will have to use the knowledge they have learned in order to successful apply and solve the problem sets. There could be more opportunities in early lessons for student to do more explaining and critiquing of others rather than have teacher engage the students in whole class discussions. Precision is a term that is used frequently throughout the entire unit. The lessons expect that students use precise terminology and many of the lessons review key vocabulary in order to encourage the students to use new and previously learned terms. The lessons are designed in such a way that a teacher could easily pick up the materials and follow the lessons as designed. A new teacher may benefit from some more structures as to how to pair or group students together and how to encourage dialogue that keeps them on task. Some examples of good questions may also be a benefit to a novice or struggling teacher. There are no accommodations that provide additional support for different levels of learning. The lessons have challenging materials but it is not separated out for students at an advanced level. There is no mention of struggling students or suggestions for how to meet their needs. Students who do not speak English as a first language would struggle without specific groupings and strategies to meet their needs. Some of these needs could be addressed by adding different instructional strategies into the lesson plans as well as provide ideas for the best ways to group students and have them work together to solve different problem sets.

✓ 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.	The lessons build up and follow a progression however it is just assumed that students would work the problem sets individually. There is nothing evident in the lesson plans that suggests how a teacher would accurately check individual students for understanding.
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.	There is an assessment at the end of the unit that assesses a student's knowledge of the material and includes a rubric. The lesson plans include answers for student work or problem sets. There is no specific instructions for how a teacher will check for individual understanding before the assessment at the end. A unit this long would benefit from having specific checks for understanding and more formative assessments with scoring guides at various points throughout the lesson. The unit is long and needs room for students to assess themselves as well as for the teacher to assess them before the summative assessment at the end. A pre-test may benefit a teacher by testing the standards from 8th grade that a student may need to use throughout the unit to eliminate unnecessary time reviewing the material.
Rating: **2 – Meets many of the criteria in the dimension**	

Summary Comments

The unit clearly targets the key elements of a Geometry course. By including more scaffolding throughout individual lessons, the concern about rigor would be resolved.

This unit could be improved by giving more examples of ways that students could demonstrate understanding. Various means of assessing students and checking for understanding would make this easier for teachers to use and customize their instruction. This type of guidance related to assessment would assist teachers in providing proper support throughout the lesson, not just at the end of the unit.

As written, this is 34 days of instruction. This unit could be improved if there was some overall guidance related to how teachers/districts could structure their time if it was not feasible to teach all 31 lessons.

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.