

# EQuIP Review Feedback



**Lesson/Unit Name:** Geometric Figures

**Content Area:** Mathematics

**Grade Level:** Integrated Math II

**Overall Rating:**

**E/I**

Exemplar if Improved

## 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>The standards are appropriately selected and compiled for the module. The CCSS mathematics standards are clearly identified in each task. Core standards are identified, and when appropriate, related standards are also listed. The lessons are designed to insure that students reach a deep level of understanding of the three selected standards (G.CO.9, G.CO.10, G.CO.11). This deep level of understanding will ensure that students will solidify concepts that are fundamental to understanding geometry.</p> <p>The Standards for Mathematical Practice are not mentioned anywhere in this document. Although the Standards for Mathematical Practice are not identified, they are clearly evident in the provided materials, so the reviewers will not lower our rating for this dimension. Future revisions will need to list the Standards for Mathematical Practice. The module could be stronger with an additional information about how the standards of Mathematical practice are going to be used throughout the lessons.</p> <p>Materials include balanced activities that encourage conceptual understanding as well as ample opportunities for practice to build procedural skill. This module is very well structured to push students to a depth of understanding that will develop concepts for students and create procedural fluency. Some students may need additional support to make the leap from the concepts to the procedures.</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 students to connect knowledge and skills within or across clusters, domains and learning progressions.</li> <li>✓ <b>Rigor:</b> Requires students to engage with and demonstrate challenging mathematics with</li> </ul>	<p>The standards targeted are appropriate for an Integrated Mathematics I course as indicated by the PARCC Model Content Frameworks. These standards do not appear in the Integrated Mathematics II course as outlined by PARCC. These standards were outlined as Integrated Mathematics I in Appendix A of the CCSS. Those wishing to use this unit should make note of this and select the appropriate place to use this unit.</p> <p>Students are expected to create high level conjunctures throughout the module on topics that will allow them to solve many different types of geometry problems. The expectations for students proofs and conjectures are high, and it would be helpful to have example student responses to make sure that teachers can push students to the expected level of rigor.</p> <p>The unit as a whole connects the major work and supporting work in a balanced, appropriate manner. Connections to prior learning are also clear. For example, the task two Teacher Notes establish connections between the student's current work with proofs and their prior work with proving triangle congruence and rigid transformations and congruence. Students are able to practice skills throughout the lessons; for example students practice the</p>
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<p>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>skills of finding the measures of angles throughout several lessons in the units.</p> <p>Task sets include problems designed to support student application, conceptual understanding, and procedural skill and fluency. Many questions target more than one aspect of rigor. Application is a strength of this module. Students are able to see angles in real world situations, as well as explore real world problems to develop their thinking further. The building of conceptual understanding in this unit is very strong through the use of student experiments. Students are often asked to make important conjectures, so some students may need more support in developing this conceptual understanding after the student experiments. Students are given some opportunities to develop their skills and fluency, but the unit could be stronger if students had more opportunities to practice the skills they are learning in the unit.</p>
<p>Rating: <b>2 – Meets many 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> <li>- Provides extensions for students with high interest or working above grade level.</li> </ul> </li> </ul> <p><u><i>A unit or longer lesson should:</i></u></p> <ul style="list-style-type: none"> <li>✓ Recommend and facilitate a mix of instructional approaches for a variety of learners such as using multiple representations (e.g., including models,</li> </ul>	<p>The provided materials are very usable. The vocabulary and problem types are appropriate for the indicated standards and course, and the teacher notes support the teacher in the use of these materials. Multiple representations of many concepts are provided. The sequencing of tasks highlights key concepts and helps students develop deep understanding. Each task begins with a group activity and then progresses to an individual problem solving activity. Not only are the questions thought-provoking, they are revisited throughout the unit to support the cohesiveness of the materials and the standards. It would be helpful to have more student examples in the instructional supports, but students are definitely engaged in challenging and thought provoking tasks through the lesson experiments.</p> <p>Additional support on the incorporation of technology would be helpful. For example, some tasks mention online apps or dynamic geometry software, but no specific directions for the use of these tools are provided.</p> <p>Scaffolding, differentiation, intervention and/or support needs to be more evident in the tasks. The unit could be improved by providing supports for students that do not come to the conclusions of the lessons as quickly or students who need more support with procedural skills. Some students might need more support throughout the lessons in order to pull out the important information to understand the concepts. There is also no mention of ELL student support.</p> <p>Materials purposefully remove supports to require students to demonstrate their mathematical understanding independently. For example, the Task 2 Teacher Notes clearly state that the task is "particularly moving from reasoning with a diagram to reasoning based on a logical sequence of statements that start with given assumptions and lead to a valid conclusion."</p>
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<p>using a range of questions, checking for understanding, flexible grouping, pair-share).</p> <ul style="list-style-type: none"> <li>✓ Gradually remove supports, requiring students to demonstrate their mathematical understanding independently.</li> <li>✓ Demonstrate an effective sequence and a progression of learning where the concepts or skills advance and deepen over time.</li> <li>✓ 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>Rating: <b>2 – Meets many 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><input type="checkbox"/> Includes aligned rubrics, answer keys and scoring guidelines that provide sufficient guidance for interpreting student performance.</li> </ul> <p><i>A unit or longer lesson should:</i></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>The assessments throughout the unit are found in many formative ways throughout the lesson, and evidence of student understanding can be gathered using these materials. The materials encourage student discussion and teacher observation of discussion to gather evidence of student learning. The "ready, set go" section at the end of the lesson also provides opportunities for formative and/or summative assessments.</p> <p>Answer keys and rubrics are not provided for the "Ready, Set, Go" activities, including the Module 5 test. Although discussion of the opening activities for each task are included in the teacher notes, a clear answer key would be useful for the teacher.</p> <p>Although checks for student understanding are clearly made in these materials, other than the Module 5 Test, assessment is not directly mentioned in the materials.</p> <p>The unit could be improved if a diagnostic and unit assessment was provided. The unit could also be improved if there were indicators for teachers of how to use the the formative assessments and the "ready, set, go" sections to inform and reteach concepts.</p>
<p>Rating: <b>2 – Meets many of the criteria in the dimension</b></p>	

### Summary Comments

<p>Overall, this unit is fantastic. It encourages student exploration and discussion and provides an excellent model of common-core aligned instruction.</p> <p>Future revisions need to address alignment to course pathways suggested by PARCC and include specific mentions of the Standards for Mathematical Practice, specific supports for students needing additional support, and specific attention to assessment.</p>
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#### 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)**

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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.