

**Reviewer Name or ID: DDOE**

**Grade: HS Geometry (DAPSS)      Mathematics Lesson/Unit Title:    Unit--Chapter 12: Circles**

October 9, 2014

Review of Charter Curriculum for DAPSS

In reference to the materials submitted to DDOE by DAPSS, it is not possible to determine with any certainty whether DAPSS's HS curriculum is fully aligned to the DE Common Core State Standards for Mathematics. The determination on the following pages only assesses one unit of curriculum materials out of 4 years of required HS coursework. In order to assess evidence of full alignment of the 4 required high school courses, a scope and sequence for each course, including pacing information and example assessments would need to be examined in addition to the submitted unit.

The submitted unit has been assessed for alignment to the CCSS for mathematics and does not show adequate alignment to the standards. Please see the summary comments where expectations for improvement are shown.



**Reviewer Name or ID: DDOE**

**Grade: HS Geometry (DAPSS)      Mathematics Lesson/Unit Title:    Unit--Chapter 12: Circles**

**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.

**Summary of Observations and Suggestions for Improvement:**

**Note:** The rubric feedback in this document is in reference to the content of the submitted curriculum documentation. It is **NOT** an evaluation of the identified textbook resource.

(The material submitted was one curriculum unit accompanied by some selected pages from the textbook or textbook ancillary materials. The textbook and ancillary materials included textbook answer pages, practice skill worksheets, vocabulary/reading strategies worksheets, reteach worksheets, challenge worksheets and practice problem solving worksheets. In most cases, these ancillary materials were only referred to in the curriculum document as additional resources; so it appears that these materials are intended to be used at the discretion of each teacher, dependent on the student needs within the class.)

**Observations:**

- 1) There is no reference to the Standards for Mathematical Practice (SMP) within the unit and no guidance to the teacher concerning eliciting the SMP in students' academic behaviors.
- 2) There is some indication that discussion might delve into deeper conceptual understanding, however, it appears that instruction and student work will be disproportionately focused on mathematical procedures.

**Suggestions for Improvement:**

- 1) Incorporate an explicit plan for eliciting academic behavior that displays the full range of the SMP. Not all SMP will necessarily be highlighted in each lesson. Use the unit document to give guidance to the teacher concerning which SMP(s) to highlight and suggested techniques for emphasizing the SMP.
- 2) Strategically select and include mathematical tasks that promote reasoning and problem solving and allow multiple entry points and varied solution strategies. For example,

A circle of radius 1 cm rolls around the inside of a 6cm-8cm-10cm right triangle, always remaining tangent to at least one side. How far has its center traveled when it returns to its initial position? (A problem like this could be used to elicit rich discussion and connect middle school concepts to new learning.)

- 3) Plan for at least two significant performance tasks per semester, incorporating DoK 3 and/or 4 level expectations.



**Reviewer Name or ID: DDOE**

**Grade: HS Geometry (DAPSS)      Mathematics Lesson/Unit Title:    Unit--Chapter 12: Circles**

***Rating for Dimension I: Alignment is non-negotiable and requires a rating of 2 or 3.***

Rating:                    3      2      **1**      0

**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

**II. Key Shifts in 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.
  - **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.

**Summary of Observations and Suggestions for Improvement:**

**Observations:**

- 1) The unit is focused on HS Geometry standards and the curriculum encourages the development of new skills knowledge and understandings on the basis of previous learning.
- 2) The curriculum documentation does not contain sufficient information to suggest an appropriate balance among applications, conceptual understanding and procedural skill and fluency. The unit information presented is disproportionately focused toward procedures.

**Suggestions for Improvement:**

- 1) Strive for conceptual understanding before movement to practicing procedures/skills. Students should develop conceptual understanding through tasks, brief problems, questions, multiple representations and opportunities for students to write and speak about their understanding.
- 2) Provide regular opportunities for students to grapple with real-world application problems that require persistence and application in new situations.
- 3) In order to accomplish suggestions 1 and 2, locate appropriate tasks and indicate their expected use

*The EQuIP rubric is derived from the Tri-State Rubric and the collaborative development process led by Massachusetts, New York, and Rhode Island and facilitated by Achieve. This version of the EQuIP rubric is current as of 06-15-13. View Creative Commons Attribution 3.0 Unported License at <http://creativecommons.org/licenses/by/3.0/>. Educators may use or adapt. If modified, please attribute EQuIP and re-title.*



**Reviewer Name or ID: DDOE**

**Grade: HS Geometry (DAPSS)      Mathematics Lesson/Unit Title: Unit--Chapter 12: Circles**

within the curriculum document. The provided documentation did not give enough information to determine an explicit plan for including conceptual understanding and application with sufficient regularity.

- 4) Plan for at least two significant performance tasks per semester, incorporating DoK 3 and/or 4 level expectations.

Rating:            3    **2**    1    0

**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

**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.

*A unit or longer lesson should:*

- ✓ 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.
- 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.



**Reviewer Name or ID: DDOE**

**Grade: HS Geometry (DAPSS)      Mathematics Lesson/Unit Title:    Unit--Chapter 12: Circles**

**Summary of Observations and Suggestions for Improvement:**

**Observations:**

- 1) Each lesson does indicate important vocabulary for the lesson. There is some guidance concerning vocabulary strategies and the additional resources include worksheets intended for vocabulary and reading.
- 2) There is an indication of built-in plans for differentiation (non-proficient, proficient and mastered), however, there is no guidance included in the document concerning how to determine which students will complete which level of work.
- 3) There is only one reference to the use of technology in the unit document.

**Suggestions for Improvement:**

- 1) There is a good deal of guidance to the teacher in terms of discussions to include in instruction, potential student difficulties, and textbook problems and examples to be utilized. A similar level of detail should be used in reference to the use of technology for understanding by both the teacher and the students.
- 2) Strategically select and include mathematical tasks that will require students to engage in mathematical thinking and productive struggle.
- 3) Plan for at least two significant performance tasks per semester, incorporating DoK 3 and/or 4 level expectations.
- 4) Include pacing information as a guideline for teachers and carefully proofread, especially for content errors.

Rating:                    3      2      **1**      0

**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

**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:*

*The EQuIP rubric is derived from the Tri-State Rubric and the collaborative development process led by Massachusetts, New York, and Rhode Island and facilitated by Achieve. This version of the EQuIP rubric is current as of 06-15-13. View Creative Commons Attribution 3.0 Unported License at*

*<http://creativecommons.org/licenses/by/3.0/>. Educators may use or adapt. If modified, please attribute EQuIP and re-title.*



**Reviewer Name or ID: DDOE**

**Grade: HS Geometry (DAPSS)      Mathematics Lesson/Unit Title: Unit--Chapter 12: Circles**

- ✓ Use varied modes of curriculum-embedded assessments that may include pre-, formative, summative and self-assessment measures.

**Summary of Observations and Suggestions for Improvement:**

**Observations:**

There were no assessments submitted with the unit nor was there a description of the assessment plan for the unit, therefore, it is impossible to determine whether assessments show alignment to the CCSS as described above.

**Suggestions for Improvement:**

- 1) Provide sample assessments for the unit and include clear communication about the plan for formative and summative assessment. The assessments should be accompanied by aligned rubrics, answer keys and scoring guidelines that provide sufficient guidance for interpreting student performance.

Rating:                    3      2      1      **0**

**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:**

**R:** Revision Needed – Aligned partially and needs significant revision in one or more dimensions  
**(total 3 – 7)**

**Developing toward CCSS Quality** – Aligned partially and approaches the quality standard in some dimensions and needs significant revision in others.

**Summary Comments**

*The EQuIP rubric is derived from the Tri-State Rubric and the collaborative development process led by Massachusetts, New York, and Rhode Island and facilitated by Achieve. This version of the EQuIP rubric is current as of 06-15-13. View Creative Commons Attribution 3.0 Unported License at <http://creativecommons.org/licenses/by/3.0/>. Educators may use or adapt. If modified, please attribute EQuIP and re-title.*



**Reviewer Name or ID: DDOE**

**Grade: HS Geometry (DAPSS)      Mathematics Lesson/Unit Title:    Unit--Chapter 12: Circles**

**Commendations:**

- 1) There is some guidance to teachers concerning discussion topics, typical student challenges, vocabulary, specific examples and problems to assign.
- 2) The unit is focused on HS Geometry standards and the curriculum encourages the development of new skills knowledge and understandings on the basis of previous learning.
- 3) Each lesson does indicate important vocabulary for the lesson. There is some guidance concerning vocabulary strategies and the additional resources include worksheets intended for vocabulary and reading.
- 4) There is an indication of built-in plans for differentiation (non-proficient, proficient and mastered).

**Expectations:**

- 1) Incorporate an explicit plan for eliciting academic behavior that displays the full range of the SMP. Not all SMP will necessarily be highlighted in each lesson. Use the unit document to give guidance to the teacher concerning which SMP(s) to highlight and suggested techniques for emphasizing the SMP.
- 2) Strategically select and include mathematical tasks that promote reasoning and problem solving and allow multiple entry points and varied solution strategies. For example,
  - a. A circle of radius 1 cm rolls around the inside of a 6cm-8cm-10cm right triangle, always remaining tangent to at least one side. How far has its center traveled when it returns to its initial position? (A problem like this could be used to elicit rich discussion and connect middle school concepts to new learning.)
- 3) Plan for at least two significant performance tasks per semester, incorporating DoK 3 and/or 4 level expectations.
- 4) Show your explicit plan to develop conceptual understanding before movement to practicing procedures/skills. Students should develop conceptual understanding through tasks, brief problems, questions, multiple representations and opportunities for students to write and speak about their understanding.
- 5) Indicate the explicit plan to provide regular opportunities for students to grapple with real-world application problems that require persistence and application in new situations. Tasks should be strategically selected and integrated into the curriculum.
- 6) Include pacing information as a guideline for teachers and carefully proofread, especially for content errors.
- 7) Include guidance in reference to the use of technology by both the teacher and the students in order to build mathematical understanding through reasoning with technology.
- 8) Provide sample assessments for the unit and include clear communication about the plan for formative and summative assessment. The assessments should be accompanied by aligned rubrics, answer keys and scoring guidelines that provide sufficient guidance for interpreting student performance.

**Suggested Resources:**

High School Publishers' Criteria for the Common Core State Standards for Mathematics

[http://www.corestandards.org/assets/Math\\_Publishers\\_Criteria\\_HS\\_Spring%202013\\_FINAL.pdf](http://www.corestandards.org/assets/Math_Publishers_Criteria_HS_Spring%202013_FINAL.pdf)

*The EQuIP rubric is derived from the Tri-State Rubric and the collaborative development process led by Massachusetts, New York, and Rhode Island and facilitated by Achieve. This version of the EQuIP rubric is current as of 06-15-13. View Creative Commons Attribution 3.0 Unported License at*

<http://creativecommons.org/licenses/by/3.0/>. Educators may use or adapt. If modified, please attribute EQuIP and re-title.



**Reviewer Name or ID: DDOE**

**Grade: HS Geometry (DAPSS)      Mathematics Lesson/Unit Title:    Unit--Chapter 12: Circles**

High School Common Core State Standards (including Mathematic Appendix A)

<http://www.corestandards.org/Math/>

Smarter Balanced Assessment Blueprints and Sample Assessment Items for HS

[http://www.smarterbalanced.org/wordpress/wp-content/uploads/2014/05/Math\\_Preliminary\\_-\\_Blueprint-2014\\_04-30Final.pdf](http://www.smarterbalanced.org/wordpress/wp-content/uploads/2014/05/Math_Preliminary_-_Blueprint-2014_04-30Final.pdf)

<http://www.smarterbalanced.org/sample-items-and-performance-tasks/>

**Rating for Dimension I: Alignment is non-negotiable and requires a rating of 2 or 3.**

**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.

*The EQuIP rubric is derived from the Tri-State Rubric and the collaborative development process led by Massachusetts, New York, and Rhode Island and facilitated by Achieve. This version of the EQuIP rubric is current as of 06-15-13. View Creative Commons Attribution 3.0 Unported License at <http://creativecommons.org/licenses/by/3.0/>. Educators may use or adapt. If modified, please attribute EQuIP and re-title.*

