



Tri-State Quality Review Rubric & Process
Mathematics Lessons/Units
EQIP Collaborative
Fall 2012

Tri-State Quality Review Rubric



The Tri-State Collaborative (comprised of educational leaders from Massachusetts, New York, and Rhode Island) has developed criterion-based rubrics and review processes to evaluate the quality of lessons and units intended to address the Common Core State Standards for ELA/Literacy and Mathematics.

This presentation introduces the Quality Review Rubric in Mathematics.



Tri-State Quality Review Rubric

Purposes



- 1) Provide clear, descriptive criteria for CCSS lessons/units
- 2) Provide meaningful, constructive feedback to developers of lessons/units
- 3) Identify lessons/units that can serve as models
- 4) Guide collegial review and jurying processes



Tri-State Quality Review Rubric

Initial Review Process



The primary purpose of this process is to provide specific input for the improvement of instructional materials so that teaching and learning are aligned with the CCSS.

- 1.** Initially the Quality Review sessions should focus on identifying the criteria that are met and providing feedback on improvements needed to meet the criteria.
- 2.** When the group has reviewed several lessons/units and individuals are interpreting criteria consistently, then ratings may be assigned for each dimension and judgments calibrated.



Tri-State Quality Review Rubric

Intended Use



The Tri-State Quality Review Rubric is designed to evaluate:

- Lessons that include instructional activities and assessments aligned to the CCSS that may extend over a few class periods or days.
- Units that include integrated and focused lessons aligned to the CCSS that extend over a longer period of time.
- The rubric is NOT designed to evaluate a single task or activity.



Tri-State Quality Review Rubric Formats



- The one page format contains the entire rubric including dimensions, criteria and ratings.
- The two page format is used during the review process and includes a column following each dimension for recording observations, comments and suggestions for improvement.





Criteria define quality across four dimensions

Criteria that define the rubric are organized as a list describing quality in four dimensions

Tri-State Quality Review Rubric for Mathematics Lessons & Units – Version 4

Grade: _____ Mathematics Lesson/Unit Title: _____		Overall Rating: _____	
I. Alignment to the Rigor of the CCSS	II. Key Areas of Focus in the CCSS	III. Instructional Supports	IV. Assessment
<p><i>The lesson/unit aligns with the letter and spirit of the CCSS:</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Targets a set of grade level mathematics standard(s) at the level of rigor in the CCSS for teaching and learning. ** <input type="checkbox"/> 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. ** <input type="checkbox"/> Presents a balance of mathematical procedures and deeper conceptual understanding inherent in 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"> <input type="checkbox"/> Focus: Centers on the concepts, foundational knowledge, and level of rigor that are prioritized in the standards. ** <input type="checkbox"/> Coherence: Makes connections and provides opportunities for students to transfer knowledge and skills within and across domains and learning progressions. <p>Rigor: Requires students to engage with and demonstrate challenging mathematics in the following ways:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Application: Provides opportunities for students to independently apply mathematical concepts in real-world situations and problem solve with persistence, choosing and applying an appropriate model or strategy to new situations. <input type="checkbox"/> Conceptual Understanding: Requires students to demonstrate conceptual understanding through complex problem solving, in addition to writing and speaking about their understanding. <input type="checkbox"/> 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. 	<p><i>The lesson/unit is responsive to varied student learning needs:</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Includes clear and sufficient guidance to support teaching and learning of the targeted standards, including, when appropriate, the use of technology and media. ** <input type="checkbox"/> 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. ** <input type="checkbox"/> Engages students in productive struggle through relevant, thought-provoking questions, problems, and tasks that stimulate interest and elicit mathematical thinking. <input type="checkbox"/> Addresses instructional expectations and is easy to understand and use. <p>Provides appropriate level and type of scaffolding, differentiation, intervention, and support for a broad range of learners.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Supports diverse cultural and linguistic backgrounds, interests, and styles. <input type="checkbox"/> Provides extra supports for students working below grade level. <input type="checkbox"/> Provides extensions for students with high interest or working above grade level. <p><u><i>A unit or longer lesson should:</i></u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Recommend and facilitate a mix of instructional approaches for a variety of learners such as using multiple representations, (including models) using a range of questions, checking for understanding, flexible grouping, pair-share, etc. <input type="checkbox"/> Gradually remove supports, requiring students to demonstrate their mathematical understanding independently. <input type="checkbox"/> Demonstrate an effective sequence and a progression of learning where the concepts or skills advance and deepen over time. <input type="checkbox"/> 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. 	<p><i>The lesson/unit regularly assesses whether students are mastering standards-based content and skills:</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Is designed to elicit direct, observable evidence of the degree to which a student can independently demonstrate the targeted CCSS. ** <input type="checkbox"/> Assesses student proficiency using methods that are accessible and unbiased, including the use of grade level language in student prompts. ** <input type="checkbox"/> Includes aligned rubrics, answer keys, and scoring guidelines that provide sufficient guidance for interpreting student performance. ** <p><u><i>A unit or longer lesson should:</i></u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Use varied modes of curriculum embedded assessments that may include pre-, formative, summative and self-assessment measures.
Rating: 3 2 1 0	Rating: 3 2 1 0	Rating: 3 2 1 0	Rating: 3 2 1 0

**The most critical criteria are considered to be "must have's" for a quality CCSS lesson/unit.

Quality Review Rubric Page 1:

Dimensions I, II, and Rating Descriptors

Tri-State Quality Review Rubric for Mathematics Lessons & Units – Version 4

Grade: Mathematics Lesson/Unit Title:

Overall Rating:

I. Alignment to the Rigor of the CCSS	I. Alignment to the Rigor of the CCSS	II. Key Areas of Focus in the CCSS	II. Key Areas of Focus in the CCSS
<p><i>The lesson/unit aligns with the letter and spirit of the CCSS:</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Targets a set of grade level mathematics standard(s) at the level of rigor in the CCSS for teaching and learning. ** <input type="checkbox"/> 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.** <input type="checkbox"/> Presents a balance of mathematical procedures and deeper conceptual understanding inherent in the CCSS. 	<p><u>Observations and Comments:</u></p> <div style="text-align: center; font-size: 2em; color: orange;">←</div> <p><u>Suggestions for Improvement:</u></p>	<p><i>The lesson/unit reflects evidence of key shifts that are reflected in the CCSS:</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Focus: Centers on the concepts, foundational knowledge, and level of rigor that are prioritized in the standards. ** <input type="checkbox"/> Coherence: Makes connections and provides opportunities for students to transfer knowledge and skills within and across domains and learning progressions. <p>Rigor: Requires students to engage with and demonstrate challenging mathematics in the following ways:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Application: Provides opportunities for students to independently apply mathematical concepts in real-world situations and problem solve with persistence, choosing and applying an appropriate model or strategy to new situations. <input type="checkbox"/> Conceptual Understanding: Requires students to demonstrate conceptual understanding through complex problem solving, in addition to writing and speaking about their understanding. <input type="checkbox"/> 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. 	<p><u>Observations and Comments:</u></p> <p><u>Suggestions for Improvement:</u></p>
<p>Rating: 3 2 1 0</p>	<p>Rating: 3 2 1 0</p>	<p>Rating: 3 2 1 0</p>	<p>Rating: 3 2 1 0</p>

Rating Scale for Each Dimension:

- 3: Meets all "must have" criteria (**) and most of the other criteria in the dimension.
- 2: Meets many of the "must have" criteria and many of the other 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 Lesson/Unit - meets all the "must have" criteria (**) and most of the other criteria in all four dimensions (mainly 3's).
- E/I: Exemplar if Improved - needs some improvement in one or more dimensions (mainly 3's and 2's).
- R: Needs Revision - is a "work in progress" and requires significant revision in one or more dimensions (mainly 2's and 1's).
- N: Not Recommended - does not meet the criteria in the dimensions (mainly 1's and 0's).
- N/R: Not ready to review - use rubric to revise and organize lesson/unit then resubmit for a quality review.

The Criteria Describe a Model CCSS Lesson/Unit



- The descriptive criteria listed in each Dimension represent a high standard of quality – describing characteristics one would find in a model CCSS lesson/unit.
- Critical criteria have been designated with a double asterisk (**).
- A criterion is checked when the reviewer believes that the lesson/unit contains clear, substantial evidence of the criterion’s descriptor.
- Many “in progress” lessons/units, while representing good instruction, may not be deemed to currently meet the standard.
- The pattern of checks in a column should thus indicate both the strengths of the lesson/unit and areas for possible improvement.



Dimension I. Alignment to the Rigor of the CCSS



The lesson/unit aligns with the letter and spirit of the CCSS:

- Targets a set of grade level mathematics standard(s) at the level of rigor in the CCSS 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.**

** Indicates “must have” criteria - necessary for a 3-rating.



Dimension II. Key Areas of Focus in the CCSS



The lesson/unit reflects evidence of key shifts that are reflected in the CCSS:

- ❑ **Focus:** Centers on the concepts, foundational knowledge, and level of rigor that are prioritized in the standards. **
- ❑ **Coherence:** Makes connections and provides opportunities for students to transfer knowledge and skills within and across domains and learning progressions.

Rigor: Requires students to engage with and demonstrate challenging mathematics in the following ways:

- ❑ **Application:** Provides opportunities for students to independently apply mathematical concepts in real-world situations and problem solve with persistence, choosing and applying an appropriate model or strategy to new situations.
- ❑ **Conceptual Understanding:** Requires students to demonstrate conceptual understanding through complex problem solving, in addition to writing and speaking 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 .



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.



Dimension III. Instructional Supports



 (Cont. from previous slide)

A unit or longer lesson should:

- Recommend and facilitate a mix of instructional approaches for a variety of learners, such as using multiple representations (including models), using a range of questions, checking for understanding, flexible grouping, pair-share, etc.
- 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.
- 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.

NOTE: These criteria apply specifically to pieces or collections of work that require longer periods of time to implement, units or longer lessons. A lesson/unit can still be considered for a 3-rating, relative to the criteria of a particular dimension without meeting ALL of the criteria, especially if the criteria are specifically identified for longer lessons and less applicable to a shorter lesson or instructional sequence.



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.



Use the Rubric & Criteria to Evaluate a Lesson/Unit



1. **Record** the grade and title of the lesson/unit at the top of the Quality Review Rubric.
2. **Scan** the lesson/unit packet to see what it contains and how it is organized. **Read** key materials in the packet, particularly those related to the alignment of its instruction and assessment.
3. **Identify the grade-level CCSS** that the lesson/unit targets and compare its focus and expectations to those of the targeted CCSS
4. **Work the student tasks** provided with the lesson/unit, keeping in mind all possible strategies students might use.
5. **Analyze** the lesson/unit for evidence of Dimension I: *Alignment to the Rigor of the CCSS*
6. **Check** the criteria in Column I for which there is clear and substantial evidence of meeting the descriptors.
 - Closely examine the lesson/unit packet through the “lens” of each criterion in each of the four dimensions.
 - If clear and substantial evidence is found, place a check by the criterion on the rubric; if not, use the comment column to provide input on specific improvements that can be made to meet criterion.



Use the Rubric & Criteria to Evaluate a Lesson/Unit



7. Examine the pattern of checks in the column. Determine which of the descriptors on the 3-2-1-0 rating scale (found below the rubric, on the left) best characterizes the current *Alignment* of the lesson/unit.
 - If all applicable “must have” criteria have been met, as well as other criteria deemed important, the lesson/unit is considered “exemplary” and receives a “3” rating.
 - If all “must have” criteria are not met, determine where the lesson/unit currently sits along the rating scale for the dimension.
 - 3:** Meets all “must have” criteria (**) and most of the other criteria in the dimension.
 - 2:** Meets many of the “must have” criteria and many of the other criteria in the dimension.
 - 1:** Meets some of the criteria in the dimension.
 - 0:** Does not meet the criteria in the dimension.
8. Circle the rating at the bottom of the column.
9. Use the criteria to make observations and recommendations about this lesson/unit (which can be recorded in the column next to Dimension I).



Repeat the Process for the Other Dimensions



II. Key Areas of Focus in the CSSS

- ◆ Examine the lesson/unit through the “lens” of the criteria
- ◆ Check the criteria that are met
- ◆ Provide input on improvements needed to meet the criteria
- ◆ Use the Criteria to determine a 3-2-1-0 rating

III. Instructional Supports

- ◆ Examine the lesson/unit through the “lens” of the criteria
- ◆ Check the criteria that are met
- ◆ Provide input on improvements needed to meet the criteria
- ◆ Use the Criteria to determine a 3-2-1-0 rating

IV. Assessment

- ◆ Examine the lesson/unit through the “lens” of the criteria
- ◆ Check the criteria that are met
- ◆ Provide input on improvements needed to meet the criteria
- ◆ Use the Criteria to determine a 3-2-1-0 rating



Determine an Overall Rating



1. Review the patterns of the checked criteria and the ratings for each of the four dimensions.
2. Make a summary judgment about the overall quality of the lesson/unit, using the Overall Rating Scale:
 - E:** Exemplar Lesson/Unit - meets all the “must have” criteria (**) and most of the other criteria in all four dimensions (mainly 3’s).
 - E/I:** Exemplar if Improved - needs some improvement in one or more dimensions (mainly 3’s and 2’s).
 - R:** Needs Revision - is a “work in progress” and requires significant revision in one or more dimensions (mainly 2’s and 1’s).
 - N:** Not Recommended - does not meet the criteria in the dimensions (mainly 1’s and 0’s).
 - N/R:** Not ready to review – use rubric to revise and organize lesson/unit then resubmit for a quality review.
3. Record the Overall Rating on the top right of the Rubric.
4. The four dimensional ratings for a particular lesson or unit reveal specifics about its current status as a model of CCSS instruction.



Principles & Agreements



1. Before beginning a review, **all members of a review team are very familiar with the CCSS.**
2. **Lessons/units to be reviewed are seen as “works in progress,”** with criterion-based comments intended to inform and improve rather than endorse or reject the lesson/unit.
3. **All discussions, commentary, and recommendations are criterion- and evidence-based.**
4. **Each member of a review team records his/her checked criteria and comments prior to discussion.** Discussions should focus on comparing and understanding review team members’ observations.
5. **The goal of the process is *not* consensus, but rather common understanding of the criteria and their meaning.**





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