

Module 1  
Participant Guide

Focus on Practice Standards

## Section 6

Connecticut Core Standards for  
Mathematics



Grades K–5

*Systems of Professional Learning*

### **Connecticut Core Standards Systems of Professional Learning**

The material in this guide was developed by Public Consulting Group in collaboration with staff from the Connecticut State Department of Education and the RESC Alliance. The development team would like to specifically thank Ellen Cohn, Charlene Tate Nichols, and Jennifer Webb from the Connecticut State Department of Education; Leslie Abbatiello from ACES; and Robb Geier, Elizabeth O'Toole, and Cheryl Liebling from Public Consulting Group.

The Systems of Professional Learning project includes a series of professional learning experiences for Connecticut Core Standards District Coaches in English Language Arts, Mathematics, Humanities, Science, Technology, Engineering, Mathematics (STEM), and Student/Educator Support Staff (SESS).

Participants will have continued support for the implementation of the new standards through virtual networking opportunities and online resources to support the training of educators throughout the state of Connecticut.

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Section 6

## Section 6: Teaching with the Standards for Mathematical Practice

### Asking Effective Questions

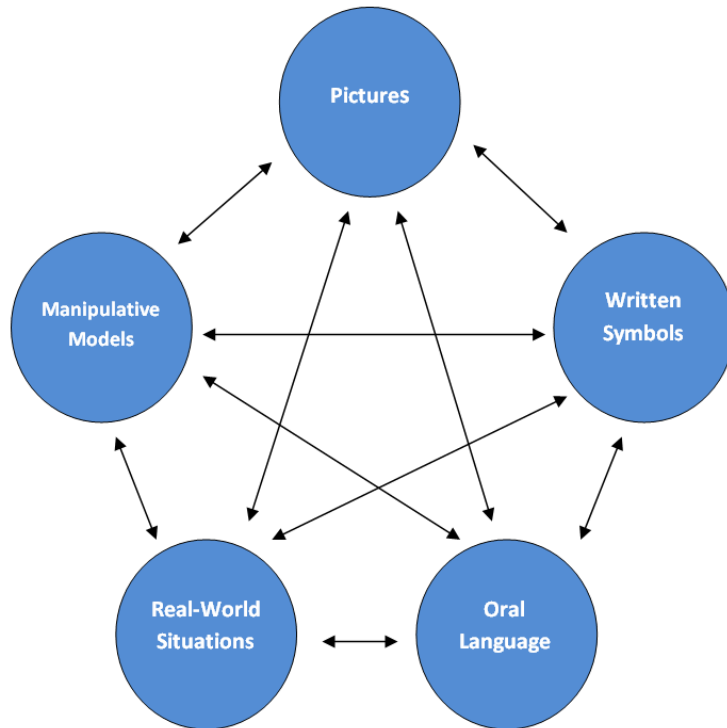
*Well structured questions include three parts:*

- An invitation to think
  - A cognitive process
  - A specific topic
1. **Anticipate Student Thinking.** Thinking about multiple ways that your students may solve a problem will allow you to anticipate and plan possible questions that the students might ask and that you can ask to stimulate their thinking and deepen student understanding.
  2. **Link to Learning Goals.** By asking questions that relate back to the learning goals and the standards that the lesson focuses on, you are helping students to focus on the key skills and concepts. This link will then allow students to deepen their understanding and apply what they have learned in new situations.
  3. **Pose Open-ended Questions.** Open-ended questions support and encourage a variety of approaches and responses. These questions also provide a manageable challenge for students as they are free to answer at their readiness level. An example of an open-ended question is: Instead of asking a student “What is  $14 + 6$ ?” you could ask “How many ways can you make 20?”.
  4. **Pose Questions that Actually Need to be Answered.** Rhetorical questions such as “Doesn’t a square have four sides?” provide students with an answer without allowing them to engage in their own reasoning.
  5. **Incorporate Verbs that Elicit Higher Levels of Bloom’s Taxonomy.** Verbs such as *evaluate*, *justify*, *explain*, *describe*, *elaborate*, etc., prompt students to communicate their thinking and understanding.
  6. **Pose Questions that Open Up the Conversation to Include Others.** Use questions such as “How does your solution relate to \_\_\_\_\_’s solution?” or “What do you think about \_\_\_\_\_’s idea?” in order to draw more students into the discussion.
  7. **Keep Questions Neutral.** Try not to qualify a question as easy or hard as some students are afraid of ‘hard’ questions and others are easily bored with ‘easy’ questions. Also, be mindful of verbal and non-verbal cues such as tone of voice and facial expressions, as these can set the tone of a question.
  8. **Provide wait time.** Many students need time to process information before answering a question. Teachers that allow for a wait time of 3 seconds or more after a question tend to receive a greater quantity and quality of student responses.

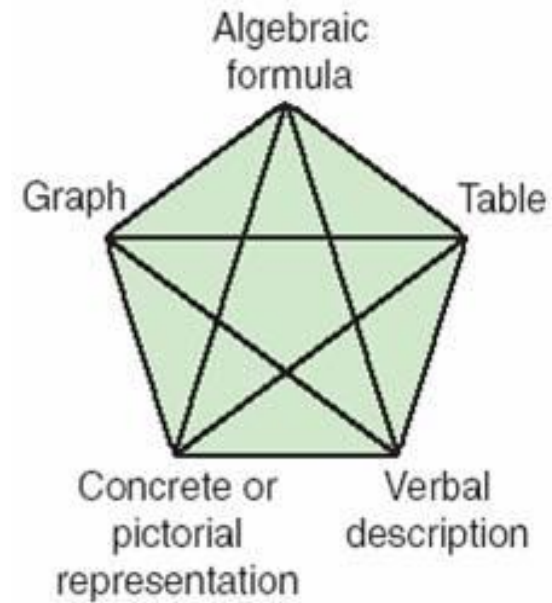
Student Achievement Division Ontario Schools (2011). *Capacity Building Series Special Edition #21 Asking Effective Questions*. Retrieved from [http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/CBS\\_AskingEffectiveQuestions.pdf](http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/CBS_AskingEffectiveQuestions.pdf)

#### Additional Notes:

### Multiple Representations



Van de Walle, Karp, & Bay-Williams, 2013. 24.



NCTM, 2001.

## Steps to Getting Grades K–5 Students Talking

### Build a Community of Learners

The community of learning is embedded in the classroom culture. Have students form community agreements for how they will work together and respect each other during the learning process.

### Encourage Students as Mathematicians

Encourage students to believe that they can reach their goals of being effective mathematicians. Share excitement when you hear students search for meaningful mathematics rather than just getting the right answer.

### Ask Genuine Questions

Asking genuine questions that show a desire to understand another way of thinking about mathematics is a critical aspect of getting students to the point of opening up their mathematical thinking to the rest of the class. Model this type of questioning and expect students to question each other in a positive and genuine manner.

### Press Students and Encourage Disequilibrium

Plan for and give the time that students need to work through productive struggle. Press for justification of thoughts and strategies, knowing that these moments offer opportunities for new learning to take place.

### Promote Risk Taking

Acknowledging stages of thinking or “partial thinking” develops risk-takers and is an important move that supports effective student discourse in the mathematics classroom.

### Allow Private Think Time

Allow individuals the time to privately think about the mathematics before engaging in discourse so that everyone comes into the conversation with some initial thinking. Then, before a full discussion ensues, have each tell what they thought about in order to get everyone’s thinking heard.

### Use Protocols

Purposefully plan the use of specific protocols to build equitable opportunities for all students to share their mathematical thinking with others.

Blanke, B. (2009). *Understanding mathematical discourse in the elementary classroom: A case study*. Retrieved from [http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/11141/Dissertation\\_Blanke\\_3-29-09\[Final\].pdf?sequence=1](http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/11141/Dissertation_Blanke_3-29-09[Final].pdf?sequence=1)

## Grades K–2: Sample 2<sup>nd</sup> Grade Lesson Plan

Evaluate the lesson plan below using the specific criteria from the EQIP Rubric. Then, in the space provided, offer suggestions for strengthening the lesson.

### Odds and Evens

From Lessons for Learning for the Common Core State Standards in Mathematics: Grade 2, “Odds and Evens” (pp. 12-15), 2013, Public Schools of North Carolina. Provided with permission from the Public Schools of North Carolina 3-7-14. Retrieved from <http://maccss.ncdpi.wikispaces.net/file/view/CCSSMathTasks-Grade2.pdf/464833262/CCSSMathTasks-Grade2.pdf>

**Content Standard: Work with equal groups of objects to gain foundations for multiplication.**

**2.OA.3** Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.

**Standards for Mathematical Practice:**

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

**Student Outcomes:**

- I can write an equation to show that a number that is doubled has an even sum.
- I can explain why two even numbers have an even sum and why two odd numbers have an even sum and why an odd and even have an odd sum.

**Materials:**

- Odds and Evens game board (one for partners)
- Paperclip and pencil to use as spinner or a clear spinner to use on top of the game board
- Pencil to record on game board
- Color tiles or grid paper for students needing additional instruction
- *Two of Everything* by Lily Toy Hong
- Chart paper or a way to display the chart, marker
- Index cards with  $1+1=$ ,  $2+2=$ ,  $3+3=$ , etc. to  $10+10$ , one card for each set of partners
- Color tiles or grid paper to model

**Directions:**

1. Read *Two of Everything*, by Lily Toy Hong to the class. Chart what happens when something is put in the pot. For example, if 3 of something goes in the pot, then how many come out?  $3+3=6$ . Continue this with at least five examples.
2. Give partners an index card with  $1+1=$  or  $2+2=$  or  $3+3=$ , etc. Ask partners to find something or think of something in the real world that represents their equation. For example,  $1+1=$  a pair of shoes,  $4+4=$  the legs on an octopus (4 on each side),  $5+5=$  the number of cents in a dime (nickel plus nickel)
3. Bring the cards back to the group and share the “doubles” found. Ask students about the sums. Do you notice what happens when you add two equal addends? Why do you think this happens? Brainstorm with the class and model with color tiles by creating rectangles to “prove” this concept.
4. Introduce the game Odds and Evens to the class by the teacher playing the game against the class. Player One has even numbers and Player Two has odd numbers. Each player spins one spinner and the two addends are added together. If the sum is even, Player One records it by writing the equation on a blank sheet of paper, or in their math journal, and then writing the sum in the box under EVEN. If the sum is odd, Player Two records it by writing the equation on a blank sheet of paper, or in their math journal, and then writing the sum in the box under ODD and the number goes to Player Two. The first player to fill all the blanks is the winner.
5. While the students are playing, the teacher should rotate around the room and see if students are starting to notice what is happening when an even number and an even number are added together, odd and odd, even and odd? Ask students if they played again if they would like to be the player with even numbers or the player with odd numbers and why.
6. After playing, discuss the game and the generalizations students were able to construct about even and odd numbers and what happens when you have two equal addends. As students share what they learned, the teacher could chart their ideas such as “odd + odd = even, odd + even = odd, even + even = even.”

**Questions to Pose:****Before**

What do you know about “doubles” facts? How do we know if a number is odd or even?

**During**

What have you noticed about the sums you are getting while playing the game? What happens when you add two equal addends? Why do you think this happens? Are you starting to notice what is happening when an even and an even are added together, odd and odd, even and odd? If you played again, would you like to be even or odd? Why?

**After**

As a whole group discuss the questions listed above and focus on what student learned about odd and even addends.



**Possible Misconceptions & Suggestions:**

Students may think an odd number and an odd number will equal an odd number.

- Show students a rectangle made with color tiles of an odd number and make another rectangle of an odd number then match the two odd tiles together so that it becomes even.

Students may think an even number and an odd number will equal an even number.

- Repeat the task above using an odd and even number so students can see that you still have an odd tile left over.

**Special Notes:**

- This task addresses the second part of the standard. This task would need to come in a progression of lessons where an understanding of grouping to create an odd or even number has already been taught.
- This standard asks that students understand that two equal addends have an even sum, therefore, an extension of this lesson would be for students to understand why an even number and an odd number have an odd sum but this is not addressed in the standard.

**Evaluation Notes:**

Strengths	Recommendations

## Grade 3–5: Sample 4<sup>th</sup> Grade Lesson Plan

*Evaluate the lesson plan using the specific criteria from the EQulP Rubric. Then provide suggestions for strengthening the lesson.*

### "Chips" ahoy!

From "Chips" Ahoy!, by T. Downing 2014, Chapel Hill, NC: LEARN NC. Copyright (2008) by LEARN NC, a program of the University of North Carolina at Chapel Hill School of Education. Available under a Creative Commons Attribution 2.5 licence. Retrieved from <http://www.learnnc.org/lp/pages/3249>

This lesson will help children recognize, continue, and create number patterns, as well as find the rules for the patterns. The activities progress from concrete to semi-concrete to abstract.

#### Learning outcomes

Students will:

- learn how to identify, continue, and create number patterns
- identify the rule for the pattern

#### Time required for lesson

45 minutes

#### Materials/resources

- overhead projector
- hundred number chart suitable for use on the overhead
- see-through chips small enough to fit in one of the squares on the hundred number chart
- laminated hundred number charts (one for each student)
- see-through plastic chips (small enough to fit on one of the squares of the hundred number chart)
- dry erase or wet erase markers
- notebook paper and pencil

#### Pre-activities

- The students will need to be familiar with patterning using shapes. The teacher should have given the students time prior to the lesson to examine the hundred number charts and to make observations about the hundred number chart.
- Prior to this lesson, the teacher should prepare several number patterns for the students to complete during the lesson.

## Activities

1. Review with the students shape patterns. (For example: draw circle, triangle, circle, triangle or square, square, hexagon, square, square, hexagon.) Put a few on the board for the students to solve as a class.
2. Tell students that they are going to learn about a new kind of patterning today—numerical patterns, or patterns using numbers. Demonstrate how to use the hundred number chart to complete a numerical pattern using the overhead projector, overhead projector hundred number chart, and see-through chips. Put chips on the overhead transparency and model how you will figure out the next number in the pattern. Some example patterns are: 8, 10, 12, 14 or 30, 27, 24, 21. (Be sure to alternate putting the missing blanks at the beginning, middle, and end of the row.)
3. Talk about how to find the rule for the pattern. Ask if the numbers are going up (adding) or going down (subtracting), and by how much. Model how you find the rule for the pattern with the chips.
4. Pass out the hundred number charts and at least 8–10 see-through plastic chips to each student. If you don't have enough for each student, you can put the students in pairs. Work out several more number patterns together as a class. Circulate around the class to check on student progress.
5. Finally, put several more number patterns up on the board or overhead for the student pairs to work independently. Call on students to share their answers and to explain how they got their answers.
6. The final activity is to have students create their own number patterns.
7. As students master the number patterns using chips, they can progress to using the dry or wet erase markers to help them solve the number patterns. Students can progress at their own rate while still being able to participate in the classroom activities. The goal is to eventually remove the hundred number chart, and the students will be able to solve the number patterns independently.

## Assessment

- The assessment can be done by the children themselves. On notebook paper, students can create number patterns that are incomplete and these can be used to assess how they create number patterns. After the teacher has assessed how well the students created number patterns, the students can trade papers with each other. These can be the assessment as to how well they complete number patterns.
- If students make errors creating patterns, those patterns can be used to teach a lesson on correcting patterns.

*Note: Although certain aspects of technology (i.e., overhead projector) are mentioned in the lesson plan, teachers, if replicating this lesson plan, should feel free to incorporate their own technology for use in their classroom.*

**Connecticut Core Standards: Operations & Algebraic Thinking**

**4.OA.5** Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence...

**Evaluation Notes:**

Strengths	Recommendations

## Kindergarten: Making 10

*Examine the following task. Then, in the space below, provide guidance to a teacher who is considering using this task within their lesson. Help the teacher to think about questions to be asked, how students may work on the task, guidance for getting students to talk if working in groups, which of the practices they may want to focus on, the precise language, notations, and symbols they want students to use, and so forth.*

Michael is starting a rock collection. He wants to have 10 rocks in his collection. He has 6 rocks in his collection right now. Michael tells Lisa that he only needs three more rocks in order to complete his collection. If Lisa gives Michael three rocks, will Michael's collect be complete? Show and tell how you know.

### Instructional Suggestions

### Grade 1: The Bake Sale

*Examine the following task. Then, in the space below, provide guidance to a teacher who is considering using this task within their lesson. Help the teacher to think about questions to be asked, how students may work on the task, guidance for getting students to talk if working in groups, which of the practices they may want to focus on, the precise language, notations, and symbols they want students to use, and so forth.*

Your class wants to sell cookies at the bake sale. Your teacher brings in bags for the cookies and 6 cookies will fit into each bag. If you have 18 cookies, how many bags can you fill? Show and tell how you know.

#### Instructional Suggestions

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## Grade 2: Making Bracelets

*Examine the following task. Then, in the space below, provide guidance to a teacher who is considering using this task within their lesson. Help the teacher to think about questions to be asked, how students may work on the task, guidance for getting students to talk if working in groups, which of the practices they may want to focus on, the precise language, notations, and symbols they want students to use, and so forth.*

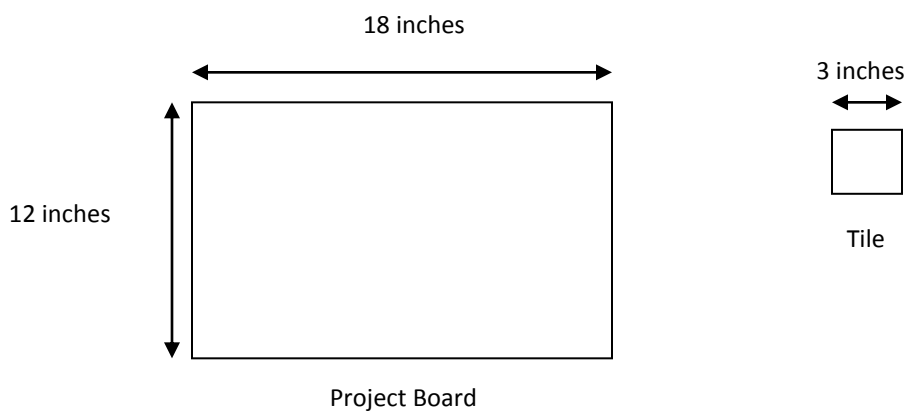
Anna and Jenna are going to the store to buy beads for making bracelets. They each buy the same three colors of beads and the same total number of beads. Anna buys 21 red beads, 37 blue beads, and 19 silver beads. Jenna buys 11 red beads and 29 blue beads. How many **silver** beads did Jenna buy? Show all of your mathematical thinking.

### Instructional Suggestions

### Grade 3: Tile Art

Examine the following task. Then, in the space below, provide guidance to a teacher who is considering using this task within their lesson. Help the teacher to think about questions to be asked, how students may work on the task, guidance for getting students to talk if working in groups, which of the practices they may want to focus on, the precise language, notations, and symbols they want students to use, and so forth.

A new artist wants to create a piece of art by gluing 3-inch square tiles on to a project board that measures 18 inches by 12 inches. How many tiles will the artist need to finish the project?



### Instructional Suggestions



## Grade 4: The Farmer

*Examine the following task. Then, in the space below, provide guidance to a teacher who is considering using this task within their lesson. Help the teacher to think about questions to be asked, how students may work on the task, guidance for getting students to talk if working in groups, which of the practices they may want to focus on, the precise language, notations, and symbols they want students to use, and so forth.*

A farmer uses different sizes of bags to package his vegetables he sells at the market.

**Potato** bags hold 12 potatoes

**Carrot** bags hold 6 carrots

**Onion** bags hold 4 onions

**Tomato** bags hold 8 tomatoes

**Cucumber** bags hold 2 cucumbers

1. On Monday, the farmer sold 24 of everything. How many of each bag did the farmer use?
2. On Tuesday, the farmer only sold 8 bags of potatoes. How many potatoes were sold?
3. On Wednesday, the farmer had 52 carrots to sell. How many bags could the farmer fill? Explain how you found your answer.
4. On Thursday, the farmer only had 56 of one vegetable to sell. If the farmer filled 7 bags with this vegetable, which vegetable was sold was sold on Thursday? Show and explain how you found your answer.

### Instructional Suggestions

## Grade 5: The Great Card Debate

*Examine the following task. Then, in the space below, provide guidance to a teacher who is considering using this task within their lesson. Help the teacher to think about questions to be asked, how students may work on the task, guidance for getting students to talk if working in groups, which of the practices they may want to focus on, the precise language, notations, and symbols they want students to use, and so forth.*

Zack and Emily both collect game cards. Zack has 15 cards in his deck and Emily has 25 cards in her deck. Zack does work around his house and makes enough money every week to buy five new cards weekly. Emily helps her neighbor in the yard and makes enough money every week to buy four new cards weekly. During a recent conversation, Emily tells Zack that she will always have more cards in her deck. Zack says that because he is adding five cards to his deck each week and Emily only is adding four cards to her deck each week, he will eventually have more cards in his deck. Help Zack and Emily determine which of their statements is accurate and explain to them how you figured this out.

### Instructional Suggestions

Grade:

Mathematics Lesson/Unit Title:

Overall Rating:

I. Alignment to the Depth of the CCSS	II. Key Shifts 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"> <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><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 appropriate balance among the following:               <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> </li> </ul>	<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, using a range of questions, checking for understanding, flexible grouping, pair-share).</li> <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><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>○ Includes aligned rubrics, answer keys and scoring guidelines that provide sufficient guidance for interpreting student performance.</li> </ul> <p><u><i>A unit or longer lesson should:</i></u></p> <ul style="list-style-type: none"> <li>○ Use varied modes of curriculum-embedded assessments that may include pre-, formative, summative and self-assessment measures.</li> </ul>
<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>

## EQIP Rubric for Lessons & Units: Mathematics

**Directions:** The Quality Review Rubric provides criteria to determine the quality and alignment of lessons and units to the Common Core State Standards (CCSS) in order to: (1) Identify exemplars/ models for teachers' use within and across states; (2) provide constructive criteria-based feedback to developers; and (3) review existing instructional materials to determine what revisions are needed.

### **Step 1 – Review Materials**

- Record the grade and title of the lesson/unit on the recording form.
- Scan to see what the lesson/unit contains and how it is organized.
- Read key materials related to instruction, assessment and teacher guidance.
- Study and work the task that serves as the centerpiece for the lesson/unit, analyzing the content and mathematical practices the tasks require.

### **Step 2 – Apply Criteria in Dimension I: Alignment**

- Identify the grade-level CCSS that the lesson/unit targets.
- Closely examine the materials through the “lens” of each criterion.
- Individually check each criterion for which clear and substantial evidence is found.
- Identify and record input on specific improvements that might be made to meet criteria or strengthen alignment.
- Enter your rating 0 – 3 for Dimension I: Alignment.

*Note: Dimension I is non-negotiable. In order for the review to continue, a rating of 2 or 3 is required. If the review is discontinued, consider general feedback that might be given to developers/teachers regarding next steps.*

### **Step 3 – Apply Criteria in Dimensions II – IV**

- Closely examine the lesson/unit through the “lens” of each criterion.
- Record comments on criteria met, improvements needed and then rate 0 – 3.

*When working in a group, individuals may choose to compare ratings after each dimension or delay conversation until each person has rated and recorded their input for the remaining Dimensions II – IV.*

### **Step 4 – Apply an Overall Rating and Provide Summary Comments**

- Review ratings for Dimensions I – IV adding/clarifying comments as needed.
- Write summary comments for your overall rating on your recording sheet.
- Total dimension ratings and record overall rating E, E/I, R, N – adjust as necessary.

*If working in a group, individuals should record their overall rating prior to conversation.*

### **Step 5 – Compare Overall Ratings and Determine Next Steps**

- Note the evidence cited to arrive at final ratings, summary comments and similarities and differences among raters. Recommend next steps for the lesson/unit and provide recommendations for improvement and/or ratings to developers/teachers.

**Additional Guidance on Dimension II: Shifts** - When considering *Focus* it is important that lessons or units targeting additional and supporting clusters are sufficiently brief – this ensures that students will spend the strong majority of the year on major work of the grade. See the *K-8 Publishers Criteria for the Common Core State Standards in Mathematics*, particularly pages 8-9 for further information on the focus criterion with respect to major work of the grade at [www.corestandards.org/assets/Math\\_Publishers\\_Criteria\\_K-8\\_Summer%202012\\_FINAL.pdf](http://www.corestandards.org/assets/Math_Publishers_Criteria_K-8_Summer%202012_FINAL.pdf). With respect to *Coherence* it is important that the learning objectives are linked to CCSS cluster headings (see [www.corestandards.org/Math](http://www.corestandards.org/Math)).

### **Rating Scales**

**Rating for Dimension I: Alignment is non-negotiable and requires a rating of 2 or 3. If rating is 0 or 1 then the review does not continue.**

#### **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

#### **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.

#### **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)

#### **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.