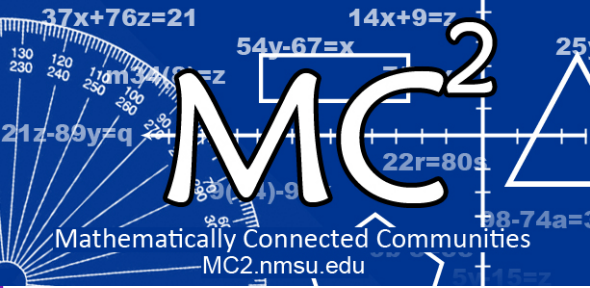


**November 19, 2014**  
**Webinar**

**Countdown to**

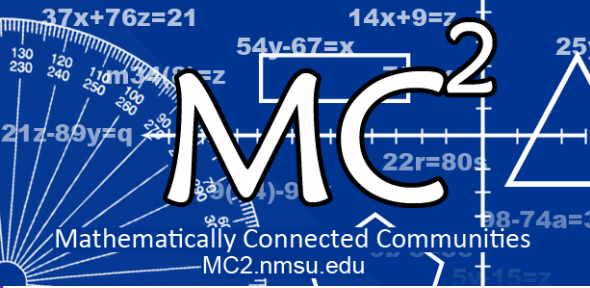
**PARCC**

Partnership for Assessment of  
Readiness for College and Careers



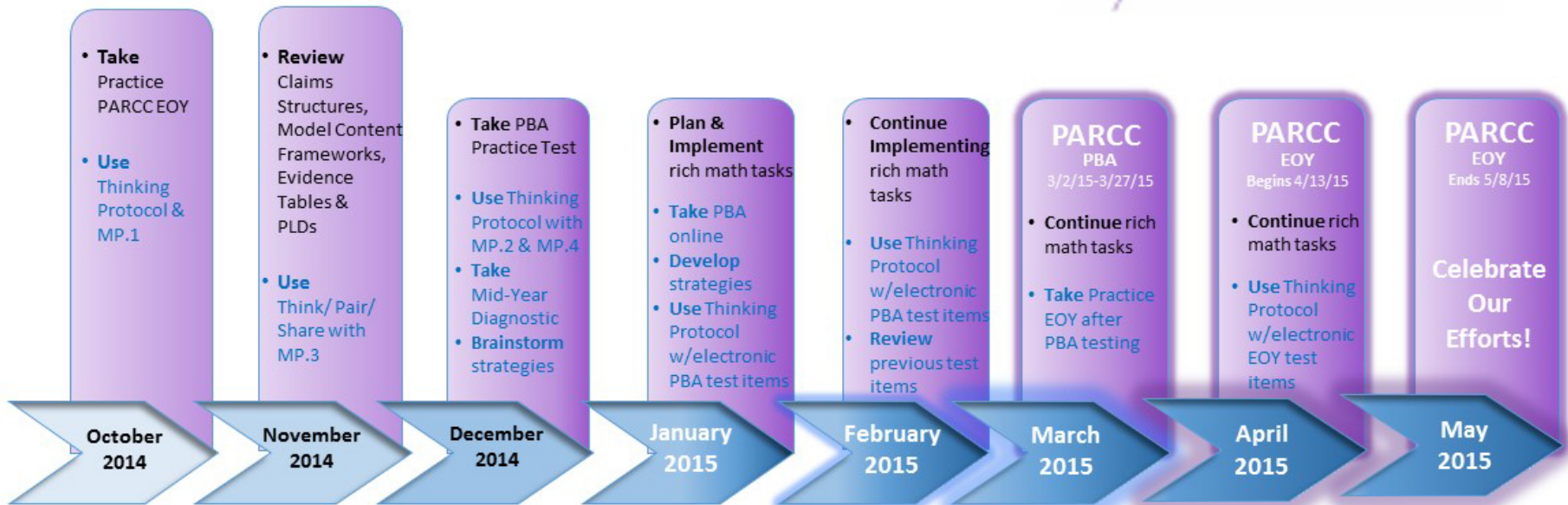
# Webinar Agenda...

- Overview of Countdown to PARCC Format (5 min.)
- Description of November Resources for Teacher Planning (20 min.)
- Description of November Suggestions for Math Practice 3 in the Classroom (10 min.)
- Q & A – Please type in questions that you would like for us to address (10 min.)



# Monthly Resources for Teachers

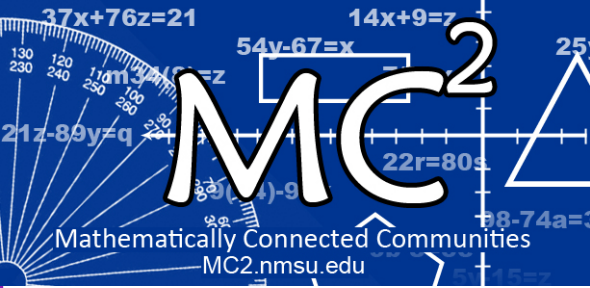
## MC<sup>2</sup> Countdown to PARCC



Color Code Key: Teacher Support & Classroom Strategies

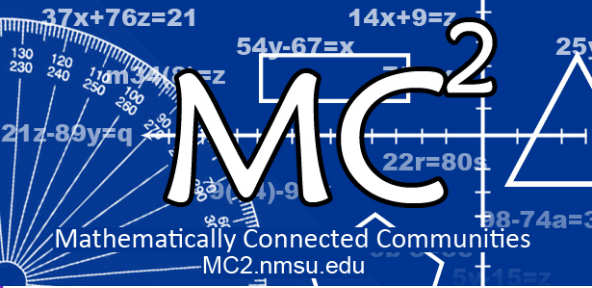
\*The bulleted tasks above are recommended by MC<sup>2</sup> to assist teachers in preparing for PARCC.

Click on the image to enlarge the graphic.



# Aligned to CCSS-M with Emphasis on Math Practices 1, 3, 4, and 6

- 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**
- 4. Model with Mathematics**
5. Use appropriate tools strategically
- 6. Attend to precision**
7. Look for and make use of structure
8. Look for and express regularity in repeated reasoning



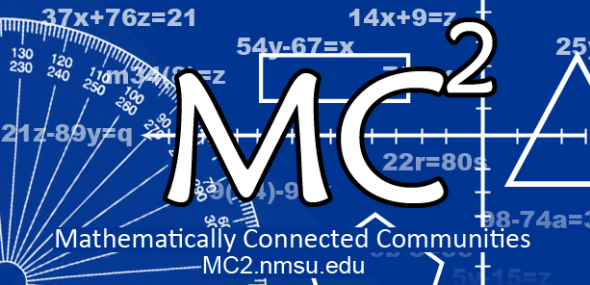
# What can you expect to find on the Countdown each month?

## Supports for Teachers

- Suggestions for teachers to develop a solid understanding of PARCC expectations for students
- Ideas for using the PARCC website and your curriculum resources to design activities for students

## Supports for Daily/Weekly Classroom Instruction to:

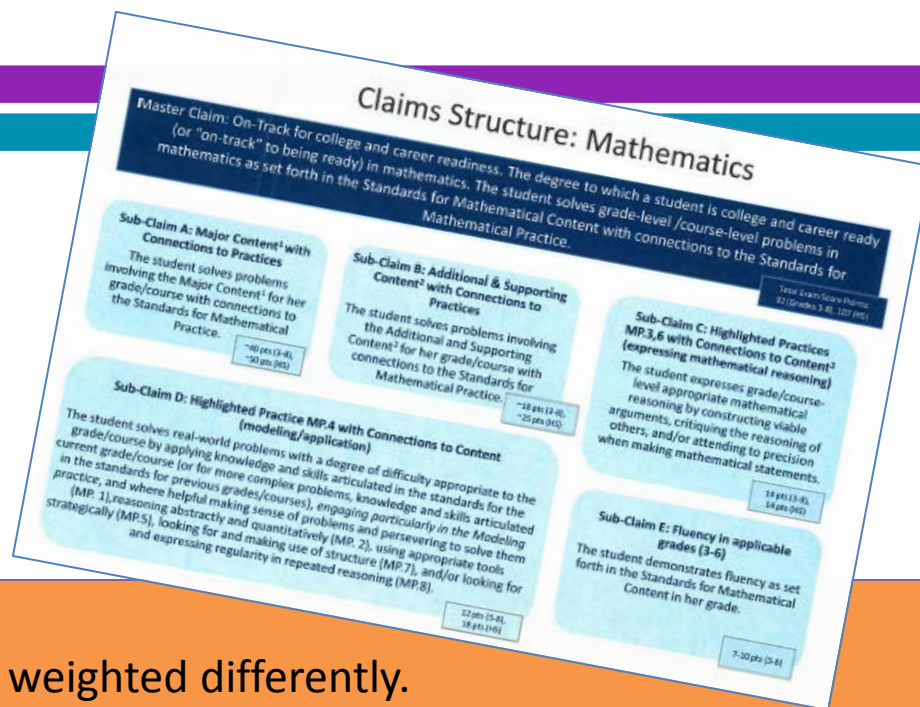
- Build student **confidence and competence** with PARCC assessment items and solving various and complex tasks
- Develop students' **critical thinking** skills in mathematics and habits of minds outlined in the CCSS-M Standards for **Mathematical Practice**
- Develop familiarity with test item technology (**testnav**) and the various types of assessment items that students will encounter on PARCC assessments



# November – For Teachers

## Review PARCC Claims Structure:

<http://mc2.nmsu.edu/PARCC/Claim%20Structure%20page%20%28ELC%20PPT%29.pdf>



## Discuss with Colleagues:

- The content assessed by PARCC is weighted differently.
  - Sub-Claims A & E: **Major Content** (~50%)
  - Sub-Claim B: **Additional/Supplementary Content** (~20%)
  - Sub-Claims C & D: **Reasoning and Modeling in the Math Practices** (~30%)
- What decisions can we make with the information PARCC has provided?
- The language of the mathematical practices is in all of the sub claims. How does your current instruction support students' development of mathematical practices?

# Claims Structure: Mathematics

**Master Claim:** for college and career readiness. The degree to which a student is college and career ready (or “on-track” to being ready) in mathematics. The student solves grade-level /course-level problems in mathematics as set forth in the Standards for Mathematical Content with connections to the Standards for Mathematical Practice.

Total Exam Score Points:  
92 (Grades 3-8), 107 (HS)

## Sub-Claim A: Major Content<sup>1</sup> with Connections to Practices

The student solves problems involving the Major Content<sup>1</sup> for her grade/course with connections to the Standards for Mathematical Practice.

~40 pts (3-8),  
~50 pts (HS)

## Sub-Claim B: Additional & Supporting Content<sup>2</sup> with Connections to Practices

The student solves problems involving the Additional and Supporting Content<sup>2</sup> for her grade/course with connections to the Standards for Mathematical Practice.

~18 pts (3-8),  
~25 pts (HS)

## Sub-Claim C: Highlighted Practices MP.3,6 with Connections to Content<sup>3</sup> (expressing mathematical reasoning)

The student expresses grade/course-level appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others, and/or attending to precision when making mathematical statements.

14 pts (3-8),  
14 pts (HS)

## Sub-Claim D: Highlighted Practice MP.4 with Connections to Content (modeling/application)

The student solves real-world problems with a degree of difficulty appropriate to the grade/course by applying knowledge and skills articulated in the standards for the current grade/course (or for more complex problems, knowledge and skills articulated in the standards for previous grades/courses), *engaging particularly in the Modeling practice*, and where helpful making sense of problems and persevering to solve them (MP. 1), reasoning abstractly and quantitatively (MP. 2), using appropriate tools strategically (MP.5), looking for and making use of structure (MP.7), and/or looking for and expressing regularity in repeated reasoning (MP.8).

12 pts (3-8),  
18 pts (HS)

## Sub-Claim E: Fluency in applicable grades (3-6)

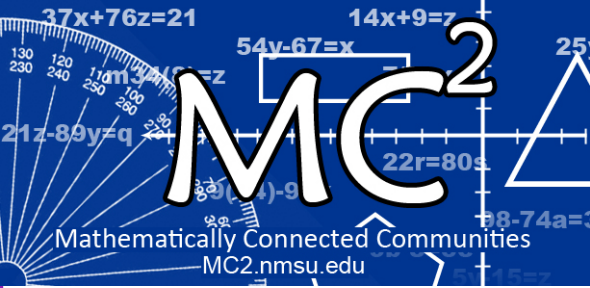
The student demonstrates fluency as set forth in the Standards for Mathematical Content in her grade.

7-10 pts (3-6)

<sup>1</sup> For the purposes of the PARCC Mathematics assessments, the Major Content in a grade/course is determined by that grade level's Major Clusters as identified in the *PARCC Model Content Frameworks v.3.0* for Mathematics. Note that tasks on PARCC assessments providing evidence for this claim will sometimes require the student to apply the knowledge, skills, and understandings from across several Major Clusters.

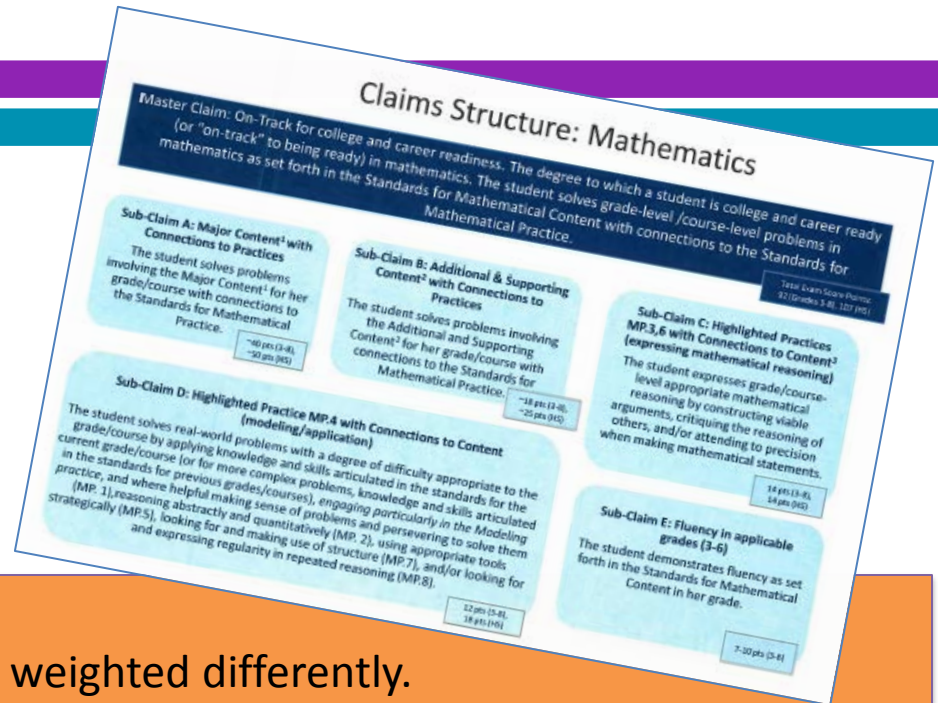
<sup>2</sup> The Additional and Supporting Content in a grade/course is determined by that grade level's Additional and Supporting Clusters as identified in the *PARCC Model Content Frameworks v.3.0* for Mathematics.

<sup>3</sup> For 3 – 8, Sub-Claim C includes only Major Content. For High School, Sub-Claim C includes Major, Additional and Supporting Content.



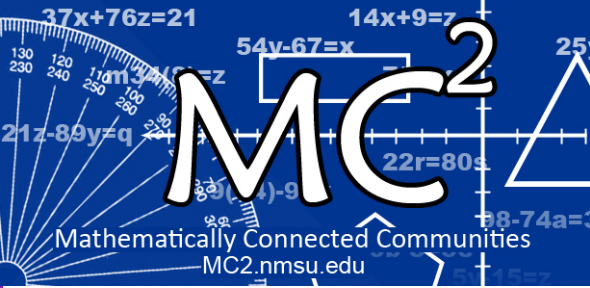
# November – For Teachers

**Review PARCC Claim Structure:**  
<http://mc2.nmsu.edu/PARCC/Claim%20Structure%20page%20%28ELC%20PPT%29.pdf>



- Discuss with Colleagues:**
- The content assessed by PARCC is weighted differently.
    - Sub-Claims A & E: **Major Content** (~50%)
    - Sub-Claim B: **Additional/Supplementary** content (~20%)
    - Sub-Claims C & D: **Reasoning and Modeling** in the **Math Practices** (~30%)
  - What decisions can we make with the information PARCC has provided?
  - The language of the mathematical practices is in all of the sub-claims. How does your current instruction support students' development of mathematical practices?

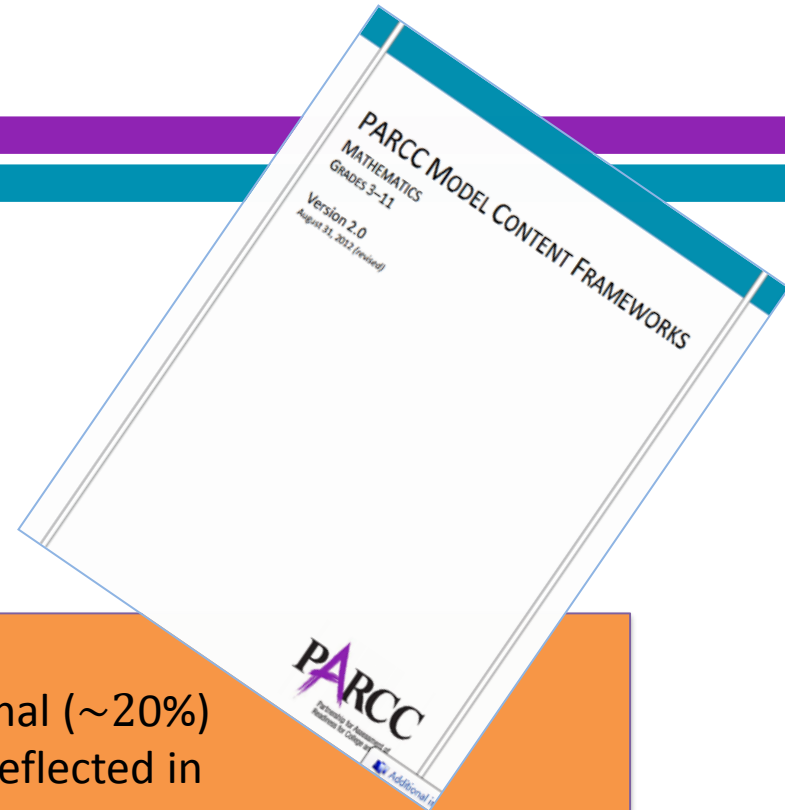




# November – For Teachers

**Read your Grade Level MCF (3-4 pages):**

<http://www.parcconline.org/parcc-model-content-frameworks>



## **Discuss with Colleagues:**

- How are the major (~50%), supporting/additional (~20%) standards, and mathematical practice (~30%) reflected in our pacing guide?
- What needs to be enriched in your curriculum resource to address in-depth focus standards identified in the MCF?
- What are the concepts and skills that need to be reinforced and built upon from previous grades?
- How does your mathematics resource provide a balance of conceptual and procedural development to support a robust understanding for students?

# Model Content Framework

- Communicates the fluency expectations for each grade level
- Describes important connections between standards to avoid teaching standards in isolation
- Describes key advances from one grade level to the next
- Describes natural connections between content standards and mathematical practices
- Identifies major, supporting, and additional content clusters by grade level

Key: ■ Major Clusters; ■ Supporting Clusters; ● Additional Clusters

## Operations and Algebraic Thinking

- Write and interpret numerical expressions.
- Analyze patterns and relationships.

## Number and Operations in Base Ten

- Understand the place value system.
- Perform operations with multi-digit whole numbers and with decimals to hundredths.

## Number and Operations — Fractions

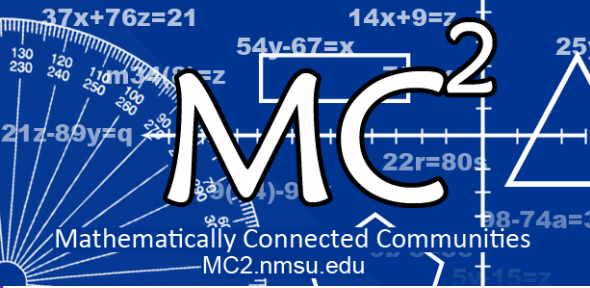
- Use equivalent fractions as a strategy to add and subtract fractions.
- Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

## Measurement and Data

- Convert like measurement units within a given measurement system.
- Represent and interpret data.
- Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

## Geometry

- Graph points on the coordinate plane to solve real-world and mathematical problems .
- Classify two-dimensional figures into categories based on their properties.



# November – For Teachers

Use your grade Performance Level Descriptors for planning:

<http://parconline.org/math-plds>

**PARCC**  
Partnership for Assessment of Readiness for College and Careers

**Performance Level Descriptors – Grade 5 Mathematics**

**Grade 5 Math : Sub-Claim A**  
The student solves problems involving the Major Content for grade/course with connections to the Standards for Mathematical Practice.

<b>Level 5: Distinguished Command</b>	<b>Level 4: Strong Command</b>	<b>Level 3: Moderate Command</b>	<b>Level 2: Partial Command</b>
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## Discuss with Colleagues:

- Read through descriptors for Sub-Claims A, B, and E and flag where these concepts are taught in your scope and sequence (Level 3 for first review). Mark your scope and sequence with the appropriate sub-claim. (The purpose is to ensure the scope and sequence reflects PARCC content expectations.)
- Read through Sub-Claims C and D. Flag your scope and sequence to indicate where these sub-claims are addressed with the content. Add description to your scope and sequence when necessary to plan how students will develop reasoning and modeling skills as described in the PLDs.
- Use the PLDs to write classroom-based assessments, learning targets, and questions for units and lessons. (Mix of Level 3 and 4 recommended.)
- Use learning targets from PLDs for students to self-assess their level of understanding of concepts.

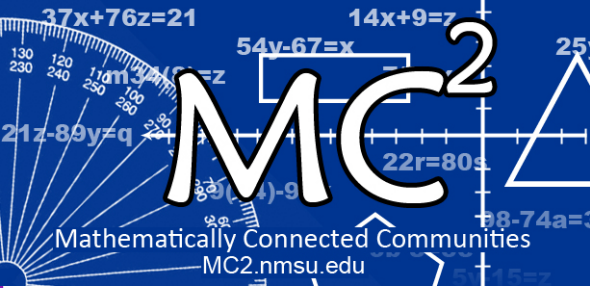
# Performance Level Descriptors – Grade 5 Math

	Grade 5 Math : Sub-Claim A			
	The student solves problems involving the Major Content for grade/course with connections to the Standards for Mathematical Practice.			
	Level 5: Distinguished Command	Level 4: Strong Command	Level 3: Moderate Command	Level 2: Partial Command
<b>Addition and Subtraction Operations with Decimals</b>  5.NBT.7-1 5.NBT.7-2	Adds or subtracts two decimals to hundredths using concrete models, drawings or strategies based on place value, properties of operations and/or the relationship between addition and subtraction.  <b>Applies this concept to a real-world context, relates the strategy to a written method and explains the reasoning used.</b>	Adds or subtracts two decimals to hundredths using concrete models, drawings or strategies based on place value, properties of operations and/or the relationship between addition and subtraction.  <b>Relates the strategy to a written method and explain the reasoning used.</b>	<b>Adds or subtracts two decimals to hundredths using concrete models, drawings or strategies based on place value, properties of operations and/or the relationship between addition and subtraction.</b>	Adds or subtracts (without regrouping) two decimals to hundredths using concrete models, drawings or strategies based on place value and/or the relationship between addition and subtraction.

	Grade 5 Math: Sub-Claim C			
	The student expresses grade/course-level appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements.			
	Level 5: Distinguished Command	Level 4: Strong Command	Level 3: Moderate Command	Level 2: Partial Command
<p><b>Distinguish Correct Explanation/ Reasoning from that which is Flawed</b></p> <p>5.C.7-1 5.C.7-2 5.C.7-3 5.C.8-1 5.C.8-2 5.C.9</p>	<p>Clearly constructs and communicates a well-organized and complete response by:</p> <ul style="list-style-type: none"> <li>analyzing and defending solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equal signs appropriately</li> <li><b>evaluating</b> explanation/reasoning if there is a flaw in the argument</li> <li>presenting and <b>defending</b> corrected reasoning</li> </ul>	<p><b>Clearly</b> constructs and communicates a <b>well-organized</b> and complete response by:</p> <ul style="list-style-type: none"> <li>analyzing and <b>defending</b> solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equal signs appropriately</li> <li>distinguishing correct explanation/reasoning from that which is flawed</li> <li>identifying and describing the flaw in reasoning or describing errors in solutions to multi-step problems</li> <li>presenting corrected reasoning</li> </ul>	<p>Constructs and communicates a <b>complete</b> response by:</p> <ul style="list-style-type: none"> <li>analyzing solutions to <b>multi-step</b> problems in the form of valid chains of reasoning, using symbols such as equal signs appropriately</li> <li>distinguishing correct explanation/reasoning from that which is flawed</li> <li>identifying and <b>describing the flaw in reasoning or describing errors in solutions to multi-step problems</b></li> <li><b>presenting corrected reasoning</b></li> </ul>	<p>Constructs and communicates an incomplete response by:</p> <ul style="list-style-type: none"> <li>analyzing solutions to scaffolded two-step problems in the form of valid chains of reasoning, sometimes using symbols such as equal signs appropriately</li> <li>distinguishing correct explanation/reasoning from that which is flawed</li> <li>identifying an error in reasoning</li> </ul>

## Learning Target (5NBT.7)

Use models or drawings to explain how place value is used for subtracting decimals.

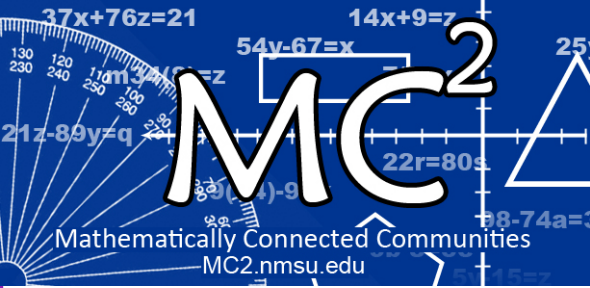


# November – For the Classroom

## Use rich mathematical tasks in class that promote MP.3: **Construct viable arguments and critique the reasoning of others**

*Sentence Frames for teachers to use in their classrooms:*

- I made a conjecture when I...
- I justified my conclusion by...
- I constructed a viable argument when...
- I made sense of another's argument when I ...
- A question I asked to help clarify my own or someone else's thinking was...

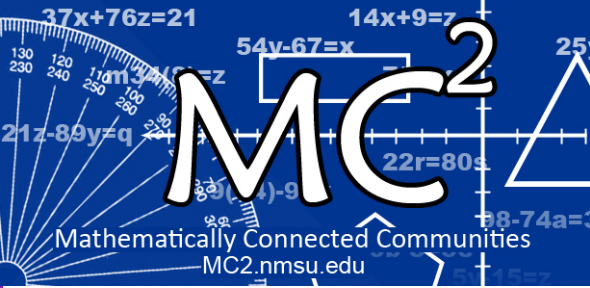


# November – Where to Find Rich Math Tasks

**Use rich mathematical tasks in the classroom daily.**  
**Some resources to consider:**

- Your textbook: Find the rich math tasks in your textbook and use those tasks as the central part of the lesson.
- Web Resources designed to support CCSS Math Practices:
  - Illustrative Mathematics <https://www.illustrativemathematics.org/>
  - Illuminations <https://illuminations.nctm.org>
  - Inside Mathematics <http://www.insidemathematics.org/>
  - You Cubed <http://www.youcubed.org/>
  - Mathematics Assessment Project <http://map.mathshell.org/>





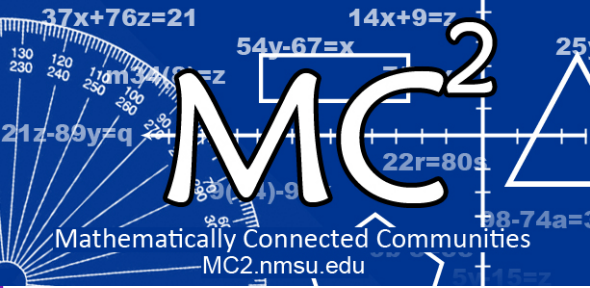
# November – For the Classroom (continued)

Use the MC<sup>2</sup> Thinking Protocol for sample PARCC items  
1-2 per week as a class warm-up or formative assessment

Thinking Protocol (15-20 min.):

1. Students think individually about the test item. (3 min)
2. Think with a partner about the problem. Change colored writing utensils to add to the solution. Don't erase from your original ideas. (5 min.)
3. Share strategies. Teacher selects 2-3 students or partners to share their ideas. The purpose is to add new ideas/strategies to the whole group's thinking. (6 min.)
4. Ask students to reflect on the problem and identify what was easy about the problem. What required more effort? (1 min.)

Go to: <http://mc2.nmsu.edu/> (New EOY items added for November)



# November – For the Classroom (continued)

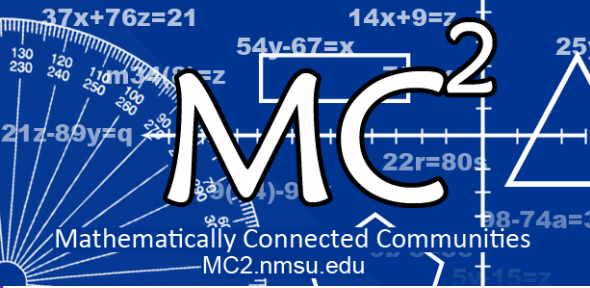
## Thinking/Writing Prompts to Promote Mathematical Practices in the Thinking Protocol

Math Practice 1 (October): **Make sense of problems and persevere in solving them.**

1. What do I know about the problem?
2. What questions do I have?
3. Explain your reasoning or thinking in solving the problem.

Math Practice 3 (November): **Construct viable arguments and critique the reasoning of others.**

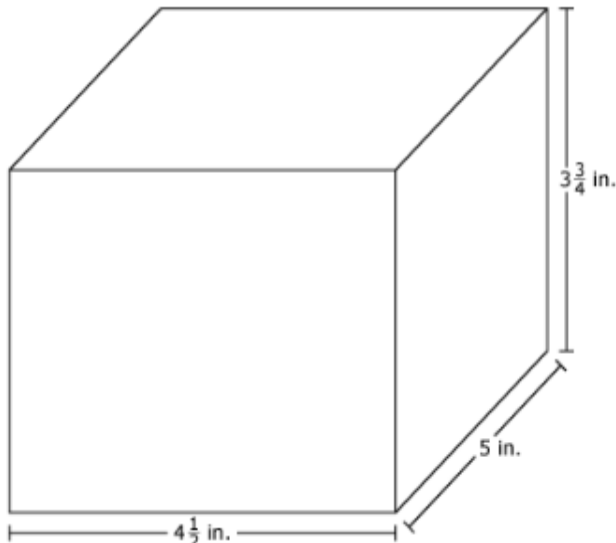
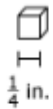
1. What are the assumptions, definitions, and previous knowledge to help in thinking about this problem?
2. What are some possible conjectures that you have about the problem?
3. Explain your mathematical argument so that somebody else can make sense of your thinking.



# November – For the Classroom (Sample Test Item)

## 6<sup>th</sup> Grade PARCC EOY Sample Assessment Item #6, Standard 6.G.1-2

Small cubes with edge lengths of  $\frac{1}{4}$  inch will be packed into the right rectangular prism shown.

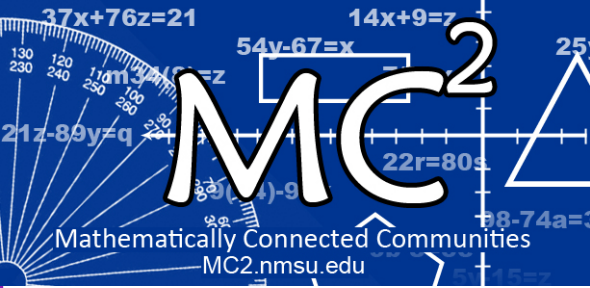


How many small cubes are needed to completely fill the right rectangular prism?

Enter your answer in the box.

 cubes

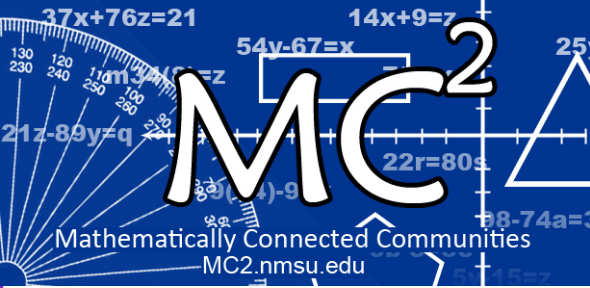
1. What are the assumptions, definitions, and previous knowledge to help in thinking about this problem?
2. What are some possible conjectures that you have about the problem?
3. Explain your mathematical argument so that somebody else can make sense of your thinking.



# Coming in December

- **PBA Practice Test** (if available)  
If not, we will have other resources to build student understanding of mathematics
- Using the *Thinking Protocol* to practice Attending to Precision (MP.6) and/or Model with Mathematics (MP.4)

Go to: <http://mc2.nmsu.edu/>

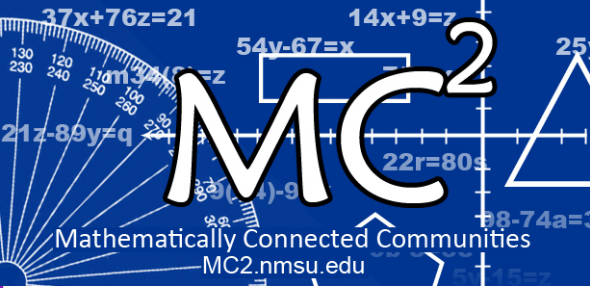


# Questions

Please enter any questions you have into the Q & A dialogue box.

There will be a two-minute pause to give time for typing.

Go to: <http://mc2.nmsu.edu/>



**Thank you!**

*Please send us comments or suggestions for future webinars.*

[mc2@nmsu.edu](mailto:mc2@nmsu.edu)