# How to Evaluate Lessons for the CCSSM

- You will not be able to click on these links, you will have to type these into your browser or copy from your email.
- If you haven't already, download the Tri-State rubric http://engageny.org/resource/tri-state-quality-review-rubric-and-rating-process/
- Download the task_smoothie_box, rubric_smoothie_box and student_smoothie_box from:
- http://www.map.mathshell.org.uk/materials/tasks.php?taskid=392&subpage=expert

**The webinar will begin at 3:30**

# How to Evaluate Lessons for the Common Core State Standards for Mathematics

Joan Barrett

Heather Brown

Alanna Mertens

Patricia Reisdorf

5/15/12

**The webinar will begin shortly.**

# Objectives

- Participants will
  - Be introduced to the Tri-State Quality Review Rubric
  - Evaluate a task using the Tri-State Quality Review Rubric
  - Learn to evaluate and adapt tasks to align to the rigor and expectation of the CCSS

# Tri-State Collaborative and Achieve

- The Quality Review Rubric has been created by the Tri-State Collaborative with Achieve.
- Two separate rubrics were created to evaluate the quality of lessons for Math and ELA.
- ISBE will be participating with Achieve on a multi-state effort to identify exemplar tasks, lessons, and units aligned to the CCSS.

# The Tri-State Rubric

*The Rubric is designed to serve a variety of purposes:*

1) Provide clear, descriptive standards for CCSS lessons/units and thus guide educators who are engaged in teaching to the Common Core.

2) Identify exemplary lessons/units that serve as models of CCSS instruction.

3) Guide collegial review and jurying processes.

4) Provide meaningful, constructive feedback to developers of lessons/units.

**Criteria** that define the rubric are organized as a **checklist** describing quality in **four dimensions**.

| I. Alignment to the Rigor of the CCSS | II. Key Areas of Focus in the CCSS | III. Instructional Supports for Student Needs | IV. Assessment |
|---|---|---|---|
| *The lesson/unit aligns with the letter and spirit of the CCSS:*<br>❑ Focuses teaching and learning on a targeted set of grade level content mathematics standard(s) at the level of rigor in the CCSS.**<br>❑ Identifies, addresses, and integrates into the lesson/unit the relevant Standards for Mathematical Practice. **<br>❑ Addresses both the particulars (e.g., mathematical procedures) and the deeper structures (e.g., mathematical understandings) inherent in the CCSS. | *The lesson/unit reflects evidence of key shifts that are reflected in the CCSS:*<br>❑ **Focus:** Centers on the concepts, foundational knowledge, and level of rigor that are prioritized in the standards.**<br>❑ **Coherence:** Makes connections and provides opportunities for students to transfer knowledge and skills within and across domains and learning progressions.<br>**Rigor:** Requires students to engage with challenging mathematics and to demonstrate:<br>❑ **Fluency:** Expects, encourages, and provides guidelines for core calculations and mathematical procedures to be performed quickly and accurately.<br>❑ **Application:** Provides opportunities for students to independently apply mathematical concepts in real-world situations, choosing and applying an appropriate model or strategy to new situations.<br>❑ **Deep Understanding:** Requires students to demonstrate deep conceptual understanding through complex problem solving, in addition to writing and speaking about their understanding. | *The lesson/unit is responsive to varied student learning needs:*<br>❑ Includes clear and sufficient guidance to support teaching and learning of the targeted standards, including, when appropriate, the use of technology and media. **<br>❑ Uses and encourages precise and accurate mathematics, academic language, terminology, and representations for the discipline.**<br>❑ Engages students through relevant, thought-provoking questions that stimulate interest and elicit mathematical thinking.<br>Provides appropriate level and type of scaffolding, differentiation, intervention, and support for a broad range of learners.<br>❑ Supports diverse cultural and linguistic backgrounds, interests, and styles.<br>❑ Provides extra supports for student(s) working below grade level.<br>❑ Provides extensions for students with high interest or working above grade level.<br>*A unit or longer lesson should:*<br>❑ Recommend and facilitate a mix of instructional approaches for a variety of learners, including such strategies as modeling, using a range of questions, checking for understanding, flexible grouping, pair-share, etc.<br>❑ Gradually remove supports, requiring students to demonstrate their mathematical understanding independently.<br>❑ Demonstrate an effective sequence and a progression of learning where the concepts or skills advance and deepen over time. | *The lesson/unit regularly assesses whether students are mastering standards-based content and skills:*<br>❑ Is designed to elicit direct, observable evidence of the degree to which a student can independently demonstrate the targeted CCSS.**<br>❑ Includes aligned rubrics, answer keys, and scoring guidelines that provide sufficient guidance for interpreting student performance. **<br>❑ Assesses student proficiency using methods that are accessible and unbiased, including the use of grade level language in student prompts.**<br>*A unit or longer lesson should:*<br>❑ 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 for Mathematics Lessons & Units***

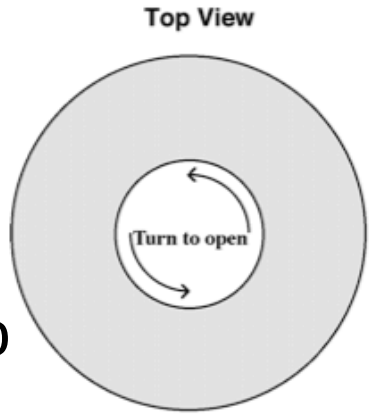
**Grade:** **Mathematics Lesson/Unit Title:** **Overall Rating:**

**Reviewer's Observations, Comments, and Recommendations:**

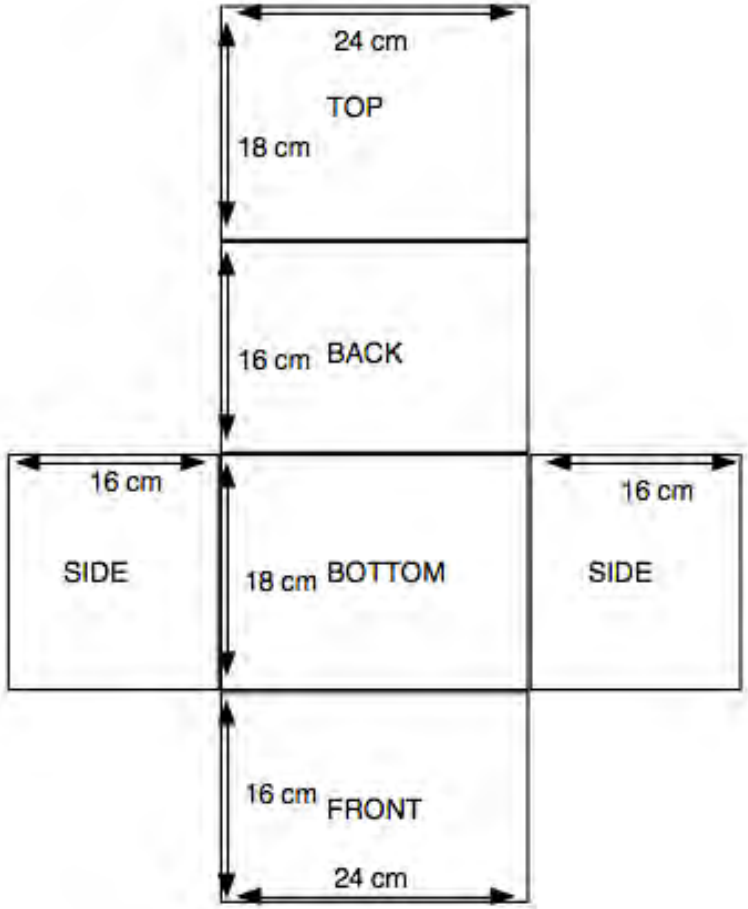
| I. Alignment to the Rigor of the CCSS | II. Key Areas of Focus in the CCSS | III. Instructional Supports | IV. Assessment |
|---|---|---|---|
| Observations and Comments: | Observations and Comments: | Observations and Comments: | Observations and Comments: |
| Recommendations for Improvement: | Recommendations for Improvement: | Recommendations for Improvement: | Recommendations for Improvement: |
| SUMMARY COMMENTS: | | | |

*Quality Rubric created by the Tri-State Collaborative (Massachusetts, New York, Rhode Island) – facilitated by Achieve* *2/21/2012*

- **SMOOTHIE BOX** **From Mathematics Assessment Project**
- Mrs. Grundy is planning to package and sell her special home made smoothies.
- These pictures show the top and side views of the type of bottle she plans to use.
- Design a net for a box that will hold **twelve** bottles.
  The box should be a tight fit, so the bottles will not rattle.
- Label your net to show all the measurements you need.




# Rubric Drawing



# Problem Analysis

- When looking at a problem/task or lesson, we want to consider
  - The quality parts of the task
  - The areas that need improvement, and how to improve them.
- The Tri-State Rubric gives us common vocabulary and structure to do this consistently.

# I. Alignment to the CCSS

***The lesson aligns with the CCSS:***

- Focuses teaching and learning on grade level content standard(s). **
- Identifies, addresses, and integrates the Standards for Mathematical Practice. **
- Presents a balance of mathematical procedures and deeper conceptual understanding.

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

- **SMOOTHIE BOX** **From Mathematics Assessment Project**
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- These pictures show the top and side views of the type of bottle she plans to use. They are drawn full size.
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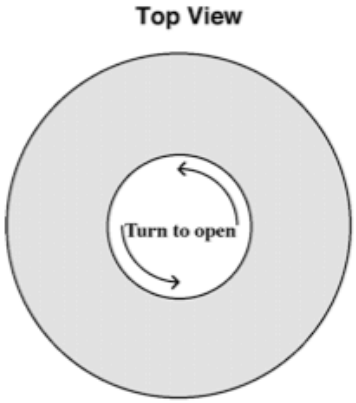



# Poll #1

# Complete alignment?

- 6.G.4 Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

1. Make sense of problems and persevere in solving them
6. Attend to precision

2. Reason abstractly and quantitatively

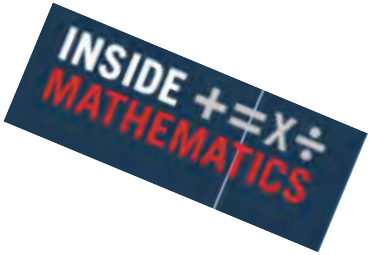
3. Construct viable arguments and critique the reasoning of others

4. Model with mathematics

5. Use appropriate tools strategically

7. Look for and make use of structure.

8. Look for and express regularity in repeated reasoning.




**Reasoning & explaining**

**Modeling and using tools**

**Seeing structure and generalizing**

**Overarching habits of mind of a productive mathematical thinker**

# Poll #2

# Third Bullet – to consider

- Presents a balance of mathematical procedures and deeper conceptual understanding inherent in the CCSS.

# Poll #3

# II. Focus on Key CCSS Shifts

- **Focus:** Centers on the concepts, foundational knowledge, and level of rigor that are prioritized in the standards.**
- **Coherence:** Makes connections across domains and progressions.
- **Rigor:** Requires students to engage with challenging mathematics.
- **Application:** Apply mathematical concepts in real-world situations, choosing and applying an appropriate model.
- **Deep Understanding:** Requires complex problem solving, in addition to writing and speaking about their understanding.

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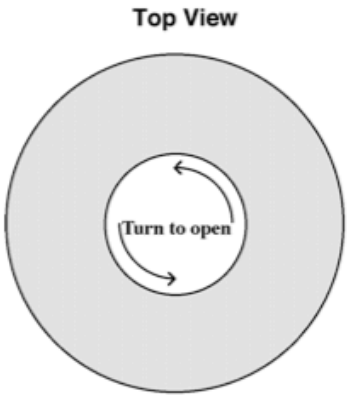



# Grade 6 Critical Areas

Instructional time should focus on 4 critical areas:

1. Connecting ratio and rate to whole number multiplication and division and using ratio and rate to solve problems
2. Completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers;
3. Writing, interpreting, and using expressions and equations; and
4. Developing understanding of statistical thinking.

# Poll #4

# III. Instructional Support for Student Needs

***Responsive to varied student learning needs, including:***

- Clear and sufficient guidance to support teaching and learning, and when appropriate, the use of technology. **
- Precise and accurate mathematics, academic language, and concrete or abstract representations. **
- Relevant, thought-provoking questions and tasks that stimulate interest and elicit mathematical thinking.

Provides differentiation, intervention, & support for a range of learners: cultural, linguistic, interests, below grade level, above grade level.

# Poll #5

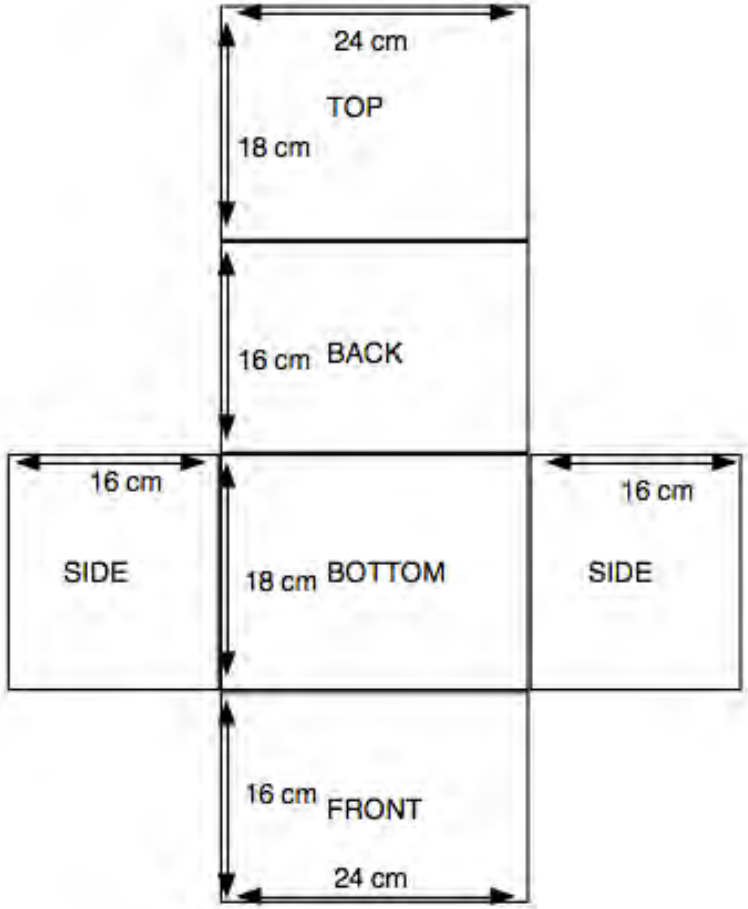
# IV. Assessment

- Is designed to elicit direct, observable evidence to which a student can independently demonstrate the standard.**
- Assesses student proficiency using accessible and unbiased methods, 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. **

# Rubric Included

| | Smoothie Box | Points |
|---|---|---|
| 1. | Draws net of a closed box such as diagram betow. | 2 |
| | Correct measurements on a net. | |
| | Height 15.5 or 16 | 2 |
| | Width 6 x 2 or 3 or 1 | 2 |
| | Length 6 x 6 or 4 or 12 | 2 |
| | *Partial credit* | |
| | Correct measurements not on a net. | 3 x (1) |
| | Net holds exactly 12 bottles. | 2 |
| | *Partial credit* | |
| | Plan or 3D drawing that holds 12 bottles. | (1) |

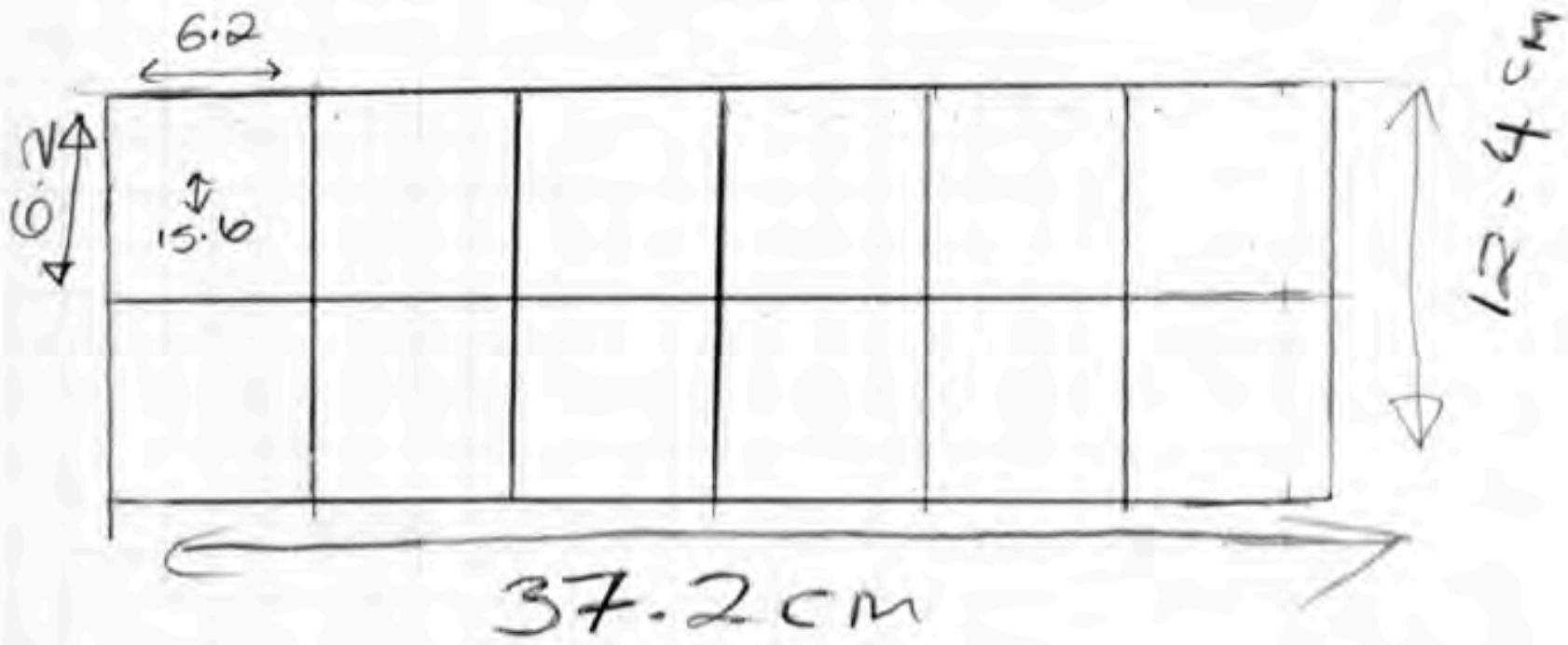
# Rubric Drawing



# Sample little progress

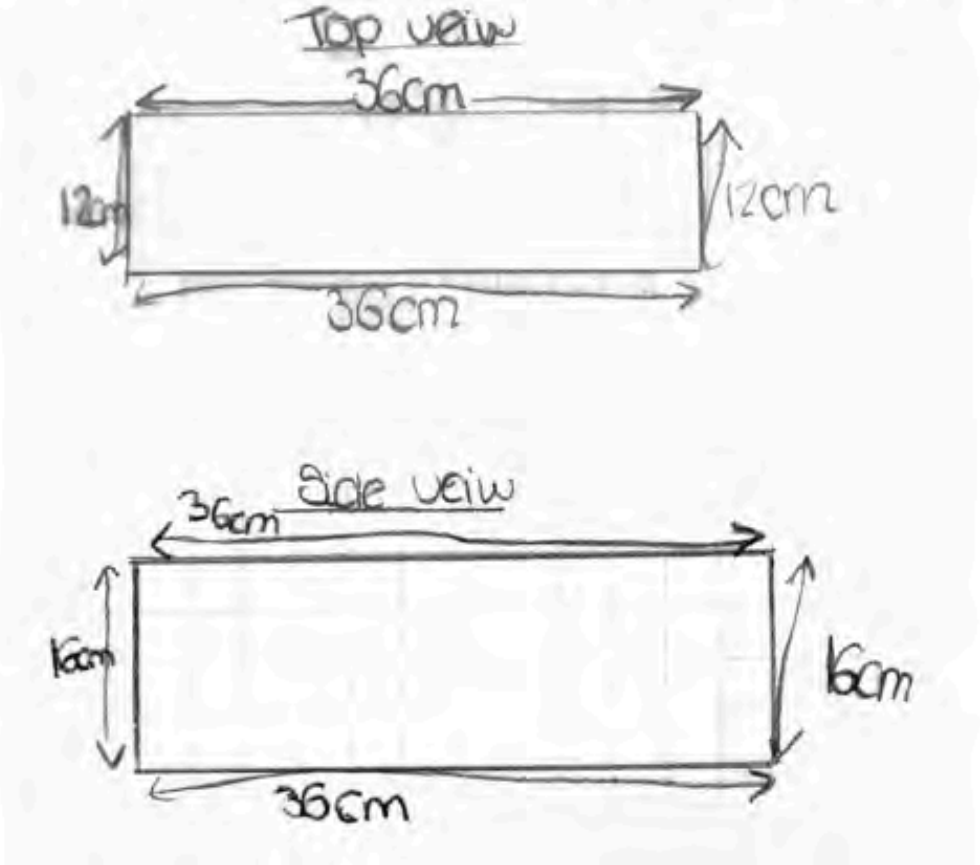
*Sample response: Kat*

Kat has drawn a plan view of a suitable box. From the measurements on the plan we can see that Kat has correctly measured the diagram of the bottle. She does not attempt to draw a net.



# Sample some progress

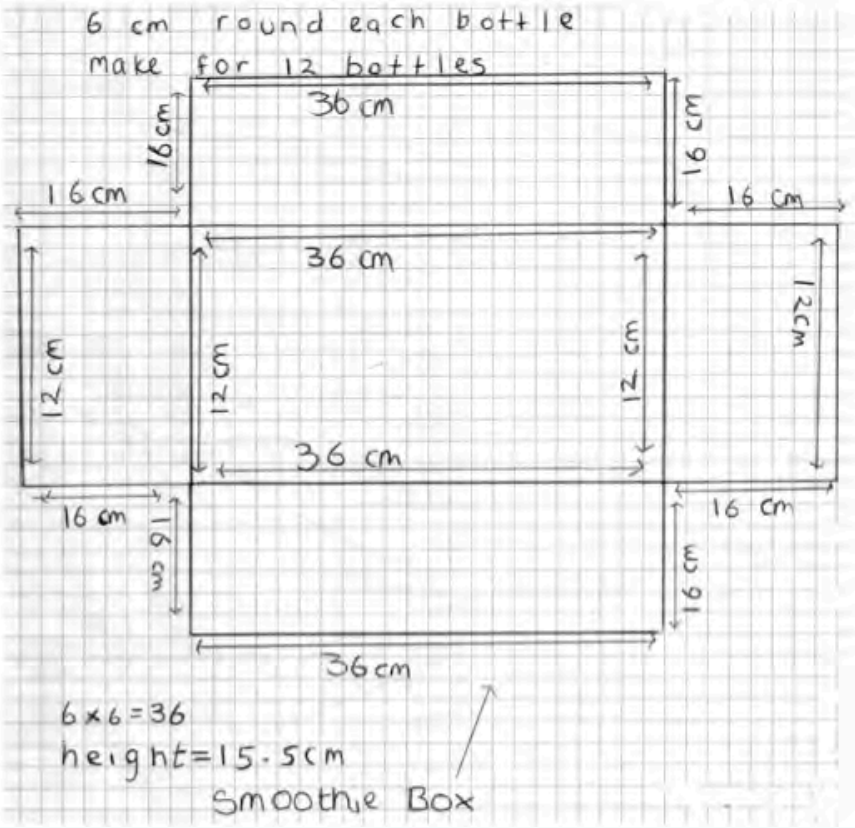
From the measurements of the top view and the side view, we can see that Jemma has correctly measured the diagram of the bottle. She does not attempt to draw a net.



# Sample Substantial Progress

*Sample response: Aaron*

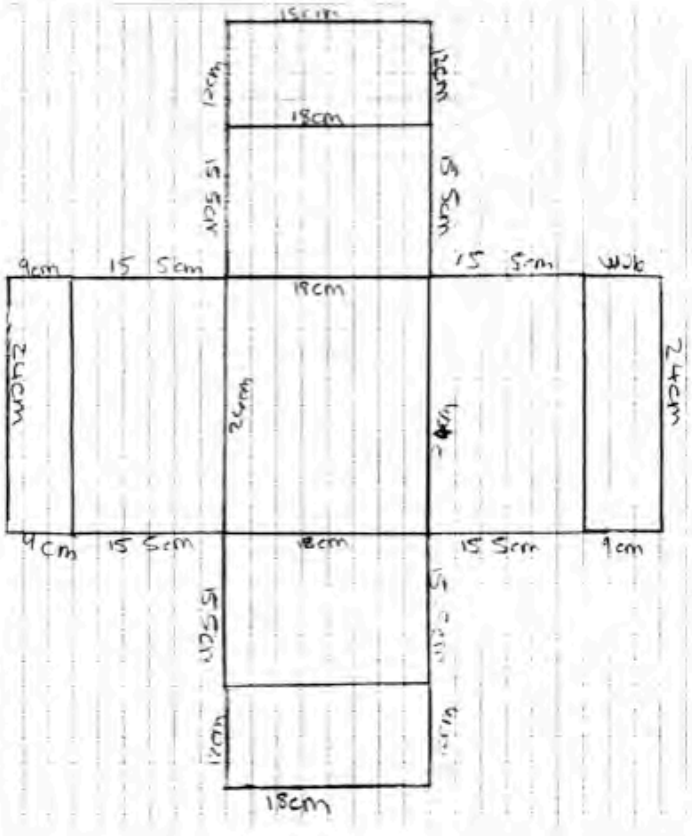
From Aaron's net of an open box, we can see that he has correctly measured the diagram of the bottle provided. He has arranged the bottles in a 2 by 6 array. However, Aaron's package does not have a top.



# Sample Task Accomplished

*Sample response: Billy*

From Billy's net of a closed box, we can see that he has correctly measured the diagram of the bottle provided. Billy's closed box has two tops; one overlaps the other. He has arranged the bottles in a 3 by 4 array.
His diagram clearly shows the dimensions of his net.



# Poll #6

# 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).

# Our Feedback

- Let's review how our participants scored the four columns.
  - Alignment to rigor
  - Key areas of focus
  - Instructional supports
  - Assessment

# Poll #7

# Where to go

- Continue the discussion
  - Evaluate tasks – share the Tri-State Quality Review Rubric with colleagues
  - Communicate with other teachers your difficulties, successes, concerns, etc.

# Evaluation

- In the comments box:
  - Provide feedback for what could be improved about this webinar.
  - Tell us what future webinars you would like to see offered by the Mathematics Content Area Specialists
- Feel free to email the presenters with additional comments.
- This webinar will be archived at…

# Contact Information

Joan Barrett

joanbear.it@gmail.com

Heather Brown

hbrown@lake.k12.il.us

Alanna Mertens

almertens@cps.k12.il.us

Pat Reisdorf

preisdor@kidsroe.org