If you have not downloaded and/or viewed the materials that will be discussed during this webinar, you may access them at the MDE CCSS SharePoint site.

1. Visit https://districtaccess.mde.k12.ms.us/commoncore/

2. In the left pane, click on Training Materials.

3. Select the folder "CCSS-M 106: Preparing for the PARCC Math Assessment (Vol. 2)".

4. Download and/or print materials as needed.

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CCSS-M 106:
Preparing for the PARCC Math Assessment

(Volume 2)

March 25, 2013

Marla Davis, Ph.D., NBCT, Office Director for Mathematics
Office of Curriculum and Instruction

Agenda

- PARCC Assessment Design for CCSSM
- PARCC Assessment Details
  - Number of sessions
  - Number of items by grade
  - Estimated testing time on task
  - Assessment/testing “window”
  - PARCC timeline for future guidance
- Exemplar math assessment prototypes
- Additional guidance from the MDE

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PARCC
Assessment Design

Primary Purposes of the PARCC Math Assessments :

- determine whether students are college- and career-ready or "on-track"
- assess the full range of the CCSSM, including those standards that are difficult to measure
- measure the full range of student performance, including the performance of high- and low-performing students
- provide data during the academic year to inform instruction, interventions, and professional development
- provide data for accountability, including measures of growth
- incorporate innovative approaches throughout the assessment system

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PARCC Math Assessment vs. Our Traditional State Assessments

- The Common Core State Standards call for students to apply mathematical concepts in real-world settings.
- Students will need sufficient time to engage with the questions and form their responses.
- The PARCC assessments are being designed to provide students with the time and space to show what they know and can do.
- The vision for the PARCC assessment is that it will become more integrated into classroom instruction.

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Claims Driving PARCC Assessment Design for Mathematics

Students are on-track or ready for college and careers

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Overview of the PARCC Assessment Design

The PARCC summative assessments will:

- include a rich set of performance-based tasks that capture some of the most important skills we strive to develop in students.

- enable teachers, schools, students, and parents to gain insight into the critical knowledge, skills and abilities essential for students to thrive in college or careers.

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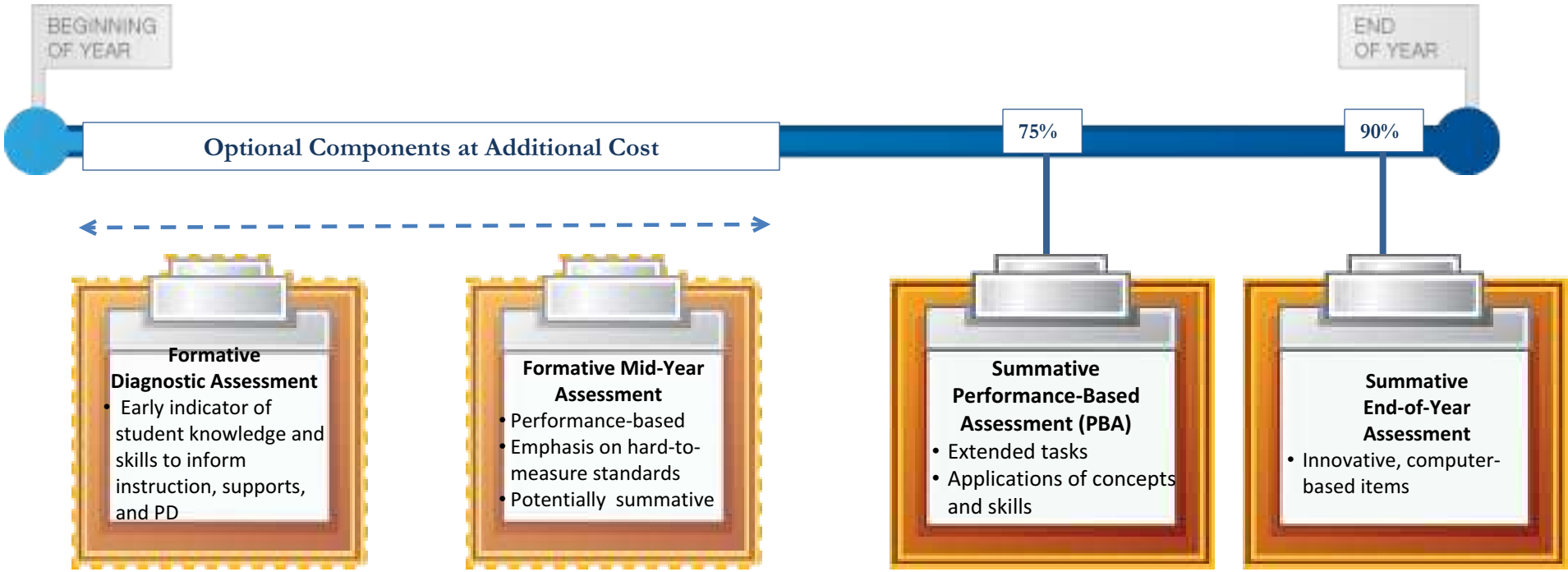
PARCC Math Assessment Task Types

Task Type	Description of Task Type
I. Tasks assessing concepts, skills and procedures	• Balance of conceptual understanding, fluency, and application • Can involve any or all mathematical practice standards • Machine scorable including innovative, computer-based formats • Will appear on the End-of-Year and Performance-Based Assessment components
II. Tasks assessing expressing mathematical reasoning	• Each task calls for written arguments/justifications, critique of reasoning, or precision in mathematical statements (MP.3, 6) • Can involve other mathematical practice standards • May include a mix of machine scored and hand scored responses • Included on the Performance-Based Assessment component
III. Tasks assessing modeling / applications	• Each task calls for modeling/application in a real-world context or scenario (MP.4) • Can involve other mathematical practice standards. • May include a mix of machine scored and hand scored responses • Included on the Performance-Based Assessment component

PARCC Assessment Design

Mathematics, Grades 3-11



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PARCC Assessment Design

PARCC has two required assessment components that will make up a student's overall score:

- Performance Based Assessment (PBA)
- End-of-Year (EOY) Assessment

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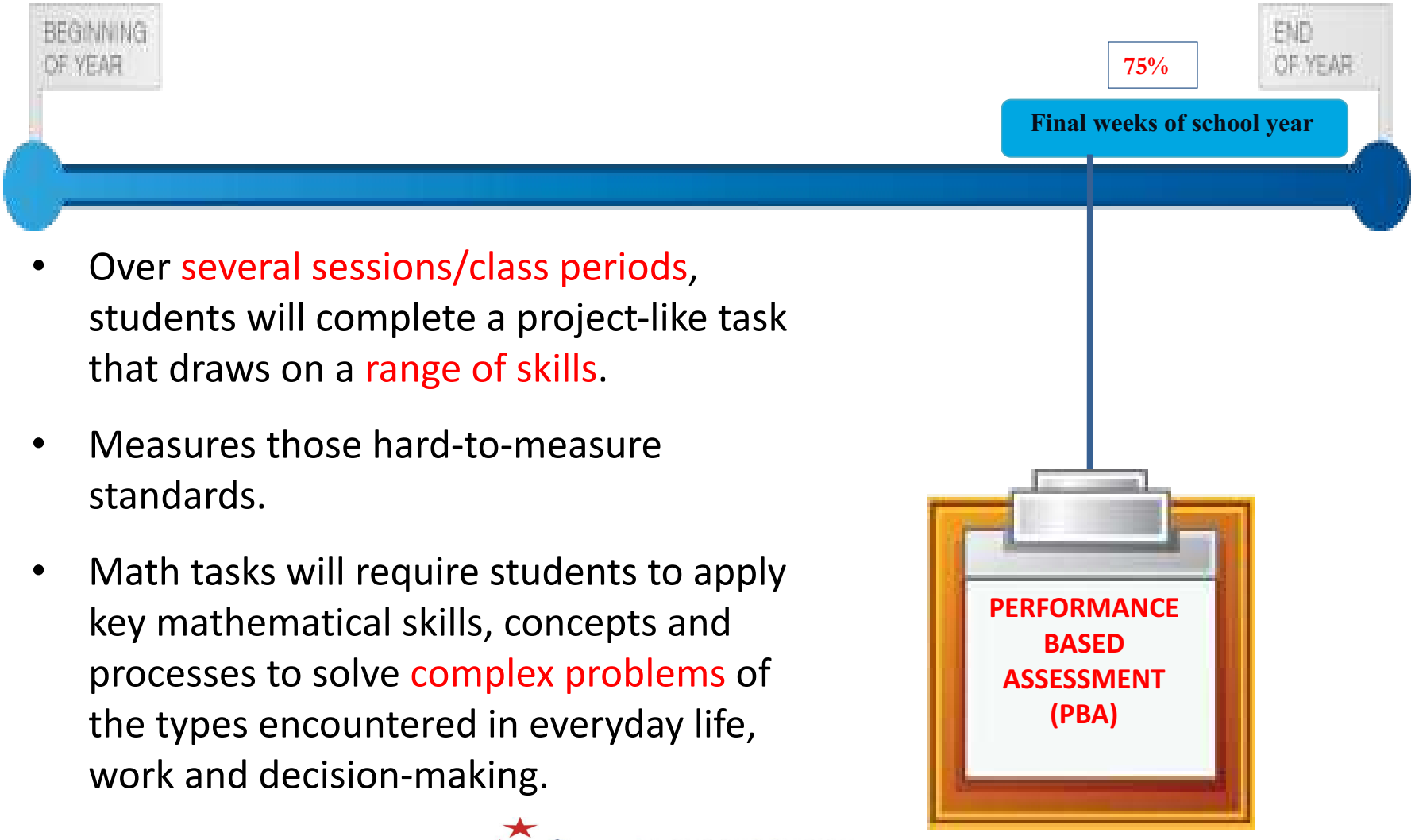
PARCC
Performance Based Assessment (PBA)



- Over several sessions/class periods, students will complete a project-like task that draws on a range of skills.
- Measures those hard-to-measure standards.
- Math tasks will require students to apply key mathematical skills, concepts and processes to solve complex problems of the types encountered in everyday life, work and decision-making.

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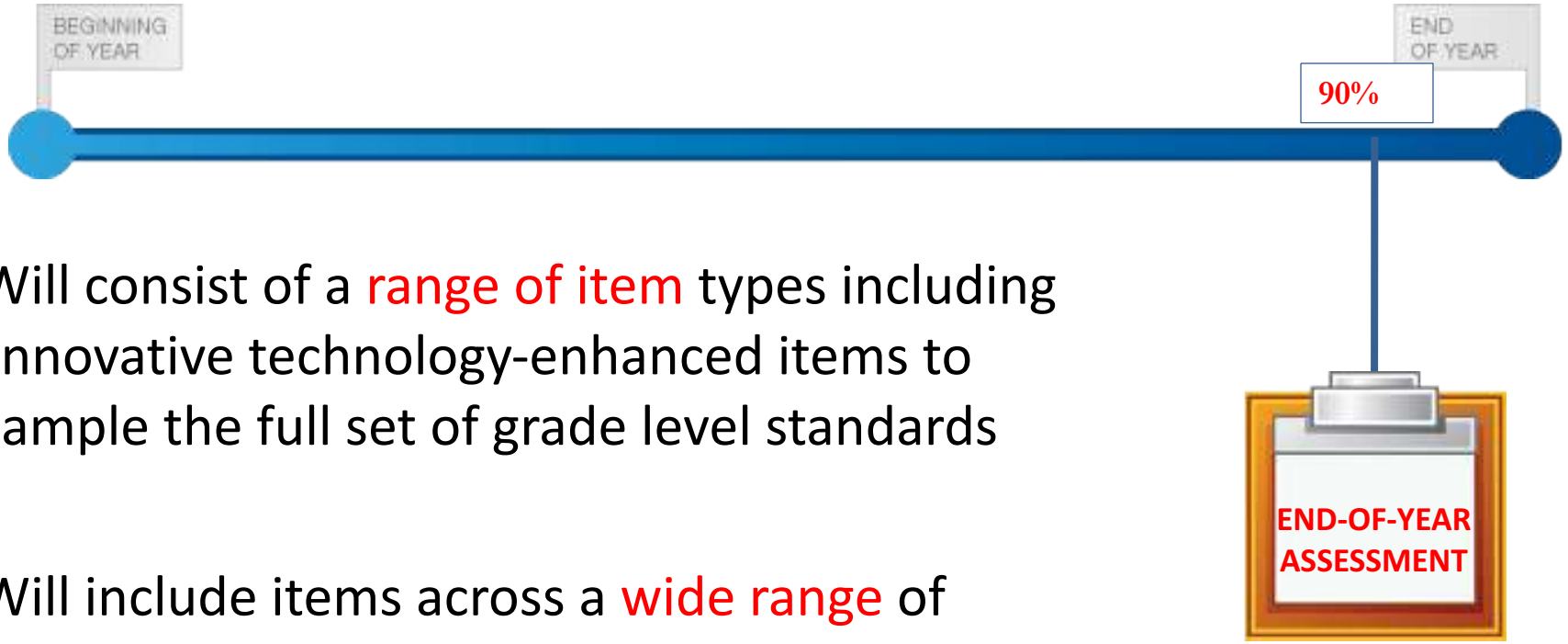
PARCC
End-of-Year (EOY) Assessment



- Will consist of a range of item types including innovative technology-enhanced items to sample the full set of grade level standards

- Will include items across a wide range of cognitive demand

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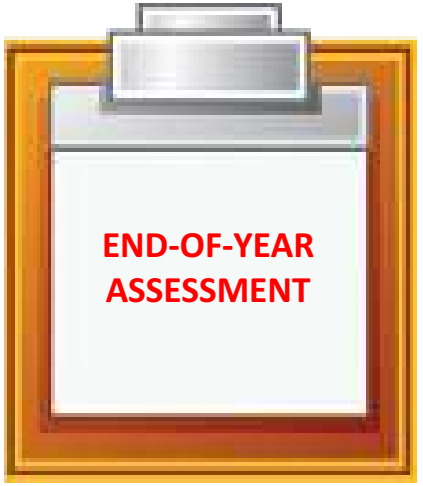
PARCC Math Assessment in Short

- Short- and extended-response items
- Focus on conceptual knowledge, skills, mathematical practices of reasoning and modeling

- Mostly short-answer items
- Focus on conceptual knowledge, skills, and understandings



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PARCC Math Assessment Details

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Number of Sessions

- The PARCC PBA and EOY assessments will be administered in nine sessions. At each grade level:
  - the PBA component will require **five sessions** – three (3) sessions for ELA/Literacy and two (2) sessions for math.
  - the EOY component will require **four sessions** – two (2) sessions for ELA/Literacy and two (2) sessions for math.

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Number of Items by Grade

Directions:

- Locate Handout #1: Grade 7 Assessment Blueprint. (excerpt)

- Examine this page as the presenter discusses key features.

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Number of Items by Grade

Grade 7 Summary

Number of Tasks by Type and Component

Type	PBA(1)	PBA(2)	PBA(3)	EOY	Total
I / 1 point	8			32	40
I / 2 points	2			9	11
I / 3 points				0	0
I / 4 points				1	1
II / 3 points		2			2
II / 4 points		2			2
III / 3 points			2		2
III / 6 points			1		1

Source: http://www.in.gov/idoa/proc/bids/RFP-13-29/

- How many Task Type III, 6-point items are expected on the PBA? _____
- How many Task Type I, 1-point items are expected on the PBA? _____
- What is the total number of items expected on the EOY? _____
- What is the total number of Task Type II, 4-point items expected on the Grade 7 PARCC assessments? _____

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Estimated Testing Time on Task

- Based on early research of the PARCC test items, PARCC has released estimated testing times for each grade.

- These estimated times will include the amount of time expected for most students to complete all of the sessions on the PBA and EOY components.

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Estimated Testing Time on Task

Directions:

- Locate Handout #2: Estimated Testing Time on Task. (excerpt)

- Examine the second page as the presenter discusses key features.

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Be careful how you read this!

Estimated Testing Time on Task

Grades		Performance-Based Component						End-of-Year Component					Summative Total
		ELA/Literacy			Math		Total	ELA/Literacy		Math		Total	
		Literary Analysis	Research	Narrative	Session 1	Session 2		Session 1	Session 2	Session 1	Session 2		
9 -10 Alg I/ Math I Geo/ Math II	Estimated Time on Task (minutes)	80	85	50	50	50	315	70	70	65	65	270	9 hours, 45 minutes

Grade		Performance-Based Component						End-of-Year Component					Summative Total
		ELA/Literacy			Math		Total	ELA/Literacy		Math		Total	
		Literary Analysis	Research	Narrative	Session 1	Session 2		Session 1	Session 2	Session 1	Session 2		
11 Alg II / Math III	Estimated Time on Task (minutes)	80	85	50	65	65	345	70	70	55	55	250	9 hours, 55 minutes

- For Algebra I students, what is the estimated time on task for the 2nd session of the PBA? _____

- For 11th grade students, what is the **total** estimated testing time on task? _____

Source: http://parcconline.org/sites/parcc/files/PARCC%20Assessment%20Administration%20Guidance_FINAL_0.pdf

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Estimated Testing Time on Task

- These estimates may be refined based on the results of research and field tests conducted over the next 18 months.

- While it is anticipated that most students will complete the test sessions within these estimated times, all students will have a set amount of additional time for each session to allow for ample time to demonstrate their knowledge.

- Additional time beyond the set time will be allowed for students with disabilities who have an unlimited/untimed accommodation documented in their IEP, as allowed by the PARCC Accessibility, Accommodations. and Fairness Manual.

Assessment/Testing "Window"

- Preparing for the PARCC assessment will necessitate changes in how teachers have planned for paper-based assessments in the past.

- Schools will have a maximum of 20 school days to administer the PBA and a maximum of 20 days to administer the EOY.

- Individual students will participate in testing sessions for both the PBA and EOY assessment over five to nine days.

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PARCC Timeline for Future Guidance

Directions:

- Locate Handout #3: PARCC Timeline for Future Guidance.

- Examine both pages as the presenter discusses key features.

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PARCC Timeline for Future Guidance

Timeline:	Information Available:
March, 2013	• Window length • Overview information about the content design for all test components in math and ELA/literacy • Estimated "time on task" for students for each assessment component • Minimum and recommended device "rule of thumb" guidance • Assessment Administration Capacity Planning Tool to support planning for devices, bandwidth and assessment administration
April, 2013	• Draft accommodations policy for students with disabilities for public comment • Draft policy for English Language Learners for public comment • Performance level descriptors for public comment • More detailed information about test blueprints, evidence statements and reporting categories for assessment components in math and ELA/literacy
June, 2013	• Information about field test timeline and participation guidelines • Information about the timeline, design and cost of non-summative components (diagnostic, mid-year, speaking and listening and K-2) • Information about the timeline for professional development modules
Summer, 2013	• Summative assessment cost estimates • Specific information about windows for traditional and block scheduling, when assessment components will be available within the window, models of what PARCC will look like in schools, and proctor requirements • Final English Language Learners policy • Final accommodations manual for students with disabilities • Final performance level descriptors for all grades/courses in ELA/literacy and mathematics • Additional sample items
Fall, 2013	• Timeline and plan for student registration for operational assessment • Plan for student level reporting • Anticipated timing of data return for year one • Final summative test costs

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PARCC Timeline for Future Guidance

Timeline:	Information Available:
	• Training materials for IEP writing teams based on accommodations manual • Additional information about minimum and recommended technology specifications including minimum bandwidth requirements • Technology requirements for the field test
Winter, 2013-14	• Specifications and models of what the online testing portal will look like • Final design information about the non-summative components • Final information about the field test (including administration manual) • Final information about the timeline of data return
Spring / Summer, 2014	• Final information about registration timeline and process, registration site launch • Final information about how student scores will be calculated • Final test security policies • Final length of assessment components (informed by data from the field test) • Final technology specifications information
Fall, 2014	• Test Administration process and information (including manual)
Summer, 2015	• Student performance levels and associated cut scores • Student cut scores for career and college readiness determination

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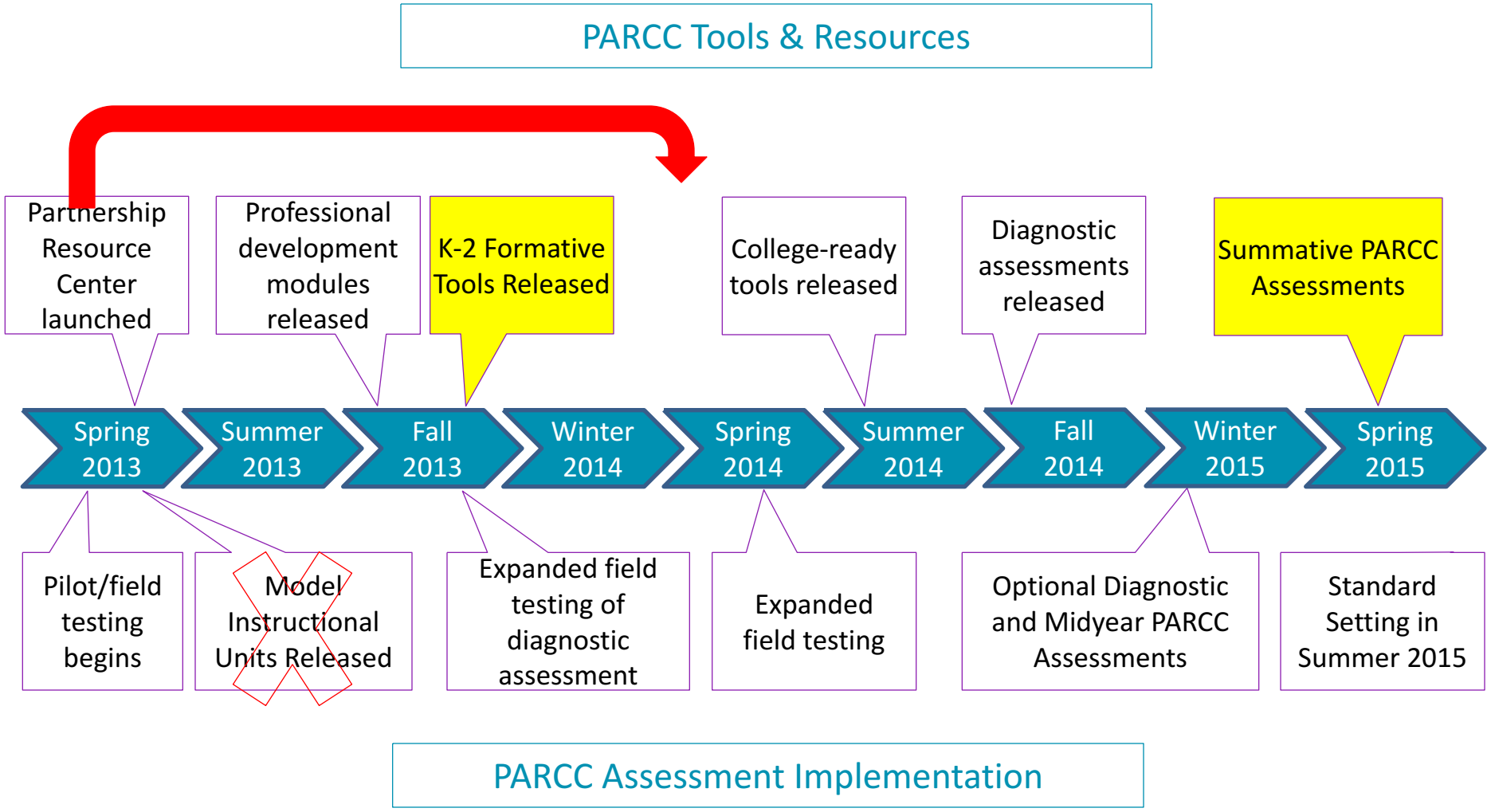
PARCC Timeline 2014-2015



Exemplar Math Assessment Prototypes

Exemplar Math Assessment Prototypes

- PARCC Sample Item and Task Prototypes for Mathematics are available at: http://www.parcconline.org/samples/item-task-prototypes.

- To date, sample items and prototypes are available for Grades 3, 4, 6, 7, and HS (total: 28).

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New items added by the Dana Center!!

PARCC Math Assessment Prototypes

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www.ccsstoolbox.com/parcc/PARCCPrototype

Search

Grade 3 - Mathematics | PARCC | High School - Mathematics | PA... | CCSSTOOLBOX.COM

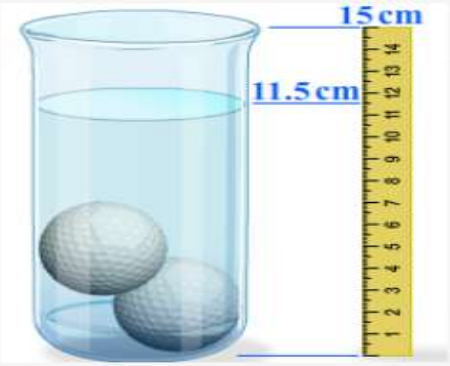
ıon Core Toolbox

Standards for Mathematical Content | Resources for Implementation | Other Helpful Information

Golf balls in water (high school)

About the task | CCSSM Alignment | Part a | Part b | Part c | Scoring

Tom is doing an experiment adding golf balls to a glass jar containing water. The picture and the table show what happens to the height of the water as Tom adds golf balls.



Number of golf balls, x	Height of water in centimeters, y
0	9.0
1	10.2
2	11.5
3	12.7
4	13.8

Drag tiles to complete the sentences and the equation below based on the results of Tom's experiment.

PARCC Math Assessment Prototypes

Drag tiles to complete the sentences and the equation below based on the results of Tom's experiment.

golf balls	change	glass jars	water height	1.16
1.2	1.3	9.0	12.0	13.8

The height of the water changes at an average rate of about [ ] centimeters per golf ball. If these data were graphed with the number of golf balls as the independent variable, the y-intercept for the graph would be about [ ] centimeters. This means that for zero [ ], the [ ] is 9 centimeters.

Tom's table and graph can be represented by the trend line with the equation

$y =$ [ ] $x +$ [ ] .

PARCC Math Assessment Prototypes

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www.ccsstoolbox.com/parcc/PARCCPrototype Search

Grade 3 - Mathematics | PARCC | High School - Mathematics | PA... | CCSSTOOLBOX.COM

ıon Core Toolbox

Standards for Mathematical Content | Resources for Implementation | Other Helpful Information

Golf balls in water (high school)

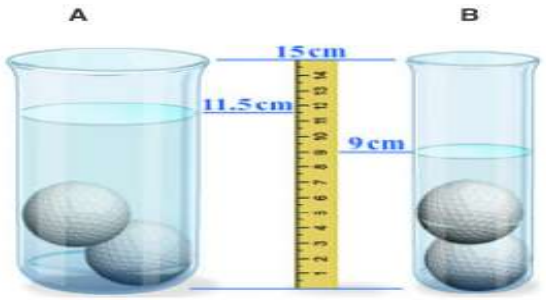
◀ About the task | CCSSM Alignment | Part a | Part b | **Part c** | Scoring ▶

Write your answers to the following problem in your answer booklet.

Tom repeats his experiment with a different glass jar. The new glass jar, B, has a smaller radius than the original glass jar, A.

Data from Experiment with Glass Jar A

Number of golf balls, x	Height of water in centimeters, y
0	9.0
1	10.2
2	11.5
3	12.7
4	13.8



Tom forgot to write down the initial height of the water in glass jar B, but he measured the water height at 9 centimeters after adding two golf balls.

Question a: When Tom creates graphs of the data from both experiments, how will the y-intercepts of the graphs be different for glass jar A versus glass jar B? Explain how you know.

Question b: How will the rate of change in the experiment using glass jar B be different than the rate of change in the experiment using glass jar A? Explain how you know.

Question c: Suppose glass jar B has a water height of 5 centimeters with no golf balls, and the water height increases at a rate of 2 centimeters per golf ball added. Tom continues to add golf balls to each glass jar. He discovers that there is a number of golf balls at which the height of the water in each glass jar is the same. How many golf balls will be in each jar when the water in each reaches the same height?

Exemplar Math Assessment Prototypes

- Smarter Balanced (SBAC) Sample Item and Task Prototypes for Mathematics are available by grade bands and claims at: http://www.ode.state.or.us/search/page/?id=3747

- It is important to note, that while we are a member of PARCC, the SBAC sample items are also aligned to the CCSSM.

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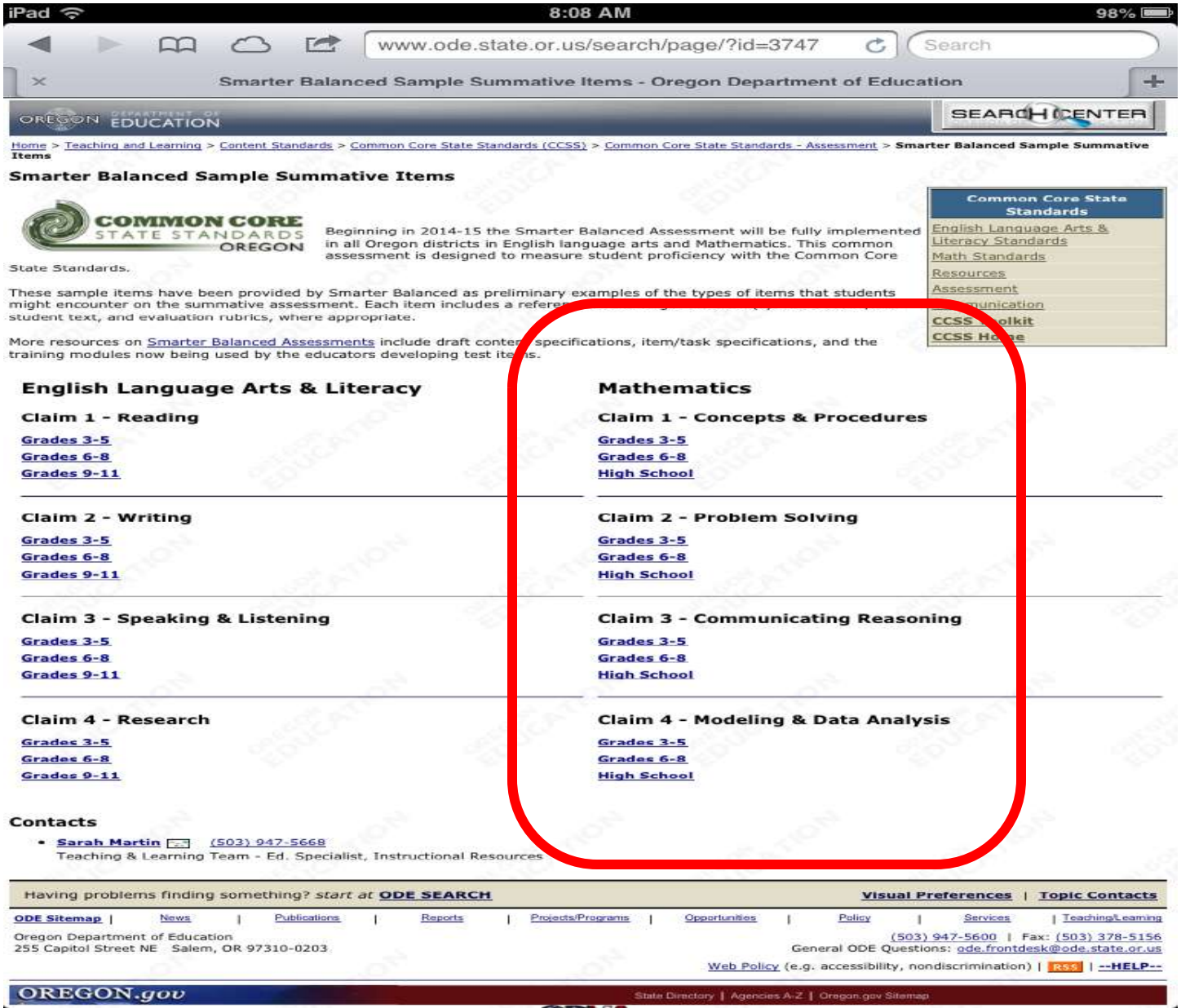
SBAC Math Assessment Prototypes



SBAC Math Assessment Prototypes

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www.ode.state.or.us/wma/teachlearn/commonc Search

Sample Item ID:

HS Mathematics Sample PT Form Claim 4

Smarter Balanced Assessment Consortium

Prework:

Students will watch two short videos describing the harvesting and storing of corn for market. These videos will assist students, especially those unfamiliar with the work on a farm, by giving them a snapshot of this process. They may also supplement the reading load of these tasks for ELLs.

Here are some examples of ones that might be used:

- http://www.youtube.com/watch?v=1jhuNDuLaps
- http://www.youtube.com/watch?v=iddFy6A9uHg

Students will also be asked to research the current cost of corn and of LPG (liquid propane gas).

Your Assignment:

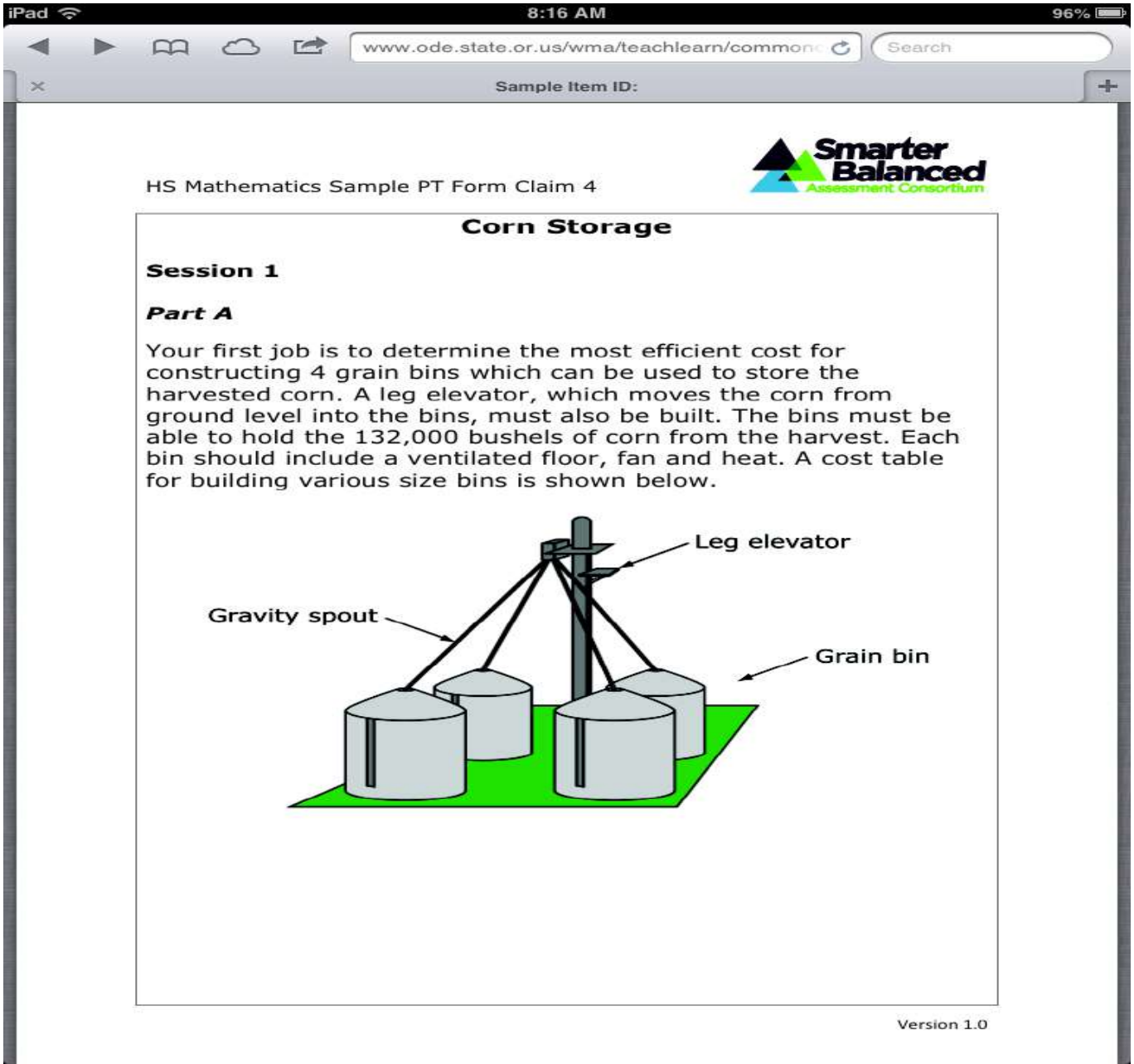
In this task you will assume the role of consultant for a farmer. You will analyze the options available to the farmer for handling the storage of shelled field corn (shown in the pictures above). In the past, the farmer has sold the corn as it was harvested, and did not store the corn to be sold in the future. The farmer has increased the number of acres used to grow corn, and now is exploring the cost of storing the corn until after the harvest is complete and then selling it. You will analyze two storage options available to the farmer for storing the grain that is harvested.

- The corn can be stored in grain bins constructed on the farm.
- The corn can be stored in rental storage close to the farm.

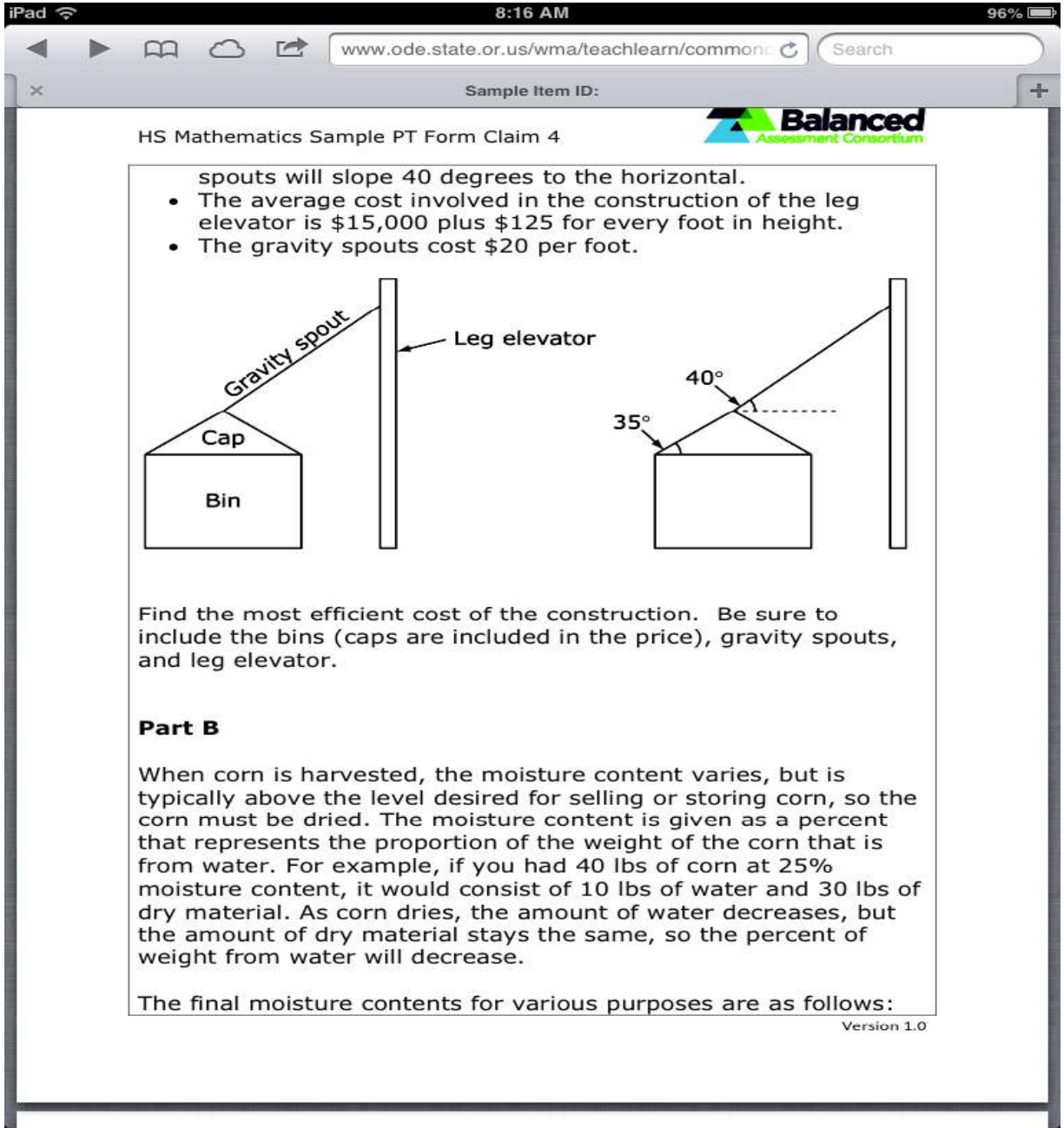
Following the tasks, you will recommend which type of storage the farmer should use.

Version 1.0

SBAC Math Assessment Prototypes



SBAC Math Assessment Prototypes



Exemplar Math Assessment Prototypes

- Illustrative Mathematics (IM) Sample Items and Task Prototypes for Mathematics are available at: www.illustrativemathematics.org

- The Illustrative Mathematics project was developed by Dr. William (Bill) McCallum, lead writer of the CCSSM. All math assessment prototypes are vetted by him prior to posting.

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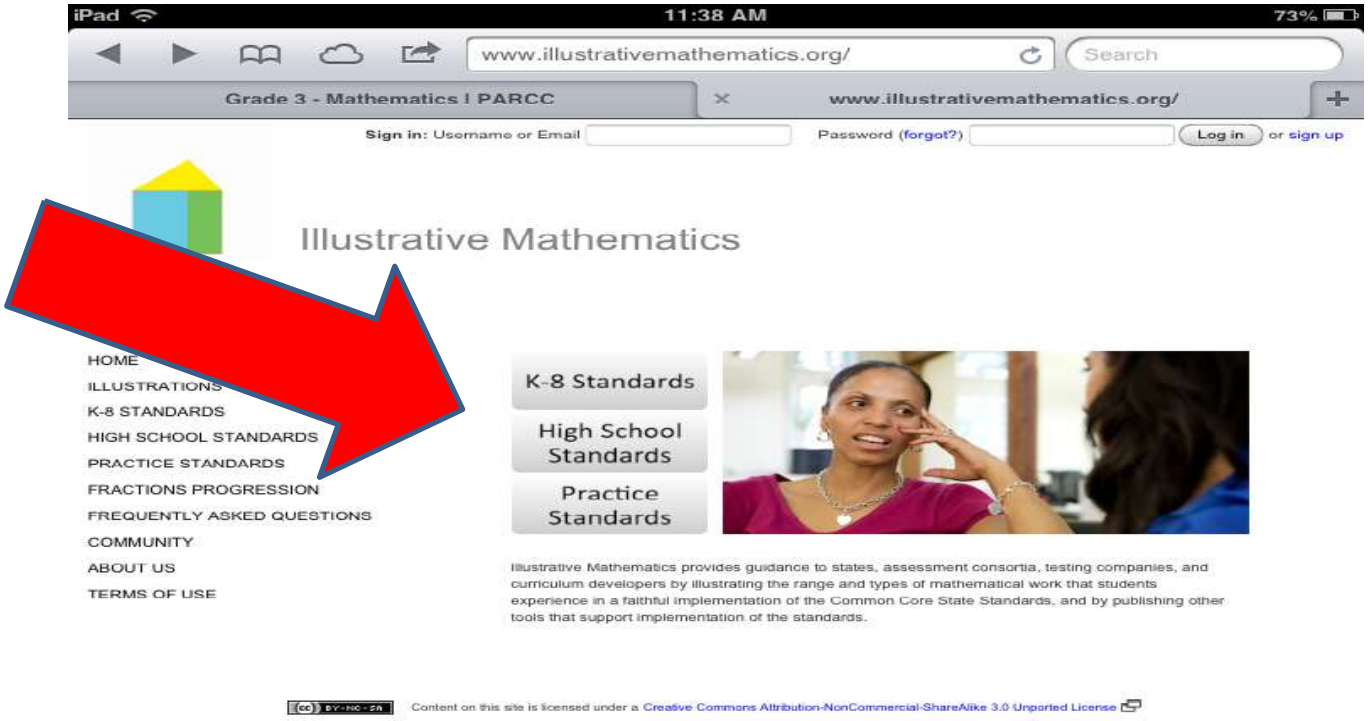
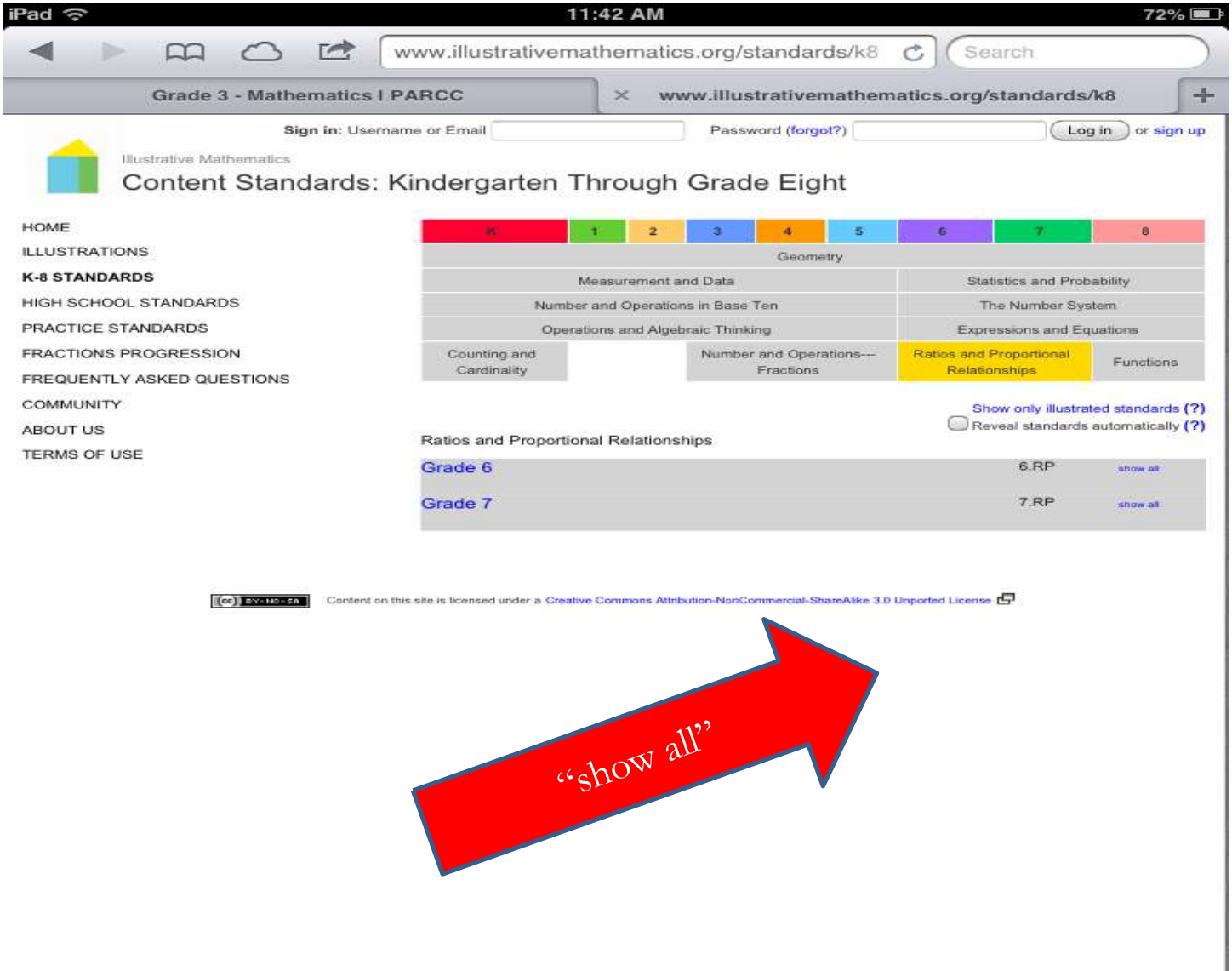
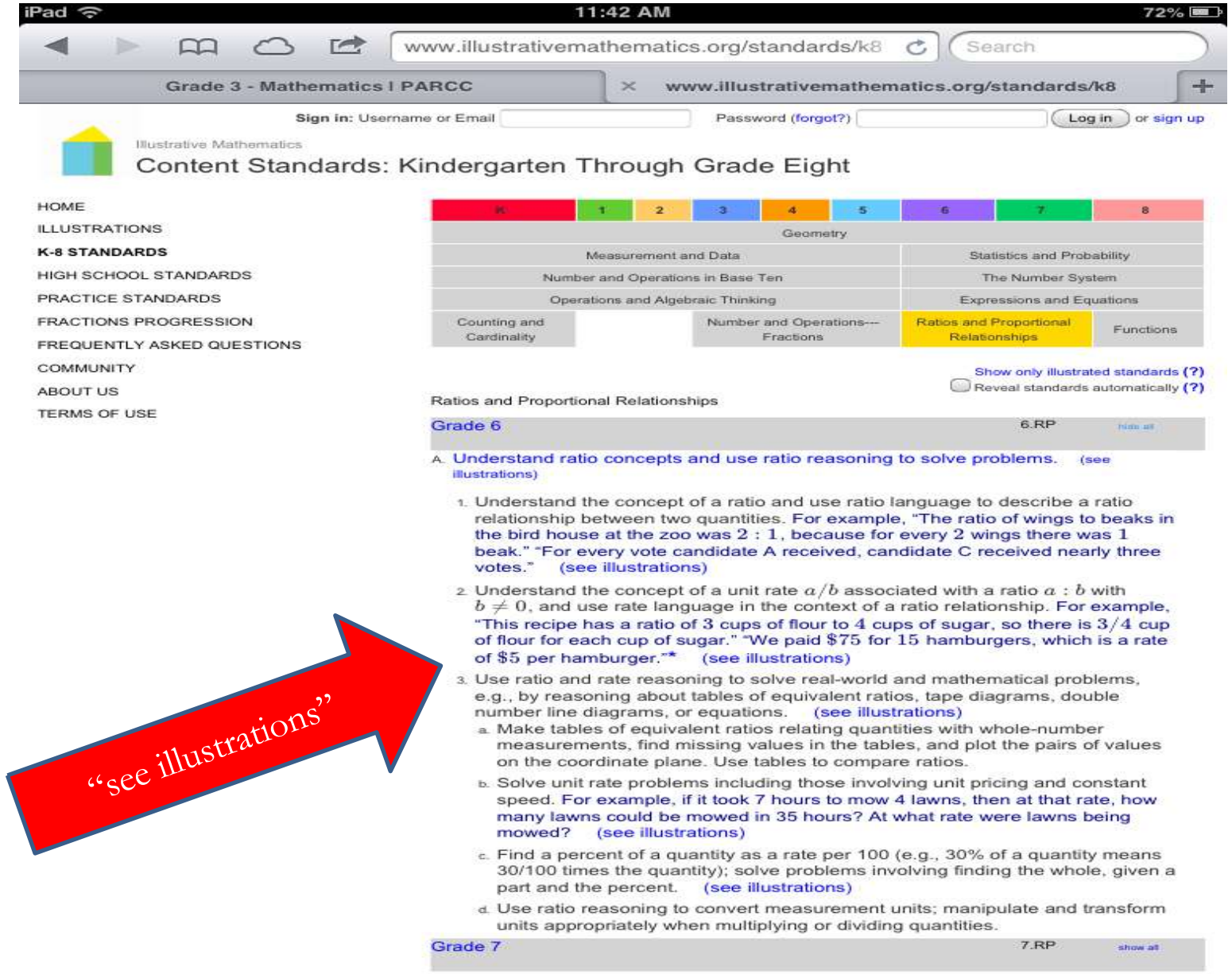
IM Math Assessment Prototypes



IM Math Assessment Prototypes



IM Math Assessment Prototypes



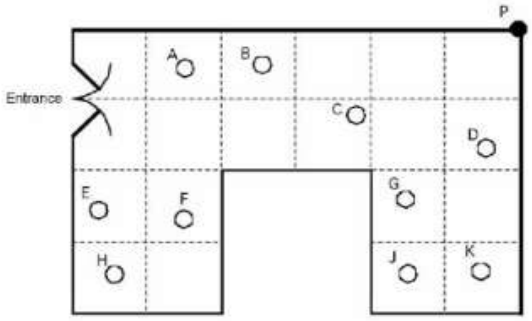
IM Math Assessment Prototypes

Illustrative Mathematics

6.RP Security Camera

Alignment 1: 6.RP.A.3

A shop owner wants to prevent shoplifting. He decides to install a security camera on the ceiling of his shop. Below is a picture of the shop floor plan with a square grid. The camera can rotate 360°. The shop owner places the camera at point P, in the corner of the shop.



a. The plan shows where ten people are standing in the shop. They are labeled A, B, C, D, E, F, G, H, J, K. Which people cannot be seen by the camera at P?

b. What percentage of the shop is hidden from the camera? Explain or show work.

c. The shopkeeper has to hang the camera at the corners of the grid. Show the best place for the camera so that it can see as much of the shop as possible. Explain how you know that this is the best place to put the camera.

Exemplar Math Assessment Prototypes

- New York City (NYC) Department of Education Sample Unit Plans and Assessment Prototypes for Mathematics are available by grades at: http://schools.nyc.gov/Academics/CommonCoreLibrary/TasksUnitsStudentWork/default.htm.

- Each assessment prototype is embedded in a 4 -5 week unit plan which includes sample student responses.

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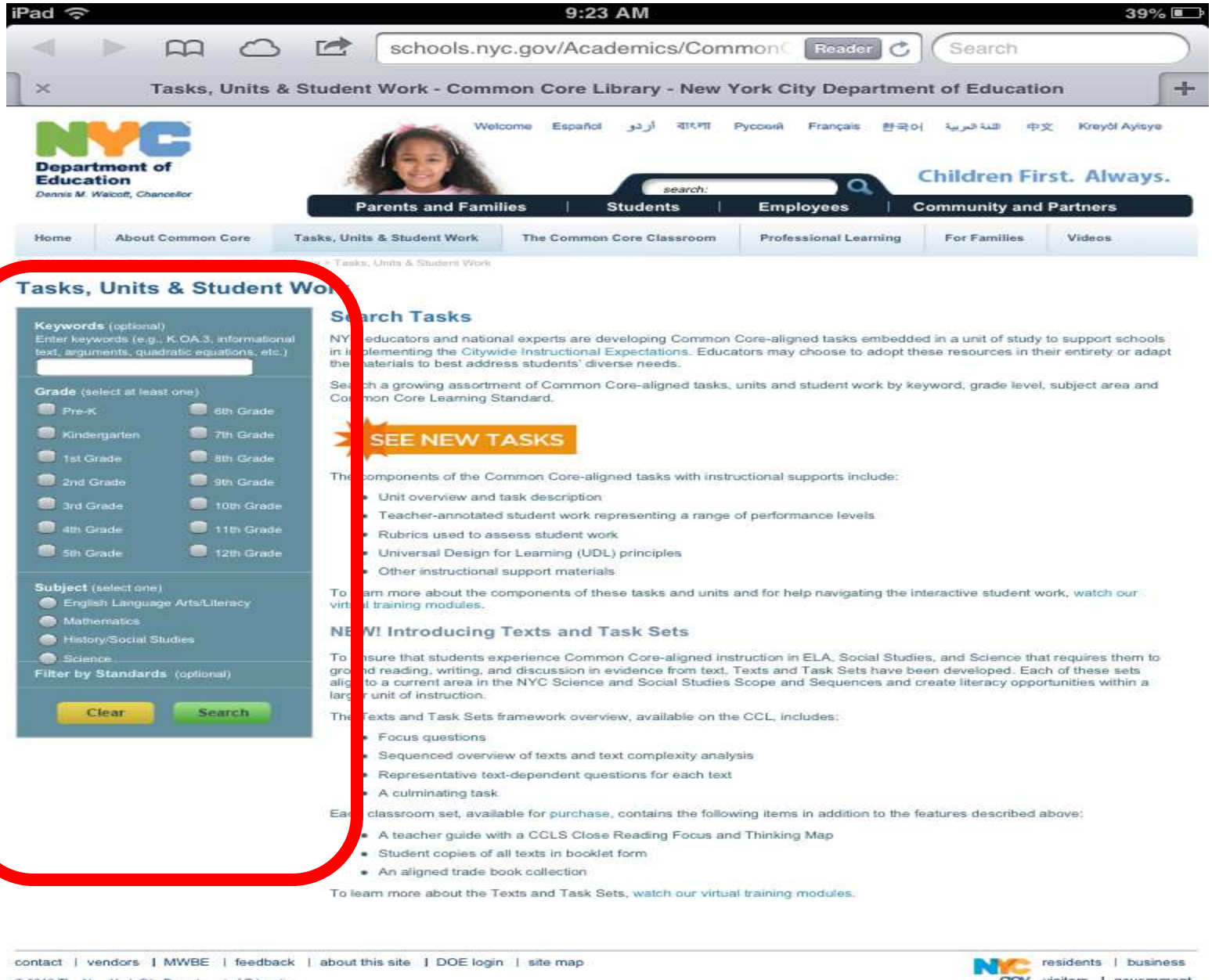
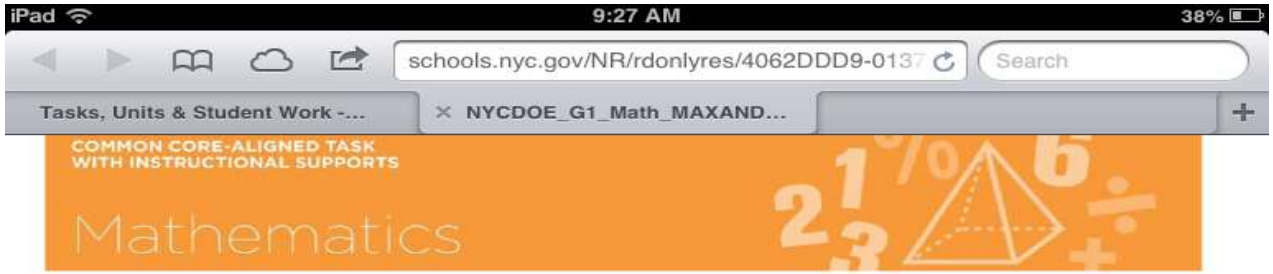
NYC Math Assessment Prototypes



NYC Math Assessment Prototypes



GRADE 1 MATH: FUN IN THE SNOW WITH MAX AND RUBY

UNIT OVERVIEW

This 4-5 week unit is designed to introduce students to the operations of addition and subtraction, and to provide students the opportunity to apply these operations. Throughout the unit, students will model by counting all or taking away, and counting on. Guided practice with these methods will lead to growth in Grade 1 and fluency and precision in Grade 2.

TASK DETAILS

Task Name: Fun in the Snow with Max and Ruby

Grade: 1

Subject: Mathematics

Depth of Knowledge: 2 -3

Task Description: This task includes the recall of facts in one-step operation problems within twenty and requires students to make some decisions on how to approach the problem using basic addition and subtraction skills. It demands reasoning abilities, and students must apply their understanding of operations to solve a problem presented in a novel and unrehearsed way.

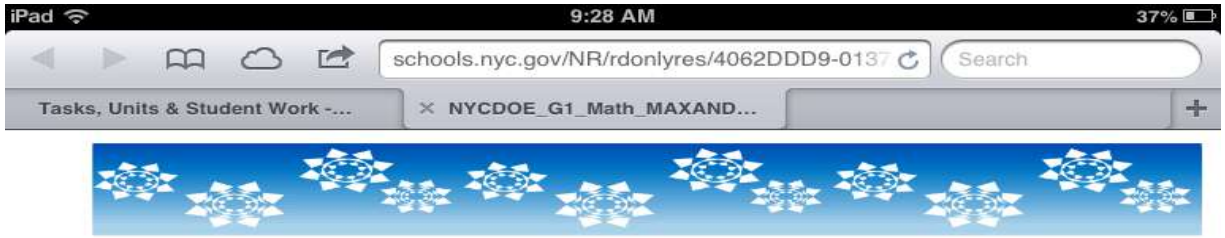
Standards:

1.OA.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

1.OA.4 Understand subtraction as an unknown-addend problem. For example, subtract 10 – 8 by finding the number that makes 10 when added to 8. Add and subtract within 20.

1.OA.5 Relate counting to addition and subtraction.

NYC Math Assessment Prototypes



1. Max and Ruby are playing in the snow. Together they make 9 snowballs. Write 10 number sentences to show all the ways to make 9.

_____ ◯ _____=_____

_____ ◯ _____=_____

_____ ◯ _____=_____

_____ ◯ _____=_____

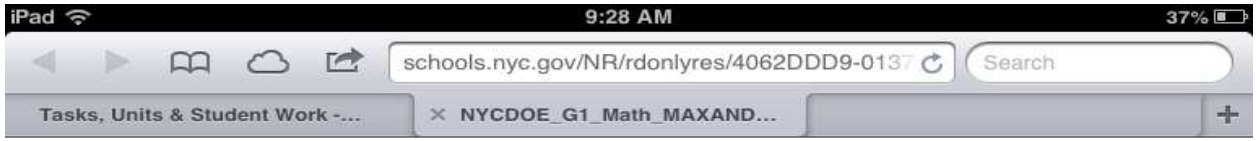
_____ ◯ _____=_____

_____ ◯ _____=_____

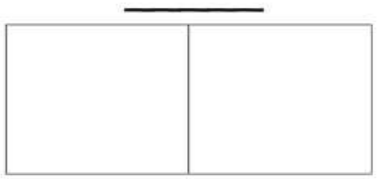
_____ ◯ _____=_____

_____ ◯ _____=_____

NYC Math Assessment Prototypes



2. The next day Max made more snowballs. He now has 15 snowballs. Ruby has 9 snowballs. How many more snowballs does Max have than Ruby?
Complete the model to show your answer:



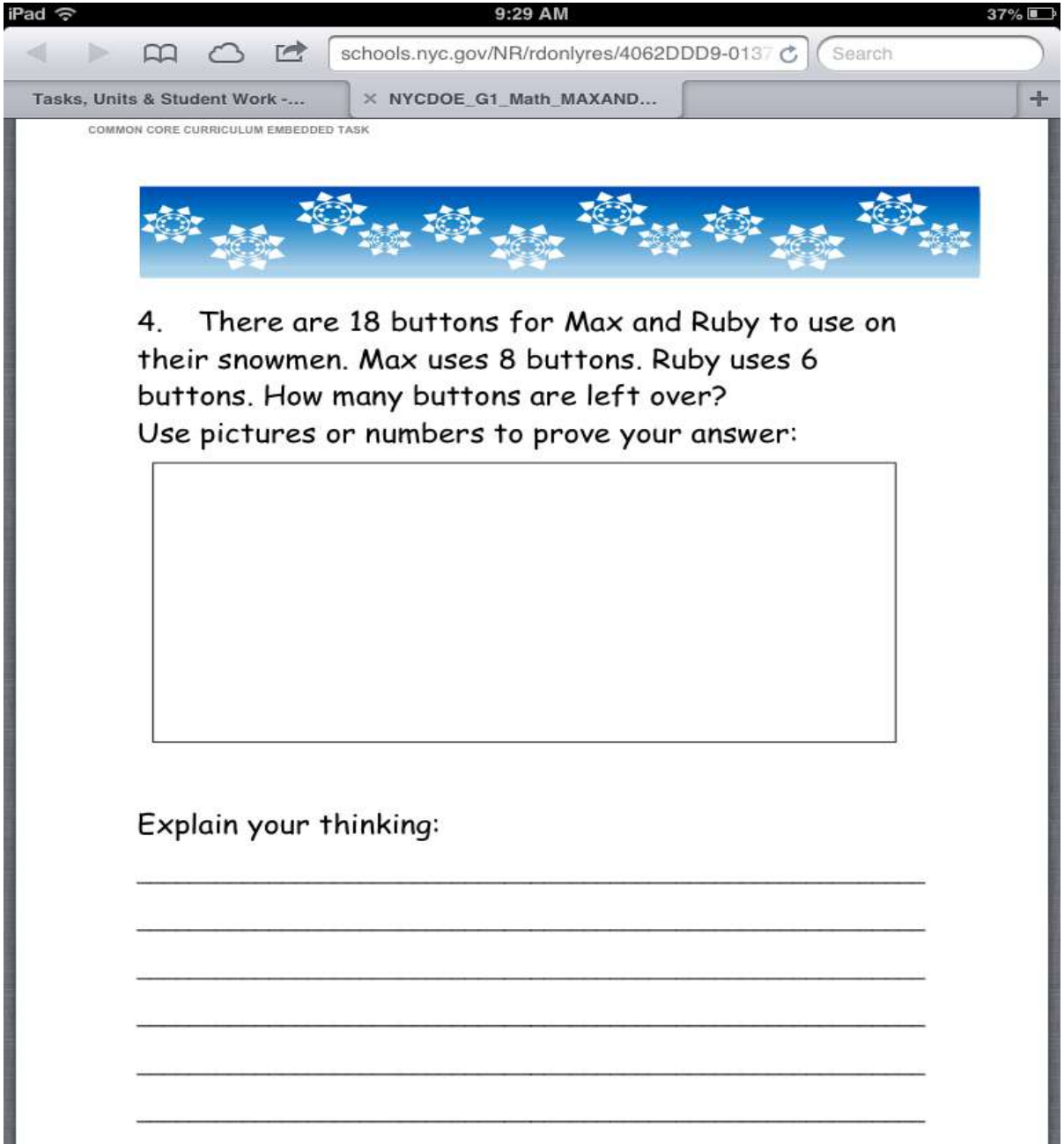
Write a subtraction sentence about the story:

_____ ◯ _____=_____

Write an addition sentence about the story:

_____ ◯ _____=_____

NYC Math Assessment Prototypes



Exemplar Math Assessment Prototypes

- Mathematics Assessment Resource Service (MARS) Sample Items and Task Prototypes for Mathematics are available for Grades 6 – 12 at: http://map.mathshell.org/materials/lessons.php.

- Assessment prototypes are divided by student readiness (novice, apprentice, and expert) and by the Standards for Mathematical Practice.

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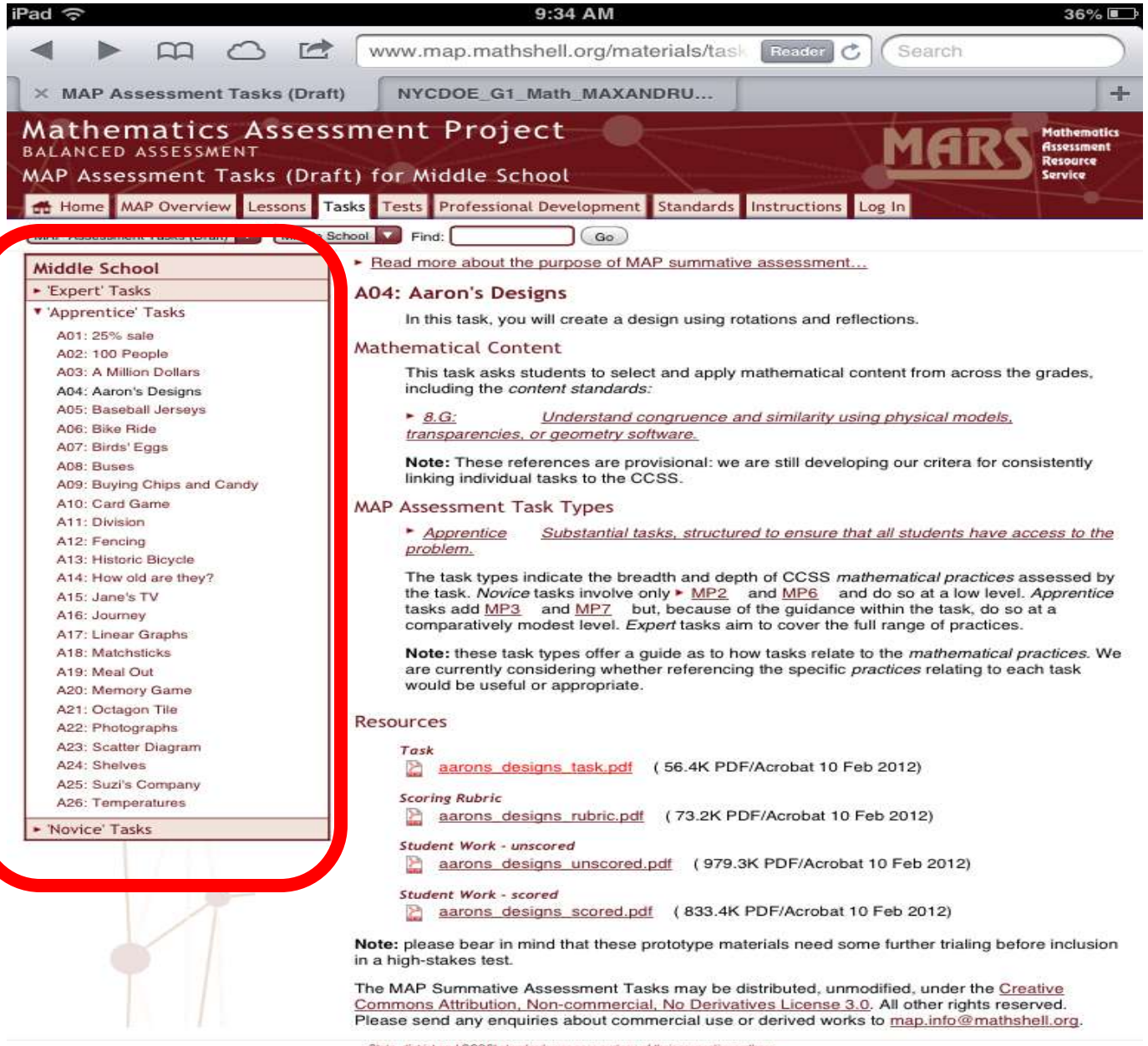
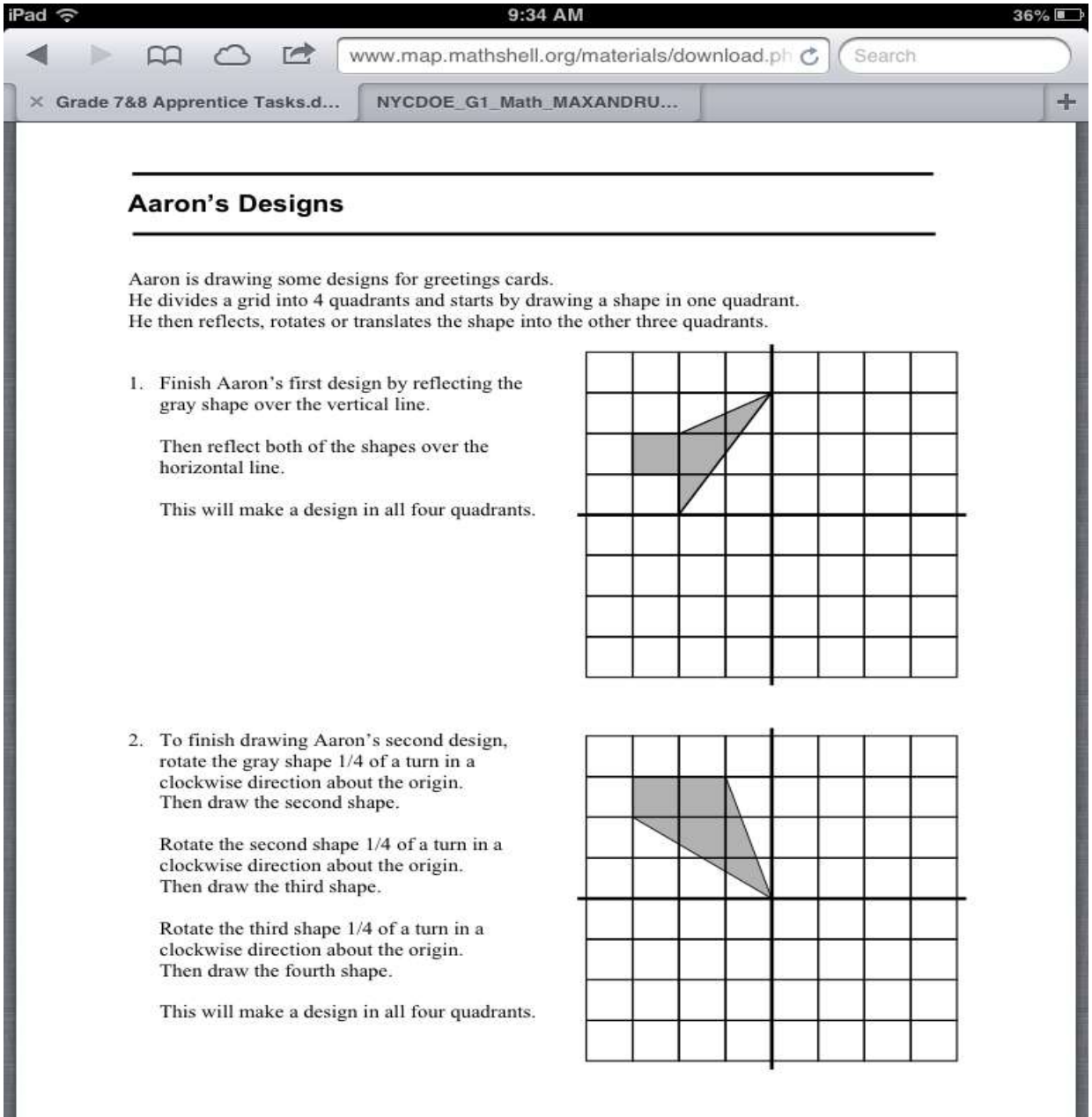
MARS Math Assessment Prototypes



MARS Math Assessment Prototypes



Aaron's Designs

Aaron is drawing some designs for greetings cards.
He divides a grid into 4 quadrants and starts by drawing a shape in one quadrant.
He then reflects, rotates or translates the shape into the other three quadrants.

1. Finish Aaron's first design by reflecting the gray shape over the vertical line.

   Then reflect both of the shapes over the horizontal line.

   This will make a design in all four quadrants.

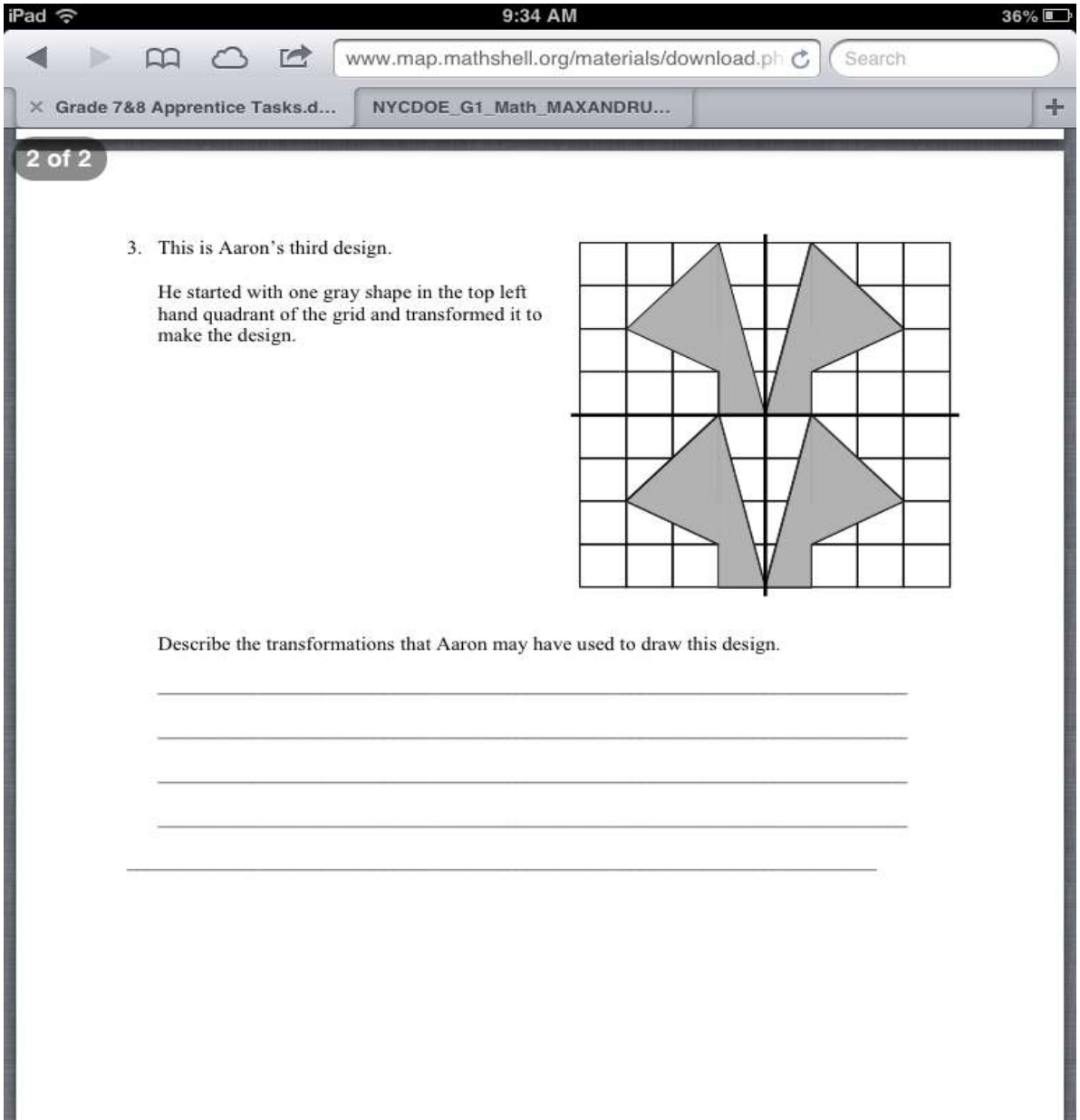
2. To finish drawing Aaron's second design, rotate the gray shape 1/4 of a turn in a clockwise direction about the origin. Then draw the second shape.

   Rotate the second shape 1/4 of a turn in a clockwise direction about the origin. Then draw the third shape.

   Rotate the third shape 1/4 of a turn in a clockwise direction about the origin. Then draw the fourth shape.

   This will make a design in all four quadrants.

MARS Math Assessment Prototypes



Future Guidance from the MDE

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Additional Guidance from the MDE

MDE has released a video to share new information from PARCC related to several topics, including:

- The number of computer devices needed to administer the assessment
- PARCC Assessment Administration Capacity Planning Tool
- Assessment Administration Guidance
- PARCC Accessibility, Accommodations, and Fairness

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Key Take-Aways

- The assessments are coming.
- Provide timed, mock-assessments in class to acclimate students to the PARCC testing environment.
- Use only CCSSM-aligned assessment items & prototypes.
- Stay informed.

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CCSSM Resources

Common Core Website
www.corestandards.org

PARCC Assessment Administration Guidance
http://www.parcconline.org/assessment-administration-guidance

PARCC Grade Level Assessment Blueprints
http://www.in.gov/idoa/proc/bids/RFP-13-29/

Progression Documents for CCSSM
http://math.arizona.edu/~ime/progressions/

PARCC Model Content Frameworks for Mathematics
http://parcconline.org/parcc-model-content-frameworks

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MDE Resources

Office of Curriculum and Instruction
http://www.mde.k12.ms.us/ci

MDE iTunes U (archived webinars)
http://www.mde.k12.ms.us/itunes

MDE Common Core Website
www.mde.k12.ms.us/ccss

CCSS and PARCC training materials
https://districtaccess.mde.k12.ms.us/commoncore/

Curriculum and Instruction Listserv
http://fyt.mde.k12.ms.us/subscribe/subscribe_curriculum.html

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