



OAKS

Essential Skills Assessment



Developing Essential Skills Math Work Samples

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TRANSITION

Oregon Administrative Rule 581-22-0615

The Assessment of the Essential Skills

1. Students will be able to use Essential Skills assessment evidence collected prior to the transition to Smarter Balanced (as long as it comes from the approved list of assessment options).
2. The approved assessment options will remain in place through the transition to Smarter Balanced (state test, other standardized tests, work samples)

12th Grade Retest opportunities for 2014-15,
Reading (3), Writing (1), Math (3)



SCORING GUIDES

- Math and ELA Official Scoring Guides review and validation May 2014
- Any revisions will be field tested and presented to State Board of Education for adoption
- Educators will be supported with appropriate professional development opportunities



WORK SAMPLES

- Late fall 2014-15 ODE will release secure Essential Skills work samples. 35 reading, 35 writing and 35 math each with 5 student exemplars
- Assessment Portal
- Blended work samples – reading/writing, science/writing, and science/math
- New Math plain language scoring guide
- New Math work sample development template



CRITERIA

Criteria	
1. Clear Purpose	Why am I assessing?
2. Clear Learning Target(s)	What am I assessing?
3. Quality Assessment	How can I assess it well?
4. Proper Test Administration	How will I ensure test conditions do not interfere with a student's ability to perform well on a test?
5. Effective Communication of Results	How will I share results for maximum impact?



WORK SAMPLE TEMPLATE

Assessment

Guide to Writing Quality Mathematics Work Samples

Effective tasks must provide an opportunity for scoring across all five process dimensions of the Mathematics Problem Solving Official Scoring Guide. Tasks must elicit developmentally appropriate problem solving skills and be tied to grade level content standards. A good task must be a non-familiar application requiring multiple steps and, ideally, have more than one method of solution. When appropriate, work samples should be embedded in the curriculum and may be used as a culminating assessment.



Task Writing Process	
	Select the standard(s) to be addressed. Students working toward a solution may be required to apply standards from earlier grades.
	Determine a real-world context that students have previous experience with. Ideas may come from textbooks, online resources, etc.
	Write a task that provides an opportunity for students to demonstrate proficiency in the selected standard(s).
	Determine the solution.



WORK SAMPLE TEMPLATE

Matrix for Evaluating Mathematics Work Sample Tasks

In designing a task, writers may consider the following matrix. Task writers may use the matrix to reflect on and revise their work, or as a training tool for use in developing tasks in teams.

Process Dimension	Questions	Yes/No Ideas for Revision
Making Sense of the Task	Does the task ask students to change important information into mathematical ideas?	<input type="checkbox"/>
Representing and Solving the Task	Are there clear math strategies students can use to solve this problem?	<input type="checkbox"/>
Communicating Reasoning	Does the task require a logical chain of reasoning that is robust enough for the student to demonstrate communication?	<input type="checkbox"/>
Accuracy	Is there one answer? Does the task allow students to make their own connections and determine which steps to take?	<input type="checkbox"/> <input type="checkbox"/>
Reflecting and Evaluating	Is there a reasonable way for the student to rework the problem by solving with an alternate method, by working backwards or double-checking the result?	<input type="checkbox"/>
Characteristic	Questions	Yes/No Ideas for Revision
Grade level standards are addressed	Will the task be used to demonstrate Essential Skills? Does the complexity of the task deter students from addressing below grade level standards?	<input type="checkbox"/> <input type="checkbox"/>



ONLY IN MATH PROBLEMS CAN YOU BUY
60 CANTALoupES AND NO ONE ASKS
WHAT THE HECK IS WRONG WITH YOU.



SCHULZ

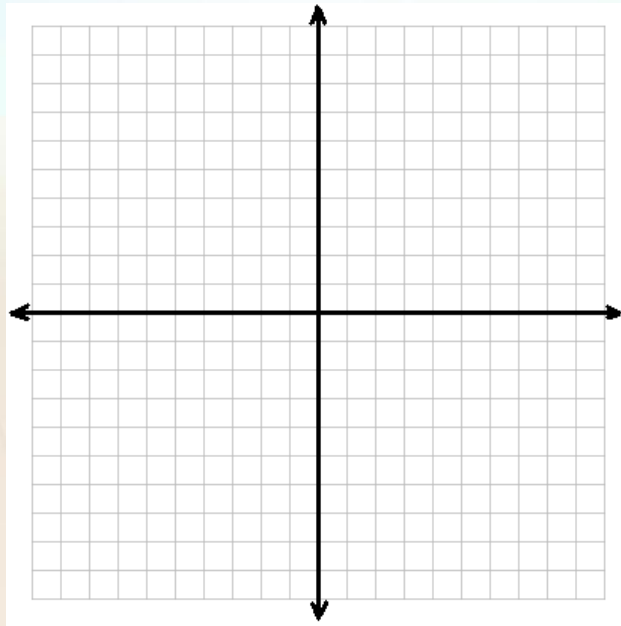
PEANUTWEETER.COM

@KARIMI



QUADRILATERAL ABCD

Quadrilateral ABCD has the points $A(1, 1)$, $B(3, 5)$, $C(3, 5)$, $D(1, 6)$. If ABCD is reflected across the y -axis and then the x -axis, what is the location of the points A' , B' , C' , and D' ?



FARMER JOHN

Farmer John has a rectangular holding pen that measures 10 yards long and 5 yards wide to contain his cattle. He is acquiring more cattle from the neighboring farmer and wants to add the same amount of fencing to each side to create a new holding pen that encloses 176 square yards. How much should Farmer John add on to each side of his existing holding pen to achieve his goal?



GOPHER SECURITY

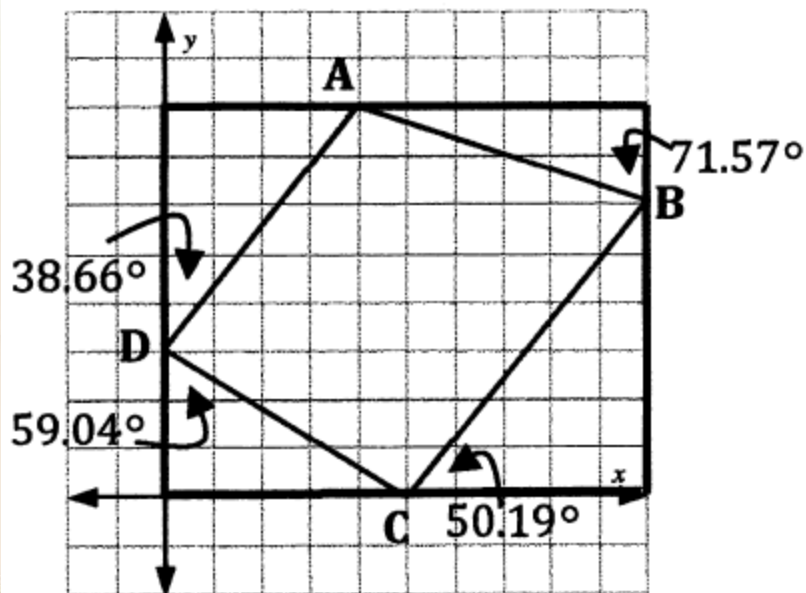
Gopher Security Company has been hired to create a security system for the Portland Museum to guard the famous Hope Diamond. They will be installing a laser beam triggered security system. You will help them determine the distance the beam will travel around the room to protect the diamond. If the beam is broken, the alarm will be triggered.

The display box will be placed in the center of the room.

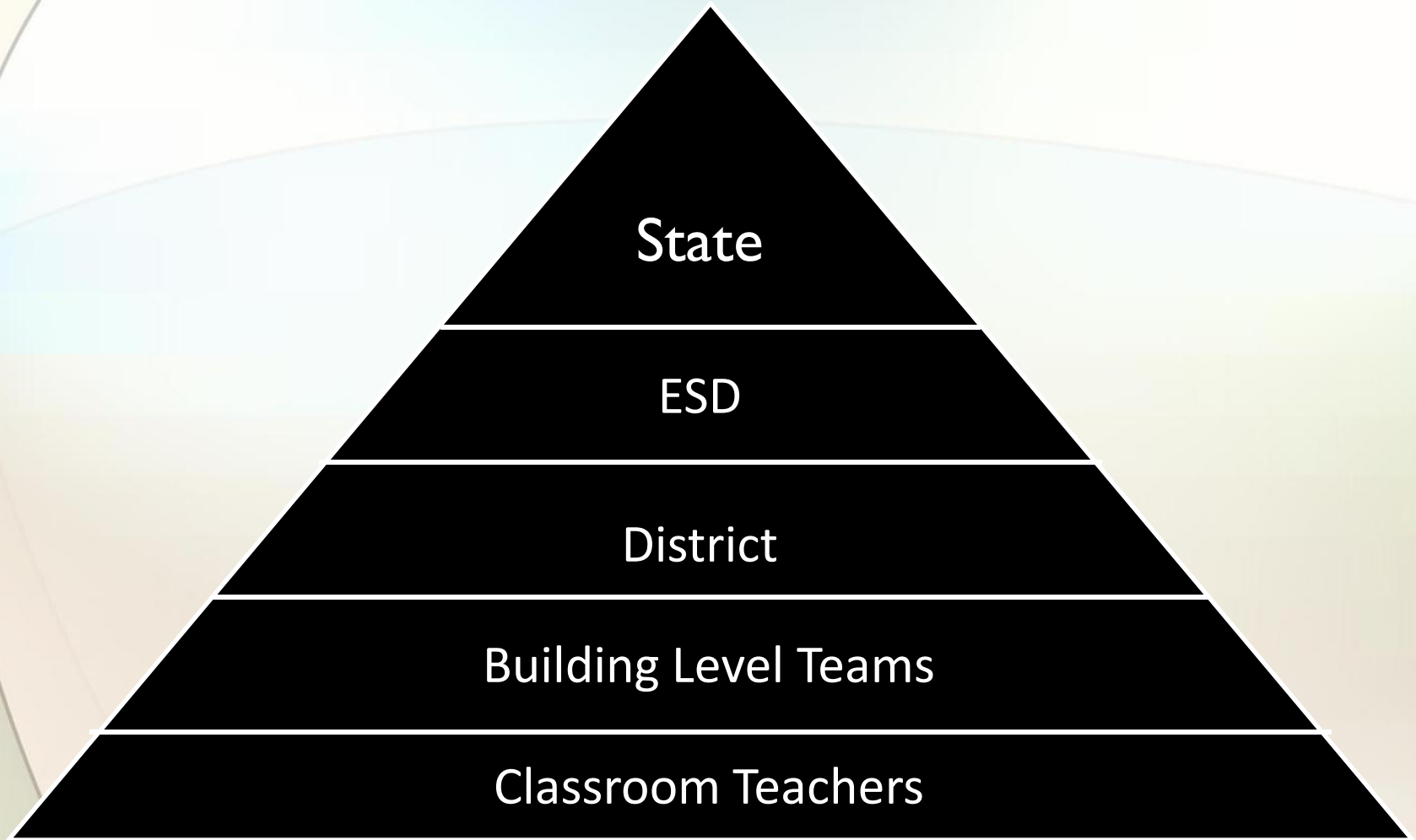
The beam travels from the sensor at point A to sensor B to sensor C to sensor D and back to sensor A.

What is the total distance the beam will travel around the room?

Show all work and reasoning to complete the task.



DESIGN AND COLLABORATION



WORK SAMPLE NETWORK

A5 Crook County School Dis			
	A	B	C
1	Organization	English	Terms or conditions for sharing
2	Adel School District- Adel School	x	No Restrictions
5	Crook County School District	x	Reciprocal Sharing
7	Hillsboro School District	x	Will Share scorers, not samples
10	Multnomah ESD	x	Fee
15	Ukiah School District	x	No Restrictions
16	Neah-Kah-Nie School District	x	No Restrictions
17			
18	Has WS Prompts		
19	Does not have WS Prompts		
20			
21			
22			

A16 Crook County School District				
	A	B	D	E
5	Beaverton School District	Rayna Flye	rayna_flye_fairman@beaverton.k12.or.us	503-591-4403
6	Bethel School District	Marianne Oakes	moakes@lesd.k12.or.us	
8	Butte Falls School District, Butte Falls Charter School	Dianne Gorman	dcorman@buttefalls.k12.or.us	541 865 3563
9	Cascade School District	Holly Rahn	hrahn@cascade.k12.or.us	503-749-8251
13	Central Point School District, Crater Renaissance Academy	Deirdre Barber	deirdre.barber@district6.org	541-494-6316
15	Corvallis School District	Sally McAfee	sally.mcafee@corvallis.k12.or.us	541-757-4433
16	Crook County School District	Yancey Fall	yancey.fall@crookcounty.k12.or.us	541-416-9977
18	Dayville School District	Lori Smith	smithl@grantesd.k12.or.us	541-987-2412
19	Douglas County School District, Days Creek/Tiller	Teresa Reed	teresa.reed@dayscreek.k12.or.us	541-825-3296
20	Estacada School District	Steven Christianen	christis@estacada.k12.or.us	503-630-8515 x 2822
21	Forest Grove School District	Brigetta Martell	bmartell@fgsd.k12.or.us	503-359-8110 x4580

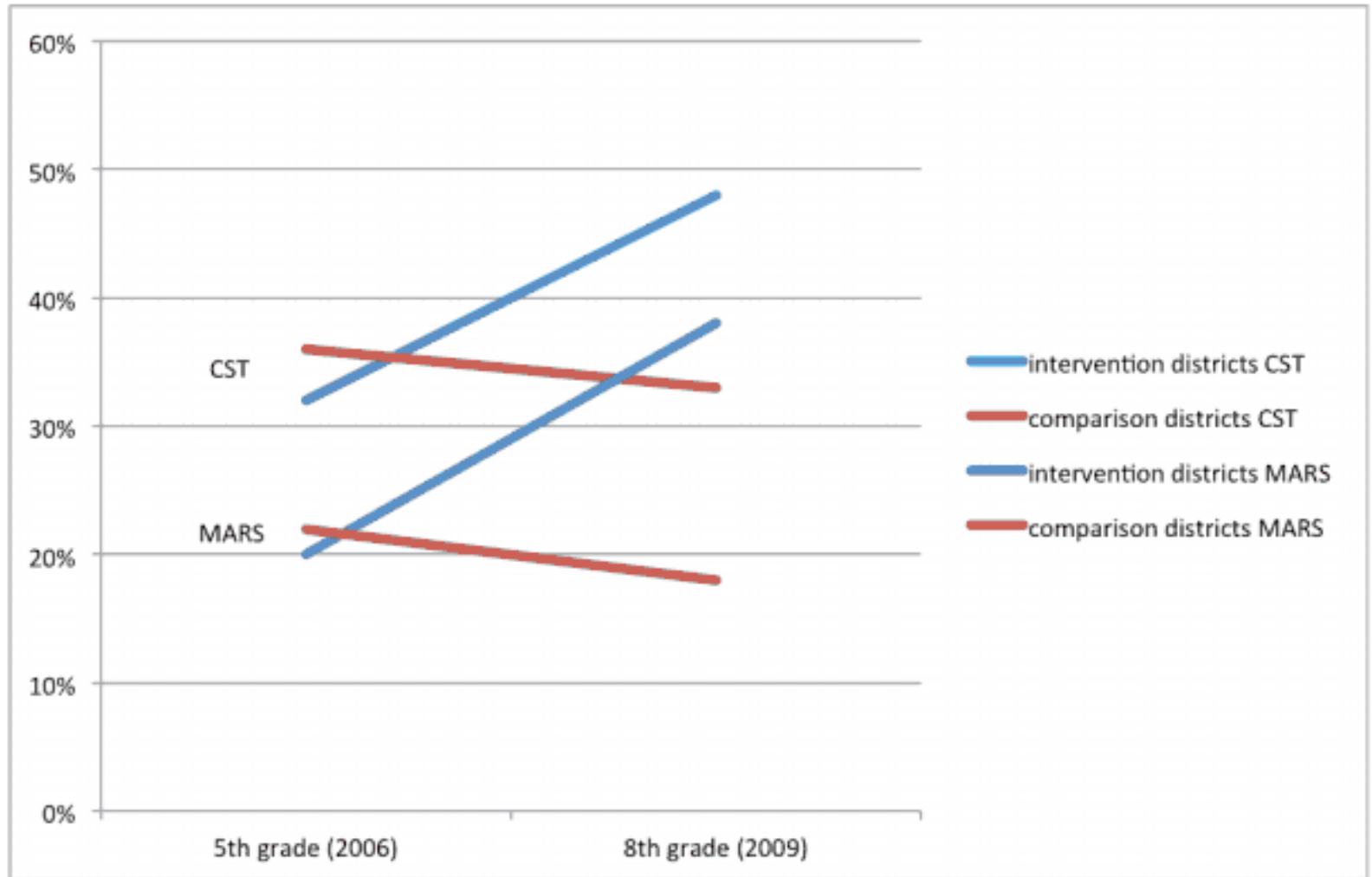
<http://www.ode.state.or.us/search/page/?id=3961>

“...the best preparation for the CCSS assessments, with their commitment to assessing all the standards, including the Standards for Mathematical Practice, is high-quality instruction...”

NCTM President Diane J. Briars



STUDENT ACHIEVEMENT BEFORE AND AFTER INTERVENTION



(Boaler & Foster, 2014)



MARS TASK

Baseball Jerseys

This problem gives you the chance to:

- work with equations that represent real life situations
-

Bill is going to order new jerseys for his baseball team.

The jerseys will have the team logo printed on the front.

Bill asks two local companies to give him a price.



1. 'Print It' will charge \$21.50 each for the jerseys.

Using n for the number of jerseys ordered, and c for the total cost in dollars, write an equation to show the total cost of jerseys from 'Print It'.

2. 'Top Print' has a one-time setting up cost of \$70 and then charges \$18 for each jersey.

Using n to stand for the number of jerseys ordered, and c for the total cost in dollars, write an equation to show the total cost of jerseys from 'Top Print'.

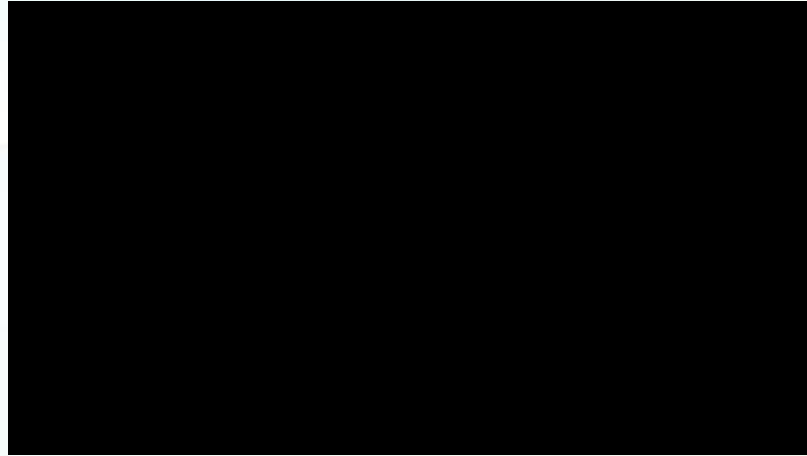
3. Bill decides to order 30 jerseys from 'Top Print'.

How much more would the jerseys cost if he buys them from 'Print It'?
Show all your calculations.

4. Use the two equations from questions 1 and 2 to figure out how many jerseys Bill would need to buy for the price from 'Top Print' to be less than from 'Print It'.
Explain how you figured it out.
-



PERFORMANCE ASSESSMENT TASKS



Video: How to Learn Math: Teaching for a
Growth Mindset

<http://youtu.be/EbhJk62N05I>



RESOURCES

Study: Boaler, J., & Foster, D. (2014). Raising Expectations and Achievement. The Impact of Wide Scale Mathematics Reform Giving All Students Access to High Quality Mathematics.
<http://www.youcubed.org>

Tasks: Quadrilateral ABCD

<https://web.archive.org/web/20130805204002/http://www.ode.state.or.us/search/page/?id=281>

Farmer John <http://www.ode.state.or.us/search/page/?id=503>

Gopher Security <http://www.ode.state.or.us/search/page/?id=503>

Mathematics Assessment Project: Baseball Jerseys

<http://map.mathshell.org/materials/tasks.php?taskid=362&subpage=apprentice>

Video: How to Learn Math: Teaching for a Growth Mindset
<http://youtu.be/EbhJk62N05I>





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