Grades 6-12
Math SBAC Scores are IN!
Now What??

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How well did you do?

Name	Number of Students	Average Scale Score	Percent Proficient	Percent at Each Achievement Level
State of Oregon	35809	2567 ±1	31	42 ...
Sample	XXX	2557 ±21	21	43 ...

What scores did you have to get to "pass"?

	Level 1	Level 2		Level 3		Level 4
Math	Below and To	From	To	From	To	From and Above
3	2380	2381	2435	2436	2500	2501
4	2410	2411	2484	2485	2548	2549
5	2454	2455	2527	2528	2578	2579
6	2472	2473	2551	2552	2609	2610
7	2483	2484	2566	2567	2634	2635
8	2503	2504	2585	2586	2652	2653
11	2542	2543	2627	2628	2717	2718

Adopted Nov. 14, 2014 by Smarter Balanced Assessment Consortium

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How Claim Scores are Reported

What are two to three observations you can make about "Sample Data"?

If this were your school, would you be surprised?

Claim 1: Concepts and Procedures

Students can explain and apply mathematical concepts and interpret and carry out mathematical procedures with precision and fluency.
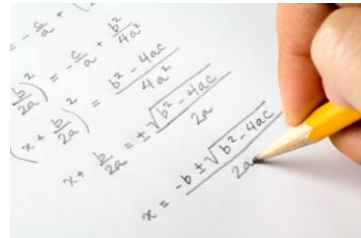

Target/Cluster Level Information

Icon	Content Standard/Target Level	Description
+	Better than performance on the test as a whole	This content standard/target is a relative strength. The group of students performed better on items from this content standard/target than they did on the rest of the test as a whole.
=	Similar to performance on the test as a whole	This content standard/target is neither a relative strength nor a relative weakness. The group of students performed about as well on items from this content standard/target as they did on the rest of the test as a whole.
−	Worse than performance on the test as a whole	This content standard/target is a relative weakness. The group of students did not perform as well on items from this content standard/target as they did on the rest of the test as a whole.
*	Too Few Items or Too Few Students/Insufficient Information	Not enough information is available to determine whether this content standard/target is a relative strength or weakness.

Target	Performance Level
Concepts and Procedures	
Number and Quantities: Extend the properties of exponents to rational exponents.	=
Number and Quantities: Use properties of rational and irrational numbers.	=
Number and Quantities: Reason quantitatively and use units to solve problems.	−
Algebra: Interpret the structure of expressions.	=
Algebra: Write expressions in equivalent forms to solve problems.	=
Algebra: Perform arithmetic operations on polynomials.	=
Algebra: Create equations that describe numbers or relationships.	=
Algebra: Understand solving equations as a process of reasoning and explain the reasoning.	=
Algebra: Solve equations and inequalities in one variable.	=
Algebra: Represent and solve equations and inequalities graphically.	−
Functions: Understand the concept of a function and use function notation.	=
Functions: Interpret functions that arise in applications in terms of the context.	−
Functions: Analyze functions using different representations.	=
Functions: Build a function that models a relationship between two quantities.	=
Geometry: Define trigonometric ratios and solve problems involving right triangles.	−
Statistics and Probability: Summarize, represent, and interpret data on a single count or measurement variable.	=

Target J: Represent and solve equations and inequalities graphically.

Example Stem 1: Select the ordered pair that is most likely a solution to the equation represented by the graph.
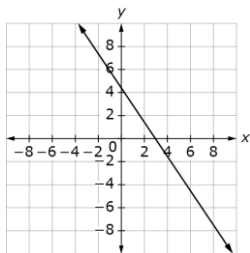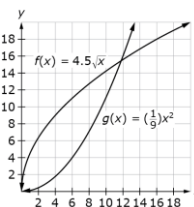
A. (0, 3)

B. (0, 4.5)

C. (2.5, 0)

D. (4.5, 0)

Target J: Represent and solve equations and inequalities graphically.

This graph shows equations $f(x) = 4.5\sqrt{x}$ and $g(x) = \left(\frac{1}{9}\right)x^2$.

Select **all** answer choices that best represent solutions to the equation $f(x) - g(x) = 0$.

A. $x = 0$

B. $x = 5.0$

C. $x = 11.7$

D. $x = 13.5$

E. $x = 20.0$

## What do we do if our Claim 1 scores are low?

- Compare your curriculum maps to the priority clusters (SBAC Blueprints).
- Look at SBAC item specifications to see sample questions, compare level of rigor, and vocabulary. (www.smarterbalanced.org/smarter-balanced-assessments)
- Determine how calculator usage in classrooms compare to calculator allowance on SBAC (item specs).

- For HS:
  - Look at how content is spiraled over the three years of curriculum.
  - Look at HS program to determine what level of math most Juniors are in. Does this match SBAC expectations?

Claim 2/4: Problem Solving and Modeling & Data Analysis

Students can solve a range of complex well-posed problems in pure and applied mathematics, making productive use of knowledge and problem solving strategies.

Students can analyze complex, real-world scenarios and can construct and use mathematical models to interpret and solve problems.
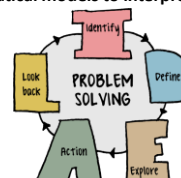
CAT Test
Computer **ADAPTIVE** Test

Approximately <u>twenty</u> **grade-level** concept and procedure items (Claim 1)

→ <u>SIX</u> problem-solving items (grade-level based on Claim 1 success) (Claim 2 & 4)

→ <u>EIGHT</u> communicating reasoning (grade-level based on Claim 1 success) (Claim 3)

Claim 2/4 Stats

- **Approximately <u>six</u> adaptive items on the CAT portion of SBAC.**
- **Each student will receive at least 2 Claim 2 CAT items at DOK 3 or higher.**
- **Majority (4 out of 6 items) of Performance Task falls into this category.**
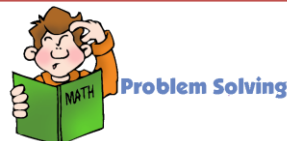
Problem Solving

Grade 7 Problem-Solving

Luke buys a television that is on sale for 25% off the original price. The original price is $120 more than the sale price. What is the original price of the television?

PHILIPS

Grade 7 Modeling & Data Analysis

Elias is a produce manager at a grocery store. He buys fresh vegetables from local farmers each week. Based on previous sales, he has identified the following ideal ratios (in pounds) to keep in stock for certain vegetables. The ratio of
- tomatoes to onions is 3:2.
- onions to peppers is 2:1.
- peppers to cucumbers is 2:5.

This table shows the amount, in pounds, of each vegetable a local farmer has available to sell to Elias.

Vegetable	Amount (lbs)
Cucumbers	50
Onions	55
Peppers	30
Tomatoes	85

Elias buys all 50 pounds of the farmer's cucumbers. He then buys the remaining vegetables according to the ideal ratios shown above.

Enter the amount of **peppers**, in pounds, Elias buys in the first the response box.

Enter the amount of **tomatoes**, in pounds, Elias buys in the second response box

HS Problem-Solving

I'd be a vegetarian if bacon grew on trees...

A restaurant serves a vegetarian and a chicken lunch special each day. Each vegetarian special is the same price. Each chicken special is the same price. However, the price of the vegetarian special is different from the price of the chicken special.

- On Thursday, the restaurant collected $467 selling 21 vegetarian specials and 40 chicken specials.
- On Friday, the restaurant collected $484 selling 28 vegetarian specials and 36 chicken specials.

Enter the cost, in dollars, of the **vegetarian** lunch special.

What do we do if our Claim 2/4 scores are low?

- Give students strategies for persevering in problem-solving.
- Embed authentic "word problems" in your curriculum.
- Allow students to build confidence in problem-solving by working problems that include math they can access.
- Spiral tasks that do not just use the most recently learned concepts.
- Be cognizant of including higher depth of knowledge items in students' activities and assignments.

Claim 3: Communicating Reasoning

Students can clearly and precisely construct viable arguments to support their own reasoning and to critique the reasoning of others.

Claim 3 Stats

- **Approximately <u>eight</u> adaptive items on the CAT portion of SBAC.**
- **Each student will receive at least 2 Claim 2 CAT items at DOK 3 or higher.**
- **CAT items may be at and/or below grade-level.**
- **One-third (2 out of 6 items) of Performance Task falls into this category.**
- **Far less "textbox" writing items than we were originally told there would be (up to 1 on CAT test and up to 4 total on PT)**

Grade 6 Communicating Reasoning

Sarah claims that for any fraction multiplied by $\frac{2}{3}$, the product n will always be less than $\frac{2}{3}$.

A. Drag one number into each box so that the product n is less than $\frac{2}{3}$.

B. Drag one number into each box so that the product n is **not** less than $\frac{2}{3}$.

```
1
2
.3
4
5
6
7
8
9
```

A. Supports Sarah's Claim

$$\frac{2}{3} \times \frac{\square}{\square} = n$$

B. Does not support Sarah's Claim

$$\frac{2}{3} \times \frac{\square}{\square} = n$$

Grade 8 Communicating Reasoning

Kyle had to solve a problem. The problem and his work are shown in the box.

Select the part of Kyle's work that has a mistake.

Select the part of the problem Kyle should read again to fix his mistake.

A company sells baseball gloves and bats. The gloves regularly cost $30 and the bats regularly cost $90. The gloves are on sale for $4 off. The bats are on sale for 10% off. The goal is to sell $1200 worth of bats and gloves each week. Last week, the store sold 14 gloves and 9 bats.

Did the store meet its goal?

	1.		2.		3.	
		$30		$90		$900
		− $4		÷ 0.9		+ $364
		$26		$100		$1264
		$26		$100		
		× 14		× 9		
		$364		$900		

HS Communicating Reasoning

A geometry student made this claim: If two lines are cut by a transversal, then alternate interior angles are congruent.

Part A:

Draw a diagram that shows congruent alternate interior angles **or** select **None** if there is not a situation to support the student's claim.

Part B:

Draw a diagram that shows alternate Interior angles that are **not** congruent **or** select **None** if there is not a situation to support the student's claim.

Part A:

[None]

Part B:

[None]

What do we do if our Claim 3 scores are low?

- Structure lesson plans to include prompts that ask students to explain or critique.

- Determine if assessments, classroom assignments and/or activities include a variety of styles of Communicating Reasoning items. If not, adjust accordingly.

- Use sentence frames to help students know how to construct explanations and critiques.

- Have students practice constructing arguments using accessible mathematics.

Individual Student Data

- Not meant to be used for student-specific prescribed instruction (summative data)
- Use data to look for trends in student strengths and weaknesses.

Scale Score	Achievement Level	Concepts and Procedures Performance Level	Problem Solving and Modeling & Data Analysis Performance Level	Communicating Reasoning Performance Level
2459 ±44	1	⚠	⊖	⚠
2506 ±30	1	⚠	⊖	⚠
2584 ±36	2	⊖	⊖	⊖
2632 ±26	3	⊖	⊖	⊖
2607 ±33	2	⚠	⊖	⊖
2500 ±39	1	⚠	⊖	⚠
2542 ±34	1	⚠	⊖	⚠
2421 ±54	1	⚠	⚠	⚠
2582 ±31	2	⚠	⊖	⊖
2457 ±41	1	⚠	⚠	⚠
2619 ±25	2	⊖	✅	⊖
2634 ±29	3	⚠	✅	⊖
2577 ±33	2	⚠	✅	⚠
2684 ±26	3	⊖	⊖	✅

Contact Information

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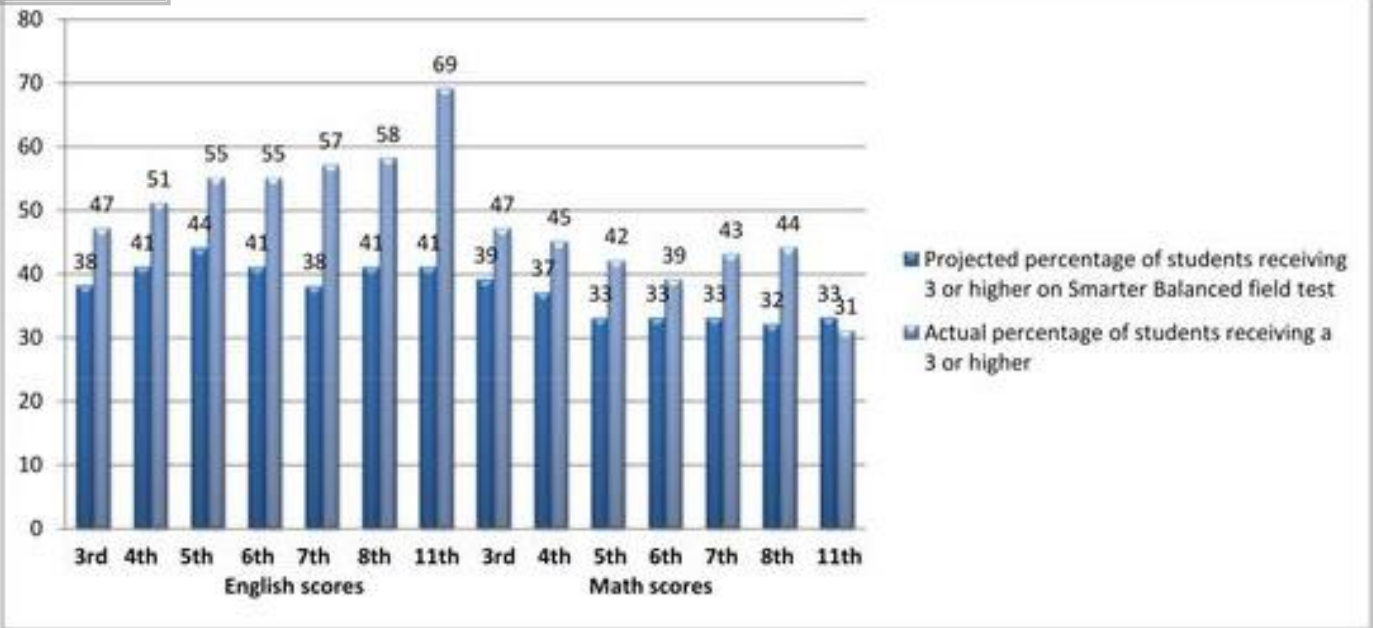
SMc curriculum
improving math.

Table A

Legend:
- Projected percentage of students receiving 3 or higher on Smarter Balanced field test
- Actual percentage of students receiving a 3 or higher

	3rd	4th	5th	6th	7th	8th	11th	3rd	4th	5th	6th	7th	8th	11th
Projected	47	51	55	55	57	58	69	47	45	42	39	43	44	—
Actual	38	41	44	41	38	41	41	39/37	33	33	33	32	33	31

English scores | Math scores

Table B

Name	Number of Students	Average Scale Score	Percent Proficient	Percent at Each Achievement Level
State of Oregon	35809	2567 ±1	31	42	27	19	12
Sample 🔍	XXX	2557 ±21	21	43	36	21

Table C

Math	Level 1 Below and To	Level 2 From	Level 2 To	Level 3 From	Level 3 To	Level 4 From and Above
3	2380	2381	2435	2436	2500	2501
4	2410	2411	2484	2485	2548	2549
5	2454	2455	2527	2528	2578	2579
6	2472	2473	2551	2552	2609	2610
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8	2503	2504	2585	2586	2652	2653
11	2542	2543	2627	2628	2717	2718

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Table D

Name	Number of Students	Average Scale Score	Percent Proficient	Claims		Percentage in Each Claims Performance Level
State of Oregon	35809	2567 ±1	31	**Mathematics**		
				Concepts and Procedures		51 / 32 / 17
				Problem Solving and Modeling & Data Analysis		28 / 53 / 19
				Communicating Reasoning		29 / 56 / 15
Sample Data 🔍	XX	2557 ±21	21	**Mathematics**		
				Concepts and Procedures		71 / 29
				Problem Solving and Modeling & Data Analysis		14 / 64 / 21
				Communicating Reasoning		43 / 50 / 7

Table E

Icon	Content Standard/ Target Level	Description
➕	Better than performance on the test as a whole	This content standard/target is a relative strength. The group of students performed better on items from this content standard/target than they did on the rest of the test as a whole.
▬	Similar to performance on the test as a whole	This content standard/target is neither a relative strength nor a relative weakness. The group of students performed about as well on items from this content standard/target as they did on the rest of the test as a whole.
▬	Worse than performance on the test as a whole	This content standard/target is a relative weakness. The group of students did not perform as well on items from this content standard/target as they did on the rest of the test as a whole.
*	Too Few Items or Too Few Students/Insufficient Information	

Table F

Target	Performance Level
Concepts and Procedures	
Number and Quantities: Extend the properties of exponents to rational exponents.	▬
Number and Quantities: Use properties of rational and irrational numbers.	▬
Number and Quantities: Reason quantitatively and use units to solve problems.	▬
Algebra: Interpret the structure of expressions.	▬
Algebra: Write expressions in equivalent forms to solve problems.	▬
Algebra: Perform arithmetic operations on polynomials.	▬
Algebra: Create equations that describe numbers or relationships.	▬
Algebra: Understand solving equations as a process of reasoning and explain the reasoning.	▬
Algebra: Solve equations and inequalities in one variable.	▬
Algebra: Represent and solve equations and inequalities graphically.	▬
Functions: Understand the concept of a function and use function notation.	▬
Functions: Interpret functions that arise in applications in terms of the context.	▬
Functions: Analyze functions using different representations.	▬
Functions: Build a function that models a relationship between two quantities.	▬
Geometry: Define trigonometric ratios and solve problems involving right triangles.	▬
Statistics and Probability: Summarize, represent, and interpret data on a single count or measurement variable.	▬

Table G

Claim	Content Category	Assessment Targets		DOK	Items		Total Items
					CAT	PT	
1. Concepts and Procedures	Priority Cluster	E.	Apply and extend previous understandings of arithmetic to algebraic expressions.	1	5-6	0	16-19
		F.	Reason about and solve one-variable equations and inequalities.	1, 2			
		A.	Understand ratio concepts and use ratio reasoning to solve problems.	1, 2	3-4		
		G.	Represent and analyze quantitative relationships between dependent and independent variables.	2	2		
		B.	Apply and extend previous understandings of multiplication and division to divide fractions by fractions.	1, 2			
		D.	Apply and extend previous understandings of numbers to the system of rational numbers.	1, 2	2		
	Supporting Cluster	C.	Compute fluently with multi-digit numbers and find common factors and multiples.	1, 2	4-5		
		H.	Solve real-world and mathematical problems involving area, surface area, and volume.	1, 2			
		I.	Develop understanding of statistical variability.	2			
		J.	Summarize and describe distributions.	1, 2			

Table H

Student Names would appear here.

Scale Score	Achievement Level	Concepts and Procedures Performance Level	Problem Solving and Modeling & Data Analysis Performance Level	Communicating Reasoning Performance Level
2459 ±44	1	⚠	⊖	⚠
2508 ±39	1	⚠	⊖	⚠
2584 ±30	2	⊖	⊖	⊖
2632 ±26	3	⊖	⊖	⊖
2607 ±32	2	⚠	⊖	⊖
2500 ±39	1	⚠	⊖	⚠
2542 ±34	1	⚠	⊖	⊖
2421 ±54	1	⚠	⚠	⚠
2582 ±32	2	⚠	⊖	⊖
2457 ±48	1	⚠	⚠	⚠
2619 ±28	2	⊖	✓	⊖
2634 ±26	3	⚠	✓	⊖
2577 ±31	2	⚠	✓	⚠
2684 ±29	3	⊖	⊖	✓