October 28, 2017

# Using SBAC Tools to Support Powerful Instruction

Grades 3 - 12

Presented by Julie Joseph Julie.joseph@tcoe.org

www.commoncore.tcoe.org



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## **Introduce Yourself**

- Name
- Grade Level
- Role
- Site
- What do you hope to learn today?

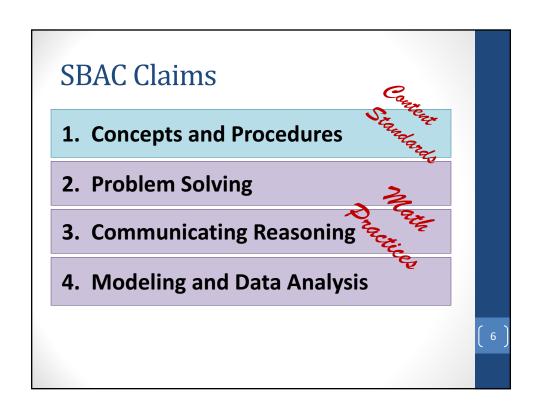
#### **Outcomes**

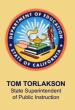
- Examine SBAC Expectations for Mathematics
  - Claims
  - DOK
  - Performance Task
  - Resources
- Become Familiar with the Interim Assessments
- Understand the Implications for Planning and Instruction

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#### DIGITAL **A Balanced Assessment** An online collection of thousands of educator-created classroom tools and resources **System INTERIM** With online assessments that **ASSESSMENTS** measure students' progress toward Optional and flexible tests given college and career readiness, throughout the year to help teachers Smarter Balanced gives educators monitor student progress information and tools to improve teaching and learning. SUMMATIVE **ASSESSMENTS** Smarter Year-end assessments for grades 3-8 and 11 with a computer adaptive test and Balanced performance tasks in math and English

Jiliai	ter Balanced Assessments: Terminology	
SBAC Claims	These are the <i>four things</i> the new assessment intends to measure and report on (Concepts and Procedures, Problem Solving/Modeling and Data Analysis, Communicating Reasoning.)	
Targets	Under each SBAC Claim are several "targets." In claim 1, targets mirror the content standard clusters. In claims 2, 3, and 4, they read more like mathematical practice standards.	
ALDs	Each target has it's own "Achievement Level Descriptors," that is, a scale with <i>four levels</i> describing levels of student understanding.	
DOK	Depth of Knowledge: A classification system with <i>four levels</i> for the way in which a student might engage with the content.	





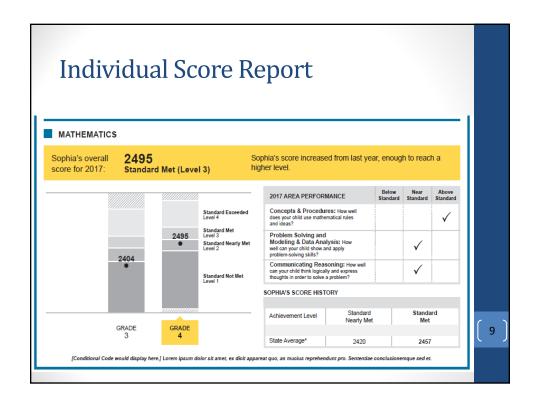
## Summative Assessment Scores

- Overall score on mathematics scale (approximately 2000 – 3000)
- · Achievement levels
  - Level 1. Standard not met
  - Level 2. Standard nearly met
  - Level 3. Standard met
  - Level 4. Standard exceeded
- Claims
  - ∆ Below standard

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## **Achievement Levels**

Mathen	natics			
Grade	Level 1	Level 2	Level 3	Level 4
3	<2381	2381-2435	2436-2500	>2500
4	<2411	2411-2484	2485-2548	>2548
5	<2455	2455-2527	2528-2578	>2578
6	<2473	2473-2551	2552-2609	>2609
7	<2484	2484-2566	2567-2634	>2634
8	<2504	2504-2585	2586-2652	>2652
11	<2543	2543-2627	2628-2717	>2717







## Mathematics Summative Assessment Blueprint As of 11/10/16

		Target Sampling Mathematics Grade 4							
Claim	Content	DOK	Iter	ns	Total				
	Category			CAT	PT	Items			
	Use the four operations with whole numbers to solve problems.	1, 2							
		<ul> <li>Use place value understanding and properties of operations to perform multi-digit arithmetic.</li> </ul>	1, 2	8-9					
	Priority Cluster  Supporting Cluster	F. Extend understanding of fraction equivalence and ordering.	1, 2						
		Priority Cluster	Priority Cluster	Priority Cluster	Priority Cluster	<ul> <li>G. Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.</li> </ul>	1, 2	2-3	
					D. Generalize place value understanding for multi-digit whole numbers.	1, 2	1-2		
Concepts and     Procedures			H. Understand decimal notation for fractions, and compare decimal fractions.	1, 2	1	0	17-20		
Tiocedules		<ol> <li>Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.</li> </ol>	1, 2	2-3					
		K. Geometric measurement: understand concepts of angle and measure angles.	1, 2	]					
		B. Gain familiarity with factors and multiples.	1, 2						
		C. Generate and analyze patterns.	2,3	1					
		J. Represent and interpret data.	1, 2						
		L. Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	1, 2	1					

- DOK: Depth of Knowledge, consistent with the Smarter Balanced Content Specifications.
  The CAT algorithm will be configured to ensure the following:
  For Claim 1, each student will receive at least 7 CAT items at DOK 2 or higher.
  For combined Claims 2 and 4, each student will receive at least 2 CAT items at DOK 3 or higher.
  For Claim 3, each student will receive at least 2 CAT items at DOK 3 or higher.

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#### Mathematics Summative Assessment Blueprint As of 11/10/16

		Target Sampling Mathematics Grade 4					
Claim	Content	Assessment Tarrets	DOK	Iter	ns	Total	
Gaim	Category Assessment largets				PT	Items	
2. Problem Solving 4. Modeling and Data Analysis  ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (	Problem	<ul> <li>A. Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.</li> </ul>	2, 3	2			
	Solving (drawn across content domains)	(drawn across content  B. Select and use appropriate tools strategically.  C. Interpret results in the context of a situation.  D. Identify important quantities in a practical attraction and man their relationships (a.g.	1, 2, 3	1	1-2		
	Modeling and Data Analysis (drawn across content domains)	A Apply mathematics to solve problems arising in everyday life, society, and the workplace.     D. Interpret results in the context of a situation.	2, 3	1		8-10	
		Modeling and Data Analysis (drawn across content E. Analyze the adequacy of and make improvements to mathematical model of a real phenomenon.	Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem.     Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon.	2, 3, 4	1	1-3	
		<ul> <li>State logical assumptions being used.</li> <li>Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).</li> </ul>	1, 2, 3	1			
		G. Identify, analyze, and synthesize relevant external resources to pose or solve problems.	3, 4	0			
	Communicating Reasoning B.	Test propositions or conjectures with specific examples.     Use the technique of breaking an argument into cases.	2, 3	3			
		B. Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures.  Distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in the argument—explain what it is.	2, 3, 4	3	0-2	8-10	
		State logical assumptions being used.     Base arguments on concrete referents such as objects, drawings, diagrams, and actions.	2, 3	2			

- DOK: Depth of Knowledge, consistent with the Smarter Balanced Content Specifications.

  The CAT algorithm will be configured to ensure the following:

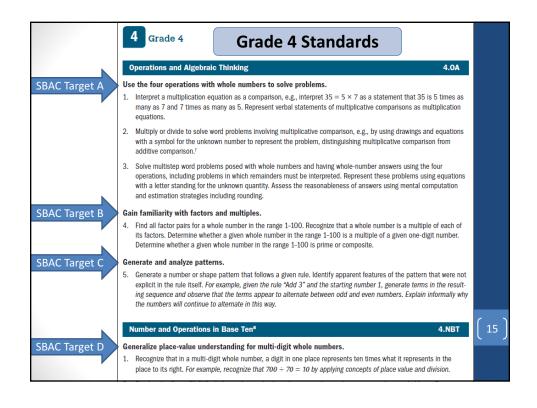
  For Claim 1, each student will receive at least 7 CAT items at DOK 2 or higher.

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  For Claim 3, each student will receive at least 2 CAT items at DOK 3 or higher.

These are the <i>four things</i> the new assessment intends to measure and report on (Concepts and Procedures, Problem Solving/Modeling and Data Analysis, Communicating Reasoning.)  Under each SBAC Claim are several "targets." In claim 1, targets mirror the content standard clusters. In claims 2, 3, and 4, they read more like mathematical practice standards.  Each target has it's own "Achievement Level Descriptors," that is, a scale with <i>four levels</i> describing levels of student understanding.  Depth of Knowledge: A classification system with <i>four levels</i>	Smar	ter Balanced Assessments: Terminology	
Targets targets mirror the content standard clusters. In claims 2, 3, and 4, they read more like mathematical practice standards.  Each target has it's own "Achievement Level Descriptors," that is, a scale with <i>four levels</i> describing levels of student understanding.  Depth of Knowledge: A classification system with <i>four levels</i>		measure and report on (Concepts and Procedures, Problem Solving/Modeling and Data Analysis, Communicating	
ALDs that is, a scale with <i>four levels</i> describing levels of student understanding.  Depth of Knowledge: A classification system with <i>four levels</i>	Targets	targets mirror the content standard clusters. In claims 2, 3,	
12	ALDs	that is, a scale with <i>four levels</i> describing levels of student	
for the way in which a student might engage with the content.	DOK	for the way in which a student might engage with the	[ 13 ]

		Claim 1: Concepts and Procedures		Claim 2:	Claim 4:	Claim 3: Communicating
		17-20 Total Questions -At least 7 CAT items will be DOK 2 or higher		Problem Solving	Modeling and Data Analysis	Reasoning 8-10 Questions -At least 2 CAT items will be
SBAC	Unit			8-10 Total -At least 2 CAT items w -80% of Claim 2 & 4 co below		DOK 3 or higher80% of Claim 3 comes from standards below.
Snapshot		Target A (Priority) 4.0A.A – Use the four operations with whole numbers to solve problems. 4.0A.1, 2, 3		4.OA.A	4.OA.A	4.OA.3
mapsilot		Target E (Priority) 4.NBT.B – Use place value understanding and properties of operations to perform multi-digit arithmetic 4.NBT.4, 5, 6	8-9	4.NBT.B		4.NBT.5 4.NBT.6
		Target F (Priority) 4.NF.A – Extend understanding of fraction equivalence and ordering 4.NF.1, 2		4.NF.A		4.NF.A 4.NF.1 4.NF.2
What do		Target G (Priority) 4.NP.B - Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. 4.NF.3, 4	2-3	4.NF.B	4.NF.B	4.NF.3a, b, c 4.NF.4a, b
What do you notice?		Target D (Priority)  4.NBT.A - Generalize place value understanding for multi-digit whole numbers.  4.NBT.1, 2, 3	1-2			4.NBT.A
you notice:		Target H (Priority)  4.NF.C - Understand decimal notation for fractions, and compare decimal fractions.  4.NF.5, 6, 7	1	4.NF.C		(4.NF.C) 4.NF.7
What do		Target I (Supporting)  4.MD.A – Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.  4.MD.1, 2, 3	2-3	4.MD.A	4.MD.A	
you wonder?		Target K (Supporting) 4.MD.C – Geometric measurement: understand concepts of angle and measure angles. 4.MD.5, 6, 7	2-3	4.MD.C	4.MD.C	
wonder?		Target B (Supporting) 4.0A.B – Gain familiarity with factors and multiples. 4.0A.4				
		Target C (Supporting) 4.OA.C – Generate and analyze patterns. 4.OA.5	1			
		Target J (Supporting) 4.MD.B - Represent and interpret data. 4.MD.4			4.MD.B	
		Target L (Supporting)  4.G.A – Draw and identify lines and angles, and classify shapes by properties of their lines and angles.  4.G.1. 2. 3	1			



SBAC	Of Jim Vi	fice	ofE	ducation interndent of Schools  Claim 1: Concepts and Procedures 19:22 Total Questions -At least 7 CAT Items will be DOX 2 or higher		Claim 2: Problem Solving	Claim 4: Modeling and Data Analysis Questions	Claim 3: Communicating Reasoning 8-10 Questions	
Snapshot	1	2 3	Course			-At least 2 CAT items higher -80% of Claim 2 & 4 of Standards below	will be DOK 3 or	-At least 2 CAT items will be DOK 3 or higher. -80% of Claim 3 comes from standards below.	
Hiah			2	Target A (Supporting) N-RN.A Extend the properties of exponents to rational exponents N-RN.1, 2	1			N-RN.A	
High School			2	Target B (Supporting) N-RN.B Use properties of rational and irrational numbers N-RN.3	1			N-RN.B N-RN.3	
School			1	Target C (Supporting) N-Q.A Reason quantitatively and use units to solve problems. N-Q.1	1	N-Q.A	N-Q.A		
			2, 3	Target D (Priority) A-SSE.A Interpret the structure of expressions A-SSE.2	2	A-SSE.A		A-SSE.2	
			2	A-SSE.B Write expressions in equivalent forms to solve problems. A-SSE.3a,b,c	2	A-SSE.B	A-SSE.B		
			2, 3	Target F (Priority)  A-APR.A Perform arithmetic operations on polynomials A-APR.1	1			A-APR.1	
			3					A-APR.B (2-3)	
			3		-			A-APR.C.4 A-APR.D.6	
			1, 2,	Target G (Priority)  A-CED.A Create equations that describe numbers or relationships.  A-CED.1,2		A-CED.A	A-CED.A	A-Ar A.D.0	
			1, 3	Target H (Priority)  A-RELA Understand solving equations as a process of reasoning and explain the reasoning.  A-REL2	4-5	A-REI.2	A-REI.A	A-REI.A A-REI.1 A-REI.2	( 16
			1, 2	Target I (Priority)  A-RELB Solve equations and inequalities in one variable  A-REL3, 4a,b		A-REI.B	A-REI.B		
			1, 2			A-REI.C (5-9)	A-REI.C (5-9)	A-REI.C (5-9)	

## Claims and DOK

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Claims	Solving/Modeling and Data Analysis, Communicating	
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Targets	targets mirror the content standard clusters. In claims 2, 3,	
1	and 4, they read more like mathematical practice standards.	
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ALDs	that is, a scale with <i>four levels</i> describing levels of student	
	understanding.	
	Depth of Knowledge: A classification system with <i>four levels</i>	<u> </u>

for the way in which a student might engage with the

content.

DOK

## Claim 1, 2, 3, or 4?

- •Solve each of the sample SBAC Items.
- Decide which claim you think the item is assessing.
- •Share why you chose that claim.

Item	Claim	
А	Claim 4 – Modeling and Data Analysis	
В	Claim 1 – Concepts and Procedures	
С	Claim 2 – Problem Solving	
D	Claim 3 – Communicating Reasoning	( 20

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## Depth of Knowledge (1997)

#### **Level 1 Recall**

• Recall of a fact, information, or procedure.

#### **Level 2 Skill/Concept**

 Use information or conceptual knowledge, two or more steps, etc.

#### **Level 3 Strategic Thinking**

 Requires reasoning, developing plan or a sequence of steps, some complexity, more than one possible answer.

#### **Level 4 Extended Thinking**

 Requires an investigation, time to think and process multiple conditions of the problem.

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From presentation in St. Petersburg, Florida, December 6, 2012 by Norman L. Webb: Content Complexity for mathematics and Science Instructional Planning <a href="http://facstaff.wcer.wisc.edu/normw/AERA%20Page1.htm">http://facstaff.wcer.wisc.edu/normw/AERA%20Page1.htm</a>

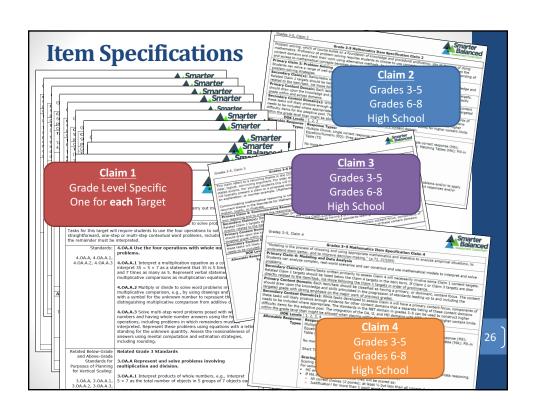
## **Identifying DOK**

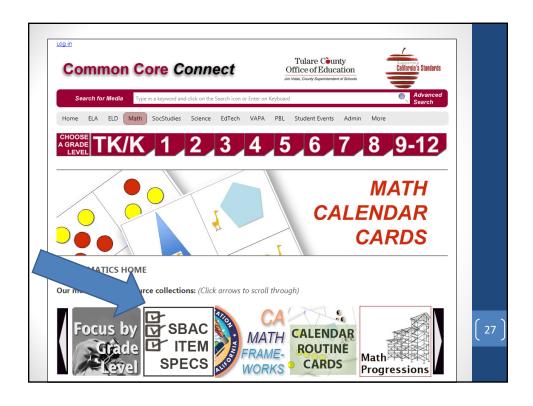
Work with your table to identify the level of DOK for each of the assessment items.

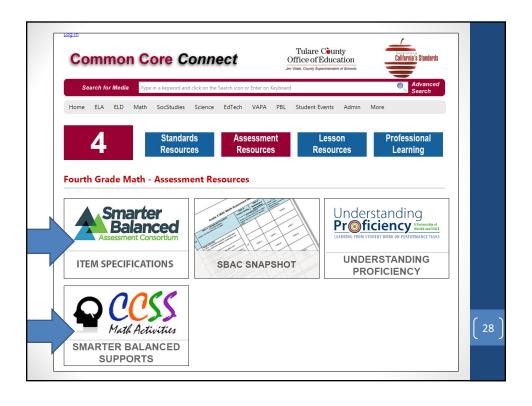
## **Mathematics**

ltem #	DOK Level
1	2
2	2
3	3
4	1
5	1
6	2
7	1
8	3

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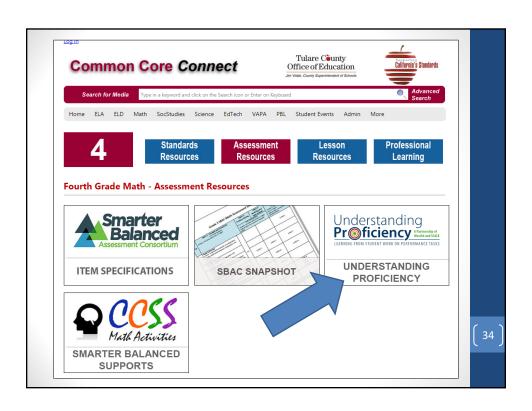
Achievement Level D		
RANGE Achievement Level Descriptor (Range	subtract, multiply, and divide) to solve one-step problems involving	
ALD) Target A: Use the four operations with whole numbers to	Level 2 Students should be able to use the four operations to solve one-step problems involving an unknown number. They should be able to realize that it is appropriate to multiply or divide in order to	
solve problems.		
	equal groups and arrays, including problems where the remainder must be interpreted. They should be able to find an unknown number and represent problems using equations with a symbol representing the unknown quantity.	
	Level 4 Students should be able to assess the reasonableness of answers using mental computation and estimation strategies, including rounding.	

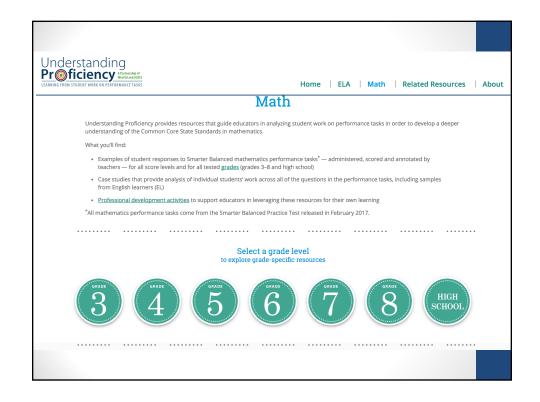
## Evidence Required

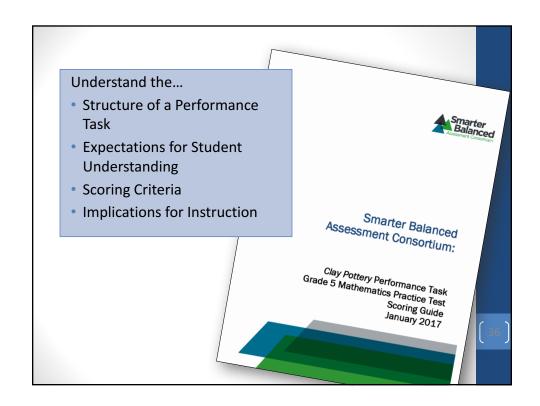
- Evidence Required: 1. The student solves contextual problems involving multiplicative comparisons, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
  - 2. The student solves straightforward, contextual problems using the four operations.

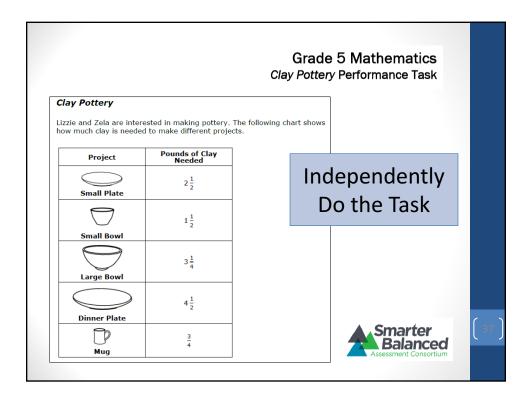
How can the Item Specifications support you in planning instruction?

## SBAC Performance Task









## Scoring the Task

Using the packet on your table:

- Review the Rubric for each Item
- Review the Sample Responses for each Item

#### Reflect on the Process

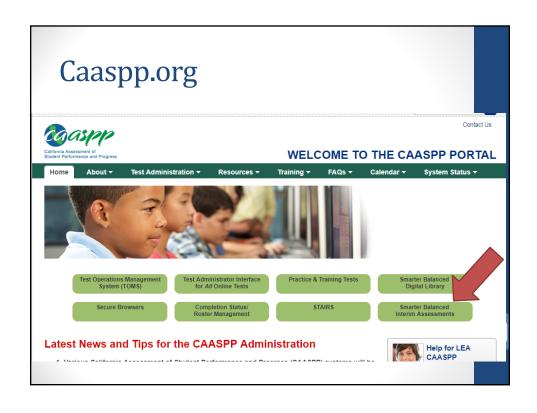
- What was difficult about the task?
- What did you notice about your own responses to the items?
- What will you take away from this experience? Did you have any "aha" moments?

What implications does this have for instruction?

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#### DIGITAL A Balanced An online collection of thousands **Assessment** of educator-created classroom **System** tools and resources INTERIM With online assessments that **ASSESSMENTS** measure students' progress toward Optional and flexible tests given college and career readiness, throughout the year to help teachers Smarter Balanced gives educators monitor student progress information and tools to improve teaching and learning. **ASSESSMENTS** Smarter Year-end assessments for grades 3-8 and 11 with a computer adaptive test and Balanced performance tasks in math and English

## SBAC Interim Assessments





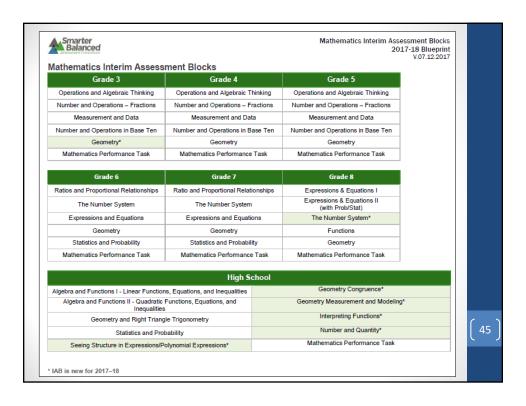
#### ICAs vs. IABs

#### ICA - Interim Comprehensive Assessment

- Mirrors the Summative
- Takes 3 4 hours
- Includes Performance Task
- · Requires hand scoring
- Provides overall and claim scores

#### IAB – Interim Assessment Block

- Focuses on Specific topics
- 4 18 items
- May require hand scoring
- Provides scores "Above Standard", "Near Standard" or "Below Standard"



## **New Interim Reports**

#### What's New

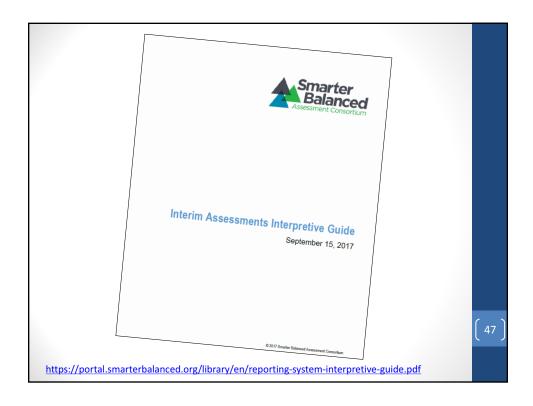
The new Interim Assessment Reporting System allows users to

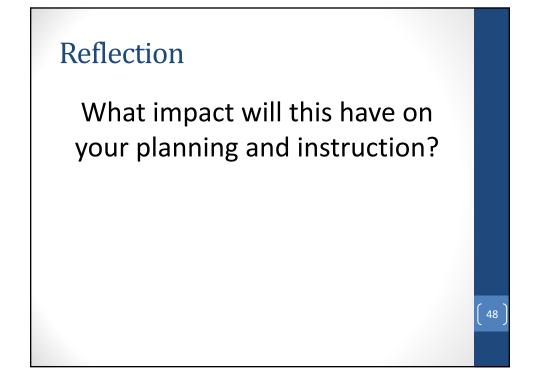
- create and manage student groups,
- view aggregate results by student group,
- compare test results by student group,
- use advanced filtering options,
- view student responses to test items,
- · view detailed item information,
- view test-item results within a group, and
- · access links to related Digital Library resources.

In addition to the features just listed, interim assessment results are now generally available within 20 minutes after all scoring, including hand scoring, has been completed.

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http://www.caaspp.org/rsc/pdfs/CAASPP.interim-assessment-guide.2017-18.pdf





### **Outcomes**

- Examine SBAC Expectations for Mathematics
  - Claims
  - DOK
  - Performance Task
  - Resources
- Become Familiar with the Interim Assessments
- Understand the Implications for Planning and Instruction

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Julie Joseph

julie.joseph@tcoe.org

TCOE Common Core Connect, <a href="http://ccss.tcoe.org/">http://ccss.tcoe.org/</a>