5th Grade Math
Claim, Target, Standard Matrix (31 CAT & 6 PT Items)
Compiled by Sandy Sanford 10-17-14

This Matrix Covers ALL Claims, Targets, & Standards taught in 5th Gd Math
that are shown as "Tested" on Smarter Balanced Item Specifications (2-4-14) & the Blueprint (4-21-14)
The 5th Grade Summative Assessment has 31 CAT & 6 PT Items

Background: Smarter Balanced publishes mountains of specification information regarding Summative Assessment (SA) Claims, Targets, Standards, DOK, & Item Types/Numbers. The problem is that no published document welds together all this information in a format friendly to educators. The CTS Matrix solves that problem by populating the rows and columns in a table that emulates the design configuration of the SA.

Matrix Guide: Use the Matrix as a resource document to acquire greater understanding of the organization and composition of the Summative Assessment (SA), which is more complicated in design than previous high-stakes assessments. The four Claims are general descriptions regarding learning expectations for each grade level. In the Matrix, each Claim is displayed in a separate table with a description in the top row followed by multiple Targets underneath the parent Claim. The Targets are more specific with regard to expected learning and usually vary in description at each grade level. The SA will report results overall and for each of the four Claims.

For any Claim/Target combination, cells to the right show the tested standards, the assessed DOK level(s), the number of items tested (both Computer Adaptive Test (CAT) & Performance Task (PT)), and the Item Types that may be used. Note that each Target will normally involve testing multiple standards, and any particular standard may be tested in multiple Claims and/or Targets. A section titled "Valuable Facts" follows the conclusion of the Matrix with additional pertinent information about the SA. The final pages of this document contain examples of the different Item Types.

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I have tried hard to make this Matrix as accurate as possible, but I'm not infallible and the information is complicated and constantly changing. I will continuously review the available sources and make corrections/updates as required and distribute the corrected Matrices with new dates. If you notice errors, please report them to me at sandy@youasksandy.com.

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5th Grade Math Standards Domain Abbreviations

Operations & Algebraic Thinking = OA
Number & Operations in Base Ten = NBT
Number & Operations—Fractions = NF
Measurement & Data = MD
Geometry = G

Item Response Type Abbreviations
(Many examples of each Item Response Type are included in the Item Specifications)

MC = multiple-choice, single correct response
MS = multiple-choice, multiple choice responses
EQ = equation/numeric
TM = matching tables
TI = fill-in table
DD = drag & drop
HS = hot spot
GR = graphing
ST = short text
PT = performance task

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Claim 1: CONCEPTS and PROCEDURES—Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency (20 CAT Items)

Claim 1 PRIORITY CLUSTER Targets (15 CAT Items)	Standards Addressed	DOK	CAT Items	Item Types
Target E—Use Equivalent fractions as a strategy to add and subtract fractions	5.NF.1, 2	1, 2	6	MC, EQ
Target I—Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition	5.MD.3, 4, 5	1, 2		MT, EQ
Target F—Apply and extend previous understanding of multiplication and division to multiply and divide fractions	5.NF.3, 4, 5, 6, 7	1, 2	5	MC, EQ
Target D—Perform operations with multi-digit whole numbers and with decimals to hundredths	5.NBT.5, 6, 7	1, 2	4	MC, EQ
Target C—Understand the place value system	5.NBT.1, 2, 3, 4	1, 2		EQ, MT, MC
Claim 1 Supporting CLUSTER Targets (5 CAT Items)	**Standards Addressed**	**DOK**	**CAT Items**	Item Types
Target J—Graph points on the coordinate plane to solve real-world and mathematical problems	5.G.1, 2	1	3	MC, HS, GR, DD
Target K—Classify two-dimensional figures into categories based on their properties.	5.G.3, 4	2		MT
Target A—Write and interpret numerical expressions	5.OA.1, 2	1	2	MC, EQ
Target B—Analyze patterns and relationships	5.OA.3	2		MC, GR, HS
Target G—Convert like measurement units within a given measurement system	5.MD.1	1		EQ
Target H—Represent and interpret data	5.MD.2	1, 2		MC, HS, EQ

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Claim 2: PROBLEM SOLVING—Students can solve a range of well-posed problems in pure and applied mathematics, making productive use of knowledge and problem-solving strategies.
Claim 4: MODELING AND DATA ANALYSIS—Students can analyze complex, real-world scenarios and can construct and use mathematical models to interpret and solve problems.
CLAIMS 2 & 4 are combined for reporting purposes

Claim 2: PROBLEM SOLVING (2 CAT & 1-2 PT Items)	Standards Addressed	DOK	CAT Items	PT Items	Item Types
Target A—Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace.	5.NBT.5, 6, 7 5.NF.1, 2, 3, 4, 5, 6, 7 5.MD.1, 3, 4, 5 5.G.1, 2,	2, 3	1	1-2 ST (PT only)	MC, MS, EQ, DD, HS, GR, MT, TI
Target B—Select and use appropriate tools strategically					
Target C—Interpret results in the context of a situation		1, 2, 3	1		
Target D—Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).					

Claim 4: MODELING AND DATA ANALYSIS (3 CAT & 2-3 PT Items)	Standards Addressed	DOK	CAT Items	PT Items	Item Types
Target A—Apply mathematics to solve problems arising in everyday life, society, and the workplace. Target D—Interpret results in the context of a situation	5.NBT.5, 6, 7 5.NF.1, 2, 3, 4, 5, 6, 7 5.MD.1, 2, 3, 4, 5 5.G.1, 2	2, 3	1	2-3 ST (PT only)	MC, MS, EQ, DD, HS, GR, MT, TI
Target B— Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem. Target E—Analyze the adequacy of, and make improvements to, an existing model or develop a mathematical model of a real phenomenon.		2, 3, 4	1		
Target C—State logical assumptions being used Target F—Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flow charts, or formulas).		1, 2	1		
Target G—Identify, analyze and synthesize relevant external resources to pose or solve problems. **(PT ONLY)**		3, 4	0		

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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: COMMUNICATING REASONING (6 CAT & 2 PT Items)	**Standards Addressed**	**DOK**	**CAT Items**	**PT Items**	**Item Types**
Target A—Test propositions or conjectures with specific examples Target D—Use the technique of breaking an argument into cases	5.NBT.2, 6, 7 5.NF.1, 2, 3, 4, 7 5.MD.5 5.G.4	2,3	2	2	MC, MS, EQ, DD, HS, GR, MT, TI **ST (PT & Tgt E only)**
Target B— Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. Target E—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	2		
Target C—State logical assumptions being used Target F—Base arguments on concrete referents such as objects, drawings, diagrams, and actions		2, 3	2		

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Valuable Facts
(From SBAC Blueprint dtd 4-21-14)

1. Number of items per Claim is not necessarily proportional to Claim weight for scoring
2. All CAT Item in grades 3-5 are designed to be machine scored (i.e., NO ST Items for grades 3-5 on CAT portion)
3. Claim 2 (Problem Solving) and Claim 4 (Modeling & Data Analysis) have been combined for reporting purposes
4. On the **CAT** portion of the test…
    o For Claim 1, each student will receive at least 7 items at DOK 2 or higher.
    o For combined Claims 2 & 4, each student will receive at least 2 items at DOK 3 or higher
    o For Claim 3, a student will receive a least 2 items at DOK 3 or higher

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All Example Items are from 5th grade Smarter Balanced Practice Test (unless otherwise noted)

MC (Multiple Choice Item)

Which number is equal to 10^4?

  Ⓐ   100

  Ⓑ   1,000

  Ⓒ   10,000

  Ⓓ   100,000

MS (Multiple Select Item)

Select two fractions that can be rewritten with a denominator of 24.

☐ $\frac{1}{6}$

☐ $\frac{1}{5}$

☐ $\frac{5}{7}$

☐ $\frac{9}{10}$

☐ $\frac{1}{9}$

☐ $\frac{7}{8}$

EQ (Equation-Numeric)

Tyler is 8 years old. His sister Olivia is 4 years less than twice his age.

Write a numerical expression for Olivia's age.

DD (Drag & Drop)

1928

Look at the fraction model shown.

The shaded area represents $\frac{3}{2}$.

Drag rectangles to the answer space to construct a model that represents $3 \times \frac{3}{2}$.

A

B

C

D

Delete

Fraction Model

Answer Space

HS (Hot Spot)

618

Walter puts 1050 cubic inches of dirt into the tank shown.

Click the number line to show the height of the dirt in the tank.
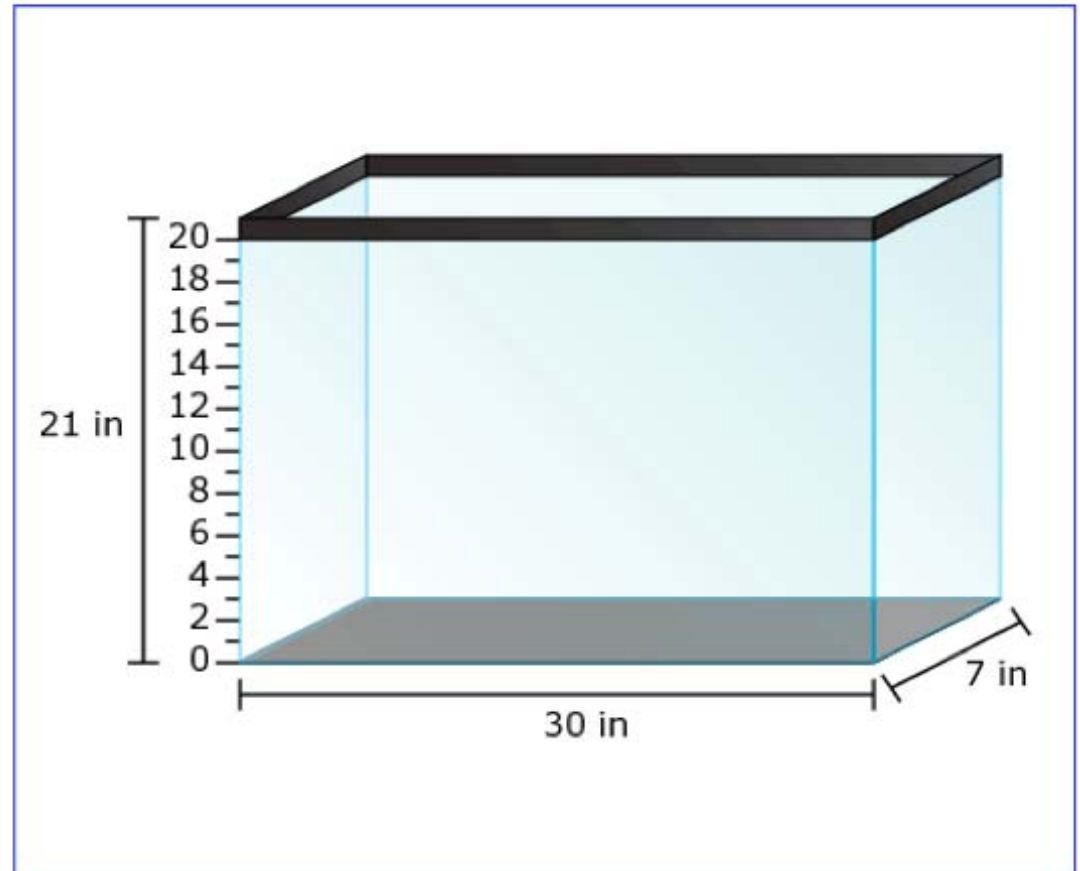
21 in

20
18
16
14
12
10
8
6
4
2
0

30 in

7 in

GR (Graphing) 6th Gd Level

1858

Micah constructs a rectangular prism with a volume of 360 cubic units. The height of his prism is 10 units.

Micah claims that the base of the prism must be a square.

Use the Connect Line tool to draw a base that shows Micah's claim is incorrect.
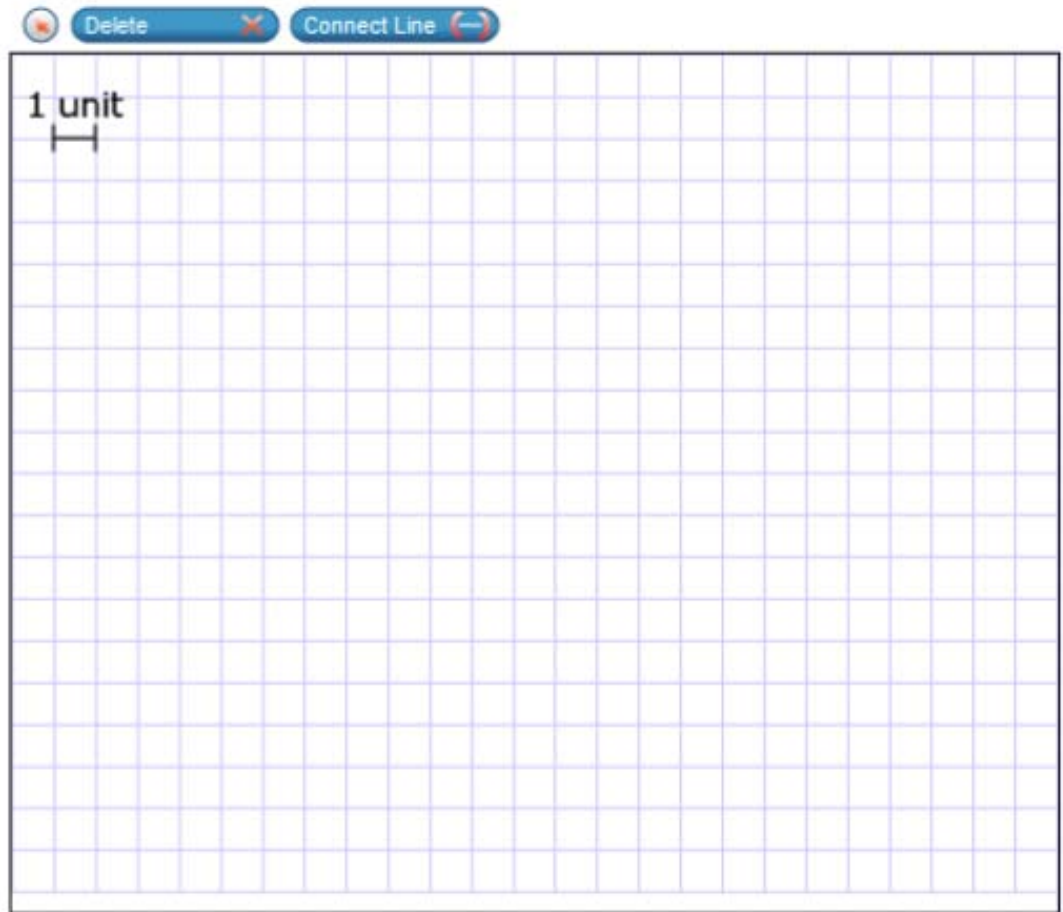
Delete   ✕   Connect Line ⊝

1 unit
⊢⊣

MT (Matching Tables)

All parallelograms have opposite sides that are equal in length and parallel.

Determine whether each polygon shown is also a parallelogram.
Select Yes or No for each polygon.

	Yes	No
Rectangle	☐	☐
Trapezoid	☐	☐
Rhombus	☐	☐

TI (Insert Table) 4th Grade Level

A pattern is generated using this rule:

Start with the number 7 as the first term and add 5.

Enter numbers into the boxes to complete the table.

Term	Number
First	7
Second	
Third	
Fourth	
Fifth	

ST (Short Text) 6th Grade Level—for grades 3-5 ST can only occur on the PT

The company proposes a new cereal box with dimensions 10.5 inches high, 7.5 inches wide, and 4 inches deep. The new cereal box is a rectangular prism. Determine if this new box meets each of the requirements. Explain why or why not.