Smarter Balanced Assessment Consortium:

Practice Test Scoring Guide
Grade 4 Mathematics

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About the Practice Test Scoring Guides

The Smarter Balanced Mathematics Practice Test Scoring Guides provide details about the items, student response types, correct responses, and related scoring considerations for the Smarter Balanced Practice Test items. The items selected for the Practice Test are designed to reflect

- a broad coverage of claims and targets that closely mirror the summative blueprint.
- a range of student response types.
- a breadth of difficulty levels across the items, ranging from easier to more difficult items.
- a sample of performance tasks with open-ended response types that allow students to demonstrate knowledge related to critical thinking and application.

It is important to note that all student response types are not fully represented on every practice test, but a distribution can be observed across all the practice tests. The items presented are reflective of refinements and adjustments to language based on pilot test results and expert recommendations from both content and accessibility perspectives.

Within this guide, each item is presented with the following information[1]:

- Claim
- Domain
- Target[2]
- Depth of Knowledge (DOK)
- Common Core State Standards for Mathematical Content (CONTENT)
- Common Core State Standards for Mathematical Practice (MP)
- Answer key or exemplar
- Static presentation of the item
- Static presentation of student response field(s)
- Rubric and applicable score points for each item

The following items are representative of the kinds of items that students can expect to experience when taking the Computer Adaptive Test (CAT) portion of the summative assessment for Grade 4. A separate document is available that provides a Grade 4 sample performance task and scoring guide.

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[1] Most of these terms (Claim, Domain, Target, DOK, etc.) are defined in various other Smarter Balanced documents, as well as the Common Core State Standards for Mathematics. Refer to the *Content Specifications for the Summative Assessment of the Common Core State Standards for Mathematics* for more information.

[2] When more than one target is presented, the first one listed is considered the primary target for the item.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#1	1	OA, NBT	A	2	4.OA.A, 4.NBT.B.4	N/A	1200

1813

Tanya ran 400 meters on Tuesday. She ran 800 meters on Wednesday.

What is the total number of meters Tanya ran on these two days? Enter your answer in the response box.

1	2	3
4	5	6
7	8	9
0	.	

Key: 1200

Rubric: (1 point) Student enters the correct number of meters.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#2	1	NBT	D	1	4.NBT.A.1	N/A	C

1824

Select the statement that explains how the values of the numbers 420 and 4200 are different.

Ⓐ 4200 is 1000 times as large as 420

Ⓑ 4200 is 100 times as large as 420

Ⓒ 4200 is 10 times as large as 420

Ⓓ 4200 is 1 time as large as 420

Key: C

Rubric: (1 point) Student selects the correct statement.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#3	1	NF	F	1	4.NF.A.1	N/A	See exemplar

2030

Figure A has $\frac{4}{12}$ of its whole shaded.

Figure A

Enter **another** fraction equal to $\frac{4}{12}$.

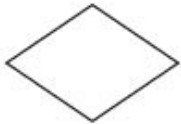**Key:** $\frac{1}{3}$ or its equivalent

Rubric: (1 point) Student enters fraction equivalent to $\frac{4}{12}$, but not $\frac{4}{12}$.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#4	1	G	L	2	4.G.A.2	N/A	See exemplar

2031

Click in the box that matches each figure with its description. Each figure may be matched to more than one description.

	Has at Least One Right Angle	Has at Least One Pair of Perpendicular Sides	Has at Least One Pair of Parallel Sides
Rectangle	☐	☐	☐
Rhombus	☐	☐	☐
Parallelogram	☐	☐	☐

Exemplar: (shown at right)

Rubric: (1 point) Student selects the correct shape attributes.

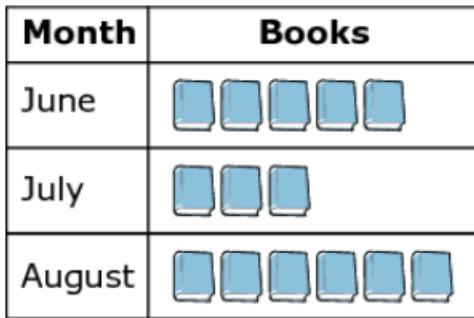|	Has at Least One Right Angle	Has at Least One Pair of Perpendicular Sides	Has at Least One Pair of Parallel Sides
Rectangle	☑	☑	☑
Rhombus	☐	☐	☑
Parallelogram	☐	☐	☑

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#5	4	MD, OA, NF	F	3	3.MD.B.3, 4.OA.B.4, 4.NF.B.4b	1, 6	See exemplar

592

Marcia read books over the summer. She created the picture graph shown.

Summary Reading

A. Select the key you will use.

▢ = 3 books ▢ = 4 books ▢ = 5 books ▢ = 6 books

B. New picture graph

Summer Reading

Summer Reading

Month	Books
June	📘📘📘📘📘
July	📘📘📘
August	📘📘📘📘📘📘

▢ = 2 books

Create another picture graph that shows these data with a different key. You may use whole books and half books in your graph.

A. Select the key you will use.

B. Select books to complete your picture graph.

Exemplar: (shown at right)

Rubric: (1 point) Student selects a key and correctly completes the picture graph using that key.

A. Select the key you will use.

▢ = 3 books ▢ = 4 books ▢ = 5 books ▢ = 6 books

B. New picture graph

Summer Reading

Month	Books
June	📘📘📘
July	📘📘
August	📘📘📘

▢ = 4 books

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#6	1	MD	I	2	4.MD.A.2	N/A	See exemplar

1897

Enter the length, in **millimeters**, of the ribbon.

Ribbon
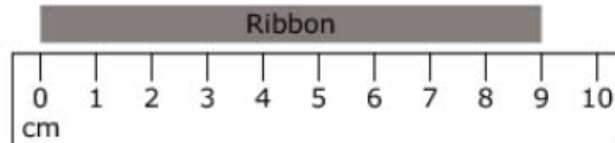
0 1 2 3 4 5 6 7 8 9 10
cm

1	2	3
4	5	6
7	8	9
0	.	

Exemplar: Any number in the range from 89 to 91

Rubric: (1 point) Student enters a correct length within the given range.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#7	3	NF	F	2	4.NF.A.2	2, 3	See exemplar

1971

A student claims that all fractions greater than $\frac{3}{7}$ have a denominator less than 7.

Show that the student's claim is only sometimes true.

A. Drag one number into each box to create a fraction greater than $\frac{3}{7}$ with a denominator less than 7.

B. Drag one number into each box to create a fraction greater than $\frac{3}{7}$ with a denominator greater than 7.

0
1
2
3
4
5
6
7
8
9

Delete ✕

A. Denominator less than 7

$\frac{\square}{\square}$

B. Denominator greater than 7

$\frac{\square}{\square}$

Exemplar: (shown at right)
This is only one example of a correct response.

Rubric: (2 points) Student enters a correct fraction in both Part A **and** Part B.

(1 point) Student enters a correct fraction in either Part A **or** Part B.

Delete ✕

A. Denominator less than 7

$\frac{4}{6}$

B. Denominator greater than 7

$\frac{8}{9}$

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#8	2	OA	A	2	4.OA.A.3	1, 2	B

2025

A teacher gives 6 students some cards to play a game. She has 52 cards total. The teacher gives each student 1 card until all 52 cards are gone.

How many students get exactly 9 cards?

- (A) 2
- (B) 4
- (C) 5
- (D) 6

Key: B

Rubric: (1 point) Student selects the correct number of students.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#9	1	NBT	E	1	4.NBT.B.4	N/A	4979

1814

Enter the sum.

$$\begin{array}{r} 4325 \\ + \ 654 \end{array}$$

1	2	3
4	5	6
7	8	9
0	.	⊟

Key: 4979

Rubric: (1 point) Student enters the correct sum.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#10	4	OA	E	2	4.OA.A.1, 3.OA.B.6	4	See exemplar

2109

Scott is reading a book that has 172 pages. Melanie is reading a book that has three times as many pages as Scott's book.

How many pages does Melanie's book have? Select **all** the equations that represent this problem.

$172 \div 3 = \square$　　　　$3 \times \square = 172$

$172 \times 3 = \square$　　　　$\square \div 3 = 172$

$\square \div 172 = 3$　　　　$172 \div \square = 3$

Exemplar: (shown at right)

Rubric: (2 points) Student selects three correct equations and no incorrect equations.

(1 point) Student selects two correct equations and no incorrect equations.

$172 \div 3 = \square$　　　　$3 \times \square = 172$

$\boxed{172 \times 3 = \square}$　　　　$\boxed{\square \div 3 = 172}$

$\boxed{\square \div 172 = 3}$　　　　$172 \div \square = 3$

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#11	1	NF	F	1	4.NF.A.1	N/A	See exemplar

1934

Figure A has $\frac{2}{3}$ of its whole shaded gray.

Figure A

Decide if each fraction is equal to $\frac{2}{3}$. Select Yes or No for each fraction.

	Yes	No
$\frac{4}{6}$	☐	☐
$\frac{1}{2}$	☐	☐
$\frac{8}{12}$	☐	☐

Exemplar: (shown at right)

Rubric: (1 point) Student identifies which fractions are equal to or not equal to $\frac{2}{3}$ (YNY).

	Yes	No
$\frac{4}{6}$	☑	☐
$\frac{1}{2}$	☐	☑
$\frac{8}{12}$	☑	☐

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#12	3	OA	B	3	4.OA.A.3	1, 3	A

2079

Nicole is helping set up tables in the cafeteria.

- Each table in the cafeteria seats 8 students.
- Fourth grade students must fill a whole table before sitting at another table.
- There are 126 fourth grade students.

Nicole needs to know how many seats might be empty at the last table after all 126 students are sitting at a table.

She used these steps to solve the problem.

Step 1: $8 \times 14 = 112$
$8 \times 15 = 120$
$8 \times 16 = 128$

Step 2: $126 - 120 = 6$

Step 3:

Which equation could be Nicole's Step 3 if she solved the problem correctly?

Ⓐ $8 - 6 = 2$

Ⓑ $6 + 15 = 21$
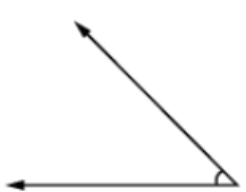
Ⓒ $6 \times 8 = 48$

Ⓓ $18 \div 6 = 3$

Key: A

Rubric: (1 point) Student selects the correct equation.

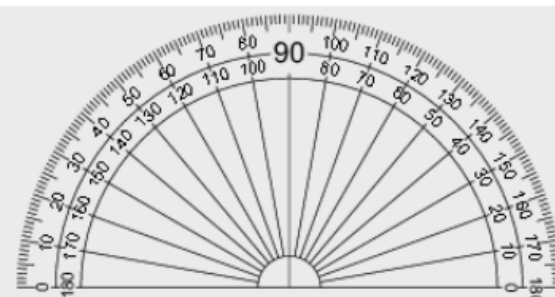| Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#13	1	MD	K	1	4.MD.C.6	N/A	44-46

1945

- Drag the protractor to measure the angle.
- Then drag the numbers into the box to enter the measure of the angle, in degrees.

Key: 44-46

Rubric: (1 point) Student correctly drags a number to indicate an angle measure within the stated range.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#14	1	NF	G	2	4.NF.B.4c	N/A	B

2045

A bottle holds $\frac{3}{5}$ liter of water. Sam needs 8 full bottles of water to fill his fish tank. How many liters of water does Sam need to fill the fish tank?

(A) $2\frac{1}{5}$

(B) $4\frac{4}{5}$

(C) $7\frac{2}{5}$

(D) $8\frac{3}{5}$

Key: B

Rubric: (1 point) Student selects the correct number of liters.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#15	1	OA	A	2	4.OA.A.2	N/A	5

2133

The cost of buying a movie is 4 times the cost of renting a movie. It costs $20 to buy a movie.
What is the cost, in dollars, of renting a movie?

Enter your answer in the response box.

1	2	3
4	5	6
7	8	9
0	.	

Key: 5

Rubric: (1 point) Student enters the correct cost.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#16	1	NF	F	2	4.NF.A.2	N/A	See exemplar

1788

Select True or False for each comparison.

	True	False
$\frac{1}{4} < \frac{2}{12}$	☐	☐
$\frac{2}{10} > \frac{3}{5}$	☐	☐
$\frac{4}{6} > \frac{5}{12}$	☐	☐

Exemplar: (shown at right)

Rubric: (1 point) Student correctly identifies all three comparisons as either true or false (FFT).

	True	False
$\frac{1}{4} < \frac{2}{12}$	☐	☑
$\frac{2}{10} > \frac{3}{5}$	☐	☑
$\frac{4}{6} > \frac{5}{12}$	☑	☐

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#17	1	OA	C	2	4.OA.C.5	N/A	See exemplar

1937

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	

Exemplar: (shown at right)

Rubric: (1 point) Student enters the correct numbers to complete the pattern (12, 17, 22, 27).

Term	Number
First	7
Second	12
Third	17
Fourth	22
Fifth	27

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#18	1	NBT	D	2	4.NBT.A.2	N/A	See exemplar

1990

Select True or False for each comparison.

	True	False
5 hundreds + 4 tens > 50 + 400	☐	☐
524 < 50 + 200 + 4	☐	☐
50 tens + 20 ones = 520	☐	☐

Exemplar: (shown at right)

Rubric: (1 point) Student correctly identifies the comparisons as true or false (TFT).

	True	False
5 hundreds + 4 tens > 50 + 400	☑	☐
524 < 50 + 200 + 4	☐	☑
50 tens + 20 ones = 520	☑	☐

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#19	3	NF	D	3	4.NF.B.3	7	See exemplar

1800

Select **all** the numbers that make this inequality true.

$$2\frac{1}{8} > \Box + 1 + \frac{1}{8}$$

☐ $\frac{1}{8}$

☐ $\frac{4}{8}$

☐ $\frac{10}{8}$

☐ $\frac{16}{8}$

Exemplar: (shown at right)

Rubric: (1 point) Student selects the first and second numbers.

☑ $\frac{1}{8}$

☑ $\frac{4}{8}$

☐ $\frac{10}{8}$

☐ $\frac{16}{8}$

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#20	1	NF	H	1	4.NF.C.6	N/A	See exemplar

1981 🏳

Select **all** equations that are true.

☐ $\dfrac{4}{10} = 0.04$

☐ $\dfrac{17}{100} = 0.17$

☐ $\dfrac{9}{100} = 0.09$

☐ $\dfrac{6}{100} = 0.60$

Exemplar: (shown at right)

Rubric: (1 point) Student selects the second and third equations.

☐ $\dfrac{4}{10} = 0.04$

☑ $\dfrac{17}{100} = 0.17$

☑ $\dfrac{9}{100} = 0.09$

☐ $\dfrac{6}{100} = 0.60$

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#21	1	OA	A	2	4.OA.A.2	N/A	6

1811

A cat has 2 times as many toys as a puppy. The cat has 12 toys.

How many toys does the puppy have? Enter your answer in the response box.

Key: 6

Rubric: (1 point) Student enters the correct number of toys.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#22	1	NF	G	2	4.NF.B.4b	N/A	See exemplar

1815

Decide whether each expression is equal to $5 \times \frac{2}{4}$.

Click in the table to respond.

	Equal to $5 \times \frac{2}{4}$	Not Equal to $5 \times \frac{2}{4}$
$2 \times \frac{1}{20}$	☐	☐
$4 \times \frac{2}{5}$	☐	☐
$10 \times \frac{1}{4}$	☐	☐

Exemplar: (shown at right)

Rubric: (1 point) Student correctly identifies the expressions as "Equal to" or "Not Equal to" the given expression (NNE).

	Equal to $5 \times \frac{2}{4}$	Not Equal to $5 \times \frac{2}{4}$
$2 \times \frac{1}{20}$	☐	☑
$4 \times \frac{2}{5}$	☐	☑
$10 \times \frac{1}{4}$	☑	☐

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#23	2	NBT	A	2	4.NBT.B.4	1	See exemplar

579

Drag one number into each box to complete the subtraction problem shown.

0
1
2
3
4
5
6
7
8
9

Delete

$$
\begin{array}{r}
5\ 0\ \square\ 6 \\
-\ \square\ 4\ 8\ \square \\
\hline
1\ 6\ \square\ 8
\end{array}
$$

Exemplar: (shown at right)

Rubric: (1 point) Student drags correct numbers into each box to complete the subtraction problem.

$$
\begin{array}{r}
5\ 0\ \boxed{9}\ 6 \\
-\ \boxed{3}\ 4\ 8\ \boxed{8} \\
\hline
1\ 6\ \boxed{0}\ 8
\end{array}
$$

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#24	1	NF	G	1	4.NF.B.3	N/A	See exemplar

1942

Michael eats $\frac{4}{6}$ of a bag of crackers. Erin eats $\frac{5}{6}$ of a bag of crackers.
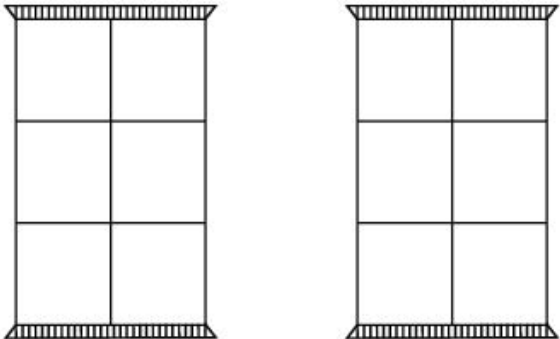
represents one full bag of crackers

Part A: Click the spaces on the model to show how many bags of crackers Michael and Erin eat together.

Part B: Click on the total number of bags of crackers Michael and Erin eat together.

Part A:

Part B:

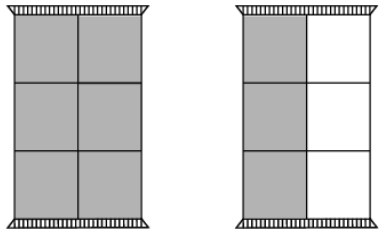$\frac{9}{12}$ $1\frac{3}{6}$ $\frac{1}{6}$ $1\frac{3}{12}$

Exemplar: (sample shown at right)
Other correct responses are possible.

Rubric:
Part A: (1 point) Student builds any model that correctly represents the fraction addition problem.

Part B: (1 point) Student selects the correct number of bags ($1\frac{3}{6}$).

Part A:

Part B:

$\frac{9}{12}$ $1\frac{3}{6}$ $\frac{1}{6}$ $1\frac{3}{12}$

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#25	3	NF	A	3	4.NF.A.2	6	See exemplar

1943

Drag one fraction to each box to create two true comparisons.

$$\boxed{} > \boxed{}$$

$$\boxed{} < \boxed{}$$

$$\frac{1}{2} \qquad \frac{2}{3} \qquad \frac{3}{5} \qquad \frac{4}{6} \qquad \frac{5}{8} \qquad \frac{6}{10}$$

Exemplar: $\frac{2}{3} > \frac{1}{2}$, $\frac{3}{5} < \frac{4}{6}$ (Other correct responses are possible)

Rubric: (2 points) Student creates two true comparisons.

(1 point) Student creates one true comparison.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#26	1	NBT	E	2	4.NBT.B.5	N/A	120

1817

Enter the unknown number that makes the equation true.

$$36 \times 94 = 2700 + \square + 540 + 24$$

Key: 120

Rubric: (1 point) Student enters the correct number.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#27	4	NF, OA	A	2	4.NF.B, 4.OA.A.2	2	$\frac{5}{12}$

1896

Some students are painting this backdrop for the school play.

12 ft

18 ft
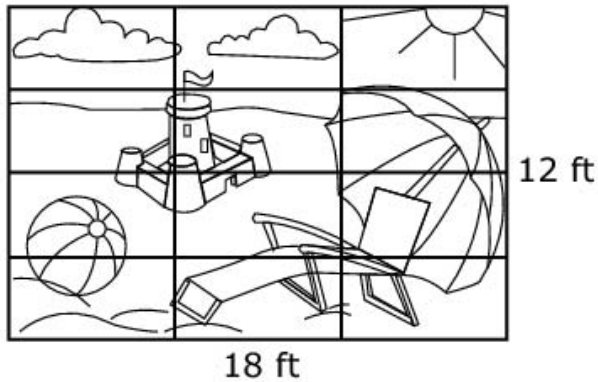
The backdrop is taped off into 12 equal sections for the students to paint.

- Mark paints 2 times as much as Jill.
- Sam paints 3 times as much as Lou.
- Lou paints 1 section less than Mark.
- Jill paints $\frac{1}{12}$ of the backdrop.

Enter the **fraction** of the backdrop that still needs to be painted.

Key: $\frac{5}{12}$ or its equivalent

Rubric: (1 point) Student enters a correct fraction.