



Computer-Based
Sample Test
Scoring Guide
Grade 4 Math



*Created September 2021
Prepared by the Arizona Department of Education*

About the Sample Test Scoring Guide

The Arizona's Academic Standards Assessment (AASA) Sample Test Scoring Guides provide details about the items, student response types, correct responses, and related scoring considerations for AASA Sample Test items.

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

- Item number
- Cluster
- Content Standard
- Depth of Knowledge (DOK)
- Static presentation of the item
- Static presentation of student response field (when appropriate)
- Answer key, rubric or exemplar
- Applicable score point(s) for each item

The items included in this guide are representative of the kinds of items that students can expect to experience when taking the computer-based test for AASA Grade 4 Math.

Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
1	4.OA.A	4.OA.A.2	2

Peter's father is 4 times as old as Peter. His father is 44 years old. The missing value in the given equation represents Peter's age.

$$4 \times \square = 44$$

How many years old is Peter?

Enter your answer in the space provided.

11

Scoring Rubric	
Score	Description
1	The student entered 11, or any equivalent value, providing evidence of the ability to model a multiplicative comparison in a word problem using an equation and solve it for the unknown value.
0	The response is incorrect or irrelevant.

(1 Point)

Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
2	4.NBT.B	4.NBT.B.6	2

An expression is given.

$$416 \div 8$$

What is the value of the expression?

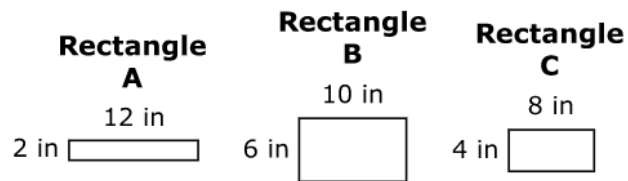
- A. 50
- B. 52
- C. 152
- D. 520

(1 Point)

Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
3	4.MD.A	4.MD.A.3	2

Rectangles A , B , C , and their side lengths, in inches (in), are shown.



Complete the sentences about the perimeter and area of the rectangles by selecting the correct answers from the drop-down menus.

Rectangle has a perimeter of inches.

The area of Rectangle A is square inches.

(1 Point) Student selected both correct answers from the dropdowns.

Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
4	4.OA.C	4.OA.C.5	2

The list of numbers shown uses an addition pattern. What number completes the pattern?

□, 28, 40, 52, 64

Enter your answer in the space provided.

16

← → ↶ ↷ ✕

1	2	3
4	5	6
7	8	9
	0	$\frac{\square}{\square}$
.	-	$\frac{\square}{\square}$

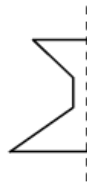
Scoring Rubric	
Score	Description
1	Student response is to enter 16 or equivalent value. Student correctly completes the pattern by determining the rule of adding 12 to each value.
0	The response is incorrect or irrelevant.

(1 Point)

Grade 4 Math Sample Test

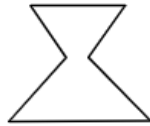
Item Number	Cluster	Content Standard	DOK
5	4.G.A	4.G.A.3	2

A figure has one line of symmetry. One-half of the figure and the line of symmetry are shown.

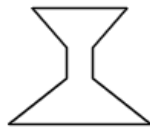


Which of the following represents the complete figure?

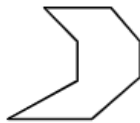
A.



B.



C.



D.



(1 Point)

Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
6	4.NF.B	4.NF.B.4	2

What fraction can be used to model the expression $4 \times \frac{2}{12}$?

Divide the figure into the correct number of equal parts using the Fewer or More buttons. Then select each part that should be shaded.

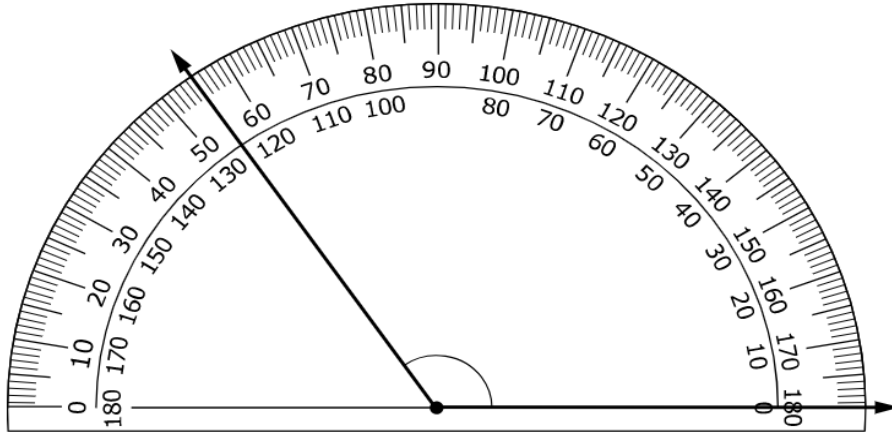
Scoring Rubric	
Score	Description
1	Student response is to select 8 parts out of 12 parts or equivalent values in the fraction model.
0	The response is incorrect or irrelevant.

(1 Point)

Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
7	4.MD.C	4.MD.C.6	2

An angle is shown on a protractor.



What is the measure, in degrees, of the angle?

Enter your answer in the space provided.

125 degrees

← → ↶ ↷ ✕

1	2	3
4	5	6
7	8	9
	0	$\frac{\square}{\square}$
.	-	$\frac{\square}{\square}$

Scoring Rubric	
Score	Description
1	The student entered 125 degrees, or any equivalent value, providing evidence of the ability to measure angles using a protractor.
0	The response is incorrect or irrelevant.

(1 Point)

Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
8	4.NBT.B	4.NBT.B.5	2

What is the value of 1051×4 ?

Enter your answer in the space provided.

4204

Scoring Rubric	
Score	Description
1	The student determined a value of 4204, or any equivalent value, providing evidence of the ability to multiply a four-digit whole number by a one-digit whole number.
0	The response is incorrect or irrelevant.

(1 Point)

Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
9	4.OA.B	4.OA.B.4	2

Which numbers are factors of 40, 42, and 48?

Select **all** the correct answers. You may select more than one answer in each row.

	6	7	8
Factor of 40	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Factor of 42	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Factor of 48	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Scoring Rubric	
Score	Description
1	Student response is to select the following factors: Factor of 40: 8 Factor of 42: 6, 7 Factor of 48: 6, 8
0	The response is incorrect or irrelevant.

(1 Point) Student selected all of the correct factors.

Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
10	4.NBT.A	4.NBT.A.1	2

What values correctly complete each equation shown in the table?

Move the correct answer to each box. Each answer may be used more than once or not at all.

10 100 1,000

Factor	Missing Factor	Product
$3,250 \times$	100	$= 325,000$
$7,861 \times$	10	$= 78,610$
$4,900 \times$	100	$= 490,000$

Scoring Rubric	
Score	Description
1	Student response is to place 100 in the first and third gaps, and 10 in the second gap.
0	The response is incorrect or irrelevant.

(1 Point)

Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
11	4.OA.A	4.OA.A.3	3

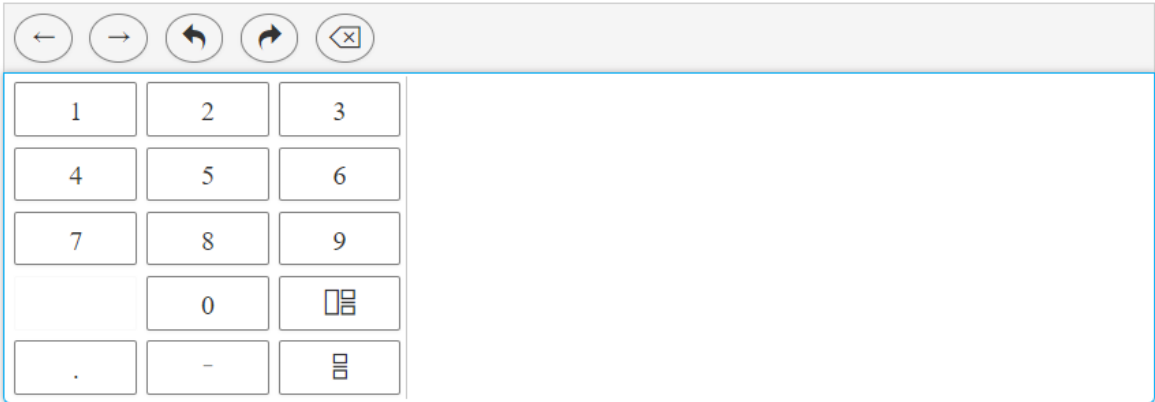
Cindy, Doug, and Stefan are saving money to buy a game together.

- The game costs \$33.
- Cindy, Doug, and Stefan have each saved \$12.

What is the total amount of money that Cindy, Doug, and Stefan have left over after they buy the game?

Enter your answer in the space provided.

\$3



Scoring Rubric	
Score	Description
1	The student entered \$3, or any equivalent value, providing evidence of the ability to solve a multi-step word problem.
0	The response is incorrect or irrelevant.

(1 Point)

Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
12	4.NF.C	4.NF.C.7	1

Which symbol, $>$, $<$, or $=$, completes the number comparison?

Complete the comparison by selecting the correct symbol from the drop-down menu.

1.03 0.13

(1 Point) Student selected the correct answer from the dropdown.

Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
13	4.NBT.A	4.NBT.A.2	2

Which expressions have a value greater than 984,422?

Select **all** the correct answers.

- A. $90,000 + 8,000 + 500 + 40 + 5$
- B. $900,000 + 80,000 + 5,000 + 10 + 9$
- C. $900,000 + 80,000 + 5,000 + 100 + 4$
- D. $900,000 + 80,000 + 4,000 + 500 + 8 + 5$
- E. $900,000 + 80,000 + 4,000 + 300 + 90 + 9$

(1 Point) Student checked all of the correct options.





Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
14	4.G.A	4.G.A.1	1

The table shows drawings 1, 2, 3, and 4. Which name is best for each drawing?

Move the correct answer to each box. Each answer may be used more than once. Not all answers will be used.

Acute angle	Line segment	Obtuse angle	Ray	Right angle
-------------	--------------	--------------	-----	-------------

1 	Line segment
2 	Ray
3 	Acute angle
4 	Right angle

Scoring Rubric	
Score	Description
1	Student selects the following name for each: Drawing 1: Line segment Drawing 2: Ray Drawing 3: Acute angle Drawing 4: Right angle
0	The response is incorrect or irrelevant.

(1 Point)

Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
15	4.NF.B	4.NF.B.3	2

Which expressions are equivalent to $\frac{9}{10}$?

Select **all** the correct answers.

A. $\frac{3}{10} + \frac{3}{10}$

B. $\frac{4}{10} + \frac{5}{10}$

C. $\frac{4}{10} + \frac{3}{10} + \frac{2}{10}$

D. $\frac{5}{10} + \frac{4}{10} + \frac{1}{10}$

E. $\frac{7}{10} + \frac{2}{10} + \frac{1}{10}$

(1 Point) Student checked all of the correct options.

Grade 4 Math Sample Test



Item Number	Cluster	Content Standard	DOK
16	4.NBT.A	4.NBT.A.3	2

What is the value of 478,632 when rounded to the nearest thousand?

Enter your answer in the space provided.

479000

← → ↶ ↷ ✕

1	2	3
4	5	6
7	8	9
	0	
.	-	

Scoring Rubric	
Score	Description
1	The student entered 479,000, or any equivalent value, providing evidence of the ability to round numbers to the nearest thousand.
0	The response is incorrect or irrelevant.

(1 Point)

Grade 4 Math Sample Test

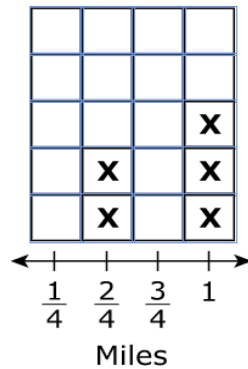
Item Number	Cluster	Content Standard	DOK
17	4.MD.B	4.MD.B.4	3

Johanna walks each day for 5 days and records how far she walks. The total distance that she walks in 5 days is 4 miles.

Add Xs above the number line to show how many miles Johanna could have walked each day.



Johanna's Walks



Scoring Rubric	
Score	Description
1	The student correctly completed the line plot, or any line plot that has five points that sum to 4, providing evidence of the ability to make a line plot to display a data set of measurements in fractions of a unit.
0	The response is incorrect or irrelevant.

(1 Point)

Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
18	4.NF.A	4.NF.A.1	3

Which expression represents a way to create a fraction equivalent to $\frac{4}{5}$?

- A. $\frac{4}{5} + \frac{3}{3}$, because $\frac{3}{3} = 1$
- B. $\frac{4}{5} \times \frac{2}{2}$, because $\frac{2}{2} = 1$
- C. $\frac{4}{5} + \frac{1}{5}$, because the sum will be 1
- D. $\frac{4}{5} \times \frac{1}{4}$, because the numerator will stay the same

(1 Point)

Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
19	4.OA.C	4.OA.C.6	2

Sunil used rounding to the nearest thousand to find a value that is close to the product of 4975 and 6.
 What value did Sunil find?

Enter your answer in the space provided.

30000

The interface includes a row of navigation buttons: left arrow, right arrow, undo, redo, and clear (X). Below this is a numeric keypad with buttons for digits 1-9, 0, a fraction template icon, a decimal point, a negative sign, and another fraction template icon.

Scoring Rubric	
Score	Description
1	Student response is to enter 30,000 or equivalent value. 4975 rounded to the nearest thousand is 5000; $5000 \times 6 = 30,000$.
0	The response is incorrect or irrelevant.

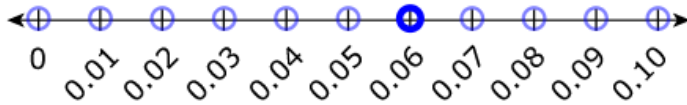
(1 Point)

Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
20	4.NF.C	4.NF.C.6	1

Which point on the number line represents the fraction $\frac{6}{100}$?

Select the place on the number line to plot the point.



Scoring Rubric	
Score	Description
1	Student selects the seventh hotspot, 0.06, which represents the fraction $\frac{6}{100}$.
0	The response is incorrect or irrelevant.

(1 Point)

Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
21	4.NF.C	4.NF.C.5	2

What fraction correctly completes the equation $\frac{6}{10} + \frac{\square}{\square} = \frac{67}{100}$?

Enter your answer in the space provided.

$$\frac{6}{10} + \frac{7}{100} = \frac{67}{100}$$

←
→
↶
↷
✕

1	2	3
4	5	6
7	8	9
	0	$\frac{\square}{\square}$
.	-	$\frac{\square}{\square}$

Scoring Rubric	
Score	Description
1	<p>Student response is to enter 7/100 in the equation. Equivalent fractions are acceptable.</p> <p>$6/10 + 7/100 = 67/100$.</p>
0	The response is incorrect or irrelevant.

(1 Point)

Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
22	4.NBT.B	4.NBT.B.4	2

An addition problem with a missing digit is given.

$$\begin{array}{r} 56\square,130 \\ + 268,844 \\ \hline 835,974 \end{array}$$

What is the value of the missing digit?

Enter your answer in the space provided.

7000

Scoring Rubric	
Score	Description
1	The student entered 7000, 7, or any equivalent value, providing evidence of the ability to add multi-digit whole numbers.
0	The response is incorrect or irrelevant.

(1 Point)

Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
23	4.NF.A	4.NF.A.2	3

A comparison with a missing numerator is given.

$$\frac{\square}{8} < \frac{1}{2}$$

What could be the value of the missing number?

Enter your answer in the space provided.

3

Scoring Rubric	
Score	Description
1	The student entered 3, or any value less than 4, providing evidence of the ability to compare fractions using benchmarks.
0	The response is incorrect or irrelevant.

(1 Point)

Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
24	4.OA.A	4.OA.A.1	1

A statement is given.

Thirty-nine is thirteen times as much as three.

Which equation models the statement?

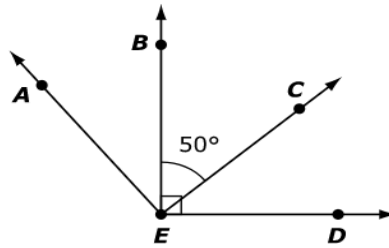
- A. $39 \times 3 = 13$
- B. $39 + 3 = 13$
- C. $39 = 13 + 3$
- D. $39 = 13 \times 3$

(1 Point)

Grade 4 Math Sample Test

Item Number	Cluster	Content Standard	DOK
25	4.MD.C	4.MD.C.7	3

A figure is shown.



The measure of $\angle BED$ is 90° . The measures of $\angle AEB$ and $\angle CED$ are equal.

What is the measure, in degrees, of $\angle AED$?

Enter your answer in the space provided.

130 degrees

← → ↶ ↷ ✕

1	2	3
4	5	6
7	8	9
	0	$\frac{\square}{\square}$
.	-	$\frac{\square}{\square}$

Scoring Rubric	
Score	Description
1	The student correctly calculated the angle measure as 130 degrees, or any equivalent value, providing evidence of the ability to solve addition and subtraction problems to find unknown angles on a diagram within mathematical problems.
0	The response is incorrect or irrelevant.

(1 Point)