AzMERIT | Arizona's Statewide Achievement Assessment for English Language Arts and Mathematics

Computer-Based Sample Test Scoring Guide Grade 4 Math
AzMERIT

Updated January 2019

Prepared by the Arizona Department of Education and the American Institutes for Research®

Arizona Department of Education

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About the Sample Test Scoring Guide

The AzMERIT Sample Test Scoring Guides provide details about the items, student response types, correct responses, and related scoring considerations for AzMERIT 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 AzMERIT Grade 4 Math.

Grade 4 Math Sample Test

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

An expression is shown.

$$\frac{5}{10} + \frac{13}{100}$$

What is the value of the expression?

$$\frac{63}{100}$$

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

(1 Point) Student entered $\dfrac{63}{100}$ or any equivalent value.

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

Select all of the factors that 14 and 24 have in common.

- ☑ 1
- ☑ 2
- ☐ 3
- ☐ 7
- ☐ 14
- ☐ 24

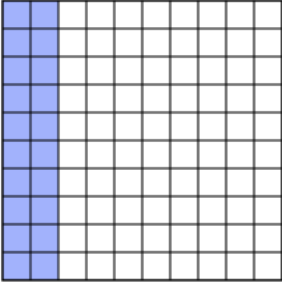**(1 Point)** Student selected the two correct options.

Item Number	Cluster	Content Standard	DOK
3	4.NF.C	4.NF.C.7	2

A decimal model is shown.
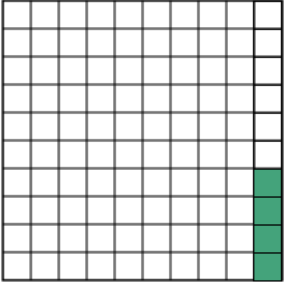
A. Click on the grid on the right to create a decimal model that shows 0.04.

B. Click on the correct symbol to compare the two decimals.
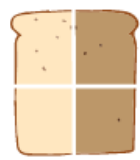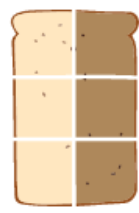
0.2   0.04

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(1 Point) Student created a correct fraction model and a correct comparison. Any model with 4 shaded blocks accepted.
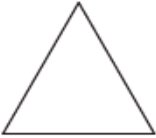
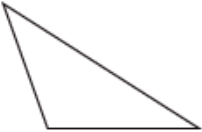| Item Number	Cluster	Content Standard	DOK
4	4.NF.A	4.NF.A.2	3

Kelly's sandwich   Lucy's sandwich

Kelly and Lucy have two different-sized sandwiches, as shown.

- Kelly ate $\frac{2}{4}$ of her sandwich.

- Lucy ate $\frac{3}{6}$ of her sandwich.

Kelly says that each girl ate the same amount of sandwich. Lucy disagrees.

Who statement is true?

Ⓐ   Kelly is not correct because $\frac{3}{6}$ is greater than $\frac{2}{4}$.

Ⓑ   Lucy is not correct because $\frac{2}{4}$ is greater than $\frac{3}{6}$.

Ⓒ   Kelly is correct because they each ate half of a sandwich.

●   Lucy is correct because they each ate half of different-sized sandwiches.

(1 Point) Student selected the correct option.

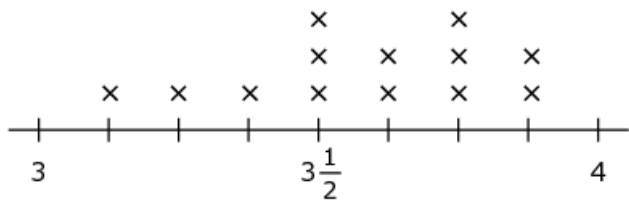| Item Number	Cluster	Content Standard	DOK
5	4.G.A	4.G.A.1	1

Select all of the shapes that do **not** have an obtuse angle.

(1 point) Student selected the two correct shapes.

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

A line plot with data for the heights of plants is shown.

Heights of Plants (inches)

What is the difference, in inches, between the tallest and shortest plants?

$$\frac{6}{8}$$

(1 point) Student entered $\dfrac{6}{8}$ or any equivalent value.

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

Select all of the expressions that have a value of $\frac{9}{8}$.

☑ $1 + \frac{1}{8}$

☐ $1 + \frac{9}{8}$

☑ $\frac{3}{8} + \frac{3}{8} + \frac{3}{8}$

☐ $\frac{1}{8} + \frac{2}{8} + \frac{3}{8} + \frac{4}{8}$

☑ $\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$

(1 Point) Student selected the three correct expressions.

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

Sami has 6 times as many books as Jeff.

Complete the table to show three different possible amounts of books Sami and Jeff could have.

Sami's Books	Jeff's Books
12	2
24	4
18	3

(1 point) Student completed the table with all correct values. Any pair of numbers in the third row where Sami has 6 times as many books as Jeff, inclusive, but all rows must be different.

Item Number	Cluster	Content Standard	DOK
9	4.NBT.A	4.NBT.A.1	1

An equation is shown.

$4000 \div \square = 400$

What is the value of the missing number?

10
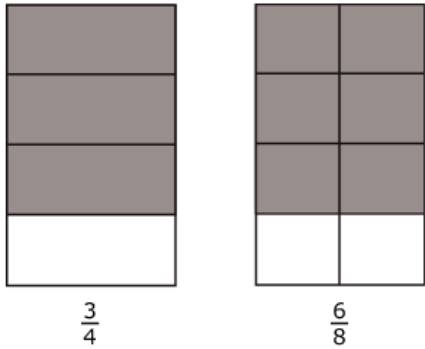
1	2	3
4	5	6
7	8	9
0	.	$\frac{\square}{\square}$

(1 point) Student entered **10** or any equivalent value.

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

Two models are shown. Each model has been shaded gray to represent a fraction.

Which statement is true about the fractions $\frac{3}{4}$ and $\frac{6}{8}$?

Ⓐ They are equivalent because each model is divided into equal parts.

Ⓑ They are not equivalent because the number of shaded parts in each model is different.

● They are equivalent because the size of the areas shaded gray in both models is the same.

Ⓓ They are not equivalent because the models are divided into different numbers of equal parts.

$\frac{3}{4}$ $\frac{6}{8}$

(1 Point) Student selected the correct option.

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

A fraction model is shown, where each large rectangle represents one whole.
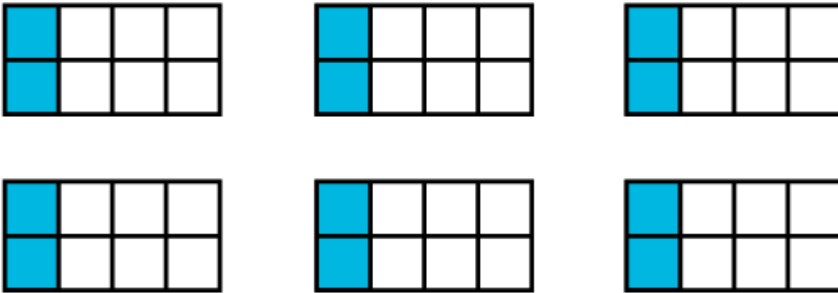
Which expression models the shaded region?

(A) $\dfrac{2}{8} + 6$

(B) $48 - 12$

● $\dfrac{2}{8} \times 6$

(D) $48 \div 6$

(1 point) Student selected the correct option.

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

What is the value of 1932 ÷ 4? Enter your answer as a whole number.

483
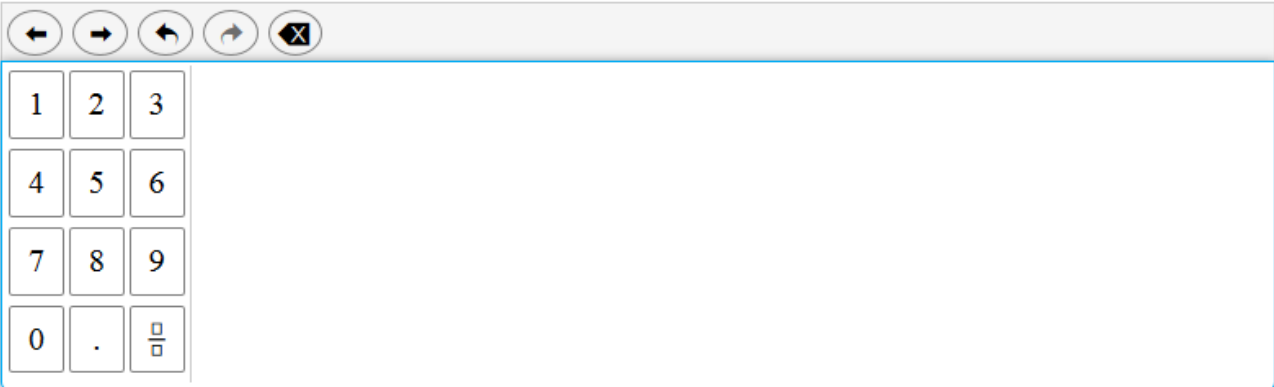
(1 point) Student entered **483** or any equivalent value.

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

Tina is buying lunch. She pays for 3 drinks and 3 pieces of pizza with a $20 bill. The price for a piece of pizza is $3. She receives $5 in change.

What was the total cost of the 3 drinks?

$ 6

1	2	3
4	5	6
7	8	9
0	.	▯/▯

(1 point) Student entered **6** or any equivalent value.

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

A digit is missing in the addition problem shown.

```
  11,□69
  12,392
+ 24,921
  48,582
```

What is the missing digit?

2

| ← | → | ↶ | ↷ | ⌫ |

1	2	3
4	5	6
7	8	9
0	.	□/□

(1 point) Student entered the correct digit.

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

Two groups of shapes are shown.
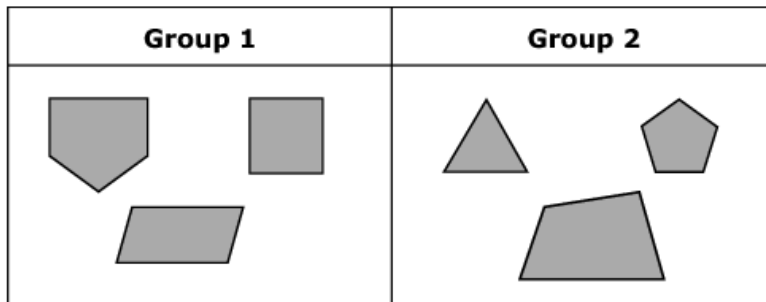
Group 1	Group 2

Explain what property the shapes in Group 1 have that the shapes in Group 2 do not.

Type your answer in the space provided.

Group 1 has parallel sides.

(1 point) Student response included one or more of the following:

- Group 1 has parallel sides.

- Group 2 doesn't have parallel sides.

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

Select all the expressions that have a value of 50.

- ☐ $600 \div 5$

- ☐ $500 \div 1$

- ☑ $400 \div 8$

- ☐ $300 \div 7$

- ☑ $200 \div 4$

(1 point) Student selected the two correct expressions.

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

Mr. Garcia asks his students to find a fraction that meets these conditions.

- The fraction is greater than $\frac{1}{2}$.

- The fraction is less than $\frac{4}{5}$.

Create a fraction that meets Mr. Garcia's conditions.

$$\frac{7}{10}$$

1	2	3
4	5	6
7	8	9
0	.	▯/▯

(1 Point) Student entered $\frac{7}{10}$ or any fraction greater than $\frac{1}{2}$ and less than $\frac{4}{5}$.

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

A group of friends eats **part** of a blueberry pie and **part** of a cherry pie. The two pies are the same size.

The amount of blueberry pie that is left is **less** than the amount of cherry pie that is left.

A. Click to show the possible remaining amount of each pie.

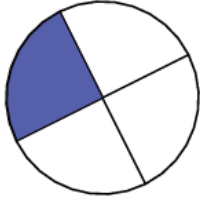B. Drag numbers to the boxes and click on a symbol below the circle to create a comparison of the two fraction models.
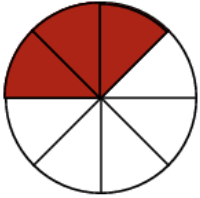
0
1
2
3
4
5
6
7
8
9

Delete

A.

Blueberry Pie

Cherry Pie

B.

$\frac{1}{4}$ < $\frac{3}{8}$

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(1 point) Student created two correct fraction models and a comparison that correctly models the two fractions.

Item Number	Cluster	Content Standard	DOK
19	4.NBT.A	4.NBT.A.3	1

Click in the table to show which place each number was rounded to.

	Nearest 100	Nearest 1,000	Nearest 10,000
4,567 → 5,000	☐	☑	☐
10,579 → 11,000	☐	☑	☐
12,362 → 10,000	☐	☐	☑
14,258 → 14,300	☑	☐	☐

(1 point) Student selected the correct rounding category for each example.

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

What is the product of 4 and 2956?

11824

1	2	3
4	5	6
7	8	9
0	.	□/□

(1 point) Student **11824** or any equivalent value.

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

A pattern starts with the number 12. The pattern follows the rule "Multiply by 2 and then subtract 9."

Complete the table to show the missing numbers in the pattern.

First Number	Second Number	Third Number
12	15	21

(1 Point) Student completed the table with two correct values.

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

Some friends buy a cake. Sam eats $\frac{2}{10}$ of the cake. Julie eats $\frac{3}{10}$ of the cake. Tyler eats $\frac{4}{10}$ of the cake.

How much of the cake is left?

(A) $\frac{1}{1}$
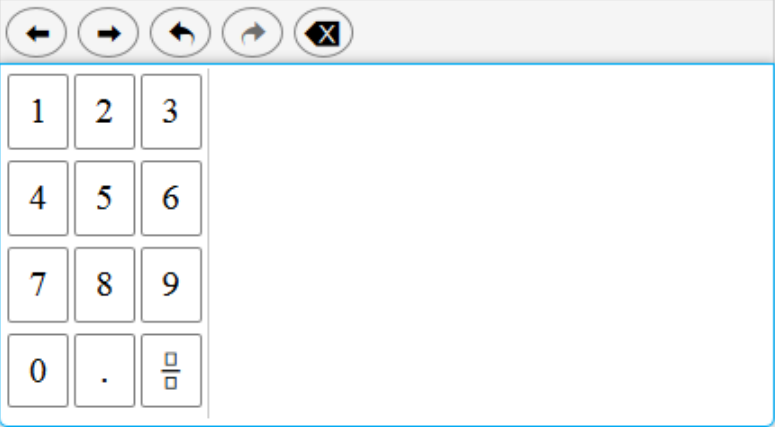
● $\frac{1}{10}$

(C) $\frac{9}{10}$

(D) $\frac{9}{30}$

(1 point) Student selected the correct option.

Item Number	Cluster	Content Standard	DOK
23	4.MD.A	4.MD.A.1	2

Joe measures his height. He is 5 feet tall.

What is Joe's height in inches?

60

1	2	3
4	5	6
7	8	9
0	.	□/□

(1 point) Student entered **60** or any equivalent value.
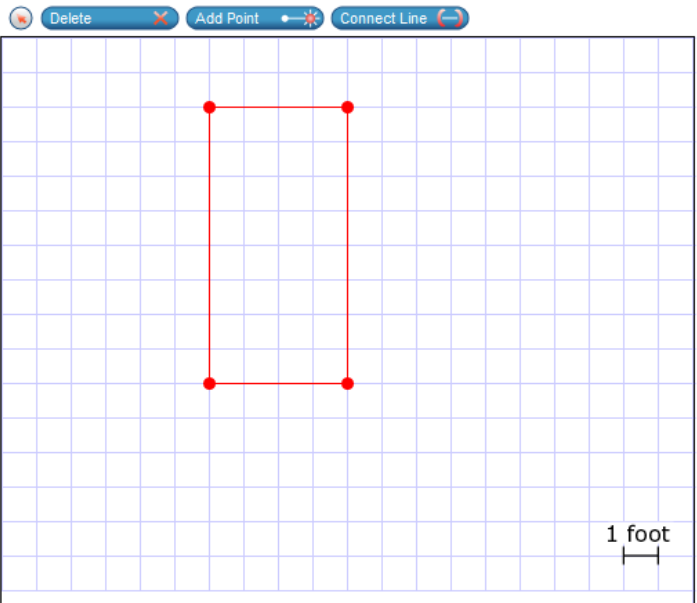
Item Number	Cluster	Content Standard	DOK
24	4.MD.A	4.MD.A.3	3

Kalli's family is planning a sandbox for their backyard.

The sandbox must have

- a rectangular shape.

- a length of 8 feet.

- a perimeter greater than 20 and less than 30 feet.

Use the Connect Line tool to draw a possible plan for the sandbox.

Delete ✕   Add Point ●—✳   Connect Line ⊖

1 foot

(1 point) Student created a correct rectangle with a length of 8 feet and a perimeter between 20 and 30 feet.

Item Number	Cluster	Content Standard	DOK
25	4.NF.A	4.NF.A.2	2

Bernadette, Janet, Liza, and Raymond shared a plate of french fries. The fraction of the plate of french fries that each person ate is shown.

Bernadette: $\frac{2}{10}$

Janet: $\frac{3}{6}$

Liza: $\frac{1}{4}$

Raymond: $\frac{5}{100}$

Complete the sentence to create a true statement.

Liza ate more french fries than [Bernadette ▾] but less than [Janet. ▾]

(1 point) Student selected "Bernadette" or "Raymond" from the first dropdown, and "Janet" from the second dropdown.