

Colorado Measures of Academic Success



Grade 4 Mathematics



Paper Practice Resource for Students

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The Colorado Measures of Academic Success (CMAS) is Colorado’s standards-based assessment program designed to measure the Colorado Academic Standards (CAS) in the content areas of science, social studies, English language arts, and mathematics. The sample items included in this resource provide students with an opportunity to become familiar with the format of test items that appear in the paper-based test books.

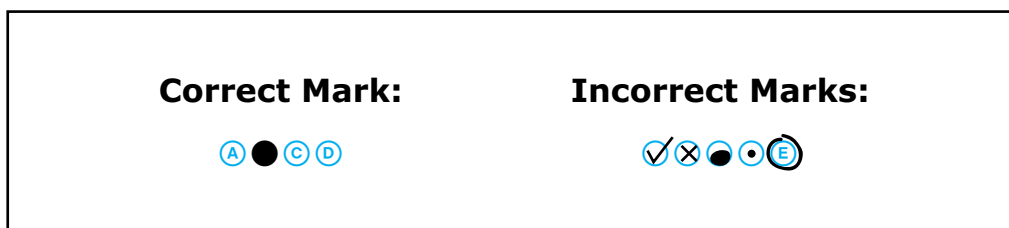
While the use of the sample items is not required, it is strongly encouraged to help ensure students are familiar with the types of items they may encounter while taking the paper-based test.

The sample item sets in the CMAS Practice Resources are not intended to be representative of a complete unit or test, nor are they intended to cover all assessed content or item types. To view assessment frameworks, high level blueprints, scoring rubrics, evidence statements and standards for the CMAS assessments, visit: https://www.cde.state.co.us/assessment/cmas_testdesign.

Item Types:

Selected Response Items

Selected response items are multiple choice questions. To respond, the student indicates their response in an answer grid or by filling in the circle(s) next to their answer choice.



Constructed Response Items

Constructed response items are questions or prompts that require an independent, written response. To respond, the student writes his or her answer in the response box in the test book.

Converted Online Technology-Enhanced Item Types

Online technology-enhanced items converted to the paper testing format may ask students to:

- Circle the correct answer
- Complete a table with checkmarks, Xs, or letters from a list of answer choices
- Fill in the blank
- Draw lines from boxes to correct answers
- Complete a bar graph or histogram
- Interact with a number line
- Graph points and lines on a coordinate grid
- Divide and shade shapes to indicate fractions

Directions for Completing the Answer Grids

1. Work the problem and find an answer.
2. Write your answer in the boxes at the top of the grid.
3. Print only one number or symbol in each box. Do not leave a blank box in the middle of an answer.
4. Under each box, fill in the circle that matches the number or symbol you wrote above. Make a solid mark that completely fills the circle.
5. Do not fill in a circle under an unused box.
6. Fractions cannot be entered into an answer grid and will not be scored. Enter fractions as decimals.
7. See below for examples on how to correctly complete an answer grid.

EXAMPLES

To answer 632 in a question, fill in the answer grid as shown below.

6	3	2			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
0	0	0	0	0	0
1	1	1	1	1	1
2	2	●	2	2	2
3	●	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
●	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

To answer .75 in a question, fill in the answer grid as shown below.

.	7	5			
●	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	●	5	5	5
6	6	6	6	6	6
7	●	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

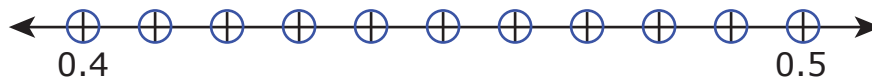
OR

0	.	7	5		
<input type="radio"/>	●	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
●	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	●	5	5
6	6	6	6	6	6
7	7	●	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

ITEM SET 1

1. Where is $\frac{42}{100}$ located on the number line?

Fill in **one** circle on the number line to plot the point.



2. A baker has cupcake pans that can hold 12 cupcakes each. The baker made 9 cupcake pans full of vanilla cupcakes and 4 cupcake pans full of strawberry cupcakes.

The baker then puts the cupcakes into boxes. The baker puts 8 cupcakes in each box.

What is the **fewest** number of boxes the baker will need for all the cupcakes?

- (A) 18
- (B) 20
- (C) 24
- (D) 32

**TURN THE PAGE AND
CONTINUE WORKING**

Use the information provided to answer Part A and Part B for question 3.

The table shows the items and amounts needed to make 1 bottle of bubble mix. The two items in a bubble mix are water and dish soap.

Bubble Mix

Item	Amount
water	$\frac{5}{8}$ cup
dish soap	$\frac{2}{8}$ cup

3. Part A

How much more water than dish soap is needed to make 1 bottle of bubble mix?

Enter your answer in the space provided. Enter **only** your answer.

<input type="text"/>	cup
<input type="text"/>	

Part B

A student wants to make enough bubble mix for 7 bottles.

- How many cups of bubble mix does the student need to make to fill 7 bottles? Include in your answer the number of cups of water and the number of cups of dish soap the student needs.
- Explain your answer or show your work.

Enter your answers and your work or explanation in the space provided.

4. A store has two lamps for sale. Lamp A costs \$9. Lamp B costs 6 times more than Lamp A.

How much is Lamp B?

- A \$3
- B \$15
- C \$45
- D \$54

**TURN THE PAGE AND
CONTINUE WORKING**

Use the information provided to answer Part A and B for question 5.

The distances, in miles, a person ran in four days is shown in the table.

Distances Ran

Day	Distance (miles)
1	$\frac{3}{2}$
2	$\frac{5}{8}$
3	$\frac{10}{6}$
4	$\frac{6}{12}$

5. Part A

What is the greatest distance, in miles, the person ran?

- (A) $\frac{3}{2}$
- (B) $\frac{5}{8}$
- (C) $\frac{10}{6}$
- (D) $\frac{6}{12}$

Part B

On Day 5, the person wants to run between $\frac{3}{4}$ mile and $\frac{6}{12}$ mile.

Which distance, in miles, is between $\frac{3}{4}$ mile and $\frac{6}{12}$ mile?

- (A) $\frac{6}{10}$
- (B) $\frac{4}{10}$
- (C) $\frac{5}{4}$
- (D) $\frac{5}{12}$

6. A person went on a hike that lasted 3 hours.

How many minutes was the hike?

Enter your answer into the box.

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

7. A group of 63 birds is 9 times more than a group of 7 birds.

Which equation has the same meaning as this statement?

A $63 = 9 \times 7$

B $7 = 63 \times 9$

C $7 = 9 \div 63$

D $63 = 7 \div 9$

8. Two friends each have a piece of yarn that is $\frac{2}{10}$ meter long.

Friend A says that $\frac{2}{10}$ meter is equivalent to $\frac{4}{12}$ meter because
$$\frac{2}{10} = \frac{2+2}{10+2} = \frac{4}{12}.$$

Friend B says that $\frac{2}{10}$ meter is equivalent to $\frac{2}{5}$ meter because
$$\frac{2}{5} = \frac{2}{5 \times 2} = \frac{2}{10}.$$

- Explain the mistake that Friend A made.
- Explain the mistake that Friend B made.
- Show a fraction that is equivalent in length to $\frac{2}{10}$ meter. Show or explain your work.

Enter your explanations and your answer in the space provided.

- 9.** There are 3,726 students spending the summer at a camp. The students are divided equally into 9 groups.

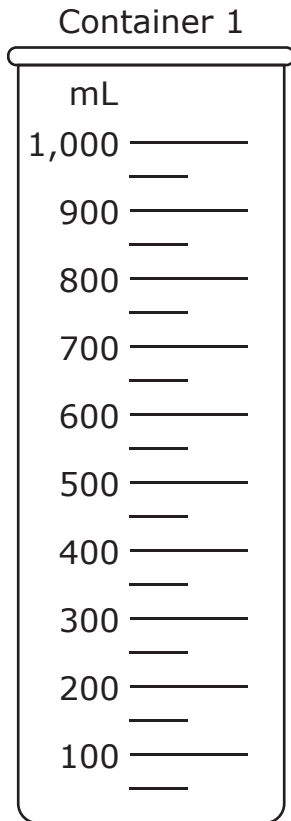
How many students are in each group?

- A 302
- B 414
- C 482
- D 512

- 10.** A student has an unknown amount of water in Container 1. She pours the amount into Container 2, which already has 450 milliliters of water inside. After she combines the two amounts, there is a total of 1 liter of water in Container 2.

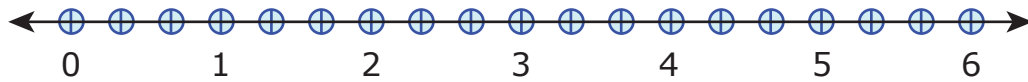
What was the original amount of water, in milliliters, in Container 1 before the student combined the two amounts?

Draw a line and shade the container to the correct height.



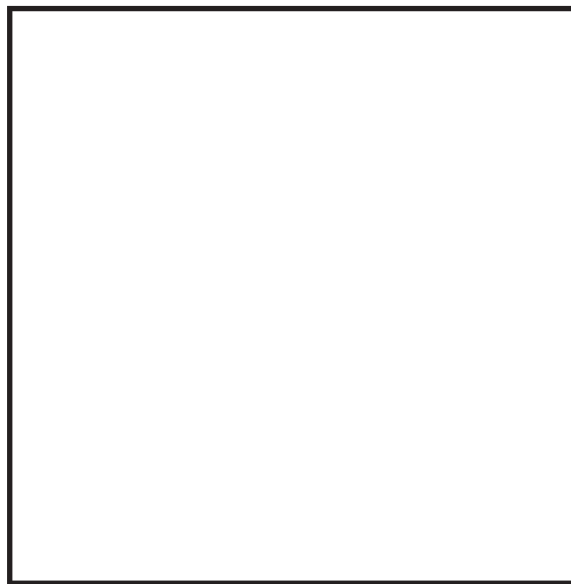
11. What number on the number line represents the value of $2 \times \frac{2}{3}$?

Fill in the circle on the number line to plot the point.



12. Create a fraction model with a denominator of 10 that is equivalent to $\frac{70}{100}$.

Divide the figure into the correct number of equal parts. Then shade the correct number of parts.



This is the end of Item Set 1.

