

Montana
Comprehensive Assessment
System (MontCAS, Phase 2)
Criterion-Referenced Test (CRT)

COMMON CONSTRUCTED-RESPONSE ITEM RELEASE
MATHEMATICS, GRADE 4

2005



OPI

OFFICE OF PUBLIC INSTRUCTION

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Printed in the United States of America.

Mathematics

Session 1 (Calculator)

You may use a calculator during this session.

25. Shannon asked 11 classmates to add their favorite breakfast food to this table.

Classmate	Favorite Breakfast Food
Roberto	Cereal
Ken	Cereal
Hank	Waffles
Latisha	Cereal
Albert	Cereal
Ray	Cereal
Danny	Waffles
Anna	Waffles
Gayle	Pancakes
Danielle	Pancakes
Beth	Waffles

- Make a tally chart that shows the number of classmates who chose each type of breakfast food.
- On the grid in your Student Response Booklet, make a bar graph that shows the number of classmates who chose each type of breakfast food. Be sure to
 - give the bar graph a title and
 - label the axes.

Scoring Guide

Score	Description
4	7 points
3	5 or 6 points
2	3 or 4 points
1	1 or 2 points OR minimal understanding of organizing data and/or creating a graph
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response.

Training Notes

Part a: 2 points creates a tally chart that matches the table
OR
1 point creates a tally chart with no more than two minor counting errors
OR
shows correct counts for all breakfast choices

Note: Do not penalize student for not including a title or headings on columns.

Part b: 1 point appropriate title

AND 1 point correct categorical labels on one axis

AND 1 point numeric labels on the other axis with an appropriate scale

AND 2 points correctly draws a bar for each type of breakfast food that matches the frequencies in the student's tally chart or the actual frequencies

OR

1 point correctly draws at least two bars that match the frequencies in the student's tally chart or the actual frequencies

OR

correct heights of bars for all three breakfast foods if there are no category labels and no chart in part a

Note:

- If numeric labels are missing, assume that each box equals one vote.
- If there is a chart in part a, but no category labels in part b, assume that the bars follow the same order as the labels in the chart.
- If no frequencies (data) are indicated on the graphic, do not give credit for a title or labels **alone**. The exception would be if the graphic contains **both** correct categorical and correct numeric labels.

Note regarding **pictographs** for part b: If student draws a pictograph instead of a bar graph, award points based on the following and then SUBTRACT 1 POINT:

- 1 point appropriate title
 - AND 1 point appropriate labels
 - AND 1 point correct key
 - AND 2 points correct number of icons for each type of breakfast food that matches the frequencies in the tally chart
- OR
- 1 point correct number of icons for 2 breakfasts

Sample response:

Part a:

Breakfast	Number of children
Pancakes	
Cereal	
Waffles	

Part b:

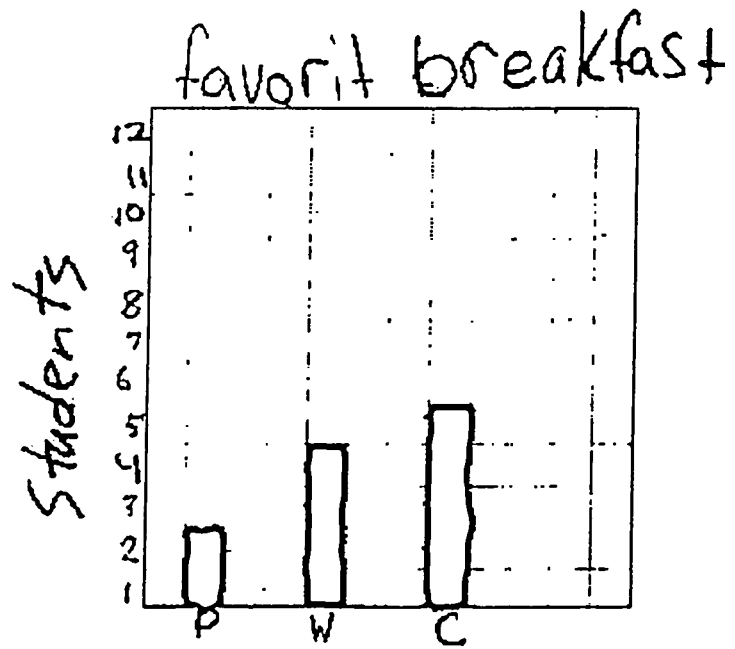
Favorite Breakfast



Score Point 4

Sample 1

Cereal	
Waffles	
Pancakes	



Score Point 3

Sample 1

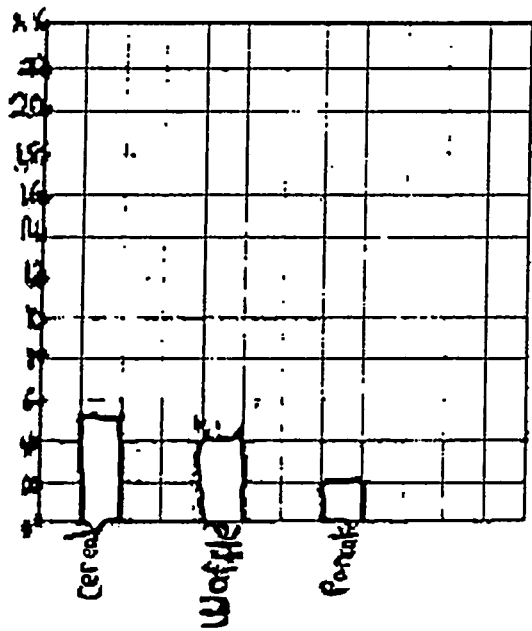
Favorite Breakfast Food

Cereal IIII

Waffles III

Pancakes II

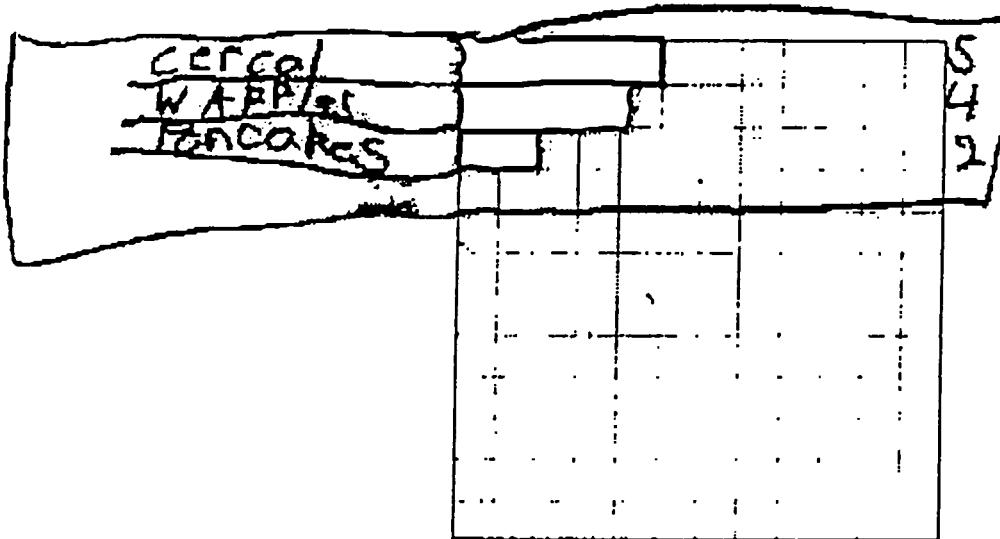
Favorite Breakfast Food



Score Point 2

Sample 1

X=5 - Cereal
X=4 - WAFFLES
X=3 - PANCAKES



Score Point 1

Sample 1

waffles IIII
pancakes II
Cereal III

Score Point 0

Sample 1

A hand-drawn table with two columns and ten rows. The first column contains names and the second column contains food items. The entries are: Roberto cereal, Ken cereal, Leticia cereal, Albert cereal, Ray cereal, Danny Waffles, Anna Waffles, Beth Waffles, Gail Pancakes, and Frankie Pancakes. To the right of this table is an empty grid with 10 rows and 6 columns.

Roberto	cereal
Ken	cereal
Leticia	cereal
Albert	cereal
Ray	cereal
Danny	Waffles
Anna	Waffles
Beth	Waffles
Gail	Pancakes
Frankie	Pancakes

Mathematics

Session 3 (No Calculator)

You may NOT use a calculator during this session.

68. The Lewis and Clark show is open every day from 10:00 A.M. to 5:00 P.M. The owners expect 50 people to visit the show during every hour that it is open.

a. How many people do the owners expect to visit the show in a day? Show or explain how you found your answer.

Tickets for the show cost \$2.00 per person.

b. How much money do the owners expect to make each day from ticket sales? Show or explain how you found your answer.

The owners of the show would like to increase the money made by each day's ticket sales to \$1000.

c. How many MORE people would need to visit the show each day to reach this goal? Show or explain how you found your answer.

Scoring Guide

Score	Description
4	6 points
3	5 points or 4 points with points from every part
2	3 or 4 points
1	1 or 2 points OR minimal understanding of solving a portion of the problem
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response.

Training Notes

- Part a: 2 points correct answer with correct strategy/explanation
OR
1 point correct answer
or
correctly answering 7 hours with or without explanation or work
or
correctly multiplying an incorrect number of hours by 50
- Part b: 2 points correct answer with correct strategy/explanation
OR
1 point correct answer or correct strategy/explanation
- Part c: 2 points correct answer with correct strategy/explanation
OR
1 point correct answer or correct strategy/explanation
or
answering that the owners have met or exceeded their goal, provided that the student's answer to part b is \$1000 or greater

NOTE: Scorers should read along with the student. If the student makes an error in a previous part and subsequent answers are correct based on the earlier error, the student should not be penalized again.

NOTE: If students mislabel their answers (e.g., 700 tickets in Part b) do not award a 4 score; otherwise, do not penalize.

Sample response:

Part a: $50 \times 7 = 350$

Part b: $\$2.00 \times 350 = \700

Part c: They need to make \$300 more dollars to reach their goal. $300 \div 2 = 150$, so 150 more people a day need to go to the show.

Score Point 4

Sample 1

a. 10:00 a.m. to 5:00 p.m. has about 7 hours. 50 people visit the show per hour so $7 \times 50 = 350$ people each day.

b. \$2.00 per person and 350 people means $2.00 \times 350 = 700.00$ each day.

c. About 500 people need to go to the show each day to reach \$1,000.00. 350 people get \$700.00 so about \$300 more dollars mean you need 150 more people.

Score Point 3

Sample 1

10:00 11:00 12:00 1:00 2:00 3:00 4:00 5:00
 50 people 100" 150" 200" 250" 300" 350" 400"
 a. About 400 people come in a day because there are 7 hours, and every hour 50 people visit the show.

b. \$800 because 400 people come, so $2 \times 400 = 800$

c. About 100 more people would need to come because $1,000 \div 500 = 2$, and the tickets are \$2.

400				
<u> </u>	<u> </u>			
	00			
	00			
<u>+ 400</u>	<u> </u>			
\$800				

Score Point 2

Sample 1

$$\begin{array}{r} A. \cancel{50} \\ \times \cancel{24} \\ \hline 200 \\ 1,000 \\ \hline 1,200 \end{array}$$

$$\begin{array}{r} B. \cancel{1,200} \\ \times \quad 2 \\ \hline 2,400 \end{array}$$

C. There would have to be about 100 to 200 more people to reach this goal.

Score Point 1

Sample 1

Handwritten work for Sample 1:

② 50
x 6

300

③ ~~2.00~~
x 300

600.00

④ 40 more people

Sample 2

Handwritten work for Sample 2:

A. 5 hours 2 hours is a 100 people
4 hours is 200 people 5 hours is 250 people

Score Point 0

Sample 1

$$\begin{array}{r} 50 \\ \times 2 \\ \hline 100 \end{array}$$

I multiplied it.