2007

Green River

Regional Educational Cooperative

Grades K–1
Mathematics

Constructed Response

Measured Progress

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Note: Each item is aligned to a standard, but does not necessarily measure the entire standard.

Item 1 Mr. Wong's Farm

Standard: MA-EP-1.3.01: Number Operations — Students will analyze real-world problems to identify appropriate representations using mathematical operations, and will apply operations to solve real-world problems with the following constraints: add and subtract whole numbers with three digits or less; multiply whole numbers of 10 or less; add and subtract fractions with like denominators less than or equal to four; and add and subtract decimals related to money.

Bloom's Taxonomy: Analysis

Depth of Knowledge: Level 2

1. Bobbie's class went on a field trip to Mr. Wong's farm.

   There were 17 cows and 8 horses in the barn.

   a. How many animals were in the barn? Show your work.

   Bobbie counted 14 pigs.

   Julie counted 9 pigs.

   b. How many more pigs did Bobbie count than Julie? Show your work.

   Mr. Wong has 26 more chickens than he has ducks.

   He has 8 ducks.

   c. How many chickens does Mr. Wong have? Show your work.

Mr. Wong's Farm

Scoring Guide

Score	Description
4	The student response demonstrates an exemplary understanding of the Number Properties and Operations concepts involved in applying addition and subtraction of whole numbers to solve real-world problems.
3	The student response demonstrates a good understanding of the Number Properties and Operations concepts involved in applying addition and subtraction of whole numbers to solve real-world problems. Although there is significant evidence that the student was able to recognize and apply the concepts involved, some aspect of the response is missing or flawed. As a result the response merits 3 points.
2	The student response demonstrates a fair understanding of the Number Properties and Operations concepts involved in applying addition and subtraction of whole numbers to solve real-world problems. While some aspects of the task are completed correctly, others are not. The mixed evidence provided by the student merits 2 points.
1	The student response demonstrates a minimal understanding of the Number Properties and Operations concepts involved in applying addition and subtraction of whole numbers to solve real-world problems.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response.

Additional Notes

Correct work may include the algorithm, pictures, or other evidence of counting up or down.

Sample Response:

Part a: 17 + 8 = 25
Part b: 14 – 9 = 5
Part c: 8 + 26 = 34

Sample Student Responses

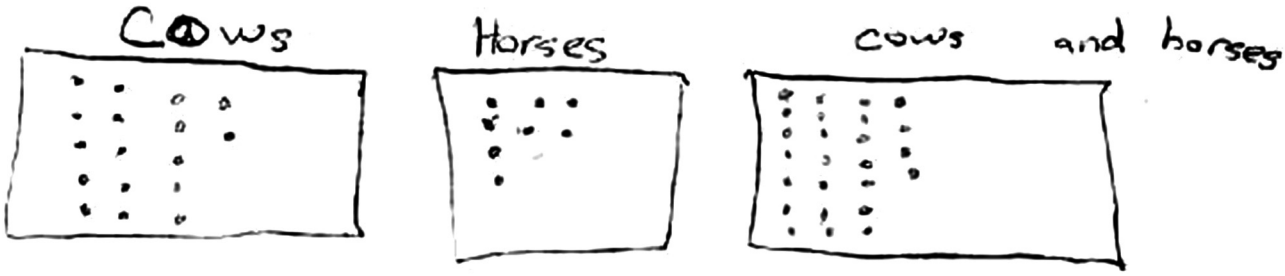
Mr. Wong's Farm

Bobbie's class went on a field trip to Mr. Wong's farm.

There were 17 cows and 8 horses in the barn.

a. How many animals were in the barn? Show your work.

25 animals in the barn



Bobbie counted 14 pigs.

Julie counted 9 pigs.

b. How many more pigs did Bobbie count than Julie? Show your work.

$$\begin{array}{r} {}^{0}\cancel{14} \\ -\ 9 \\ \hline \end{array}$$

Bobbie counted 5 more pigs than Julie

Mr. Wong has 26 more chickens than he has ducks.

He has 8 ducks.

c. How many chickens does Mr. Wong have? Show your work.

$$\begin{array}{r} {}^{1}26 \\ +\ 8 \\ \hline \end{array}$$

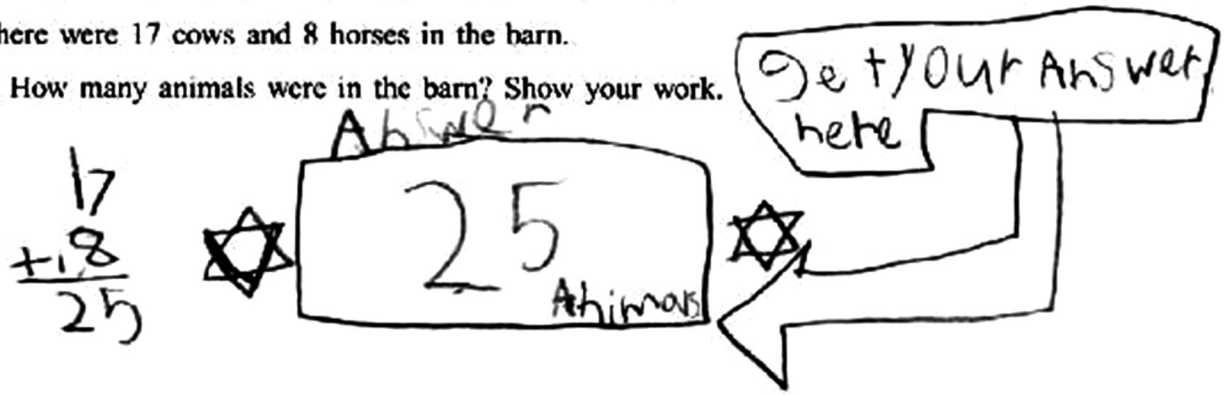
Mr. Wong has 34 chickens

Score Point: 4

Bobbie's class went on a field trip to Mr. Wong's farm.

There were 17 cows and 8 horses in the barn.

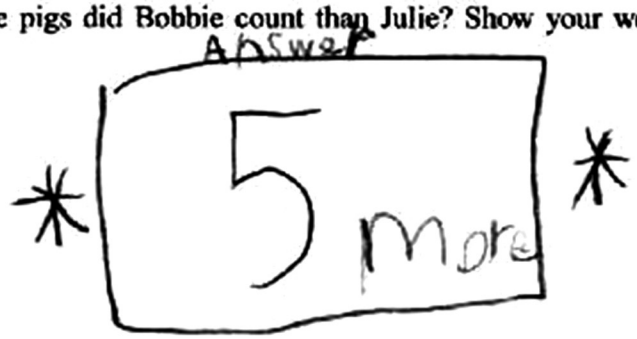
a. How many animals were in the barn? Show your work.



Bobbie counted 14 pigs.

Julie counted 9 pigs.

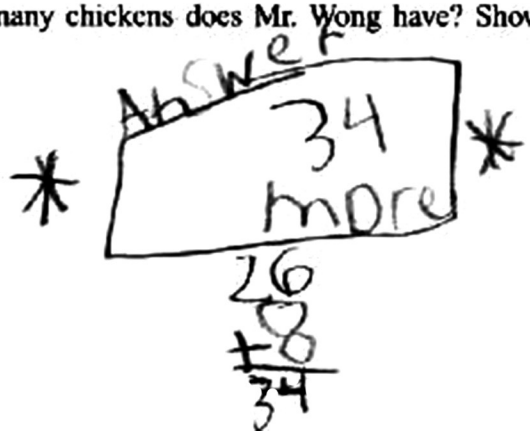
b. How many more pigs did Bobbie count than Julie? Show your work.



Mr. Wong has 26 more chickens than he has ducks.

He has 8 ducks.

c. How many chickens does Mr. Wong have? Show your work.



Score Point: 3

Bobbie's class went on a field trip to Mr. Wong's farm.

There were 17 cows and 8 horses in the barn.

a. How many animals were in the barn? Show your work.

17+8=25

Bobbie counted 14 pigs.

Julie counted 9 pigs.

b. How many more pigs did Bobbie count than Julie? Show your work.

14+9=23

Mr. Wong has 26 more chickens than he has ducks.

He has 8 ducks.

c. How many chickens does Mr. Wong have? Show your work.

26+8=34

Score Point: 2

Bobbie's class went on a field trip to Mr. Wong's farm.

There were 17 cows and 8 horses in the barn.

a. How many animals were in the barn? Show your work.

$$\begin{array}{r} {}^{2} \\ +\,17 \\ 8 \\ \hline 35 \end{array}$$

there were 35 animals.

Bobbie counted 14 pigs.

Julie counted 9 pigs.

b. How many more pigs did Bobbie count than Julie? Show your work.

$$\begin{array}{r} 14 \\ -\,9 \\ \hline 5 \end{array}$$

Bobbie counted 5 more than Julie.

Mr. Wong has 26 more chickens than he has ducks.

He has 8 ducks.

c. How many chickens does Mr. Wong have? Show your work.

$$\begin{array}{r} 26 \\ -\,8 \\ \hline 18 \end{array}$$

18 more chickens

Score Point: 2

Bobbie's class went on a field trip to Mr. Wong's farm.

There were 17 cows and 8 horses in the barn.

a. How many animals were in the barn? Show your work.

8
−17
−11

Bobbie counted 14 pigs.

Julie counted 9 pigs.

b. How many more pigs did Bobbie count than Julie? Show your work.

14
−9
15

Mr. Wong has 26 more chickens than he has ducks.

He has 8 ducks.

c. How many chickens does Mr. Wong have? Show your work.

26
−8
24

Score Point: 1

Bobbie's class went on a field trip to Mr. Wong's farm.

There were 17 cows and 8 horses in the barn.

a. How many animals were in the barn? Show your work.

02R1
8 | 17
- 16
01

Bobbie counted 14 pigs.

Julie counted 9 pigs.

b. How many more pigs did Bobbie count than Julie? Show your work.

14
+ 9
13

Mr. Wong has 26 more chickens than he has ducks.

He has 8 ducks.

c. How many chickens does Mr. Wong have? Show your work.

26
+ 8
14

Score Point: 1

Item 2 Mary's Pie

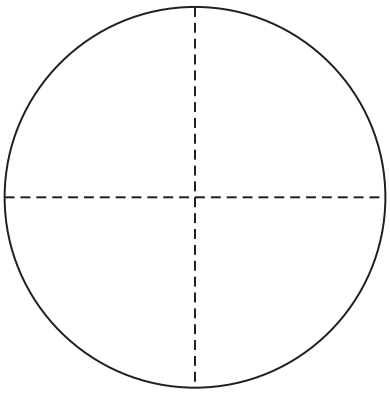
Standard: MA-EP-1.1.01: Number Sense — Students will apply multiple representations (e.g., drawings, manipulatives, base-10 blocks, number lines, expanded form, symbols) to describe whole numbers (0 to 9,999); apply multiple representations (e.g., drawings, manipulatives, base-10 blocks, number lines, symbols) to describe fractions (halves, thirds, fourths); apply these numbers to represent real-world problems; and explain how the base 10 number system relates to place value.

Bloom's Taxonomy: Comprehension

Depth of Knowledge: Level 2

2. Mary, Jeff, Sarah, and Ed are sharing a pie. Mary cut the pie so each of them will have an equal share.

a. Shade in Mary's share of the pie.



b. Mary thinks her share is $\frac{1}{3}$ of the pie. Do you agree or disagree with Mary? Tell why.

c. What single fraction equals Jeff's share plus Ed's share? Explain your answer.

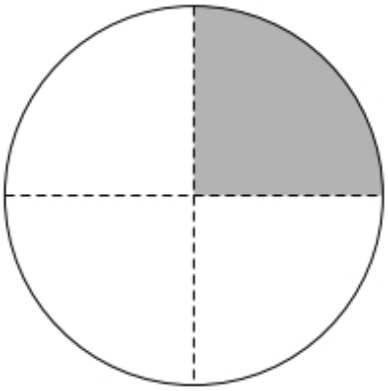
Mary's Pie

Scoring Guide

Score	Description
3	The student demonstrates a thorough understanding of the concept of fractions by associating fractions with sectors of a circle and by explaining why a given fraction does not describe a certain sector. The response may contain minor errors or omissions but they do not detract from the demonstration of mastery.
2	The student demonstrates a partial understanding of the concept of fractions by correctly completing a significant portion of the required tasks. The response indicates that the student could successfully complete the tasks if given feedback or brief instruction.
1	The student demonstrates a minimal understanding of the concept of fractions. The response indicates that the student would require significant instruction to complete the tasks.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response.

Sample Response:

Part a:



Part b: Mary is wrong because she gets one of the four equal pieces. She gets $\frac{1}{4}$, not $\frac{1}{3}$.

Part c: $\frac{2}{4}$ because together they get two of the four equal-sized pieces.

OR

$\frac{1}{2}$ because together they get one of two equal-sized pieces.

Item 3 Alphabet Symmetry

Standard: MA-EP-3.2.01: Transformations of Shapes — Students will describe and provide examples of line symmetry in real-world and mathematical problems or will apply one line of symmetry to construct a simple geometric design.

Bloom's Taxonomy: Comprehension

Depth of Knowledge: Level 2

3. The letters of the alphabet are shown below.

A B C D E F G H

I J K L M N O P Q

R S T U V W X Y Z

a. List **three** letters that have **no** lines of symmetry.

b. List **three** letters that have **only one** line of symmetry. Draw a dotted line on each letter you listed to show the line of symmetry.

c. List **two** letters that have at least **two** lines of symmetry. Draw dotted lines on each letter you listed to show the lines of symmetry.

Alphabet Symmetry

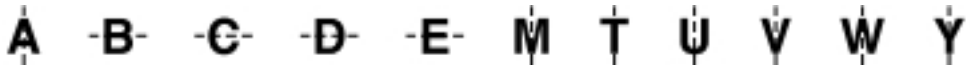
Scoring Guide

Score	Description
4	The student demonstrates a thorough understanding of symmetry by finding letters of the alphabet with one, two, and no lines of symmetry.
3	The student demonstrates a general understanding of symmetry by finding letters of the alphabet with one, two, and no lines of symmetry, with only minor errors or omissions. The response indicates that the student could readily correct any errors and omissions if given written feedback.
2	The student demonstrates a basic understanding of symmetry by correctly completing a significant portion of the required tasks. The response indicates that the student would require some instruction to successfully complete the tasks.
1	The student demonstrates a minimal understanding of symmetry. The response indicates that the student would require significant instruction to complete the tasks.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response.

Sample Response:

Part a: 3 of the following letters: F, G, J, K, L, N, P, Q, R, S, Z

Part b: 3 of the following letters:



Part c: 2 of the following letters:

Item 4 Amount of Snowfall

Standard: MA-EP-4.1.01: Data Representations — Students will analyze and make inferences from data displays (drawings, tables/charts, tally tables, pictographs, bar graphs, circle graphs with two or three sectors, line plots, two-circle Venn diagrams).

Bloom's Taxonomy: Comprehension

Depth of Knowledge: Level 2

4. Use the chart below to answer the question.

Day of the Week	Amount of Snowfall
Monday	6 inches
Tuesday	2 inches
Wednesday	3 inches

a. Complete the bar graph below to show the amount of snowfall for each day.

Amount of Snowfall								
Monday								
Tuesday								
Wednesday								
	0	1	2	3	4	5	6	7	8

b. Which day had the **least** amount of snowfall?

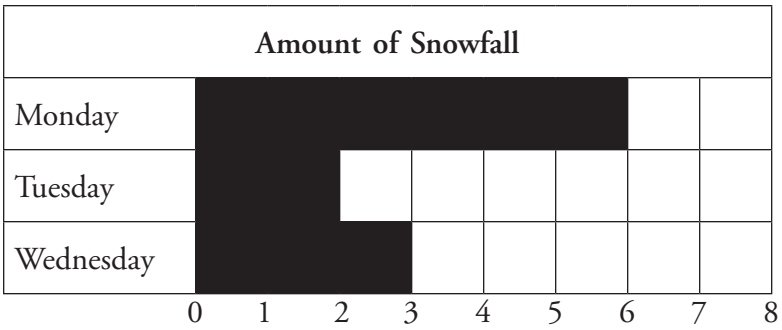
Amount of Snowfall

Scoring Guide

Score	Description
3	The student demonstrates a thorough understanding of bar graphs by correctly drawing bars on a bar graph and comparing the data. The response may contain minor errors or omissions but they do not detract from the demonstration of mastery.
2	The student demonstrates a partial understanding of bar graphs by correctly completing a significant portion of the required tasks. The response indicates that the student could successfully complete the tasks if given feedback or brief instruction.
1	The student demonstrates a minimal understanding of bar graphs. The response indicates that the student would require significant instruction to complete the tasks.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response.

Sample Response:

Part a:



Part b: Tuesday

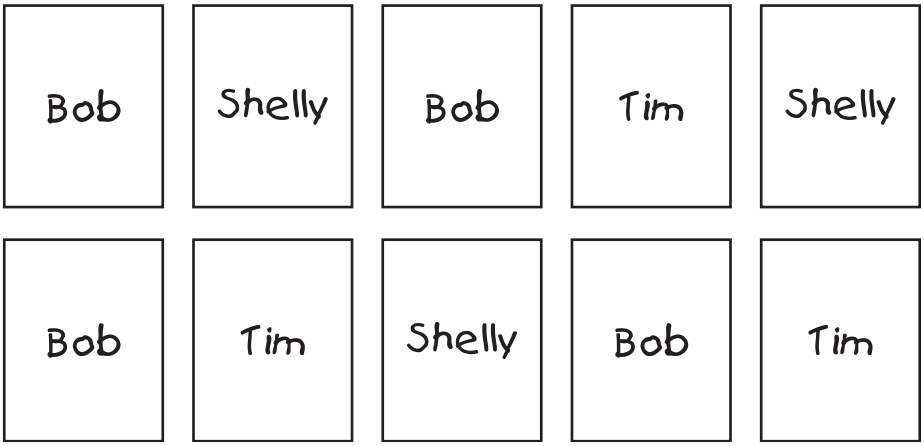
Item 5 Science Club

Standard: MA-EP-4.1.01: Data Representations — Students will analyze and make inferences from data displays (drawings, tables/charts, tally tables, pictographs, bar graphs, circle graphs with two or three sectors, line plots, two-circle Venn diagrams).

Bloom's Taxonomy: Application

Depth of Knowledge: Level 2

5. There are ten students in the science club. They voted for a new president. They could vote for Bob, Shelly, or Tim. Here are the votes.



a. How many votes did Bob get?

b. How many votes did Shelly get?

c. How many votes did Tim get?

d. Who got the **most** votes?

Science Club

Scoring Guide

Score	Description
3	The student demonstrates a thorough understanding of collecting and displaying data by creating a chart from given data. The response may contain minor errors or omissions but they do not detract from the demonstration of mastery.
2	The student demonstrates a partial understanding of collecting and displaying data by correctly completing a significant portion of the required tasks. The response indicates that the student could successfully complete the tasks if given feedback or brief instruction.
1	The student demonstrates a minimal understanding of collecting and displaying data. The response indicates that the student would require significant instruction to complete the tasks.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response.

Sample Response:

a. Bob got 4 votes.
b. Shelly got 3 votes.
c. Tim got 3 votes.
d. Bob got the most votes.