2007

Green River

Regional Educational Cooperative

Grades 2–3
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.

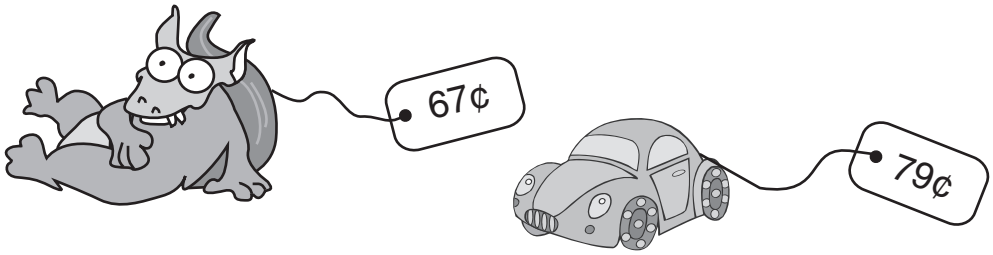
Item 1 Jena Goes Toy Shopping

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: Application

Depth of Knowledge: Level 2

1. Jena has $2.00 to spend at the store. She wants to buy the two toys shown below.



   a. How much will Jena have to pay for the two toys? Show your work.

   b. How much of her $2.00 will Jena have left after she buys the two toys? Show your work.

Jena Goes Toy Shopping

Scoring Guide

Score	Description
4	The student response demonstrates an exemplary understanding of the concepts involved in adding and subtracting decimals related to money.
3	The student response demonstrates a good understanding of the concepts involved in adding and subtracting decimals related to money. 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 concepts involved in adding and subtracting decimals related to money. 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 concepts involved in adding and subtracting decimals related to money.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response.

Additional Notes

Evaluate the correctness of Part b in terms of the answer the student gave to Part a. For example, if the student answered $1.36 for Part a, then the correct answer for Part b is $0.64 instead of $0.54.

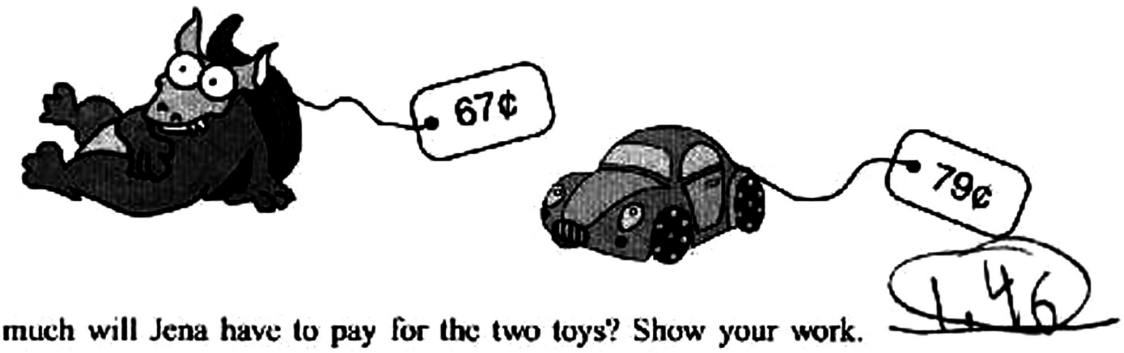
Sample Response:

Part a: 67¢ + 79¢ = $1.46
Part b: $2.00 – 1.46 = $0.54

Sample Student Responses

Jena Goes Toy Shopping

Jena has $2.00 to spend at the store. She wants to buy the two toys shown below.



a. How much will Jena have to pay for the two toys? Show your work. 1.46

79
+67
1.46

how	why
first I did 79+67=1.46	because I had to find out how much their prices are together

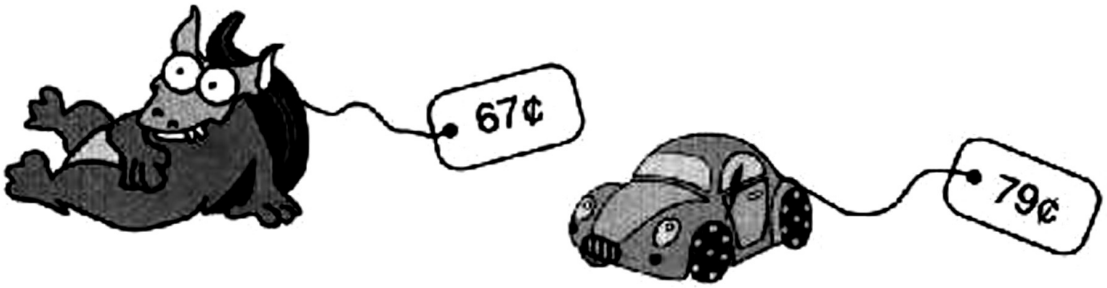
b. How much of her $2.00 will Jena have left after she buys the two toys? Show your work. 0.54

2.00
− 1.46
0.54

how	why
First I did 2.00 − 1.46	because I had to find out how much would be left after she bought the toys.

Score Point: 4

Jena has $2.00 to spend at the store. She wants to buy the two toys shown below.



a. How much will Jena have to pay for the two toys? Show your work.

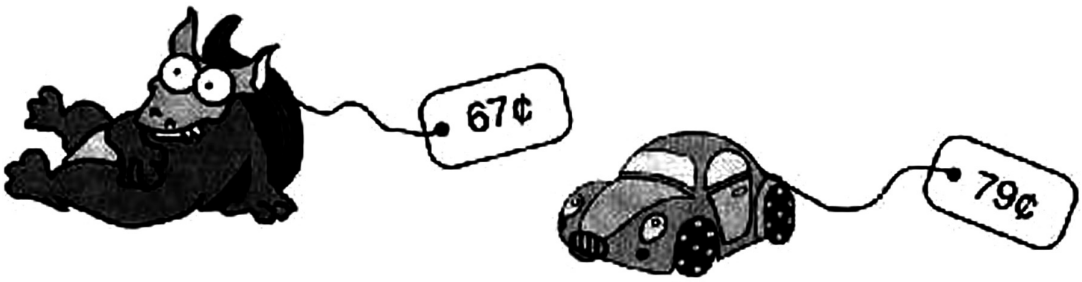
$1.46 ¢

b. How much of her $2.00 will Jena have left after she buys the two toys? Show your work.

$1 54¢

Score Point: 3

Jena has $2.00 to spend at the store. She wants to buy the two toys shown below.



a. How much will Jena have to pay for the two toys? Show your work.

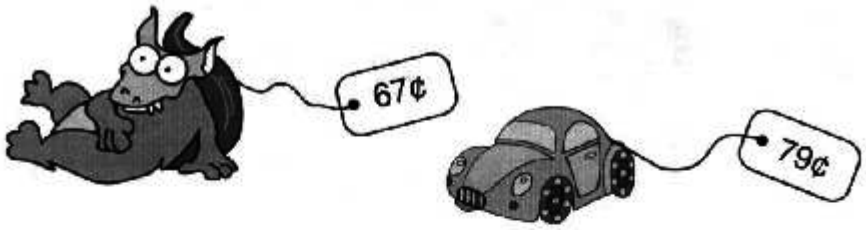
67¢
+79¢
$1.46

b. How much of her $2.00 will Jena have left after she buys the two toys? Show your work.

79
−67
12¢

Score Point: 2

16. Jena has $2.00 to spend at the store. She wants to buy the two toys shown below.



a. How much will Jena have to pay for the two toys? Show your work.

$$\begin{array}{r} 67 \\ +79 \\ \hline 1{,}36 \end{array}$$

b. How much of her $2.00 will Jena have left after she buys the two toys? Show your work.

$$\begin{array}{r} 1\,5\,5 \\ \cancel{2.00} \\ -1{,}36 \\ \hline 0{,}21 \end{array}$$

Score Point: 1

Item 2 Candy Bars

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: Comprehension

Depth of Knowledge: Level 2

2. Mike, Judy, Bill, and Sarah have three candy bars they want to share evenly.

a. Draw lines on the candy bars to show how to share them evenly. Each person should get the same amount with none left over. Label the candy bars to show who gets each piece.

b. Use **fractions** to explain how much each person gets.

Candy Bars

Scoring Guide

Score	Description
4	The student demonstrates a thorough understanding of mathematical representations using pictures to show how 3 wholes can be divided equally and by adding fractions to solve a real-world problem.
3	The student demonstrates a general understanding of mathematical representations by adding fractions to solve a real-world problem 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 mathematical representations 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 mathematical representations. 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.

NOTE: Answer to Part b might be correct based on incorrect answer to Part a.

Candy Bars

Sample Response:

Part a:

CANDY BAR CANDY BAR CANDY BAR

OR some students may respond:

CANDY BAR CANDY BAR CANDY BAR

Part b: $\frac{1}{4}+\frac{1}{4}+\frac{1}{4}=\frac{3}{4}$

OR some students may respond:

$\frac{1}{2}+\frac{1}{4}=\frac{3}{4}$

Item 3 Menu and Coins

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: Application

Depth of Knowledge: Level 3

3. Use the menu below to answer the question.

Harold has the following coins to spend on his lunch.

- 7 quarters
- 10 dimes
- 5 nickels

a. Use numbers to show whether Harold has enough money to buy a hamburger, potato chips, a cookie, and juice.

b. Harold decides to buy a hot dog, ice cream, and milk. He wants to use the **fewest** coins he can to pay for his meal. List the coins Harold should use.

Harold's friend Tim has a $5.00 bill.

c. He buys a hamburger, potato chips, ice cream, and milk. Show **two** different combinations of coins and bills he could receive as change.

Menu and Coins

Scoring Guide

Score	Description
4	The student demonstrates excellent problem solving skills by correctly analyzing and solving real-world problems involving money and coins.
3	The student demonstrates good problem solving skills by analyzing and solving real-world problems involving money and coins 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 basic problem solving skills by correctly completing a significant portion of the required tasks. The response indicates that the student would require some instruction to successfully complete the task.
1	The student demonstrates minimal problem solving skills. The response indicates that the student would require significant instruction to complete the task.
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:

Hamburger	1.20
Potato Chips	.50
Cookie	.50
Juice	+ 1.00
	$3.20

No because Harold has 1.75 + 1.00 + 0.25 = $3.00

OR

Hamburger + Potato Chips = 7 quarters with 5 cents left over; Juice = 10 dimes; Cookie ≠ 5 nickels + extra 5¢ (Cookie = 10 nickels)

Part b: 7 quarters, 10 dimes, 1 nickel

Part c: 1 dollar, 5 dimes
OR
4 quarters, 10 nickels
OR
15 dimes

Item 4 Lester's Bank

Standard: MA-EP-1.5.01: Properties of Numbers and Operations — Students will identify and provide examples of odd numbers, even numbers, and multiples of a number, and will apply these numbers to real-world problems.

Bloom's Taxonomy: Application

Depth of Knowledge: Level 2

4. Lester started with no money in his piggy bank. He decided to put 10¢ in his bank every week. He will not take any money out of his bank.

   a. Complete the table below.

Amount of Money in Lester's Piggy Bank

	Start	Week 1	Week 2	Week 3	Week 4
Amount of money in bank	0¢	10¢	20¢	30¢	

Sara started with 25¢ in her piggy bank. She decided to put 5¢ in her bank each week. She will not take any money out of her bank.

   b. Complete the table below.

Amount of Money in Sara's Piggy Bank

	Start	Week 1	Week 2	Week 3	Week 4
Amount of money in bank	25¢	30¢			

   c. Which is the first week that Lester will have **more** money in his bank than Sara will have in hers? Show or explain how you found your answer.

Lester's Bank

Scoring Guide

Score	Description
4	The student demonstrates a thorough understanding of patterns by extending two patterns and drawing a conclusion based on the patterns.
3	The student demonstrates a general understanding of extending two patterns and drawing a conclusion based on the patterns 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 patterns 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 patterns. 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:

Amount of Money in Lester's Piggy Bank

	Start	Week 1	Week 2	Week 3	Week 4
Amount of money in bank	0¢	10¢	20¢	30¢	40¢

Part b:

Amount of Money in Sara's Piggy Bank

	Start	Week 1	Week 2	Week 3	Week 4
Amount of money in bank	25¢	30¢	35¢	40¢	45¢

Part c: Week 6 because they both have 50¢ in week 5, and in week 6 Sara has 55¢ and Lester has 60¢.

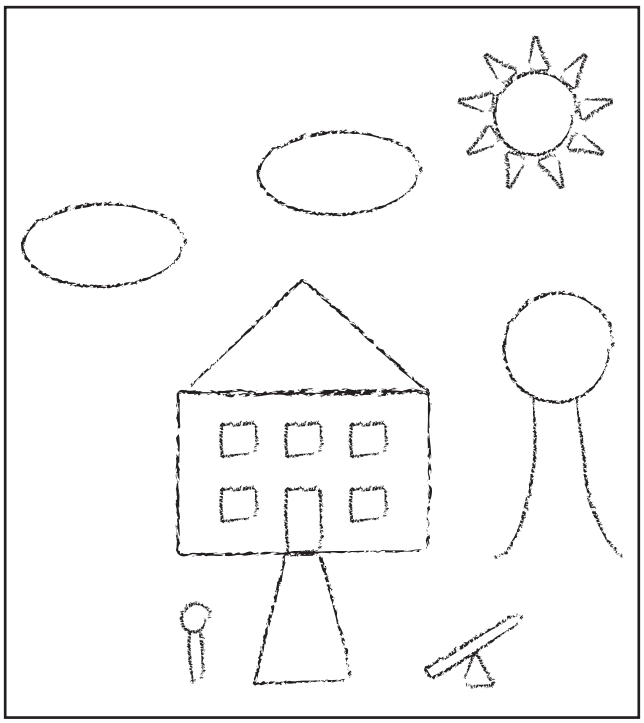
Item 5 Shapes in a House

Standard: MA-EP-3.1.02: Shapes and Relationships — Students will describe and provide examples of basic two-dimensional shapes (circles, triangles, squares, rectangles, trapezoids, rhombuses, hexagons) and will apply these shapes to solve real-world and mathematical problems.

Bloom's Taxonomy: Comprehension

Depth of Knowledge: Level 2

5. Carrie drew this picture of her house.



a. For what parts of the drawing did Carrie use squares?

b. How many circles are in Carrie's drawing?

c. What shape did Carrie use for the roof of the house?

d. Explain why the path in front of the house is **not** a rectangle.

Shapes in a House

Scoring Guide

Score	Description
4	The student demonstrates a thorough understanding of geometric shapes in the environment by correctly identifying geometric shapes shown in a picture.
3	The student demonstrates a general understanding of geometric shapes in the environment by identifying geometric shapes shown in a picture 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 geometric shapes in the environment 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 geometric shapes in the environment. 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. The windows
b. 3
c. Triangle
d. The top is shorter than the bottom.
   OR
   The angles are not all the same.