

# 2023 MCAS Sample Student Work and Scoring Guide

## Grade 4 Mathematics

### Question 13: Constructed-Response

**Reporting Category:** Number and Operations in Base Ten

**Standard:** [4.NBT.B.5](#) - Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

**Item Description:** Solve word problems by multiplying whole numbers: two digits by one digit, two digits by two digits, and four digits by one digit.

**Calculator:** Not allowed

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### Scoring Guide

Select a score point in the table below to view the sample student response.

Score*	Description
<a href="#">4A</a>	The student response demonstrates an exemplary understanding of the Number and Operations in Base Ten concepts involved in multiplying a whole number of up to four digits by a one-digit number, and multiplying two two-digit numbers by using strategies based on place value and the properties of operations. The student correctly multiplies a whole number of up to four digits by a one-digit number and multiplies two two-digit numbers.
<a href="#">4B</a>	
<a href="#">3</a>	The student response demonstrates a good understanding of the Number and Operations in Base Ten concepts involved in multiplying a whole number of up to four digits by a one-digit number, and multiplying two two-digit numbers by using strategies based on place value and the properties of operations. Although there is significant evidence that the student was able to recognize and apply the concepts involved, some aspect of the response is flawed. As a result, the response merits 3 points.
<a href="#">2</a>	The student response demonstrates a fair understanding of the Number and Operations in Base Ten concepts involved in multiplying a whole number of up to four digits by a one-digit number, and multiplying two two-digit numbers by using strategies based on place value and the properties of operations. While some aspects of the task are completed correctly, others are not. The mixed evidence provided by the student merits 2 points.
<a href="#">1</a>	The student response demonstrates a minimal understanding of the Number and Operations in Base Ten concepts involved in multiplying a whole number of up to four digits by a one-digit number, and multiplying two two-digit numbers by using strategies based on place value and the properties of operations.
<a href="#">0</a>	The student response contains insufficient evidence of an understanding of the Number and Operations in Base Ten concepts involved in multiplying a whole number of up to four digits by a one-digit number, and multiplying two two-digit numbers by using strategies based on place value and the properties of operations. As a result, the response does not merit any points.

\*Letters are used to distinguish between sample student responses that earned the same score (e.g., 4A and 4B).

**Score Point 4A**

**This question has three parts.**

A doctor works in her office 5 days each week. Each day she works, she drives a total of 19 miles to and from her office.

**Part A**

What is the total distance, in miles, the doctor drives to and from her office each week? Show or explain how you got your answer.

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

You have to do  $19 \times 5$  and then you will get a total of 95 miles each week.

**Part B**

The doctor worked 48 weeks last year.

What is the total distance, in miles, she drove to and from her office last year? Show or explain how you got your answer.

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

You have to do the number of weeks she worked last year which was 48 weeks and multiply it by the number of miles she drove which was 95 miles and you would get 4,560 miles.

**Part C**

The doctor worked the same number of weeks each year for the last 7 years.

What is the total distance, in miles, the doctor drove to and from her office over the last 7 years? Show or explain how you got your answer.

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

You have to multiply 4,560 the number of miles she drove last *year*  $\times 7$  because she worked the same number of weeks for the last 7 years so the total number of miles is 31,920.

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**Score Point 4B**

**This question has three parts.**

A doctor works in her office 5 days each week. Each day she works, she drives a total of 19 miles to and from her office.

**Part A**

What is the total distance, in miles, the doctor drives to and from her office each week? Show or explain how you got your answer.

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

$$19 \times 5 = 95 \text{ miles}$$

**Part B**

The doctor worked 48 weeks last year.

What is the total distance, in miles, she drove to and from her office last year? Show or explain how you got your answer.

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

$$95 \times 48 = 4560 \text{ miles}$$

**Part C**

The doctor worked the same number of weeks each year for the last 7 years.

What is the total distance, in miles, the doctor drove to and from her office over the last 7 years? Show or explain how you got your answer.

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

$$4,560 \times 7 = 31,920 \text{ miles}$$

**Score Point 3**

**This question has three parts.**

A doctor works in her office 5 days each week. Each day she works, she drives a total of 19 miles to and from her office.

**Part A**

What is the total distance, in miles, the doctor drives to and from her office each week? Show or explain how you got your answer.

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

$$19 \times 5 = 95 \text{ miles}$$

**Part B**

The doctor worked 48 weeks last year.

What is the total distance, in miles, she drove to and from her office last year? Show or explain how you got your answer.

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

4,560 miles

**Part C**

The doctor worked the same number of weeks each year for the last 7 years.

What is the total distance, in miles, the doctor drove to and from her office over the last 7 years? Show or explain how you got your answer.

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

31,920 miles

**Score Point 2**

**This question has three parts.**

A doctor works in her office 5 days each week. Each day she works, she drives a total of 19 miles to and from her office.

**Part A**

What is the total distance, in miles, the doctor drives to and from her office each week? Show or explain how you got your answer.

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

The answer that I got was 95 miles.

**Part B**

The doctor worked 48 weeks last year.

What is the total distance, in miles, she drove to and from her office last year? Show or explain how you got your answer.

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

My answer is 4560 miles.

**Part C**

The doctor worked the same number of weeks each year for the last 7 years.

What is the total distance, in miles, the doctor drove to and from her office over the last 7 years? Show or explain how you got your answer.

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

My answer was 6864 miles.

**Score Point 1**

**This question has three parts.**

A doctor works in her office 5 days each week. Each day she works, she drives a total of 19 miles to and from her office.

**Part A**

What is the total distance, in miles, the doctor drives to and from her office each week? Show or explain how you got your answer.

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

95miles

**Part B**

The doctor worked 48 weeks last year.

What is the total distance, in miles, she drove to and from her office last year? Show or explain how you got your answer.

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

38,835miles

**Part C**

The doctor worked the same number of weeks each year for the last 7 years.

What is the total distance, in miles, the doctor drove to and from her office over the last 7 years? Show or explain how you got your answer.

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

95,486

**Score Point 0****This question has three parts.**

A doctor works in her office 5 days each week. Each day she works, she drives a total of 19 miles to and from her office.

**Part A**

What is the total distance, in miles, the doctor drives to and from her office each week? Show or explain how you got your answer.

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

$19 + 5 = 24$  the total distance in miles the doctor drives 24 miles to and from her office.

**Part B**

The doctor worked 48 weeks last year.

What is the total distance, in miles, she drove to and from her office last year? Show or explain how you got your answer.

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

$48 + 24 = 72$  last year in total she drove 72 miles.

**Part C**

The doctor worked the same number of weeks each year for the last 7 years.

What is the total distance, in miles, the doctor drove to and from her office over the last 7 years? Show or explain how you got your answer.

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

$72 + 7 = 79$  the doctor drove 79 miles over the last 7 years.