Worked Examples

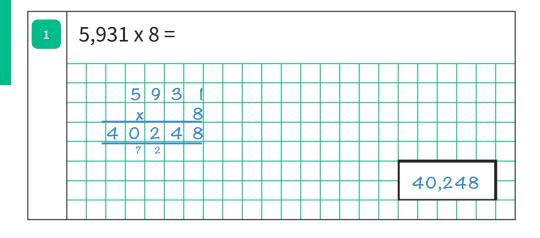## Multiplication and Division

Year 5

A pupil has been given a set of questions to answer. They tried their best but think they have got some answers wrong.

Go through the work and check the answers. Help the pupil to understand their errors by explaining where they have gone wrong or how to find the correct answer (there are prompts below the questions to help you).

Note that you will not always be asked to provide the correct answer.

1 $5,931 \times 8 =$


```
      5 9 3 1
    ×       8
  4 0 2 4 8
      7 2
```

40,248

This answer is: ☐ Correct   ☐ Incorrect

If incorrect, explain the error.

_____

_____

_____

THIRD SPACE LEARNING

2 $3,794 \div 7 =$

$$
\begin{array}{ccccc}
 & 0 & 5 & 4 & 2 \\
\hline
7 & 3 & {}^37 & {}^29 & {}^14 \\
\end{array}
$$

542

This answer is: ☐ Correct ☐ Incorrect

Explain how short division was used to solve this calculation.

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4 $8,217 \div 6 =$

$$
\begin{array}{ccccc}
 & 1 & 2 & 0 & 2 & r & 1 \\
\hline
6 & 8 & {}^12 & 1 & {}^17 \\
\end{array}
$$

1,202 r 1

This answer is: ☐ Correct ☐ Incorrect

If incorrect, what should the answer be?

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3 $53 \times 26 =$

$$
\begin{array}{r}
5\ 3 \\
\times\ 2\ 6 \\
\hline
3\ 1\ 8 \\
+\ 1\ 0\ 6 \\
\hline
4\ 2\ 4 \\
\end{array}
$$

424

This answer is: ☐ Correct ☐ Incorrect

If incorrect, explain the error.

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5 $8,405 \times 9 =$

$$
\begin{array}{r}
8\ 4\ 0\ 5 \\
\times\ \ \ \ \ 9 \\
\hline
7\ 5\ 7\ 3\ 5 \\
{}_{3\ \ 1\ \ 4} \\
\end{array}
$$

75,735

This answer is: ☐ Correct ☐ Incorrect

If incorrect, explain the error.

Answers

Q no.	Question	Correct/ Incorrect	Error/ Additional Guidance
1	5,931 x 8 = 40,248	Incorrect	The pupil understands that they can use column multiplication to calculate the answer, however, they are not secure in using this method. They have not exchanged the numbers when necessary (200 and 7,000). The pupil may not understand how to apply their knowledge of exchanging to column multiplication as exchanging is generally associated with addition and subtraction. Correct answer – 47,448
2	3,794 ÷ 7 = 542	Correct	The pupil has successfully used short division (sometimes referred to as the bus stop method) to solve this division calculation. When explaining how to use short division, it is important that the pupil recognises the place value of the digits in the calculation. If they say, for example, that they need divide 3 by 7, this is incorrect as '3' represents 3,000.
3	53 x 26 = 424	Incorrect	The pupil has not included the place holder of '0' when multiplying 53 by 20. The calculation completed shows 53 x 6 then 53 x 2. It is important that pupils understand they are multiplying by a multiple of ten when they are multiplying by a digit in the tens column. This is indicated by putting a place holder (0) in the ones column (therefore moving the digits one column to the left and increasing their value appropriately). Correct answer – 1,378
4	8,217 ÷ 6 = 1,202 r 1	Incorrect	The pupil has misunderstood the purpose of exchanging in this question. Pupils will have commonly first been introduced to exchanging in column addition where a lot of exchanging involved the digit '1'. In this question the pupil has applied their prior knowledge of exchanging the digit '1' and has therefore not exchanged the correct amounts each time. This indicates that the pupil does not have a secure understanding of short division. Correct answer – 1,369 r 3
5	8,405 x 9 = 75,735	Incorrect	The pupil has used the correct method to multiply, however, they have incorrectly multiplied 9 by 0 and indicated that this makes 9 not 0. Correct answer – 75,645