

SPOT THE MISTAKE

This is a collection of examples showing different methods for different calculations. There are some errors and the challenge for the learners is to spot the mistakes and correct them.

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How do these methods work? Find the mistake and put it right.										
$\begin{array}{r} 29 \\ \times 51 \\ \hline 145 \\ 290 \\ \hline 435 \end{array}$	<table border="1"> <thead> <tr> <th>×</th> <th>20</th> <th>9</th> </tr> </thead> <tbody> <tr> <td>50</td> <td>1000</td> <td>450</td> </tr> <tr> <td>1</td> <td>20</td> <td>9</td> </tr> </tbody> </table> <p>29×51 = $1000 + 450 + 20 + 9$ = 1479</p>	×	20	9	50	1000	450	1	20	9
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50	1000	450								
1	20	9								
29×51 = $30 \times 51 - 51$ = $1530 - 51$ = 1479	29×51 = $29 \times 50 + 29$ = $145 \times 100 + 29$ = $1450 + 29$ = 1479									

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SOLUTION

1. 2 digit by 2 digit multiplication

The answer here is 1479 and there are 2 mistakes.

In the column method 145 should be 1450 (29×5) and the 290 should be 29 (29×1).

In the calculation that $29 \times 50 =$ half of 29×100 the decimal point has been omitted but the product is correct on the line below.

2. 3 digit by 2 digit multiplication

The answer here is 4386 and there is one mistake.

In the column multiplication 486 (129×4) should be 516 and the total below should be 4386.

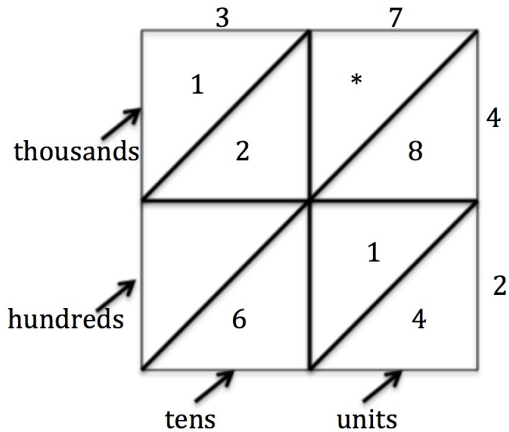
3. 3 digit by 3 digit multiplication

The answer here is 66048 and this time the mistake is in the addition in the column multiplication. The numbers 258, 1290 and 64500 are correct but the 1 is not carried over from the tens to the hundreds column in the addition.

Diagnostic Assessment

This should take about 5–10 minutes.

A. 28 B. 2 C. 12 D. 14



$$37 \times 42 = 1554$$

What number goes in place of the *?
How does this work?

1. Write the question on the board, say to the class: **“Put up 1 finger if you think the answer is A, 2 fingers for B, 3 fingers for C and 4 fingers for D”.**
2. Notice how the learners responded. Ask a learner who gave answer A to explain why he or she gave that answer and DO NOT say whether it is right or wrong but simply thank the learner for giving the answer.
3. Then do the same for answers B, C and D. Try to make sure that learners listen to these reasons and try to decide if their own answer was right or wrong.
4. **Ask the class again to vote for the right answer by putting up 1, 2, 3 or 4 fingers. Notice if there is a change and who gave right and wrong answers.** It is important for learners to explain the reason for their answer otherwise many learners will just make a guess.
5. If the concept is needed for the lesson to follow, explain the right answer or give a remedial task.

B. is the correct answer.

Common Misconceptions

A. Learner knows $7 \times 4 = 28$ goes in this quarter but does not understand that this triangle should have the hundreds value.

C. Learner may have multiplied 3×4 with little understanding of the process or relevance of place value.

D. Learner may have multiplied 7×2 with little understanding of the process or relevance of place value

<https://diagnosticquestions.com>

NOTES FOR TEACHERS

Why do this activity?

Learners need practice in doing routine calculations and this activity gives them the necessary practice in a different way. They will probably do the calculation to find out the correct answer if they don't spot the mistake straight away. They are also reminded how the working can be set out and they have to understand the reasons for the working and not just the steps in the calculation process.

Intended learning outcomes

Practice in doing routine calculations.

Possible approach

One of these 'spot the mistake' examples makes a good lesson starter. On occasions you can ask the learners to explain how one or other of the methods work and why.

Possible extension

The learners might make up their own written calculation, and then write it out with a deliberate mistake for their partner to spot and correct.