

Year 6 Maths: Multiplication & Division.

KEY WORDS

Long multiplication	Estimate	Multiply
Factor	Remainder	Formal method
Multiple	Decimal	Place value
Short division	Fraction	Known facts
Long division	Divide	Problem solving

Multiply up to 4-digit by 2-digit

$$\begin{array}{r}
 391 \\
 \times 39 \\
 \hline
 3519 \\
 \square 8 \square \\
 \hline
 11730 \\
 \square \square \square \\
 \hline
 15249
 \end{array}$$

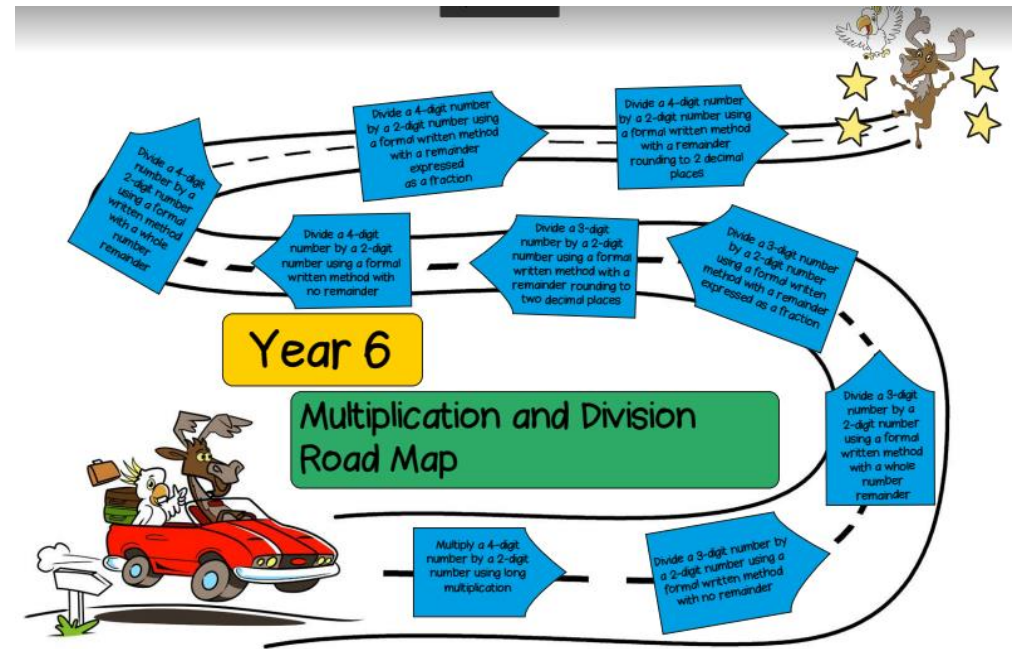
First we multiply each of the digits 391 by 9.
 $9 \times 1 = 9$
 $9 \times 9 = 81$ (put the 1 down; carry the 8)
 $9 \times 3 = 27$
 $27 + (\text{carried}) 8 = 35$

Now we multiply each of the digits 391 by 3. Because it is actually 30, not 3, we put a zero down first.
 $3 \times 1 = 3$
 $3 \times 9 = 27$ (put the 7 down and carry the 2)
 $3 \times 3 = 9$ (plus the 2 which makes 11)

Last of all, we add the results of our calculations to get the answer.

$$3519 + 11730 = 15249$$

SEQUENCE:



Short Division

Start from the left.

			4	4	0	5
12	5	2	8	6	0	

$$\begin{array}{l}
 5 \div 12 = 0 \text{ r}5 \\
 52 \div 12 = 4 \text{ r}4 \\
 48 \div 12 = 4 \\
 6 \div 12 = 0 \text{ r}6
 \end{array}$$

Long Division

		1	2	0	r	3
14	1	6	8	3		
	1	4	0	0		
		2	8	3		
		2	8	0		
				3		

Do It.

Using long multiplication, calculate:

$$\begin{array}{l} 2314 \times 22 \\ 3214 \times 42 \\ 3123 \times 37 \\ 9478 \times 97 \end{array}$$

What it is.

Twist It.

Colin thinks that he is correct so far.

$$\begin{array}{r} 4385 \\ \times 42 \\ \hline 8770 \\ 17540 \\ \hline \end{array}$$

What it is not.

Explain why he is incorrect.

Always/ Sometimes/ Never True

The product of a 4-digit number and a 2-digit number is less than 1 million.

What problems

can I solve

with this knowledge?

LONG DIVISION

11 r. 1

25 | 276

$$\begin{array}{r} -25 \\ \hline 026 \\ -25 \\ \hline 1 \end{array}$$

Look to see how many times 27 can be divided by 25!

Subtract that product!

1. Divide
2. Multiply
3. Subtract
4. Bring Down

Bring down the number to the right!

Repeat the process until there are no more numbers to bring down!

This is the traditional method for division! Students can remember the steps with "Dead Mice Smell Bad" (Divide, Multiply, Subtract, Bring Down)!