

WALT: To be able to use the distributive law to multiply a two-digit number by 6,7 or 9.

Vocabulary:

Multiple

Distributive law

Two digit

Place value

Hundred

Tens

Ones

product

Do it: distributive law

Example:

$$26 \times 7$$

Can be far too difficult to work out mentally, so we can use the distributive law to break this calculation into parts and then calculate:

We break our answer down using place value: how many tens? How many ones? Then multiple each of those by the number given (7 in this case)

Now add those answers (or products) together.

$$20 \times 7 = 140$$

$$6 \times 7 = 42$$

$$140 + 42 = 182$$

Do it: reminder of one method

$$22 \times 7 =$$

$$20 \times 7 = 140$$

$$2 \times 7 = 14$$

$$140 + 14 = 154$$

$$32 \times 6 =$$

$$30 \times 6 = 180$$

$$2 \times 6 = 12$$

$$180 + 12 = 192$$

$$42 \times 9 =$$

$$40 \times 9 = 360$$

$$2 \times 9 = 18$$

$$360 + 18 = 378$$

$$15 \times 7 =$$

$$10 \times 7 = 70$$

$$5 \times 7 = 35$$

$$70 + 35 = 105$$

Distribution method 2

Another way to work out a multiplication calculation would be:

Example

$$25 \times 7$$

	20	5
7	140	35

$$140 + 35 = 175$$

Now your turn

Using the distribution method with the table, calculate the following multiplication calculations:

$$24 \times 7$$

$$14 \times 6$$

$$31 \times 5$$

Answers

$$\begin{array}{r} 20 \quad 4 \\ 7 \end{array} \begin{array}{|c|c|} \hline 140 & 28 \\ \hline \end{array}$$

$$24 \times 7 = 140 + 28 = 168$$

$$\begin{array}{r} 10 \quad 4 \\ 6 \end{array} \begin{array}{|c|c|} \hline 60 & 24 \\ \hline \end{array}$$

$$14 \times 6 = 60 + 24 = 84$$

$$\begin{array}{r} 30 \quad 1 \\ 5 \end{array} \begin{array}{|c|c|} \hline 150 & 5 \\ \hline \end{array}$$

$$31 \times 5 = 150 + 5 = 155$$

Secure it

Coco thinks

$$22 \times 7 = 14 + 14 = 28$$

	2		2
7	14	14	

Explain why she is incorrect. Use the word 'because' when explaining.

Secure it

Coco is incorrect because she has split the two digit number into two separate digits and multiplied both by 7. she has not multiplied the tens and then the ones. The answer should be:

$$22 \times 7 = 140 + 14 = 154$$

	20	2
7	140	14

Deepen it

Find the missing digits.

$$\square 8 \times \square = 2\square\square + \square 6 = \square\square 6$$

$$\square 2 \times \square = \square 50 + 1\square = 46\square$$

Solve each calculation in several ways, if possible. Solve all the calculations together using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 at least once each.