

LO: To multiply a four digit number by a one digit number

Skills Drills

1. $23,664 - 4,728 =$

2. $17,096 -$ $= 7,315$

3. $+ 17,901 = 39,888$

4. $45,718 -$ $= 23,150$

5. Calculate the prime factors of 24 using a factor tree

6. Write all the factors of 48

7. $4.45\text{km} =$ _____ cm

In maths what does the word
Product mean?

What is the **product** of 6 and 4?



An Hampshire County Council has opened 8 new libraries each with a stock of 1245 books.

How many books are there altogether?

1245
replicated 8
times.

Can you draw a bar model to represent this?



In books:

Now show me the grid method for this calculation

$$1245 \times 8 =$$

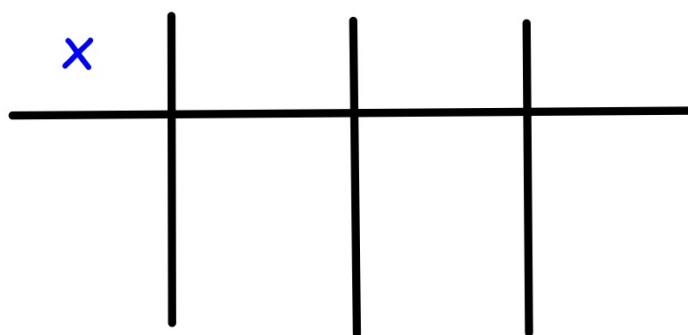
How is the concise method different?

th h t o

Show Me:

What error has this child made?

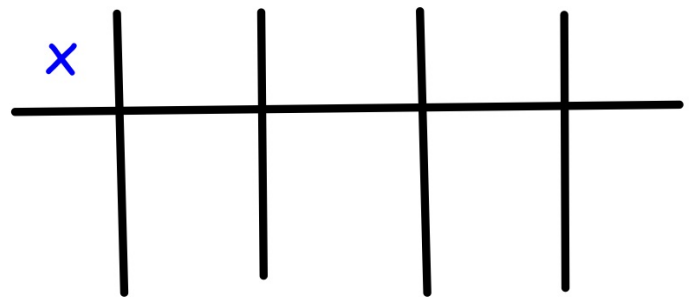
$$\begin{array}{r} 240 \\ 6 \times \\ \hline 12240 \\ \hline \end{array}$$



$$\begin{array}{r} 240 \\ 6x \\ \hline \\ \hline \end{array}$$

What about now?

$$\begin{array}{r} 1536 \\ 8 \times \\ \hline 4 \ 2 \ 4 \\ \hline 12048 \\ \hline \end{array}$$



$$\begin{array}{r} 1536 \\ 8 \times \\ \hline \\ \hline \end{array}$$

Task

1. Choose 4 numbers from 1-9 to multiply
2. Choose a multiplier (either 3, 4, 5, 6, 7, 8, 9). *(Choose easier multipliers if you are less confident E.g. 3, 4 or 5)*
3. Complete the calculation

5,671

E.g. x 5

4. After you have done three calculations check your answers using grid method.
5. Try a different multiplier if you are feeling more confident

Extension

1. How many ways?

Complete using digits 0-9. The digit in the box with a border must be odd.

$$\boxed{}\boxed{} \times \boxed{} = \boxed{}\boxed{}\boxed{}\boxed{}$$

Level 1: I can find a way

Level 2: I can find different ways

Level 3: I know how many ways there are

2. How many ways?

Complete using digits 0-9. Position the digit 1 as shown.

$$\boxed{}\boxed{} \times \boxed{} = \boxed{}\boxed{}\boxed{}\boxed{1}$$

Level 1: I can find a way

Level 2: I can find different ways

Level 3: I know how many ways there are

3. Missing digits

$$\begin{array}{r} \boxed{}8\boxed{} \\ \times 9 \\ \hline 7047 \end{array}$$

LO: To multiply a four digit number by one digit

Skills Drills

1. $2.01 + 0.99 = 3$ ✓

2. $3.901 + 0.099 = 4$ ✓

3. $5.609 + 0.391 = 6$ ✓

4. $11.091 + 0.919 = 12$ ✓

5. $17.009 + 0.991 = 18$ ✓

6. $3.67\text{m} = \underline{\hspace{1cm}}\text{mm}$

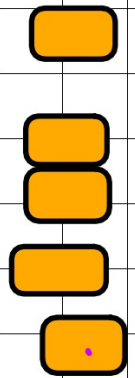
7. $1,456\text{mm} = \underline{\hspace{1cm}}\text{km}$

8. Factors of 42

3670

$0.001456 \times 1000 \div 1,000,000$

1, 42, 2, 21, 3, 14, 6, 7



Task

1. Use the digits 5,6,7,8,9 to write a one digit x 4 digit multiplication

e.g.
$$\begin{array}{r} 5678 \\ 9 \times \\ \hline \\ \hline \end{array}$$

Check your answer with the grid method

2. What is the arrangement that gives the lowest product? Highest product?
Explain your reasoning.
3. If you are developing confidence use the digits 2,3,4,5

Challenge

Work out the missing number.

$$26\boxed{} \times 8 = 2152$$

How did you find the answer?

- Can you complete the following calculation to create 1432?

$$\boxed{}\boxed{}\boxed{} \times \boxed{} = 1432$$

What is the closest answer you can make?

How do you know it is the closest?

LO: To multiply a three digit number by a two digit number

Skills Drills

1. $14.57 - \underline{\hspace{1cm}} = 12.67$

2. $\underline{\hspace{1cm}} = 19.96 - 7.891$

3. $45.35 + \underline{\hspace{1cm}} + 72.789$

4. What's the difference between -8 and 16?

5. Write the common factors of 26 and 18

6. Draw two different factor trees for 24.

7. $17\text{km} = \underline{\hspace{1cm}}\text{mm}$

Compare the two methods and think about what are the similarities and differences between them

$$\begin{array}{r}
 \times 345 \\
 14 \\
 \hline
 1380 \\
 3450 \\
 \hline
 4830 \\
 \hline
 1
 \end{array}$$

	300	40	5	
10	3000	400	50	= 3450
4	1200	160	20	= 1380
				4830

Now draw both examples into your book. Annotate the similarities in pencil and differences in purple pen.

Let's complete this method whilst comparing it to Grid.

$$\begin{array}{r} \times 472 \\ 17 \\ \hline \end{array}$$

	400	70	2	
10	4000	700	20	= 4720
7	2800	490	14	= <u>3304</u>
				8024

Now you try:

In your maths book have a go at this calculation:

$$456 \times 15 =$$

$$\begin{array}{r} \times 456 \\ 15 \\ \hline \\ \hline \\ \hline \end{array}$$

remember to show your
carrying here and here
and put a circle around it
if it helps you

(x 5)

(x 10)

Now check your answer
with the grid method

Developing confidence: Using the digits 3,4,5,6,7

Make a 2 digit x 3 digit multiplication sentence multiplying by a teens number. e.g. $345 \times 16 =$ or $654 \times 13 =$

Calculate using the concise method and then use a grid method to check

Confident: Using the digits (4,5,6,7,8) to make a 3 digit x 2 digit multiplication what is the highest product you can make? What is the lowest product you can make? Prove they are the highest and lowest. Check your answers using a grid method.

Thinking deeply: Investigate finding the highest product using the digits (4,5,6,7,8,9) to make a 4 digit x 2 digit calculation. Check using the grid method. Now explain what you have found out.

Extension

Explain the mistakes

$$163 \times 27$$

Mistake 1

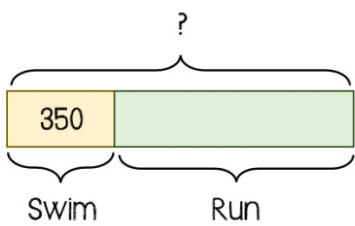
$$\begin{array}{r} 163 \\ \times 27 \\ \hline 1141 \\ 326 \\ \hline 1467 \end{array}$$

Mistake 2

$$\begin{array}{r} 163 \\ \times 27 \\ \hline 721 \\ 2260 \\ \hline 2981 \end{array}$$

LO: To multiply a four digit number by 2 digits

During a race Ash has to swim 350 metres and run 2,500 metres.
What is the total distance he has to swim and run?

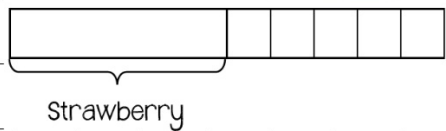


Additive Structure

3 Jan has some sweets.

- A half of the sweets are strawberry.
- Two-fifths of the remaining sweets are lime.
- The rest of the sweets are orange.
- There are 36 more strawberry sweets than orange ones.

How many more strawberry sweets than lime sweets does Jan have?



Additive/ Mixed Structure

Astrid has 3 boxes

- Box B contains $4\frac{1}{2}$ times as many counters as box A.
- Box C contains 320 more counters than Box A.
- There are 2,790 counters in total.

How many counters were there in box B?



Comparative Structure

Choose two numbers to find the product of

46

2354

547

23

102

85

632

Use the grid method to check your calculation

Extension 1

How many ways?

Complete using digits 0-9. Position the digit 1 as shown.

$$\boxed{}\boxed{} \times \boxed{} = \boxed{}\boxed{}\boxed{1}$$

Level 1: I can find a way

Level 2: I can find different ways

Level 3: I know how many ways there are

Extension 2

This represents the multiplication of a 4-figure number by 3.

$$\begin{array}{r} \star \star \star \star \\ \times \qquad \qquad \qquad 3 \\ \hline \star \star \star \star \star \end{array}$$

The whole calculation uses each of the digits 0 – 9 once and once only.

The 4-figure number contains three consecutive numbers, which are not in order. The third digit is the sum of two of the consecutive numbers.

The first, third and fifth figures of the five-digit product are three consecutive numbers, again not in order. The second and fourth digits are also consecutive numbers.

Can you replace the stars in the calculation with figures?

