

# RECALL

$$\begin{array}{r} 199 \\ + 1901 \\ \hline \end{array}$$

$$\begin{array}{r} 199 \\ - 1901 \\ \hline \end{array}$$

$$\begin{array}{r} 10,199 \\ + 36,704 \\ \hline \end{array}$$

$$\begin{array}{r} 10,199 \\ - 36,704 \\ \hline \end{array}$$

Can we do these sums?

What mistakes have I made?

Fix them and work out the answer.

L.O. MULTIPLY MULTI-DIGIT NUMBER UP TO 4 DIGITS BY A 1-DIGIT NUMBER USING THE FORMAL WRITTEN METHOD OF LONG MULTIPLICATION.

- **SOME WILL EVEN:** Check my answer using a different method.
- **SOME WILL:** Use column multiplication.
- **MOST WILL:** Use grid method for multiplication.
- **ALL WILL:** Draw an array / Use repeated addition to show a multiplication sum.



**APE**

**3**

# DISCUSSION

Rosie is working out  $2,937 + 1,870$

Rosie rounds each number to the nearest 1,000 to estimate the answer.

Complete the sentences.

2,937 rounded to the nearest 1,000 is

1,870 rounded to the nearest 1,000 is

Rosie's estimate for the answer is

|                      |   |                      |   |                      |
|----------------------|---|----------------------|---|----------------------|
| <input type="text"/> | + | <input type="text"/> | = | <input type="text"/> |
|----------------------|---|----------------------|---|----------------------|

**How do we  
use rounding  
to estimate  
answers?**

**Then, how do  
we calculate  
the answer?**



a) Without calculating, how can you tell which total is more likely to be correct:

£128,820 or £12,905

b) How much will the trip actually cost for four people?

*How many different ways can you represent this?*



How much would the trip be per person if it did cost £128,820 for four?



a) Without calculating, how can you tell which total is more likely to be correct:

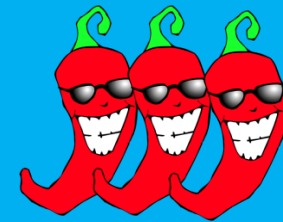
**£160,250** or **£17,200**

b) How much will the trip actually cost for four people?

*How many different ways can you represent this?*



How much would the trip be per person if it did cost **£128,820** for four?



The holiday costs £2,345 per person with a different travel company.  
What is the total cost for 4 people?

| Th          | H           | T           | O                   |
|-------------|-------------|-------------|---------------------|
| 1,000 1,000 | 100 100 100 | 10 10 10 10 | 1 1 1 1 1 1 1 1 1 1 |
| 1,000 1,000 | 100 100 100 | 10 10 10 10 | 1 1 1 1 1 1 1 1 1 1 |
| 1,000 1,000 | 100 100 100 | 10 10 10 10 | 1 1 1 1 1 1 1 1 1 1 |
| 1,000 1,000 | 100 100 100 | 10 10 10 10 | 1 1 1 1 1 1 1 1 1 1 |

|   | Th    | H | T | O |
|---|-------|---|---|---|
|   | 2     | 3 | 4 | 5 |
|   | 2     | 3 | 4 | 5 |
|   | 2     | 3 | 4 | 5 |
| + | 2     | 3 | 4 | 5 |
|   | <hr/> |   |   |   |

|   | 2,000 | 300 | 40 | 5 |
|---|-------|-----|----|---|
| 4 |       |     |    |   |

|   | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| × |   |   |   |   |

Calculate the answer using all 4 methods

Another trip costs £2,865 per person. How much would the cost be for five people?

Use your preferred method and check with another method.

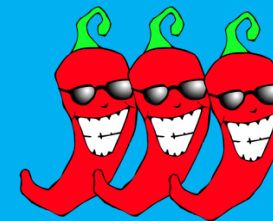
Now use the 4 methods for these:

$$7,927 \times 3$$

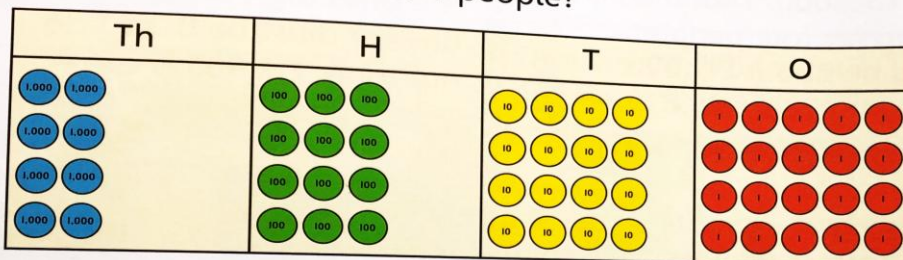
$$14,923 \times 7$$



How much would both trips cost for six people?  
Can you find a quicker way to work out your answer?



The holiday costs £2,345 per person with a different travel company.  
What is the total cost for 4 people?



**9,380**

| Th | H | T | O |
|----|---|---|---|
| 2  | 3 | 4 | 5 |
| 2  | 3 | 4 | 5 |
| 2  | 3 | 4 | 5 |
| +  | 2 | 3 | 4 |
|    |   |   |   |

|   | 2,000       | 300         | 40         | 5         |
|---|-------------|-------------|------------|-----------|
| 4 | <b>8000</b> | <b>1200</b> | <b>160</b> | <b>20</b> |

$$\begin{array}{r} 2345 \\ \times 4 \\ \hline \end{array}$$

Calculate the answer using all 4 methods



Another trip costs £2,865 per person. How much would the cost be for five people?

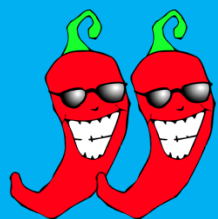
**£14,325**

Use your preferred method and check with another method.

Now use the 4 methods for these:

$$7,927 \times 3 = \mathbf{23,781}$$

$$14,923 \times 7 = \mathbf{104,461}$$



How much would both trips cost for six people?  
Can you find a quicker way to work out your answer?

$$\mathbf{£2,345 \times 6 = £14,070}$$

$$\mathbf{£2,865 \times 6 = £17,190}$$

# DIVE DEEPER 1

1) All three boys are using place value cards to create multiplication sums.

a) Predict who will have the bigger total.

b) Calculate who has the biggest total.

 Davinder

7 1 3 6 2

 Gordon

4 2 6 3 8

 Tom

8 1 2 3 4

2)

Arrange the digits to create these multiplications.

10  $\begin{array}{r} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\ \times \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\ \hline 6 \phantom{0} 2 \phantom{0} 7 \phantom{0} 2 \end{array}$

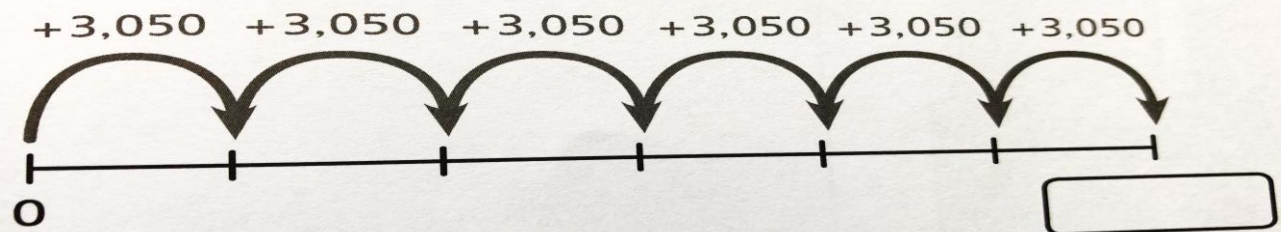
11  $\begin{array}{r} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\ \times \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\ \hline 1 \phantom{0} 0 \phantom{0} 2 \phantom{0} 8 \phantom{0} 4 \end{array}$

12  $\begin{array}{r} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\ \times \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\ \hline 3 \phantom{0} 5 \phantom{0} 8 \phantom{0} 5 \phantom{0} 6 \end{array}$

13  $\begin{array}{r} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\ \times \phantom{0} \phantom{0} \phantom{0} \phantom{0} \\ \hline 2 \phantom{0} 8 \phantom{0} 6 \phantom{0} 4 \phantom{0} 0 \end{array}$

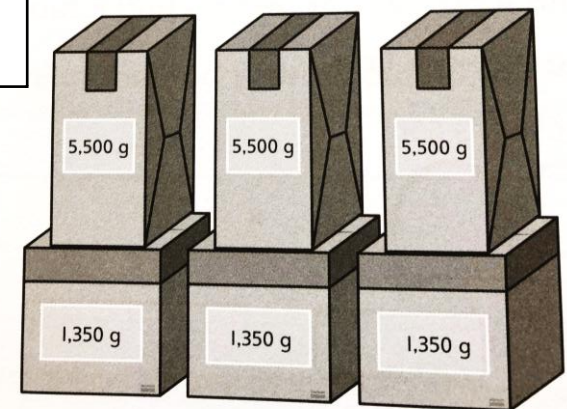
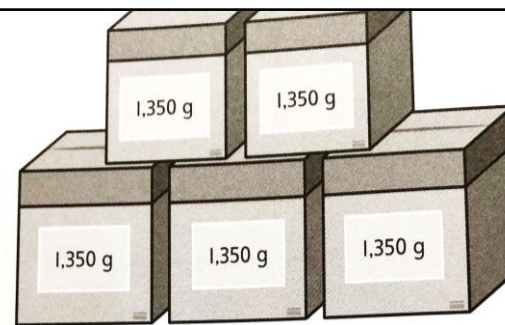
3)

Calculate the final number on the number line.



4)

Calculate the total weight of the boxes in each set.



# DIVE DEEPER 1



1) All three boys are using place value cards to create multiplication sums.

a) Predict who will have the bigger total.

b) Calculate who has the biggest total.



2)

Arrange the digits to create these multiplications.

10  $\begin{array}{r} 1568 \\ \times \quad 4 \\ \hline 6272 \end{array}$

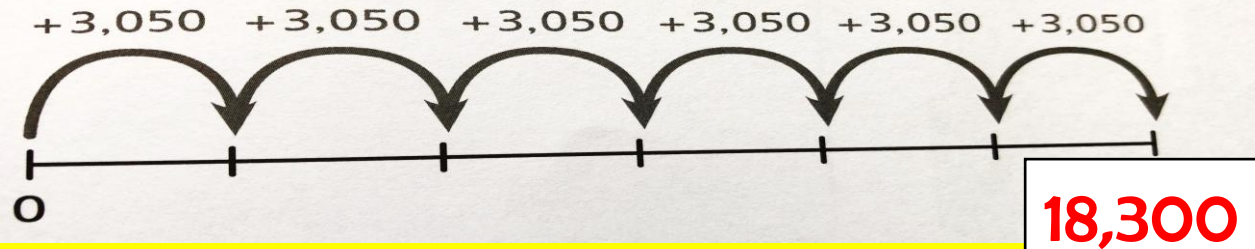
11  $\begin{array}{r} 3428 \\ \times \quad 3 \\ \hline 10284 \end{array}$

12  $\begin{array}{r} 5976 \\ \times \quad 6 \\ \hline 35856 \end{array}$

13  $\begin{array}{r} 5728 \\ \times \quad 5 \\ \hline 28640 \end{array}$

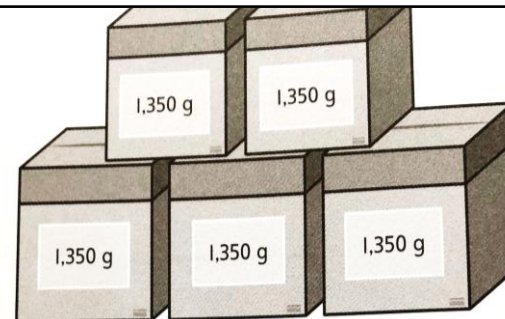
3)

Calculate the final number on the number line.

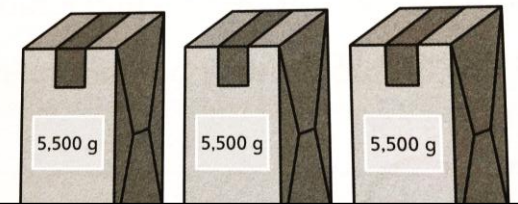


4)

Calculate the total weight of the boxes in each set.

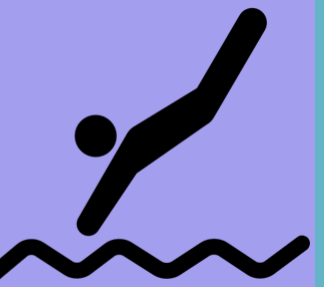


$1,350\text{g} \times 5 = 6,750\text{g}$



$5,500\text{g} \times 3 = 16,500\text{g}$   
 $1,350\text{g} \times 3 = 4,050\text{g}$   
 $16,500 + 4,050 = 20,550\text{g}$

## DIVE DEEPER 2



5



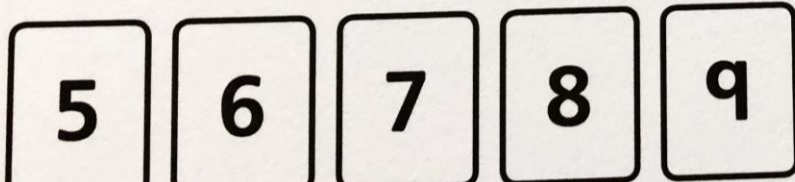
- a) Use each digit once to complete two multiplications.

What is the difference between the two answers?

|                                                             |              |                                                             |              |                                                             |
|-------------------------------------------------------------|--------------|-------------------------------------------------------------|--------------|-------------------------------------------------------------|
| <div><div>□</div><div>□</div><div>□</div><div>□</div></div> | <div>×</div> | <div><div>□</div><div>□</div><div>□</div><div>□</div></div> | <div>×</div> | <div><div>□</div><div>□</div><div>□</div><div>□</div></div> |
| <div><div>□</div><div>□</div></div>                         |              | <div><div>□</div><div>□</div></div>                         |              | <div><div>□</div><div>□</div></div>                         |
| <div>_____</div>                                            |              | <div>_____</div>                                            |              | <div>_____</div>                                            |
| <div>_____</div>                                            |              | <div>_____</div>                                            |              | <div>_____</div>                                            |



- b) Max uses these cards to make a 4-digit number and a 1-digit number. He multiplies them together. What is the biggest number he can make? What is the smallest number he can make?



## DIVE DEEPER 2



5



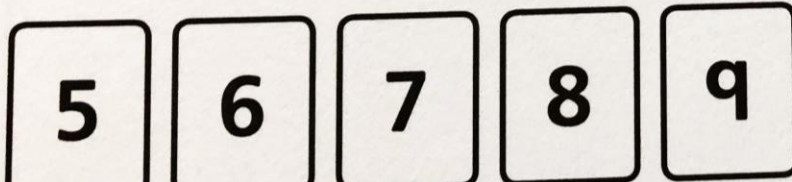
- a) Use each digit once to complete two multiplications.

What is the difference between the two answers?

|                                                                                    |                                                                                    |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| <div><div>□□□□</div><div>×</div><div>□</div><div>_____</div><div>_____</div></div> | <div><div>□□□□</div><div>×</div><div>□</div><div>_____</div><div>_____</div></div> |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|



- b) Max uses these cards to make a 4-digit number and a 1-digit number. He multiplies them together. What is the biggest number he can make? What is the smallest number he can make?



$$8765 \times 9 = 78,885$$

$$6789 \times 5 = 33,945$$

## All the Digits

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

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

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?

