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VOCABULARY

- Digit** - a single number used to make a numeral.
- Addition** - the method of combining numbers for a total.
- Subtraction** - The method of taking one number away from another.
- Total** - The final amount after a calculation.
- Pictorial Representation** - using images to represent numbers.
- Exchange** - swapping digits for a sum.
- Estimate** - using logic to find an answer close to the actual one.
- Partition** - finding the value of each digit in a whole number.
- Difference** - Using subtraction to find the total.
- Column** - The way in which our method is organised.

The method

Add 4-digit numbers

No exchange

$$\begin{array}{r} 5162 \\ +3427 \\ \hline 8589 \end{array}$$

Starting with the ones, add each column in turn.

One exchange

$$\begin{array}{r} 5162 \\ +3497 \\ \hline 8659 \\ 1 \end{array}$$

Starting with the ones, add each column in turn. When adding 6 tens + 9 tens = 15 tens = 1 hundred + 5 tens. Place 1 hundred under the hundreds answer and 5 tens in the answer.

Multiple exchanges

$$\begin{array}{r} 5864 \\ +3497 \\ \hline 9361 \\ 111 \end{array}$$

Starting with the ones, add each column in turn. Exchange tens, hundreds and/ or thousands as required.

Subtract 4-digit numbers

No exchange

$$\begin{array}{r} 5789 \\ -3421 \\ \hline 2368 \end{array}$$

Starting with the ones, subtract each column in turn.

One exchange

$$\begin{array}{r} 61 \\ 5749 \\ -3471 \\ \hline 2278 \end{array}$$

Starting with the ones, subtract each column in turn. When subtracting 4 tens - 7 tens, exchange 1 hundred to make: 14 tens - 7 tens = 7 tens

Multiple exchanges

$$\begin{array}{r} 6131 \\ 5742 \\ -3476 \\ \hline 2266 \end{array}$$

Starting with the ones, subtract each column in turn. Exchange tens, hundreds and/ or thousands as required.

Round to Estimate

$$1635 + 386 = 2021$$

Round to the nearest ten

$$1640 + 390 = 2030$$

Round to the nearest hundred

$$1600 + 400 = 2000$$

Both give a reasonable estimate, but rounding the nearest ten is more accurate.

$$9362 - 5729 = 3622$$

Round to the nearest hundred

$$9400 - 5700 = 3700$$

Round to the nearest thousand

$$9000 - 6000 = 3000$$

Rounding to the nearest hundred is much more accurate in this case.

Efficient subtraction

Calculate $6000 - 3617 = 2383$

