

Activity:

The aim of this activity is for children to practise calculating answers using different methods so they can see which is more efficient. There are seven questions to complete. The first four questions allow children to practise the skill, while the next three questions extend them as they have to apply their learning to get the answer.

Vocabulary:

When subtracting with large numbers, there is a **formal written method** (also known as column method). The number to be subtracted is written directly under the first number so that the digits line up in columns. If a digit in the second number is larger than the digit above it, you can increase the value by taking from the next column. This is called an **exchange**. In the example below, 5 is smaller than 7 so you need to take 10 from the 40, to turn 5 into 15.

$$\begin{array}{r} 3 \ 4 \ 5 \\ - 1 \ 2 \ 7 \\ \hline \end{array}$$

Exchanging can occur when completing calculations. It may also be known as 'carrying' or 'borrowing' depending on the calculation involved. In addition, an exchange happens when a place value column has a value of 10 or more. For example, if there are 8 ones + 4 ones, the ones column will have a total of 12 counters. You cannot have 12 ones in that column, so 10 ones counters must be exchanged for 1 ten counter, leaving 2 ones counters in the ones column. This is the case for any column: if there is a value of 10 or more in one column, the 10 is exchanged for one counter in the column to the left.

Count on is a subtraction strategy using a number line to count from the smallest number to the largest number.

A **number line** is a horizontal, straight line which has numbers placed at equal points. Number lines can be used to show either positive or negative numbers. Most number lines begin at 0, however this is not always the case.

Supporting resources:

You can watch a video tutorial about efficient subtraction on [kids.classroomsecrets.co.uk](https://www.kids.classroomsecrets.co.uk) >> **Year 4 >> Maths >> Addition and Subtraction >> Video Tutorials.**

You can watch the answer explanation video which takes children through this activity and ways to answer it on <https://www.youtube.com/user/ClassroomSecretsLtd/> **playlists >> Year 4 Playlist >> Efficient Subtraction Answer Explanation.**

Other resources:

If your child enjoyed this activity and wants to try more activities linked to this learning, you can sign up for £4.83 per month on [classroomsecrets.co.uk/membership](https://www.kids.classroomsecrets.co.uk/membership).

Check out our daily timetable for Year 4 home learning activities on [kids.classroomsecrets.co.uk](https://www.kids.classroomsecrets.co.uk) >> Home Learning Timetable.

Efficient Subtraction

Expected

- 1,200. Children should identify the method they have chosen. Methods may include column method, partitioning or counting on (using a number line, if necessary).
- 3,334. Methods may include column method, partitioning or counting on (using a number line, if necessary).
- 2,411; calculation method will vary according to preference.
- Suggested answers, discuss reasons why:

Counting On	2,347 – 1,847
Column Method	8,394 – 3,023
Partitioning	7,835 – 6,804

- No, the method is not efficient. Counting on in hundreds would be more efficient as the numbers are close and the tens and ones have the same value. A calculation where numbers are not easily subtracted mentally is an appropriate answer.
- Example answer: the column method is for a specific type of subtraction, not just for checking. However, column method can be used for efficient subtraction.
- Ivy's method should be quicker as $7,284 - 5,180$ requires no exchanges and can easily be done using partitioning. The calculation can be done on a number line, but is less efficient.