

Chapter 4: Addition, subtraction, multiplication.

<http://www.math.com/school/subject1/lessons/S1U1L4GL.html>

http://www.mathsteacher.com.au/year8/ch02_fracdec/05_add_dec/sub.htm

http://www.aaamath.com/g27g_dx1.htm

I. Vocabulary

Def 1: When you perform an addition, the result is called the sum, and the numbers you added together are called the "terms".

Def 2: When you perform a subtraction, the result is called the difference, and the numbers you subtracted to one another are called the "terms".

Def 3: When you perform a multiplication, the result is called the product, and the numbers you multiplied together are called the "factors".

II. Additions and subtractions: calculation and properties.

To calculate an addition or a subtraction, be very careful to line up the comas, so that the digits of your two numbers are correctly lined up: one under the ones, tens under the tens, etc...

If necessary, you can draw the columns representing the ones, the tens the tenths ...

You might need to write some "useless zeros" so that the two numbers are the same length.

Examples:

$$\begin{array}{r} 254,5600 \\ + 3,0123 \\ \hline 257,5723 \end{array} \quad \begin{array}{r} 1025,052 \\ - 62,000 \\ \hline 0963,052 \end{array}$$

Pty 1: You can reverse the terms of an addition (addition is commutative).

Pty 2: You CANNOT reverse the terms of a subtraction.

III. Multiplication: calculation and properties.

To multiply two whole numbers (without comas), you multiply each digit of the first number by the "ones" digit of the second number. Then you write a period (or a zero) at the end of the line below, and you multiply each digit of the first number by the "tens" digit of the second number.

Then you write two periods (or two zeros) at the end of the line below, and so on.

Finally you add all the lines together.

Don't forget the "carry numbers"...

$$\begin{array}{r} 1025 \\ \times 62 \\ \hline 2050 \\ 6150 . \\ \hline 63550 \end{array}$$

To multiply two decimal numbers, use basically the same method. At the end, count the number of digits each number you multiplied had after the coma, add them, and the result must have that number of digits after the coma. For example if you multiply 1,025 (3 digits after the coma) by 6,2 (1 digit after the coma), the result will have $3 + 1 = 4$ digits after the coma.

$$\begin{array}{r} 1,025 \\ \times 6,2 \\ \hline 6,3550 \end{array}$$

Pty 3: You can reverse the terms of a multiplication (multiplication is commutative).

IV. Multiplying by 0,1 ; 0,01 ; 0,001.

Pty 4: Multiplying a number by 0,1 ; 0,01 ; 0,001 , is like dividing it by 10, 100, 1000 : you shift the coma by 1, 2 or 3 rows to the left.

V. Estimation of a result.

Def 4: You'll say that you calculate an estimation of the result when you replace the numbers by simpler ones, to get an easier calculation and a rough estimate of the result.

Calculating an estimation of the result helps you to verify your calculations.

Examples:

An estimation of $254,56 + 3,0123$ could be: $250 + 3 = 253$.

An estimation of $1025,052 - 62$ could be: $1000 - 60 = 940$.

An estimation of 1025×62 could be: $1000 \times 60 = 60\ 000$.

An estimation of $1,025 \times 6,2$ could be: $1 \times 6 = 6$.