MULTIPLICATION: PARTIAL PRODUCTS

Students progress from area/array models (other side) to working with numbers. Consider 26 x 45. We can break apart each factor by place value.

26 = (20 + 6)
45 = (40 + 5)

We can then multiply each of the "parts" and then add the products back together.

(20 x 40) + (20 x 5) + (40 x 6) + (6 x 5)
800 + 100 + 240 + 30
900 + 240 + 30
1 140 + 30
= 1 170

Multiplication with this method builds understanding of place value and helps develop mental math skills and later skills with the traditional algorithm, and algebra concepts, including factoring polynomials.

Another Example: 52 x 21

(52 x 10) + (52 x 10) + (52 x 1)
520 + 520 + 52
1040 + 52
= 1 092

So, 52 x 21 = 1092

MULTIPLICATION: HALVE AND DOUBLE

This efficient strategy involves halving and doubling factors numbers without changing the product.

Consider 16 x 25:

1. Taking half of one factor times the double of the other, gives the same result.

16 X 25 = 8 X 50

2. We can repeat the process again if desired

8 X 50 = 4 X 100
SO, THE PRODUCT IS 400

BREAK-APART DIVISION:

Division in grade 4 and 5 involves breaking apart numbers into smaller, equal groups.

Consider this: We have 252 buttons to put into 4 boxes.

We can separate the 252 into 2 groups of 126 and then break those groups in half to make 4 groups of 63.

So, 252 ÷ 4 = 63

CAMPBELL RIVER
School District 72

GRADE 4&5 MATH

OPERATIONAL FLUENCY

This brochure highlights some of the methods for developing computational fluency in grades 4 & 5.

For more information, visit https://www.sd72.bc.ca/72learninghub/elementary-1

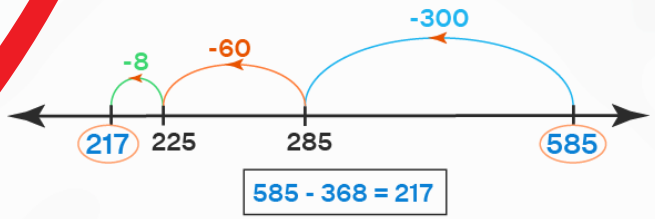
ADDITION: PARTIAL SUMS

Students break apart addends by place value. Consider 248 + 345:

248 = (200 + 40 + 8)
345 = (300 + 40 + 5)
500 + 80 + 13
The sum = 593

SUBTRACTION: ON A NUMBER LINE

A number line can be used to model subtraction with the jumps being the number being subtracted (example below).



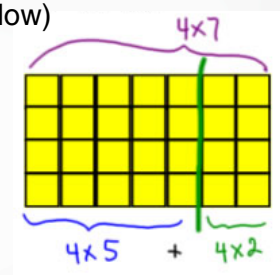
Or, the difference can be represented as the space between the two given values
Consider 126 - 49

So,126 - 49 = 77

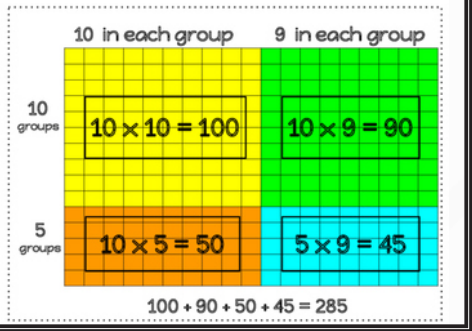
MULTIPLICATION: AREA / ARRAY

The area / array model for multiplication connects to the distributive property and can be used to solve multi-digit multiplication problems. (See the 3 examples below)

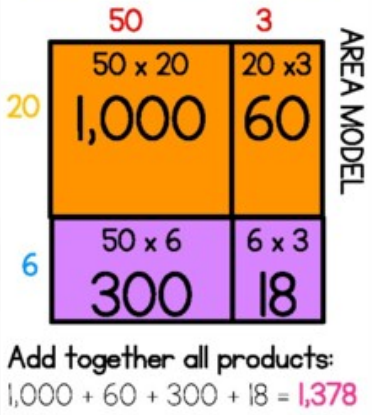
4 x 7



15 x 19



26 x 53



ADDITION: ADJUSTING

By sharing units from one addend to another, we can make the total easier to compute. Consider 326 + 274. We can take 1 from 326 and give it to 275 to make the numbers easier to work with.

326 + 274
-1 +1
325 + 275 = 600

SUBTRACTION: ADJUSTING

We can use "friendly numbers" to solve subtractions problems.
Consider 4,000 - 563

Removing 1 from each value makes this problem much simpler.

4 000 - 563
-1 -1
3 999 - 562 = 3 437