Crowmoor School



Y5 Calculations Policy

2017

Addition Year 5

Focus: Adding with more than 4 digits

In year 5 children will now use the column method to add decimal numbers in the context of money and measures. It is important that children have place value skills beyond 4 digits here and fully understand what a decimal number represents.

|  |  |
| --- | --- |
| £23.59  + £ 7.55  £31.14  1 1 1 | The decimal point needs to be lined up just like all of the other place value columns and must be remembered in the answer column. It is important children understand why this is and get into this habit very quickly.  Cross off number under equals line to ensure children include in final calculation. |
| 23,481  + 1,362  24,843  1 | Children should be working with numbers greater than 4 digits including numbers in the ten thousands and hundred thousands.  Cross off number under equals line to ensure children include in final calculation. |
| 19.01  3.65  + 0.70  23.36  1 1 | Children need to start using the column method to add more than two values, still considering place value very carefully.  Please Note:  1) It is important that children say 6 tenths add 7 tenths so they understand that they are adding part of a number not a whole number.  2) Empty places should be filled with a zero to show the value of that place. |
| Key Vocabulary  Add, more, plus, and, make, altogether, total, equal to, equals, the same as, double, most, count on, number line, sum, tens, units, partition, addition, column, tens boundary, hundreds boundary, increase, vertical, carry, expanded, compact, thousands, hundreds, digits/ones, inverse, decimal place, decimal point, tenths, hundredths, thousandths. | |

Subtraction Year 5

Focus: Subtracting with numbers beyond 4 digits including decimals

Children in year 5 will continue to use the compact column method of subtraction to solve problems including those where exchanging is required. They will subtract larger integers and begin to subtract decimal amounts.

|  |  |
| --- | --- |
|  | Children will come across problems where exchanging will need to take place several times to complete the problem.  Use number lines for time calculations i.e.  Image result for time number lines |
|  | Once confident with large integers, children will now be ready to move onto decimal numbers including lots in the context of measures and money.  Just like addition, it is important that the children line up the decimal point and understand why they are doing this.  Please Note:  Where there is a space in a column it is important that children add a zero so they understand the value and know what to subtract in that column. |
| Key Vocabulary  Equal to, take, take away, less, minus, subtract, leaves, distance between, difference between, how many more, how many fewer/less than, most, least, count back, how many left, how much less is\_?, count on, strategy, partition, tens, units/ones, exchange, decrease, hundreds, value, digit, inverse, tenths, hundredths, decimal place, decimal | |

Multiplication Year 5

Focus: Multiplying up to 4 digits by 1 or 2 digits

In year 5 children will continue to use short multiplication to solve increasingly richer problems that involve multiplying by 1 digit. They will then move on to long multiplication for problems that involve multiplying by 2 digits. Approximation will play an important part - with children making approximations before using long multiplication to help check their answer is correct.

|  |  |
| --- | --- |
|  | Children will use short multiplication in a range of increasingly challenging problems. Solving using the grid method and then comparing to the short multiplication method will help cement the children’s understanding of the shirt multiplication method. |
| 18  X 13  24 (3X8)  30 (3X10)  80 (10X8)  100 (10X10)  234  1 | Children may choose to use the longer method whereby they articulate each stage to save confusion and to ensure all options are multiplied. The general rule is X the top number of digits to the bottom number of digits and that will tell you how many separate calculations you should have. |
| 18  X 13  180 (10X18)  54 (3X18)  234  1 | As with above but this time children times each digit by the whole bottom digit. This is an efficient method providing children can operate with the two by one digit number efficiently. |
|  | When multiplying by more than 1 digit, children need to use long multiplication.  Like with short multiplication, they will solve the problem using the grid method first and then make comparisons until their understanding is secure. In the example below the top row shows 18 x 3 and the bottom shows 18 x 10. The final row shows the total of both calculations. |

|  |  |
| --- | --- |
|  | Once long multiplication methods are secure, children are ready to move on to more challenging problems which require greater levels of mental calculation. The problem to the right show 1234 x 6 on the top line, 1234 x 10 on the bottom line and the total of both calculations on the final row. |
| Key Vocabulary  Groups of, lots of, times, array, altogether, multiply, count, multiplied by, repeated addition, column, row, commutative, sets of, equal groups, times as big as, once, twice, three times, partition, grid method, multiple, product, tens, units/ones, value, inverse, square, cube, factor, integer, decimal, short/long multiplication, carry | |

Division Year 5

Focus: Extending use of short multiplication to 4 digits and remainders

Children in year 5 will use short division to solve problems up to 4 digits long. For the first time they will use short division to solve problems that have a remainder in the final answer.

|  |  |
| --- | --- |
| 16r1  4/69  - 40 (10)  29  - 28 (7)  r1 | Children can articulate thoughts using notation if beginning to chunk. Similar to Y4 but fewer chunks and less notation.  Multiply by the divisor and chunk down to reduce the amount until it reduces to a smaller number than the divisor.  Add the multipliers and the remainder. Begin to express the remainder as a decimal or fraction. |
|  | In year 5 children will begin to solve division problems where a number up to 4 digits is divided by a single digit number including answers with remainders. These division problems need to be contextual so the children learn how to express the remainder- as a number, a fraction, a decimals, rounded up or rounded down. |
| Key Vocabulary  Share, share equally, one each, two each…, group, groups of, lots of, array, divide, divided by, divided into, division, grouping, number line, left, left over, inverse, short division, carry, remainder, multiple, divisible by, factor, quotient, prime number, prime factors, composite number (non-prime) | |