

## Section 1 - Place Value

This shows the value of the digit. Each place is ten times bigger. For example, 100 is ten times ten.



Place Value	The amount a digit is worth due to its position in a number, i.e. ones, tens, hundreds, thousands,
Negative	Opposite to positive
Rounding	To increase or decrease to the nearest ten, hundred, thousand, etc
Ordering	To arrange either from biggest to smallest or vice versa
Comparing	To look at two or more numbers to decide which is greater, lesser or if they are equal
Roman numerals	Numbers written as a combination of 7 letters: I, V, X, L, C, D and M.
Addition	Plus the two numbers together, e.g. $1 + 2 = 3$
Subtraction	To remove a quantity
Decimal	Not a whole number e.g. 4.2, 5.690
Exchange	To swap for an equivalent amount
>	Greater than
<	Less than
Equal =	Has the same value as.

## Section 2 - Ordering, rounding and negative numbers

### Rounding

### Ordering and Comparing

A rhyme to help us remember what to do with rounding is "5 and above give it a shove, 4 and below leave it alone".

### Negative numbers

Negative numbers go below zero. The value decreases the further away from zero. This means that -4 is smaller than -2.

## Section 3 - Adding and Subtracting

### 5 - Addition vocabulary



add addition plus  
total increase  
more sum altogether

Addition Adding finds the total of two or more quantities or increases something by an amount.

$$\begin{array}{r} 7 \ 8 \ 9 \\ + 6 \ 4 \ 2 \\ \hline 1 \ 4 \ 3 \ 1 \\ \hline 1 \ 1 \end{array}$$

### 5- Subtraction vocabulary



take away minus  
less than reduce  
taken from fewer difference  
subtract decrease

Subtraction Subtracting takes one number or quantity away from another and reduces the amount.

$$\begin{array}{r} 1 \ 1 \\ 9 \ 3 \ 2 \\ - 4 \ 5 \ 7 \\ \hline 5 \ 6 \\ \hline 4 \ 7 \ 5 \end{array}$$

When adding and subtracting, we use the column method. Digits are placed in place value columns and each column is added or subtracted in turn, starting with the furthest righthand column.

## Section 4 - Multiplication Methods

Multiplication is an efficient method of repeated addition.  $5 \times 2$  is the same as  $5 + 5$ .

**Short multiplication:** This is used when multiplying by one digit. The single digit is multiplied by each of the digits in the other number.

$$\begin{array}{r} 3 \ 7 \ 5 \ 1 \\ \times \quad \quad 6 \\ \hline 2 \ 2 \ 5 \ 0 \ 6 \\ \hline 4 \ 3 \end{array}$$

**Long multiplication:** This is used when multiplying by two digits or more. You can see we are multiplying by 26. First, multiply the ones by 6 ( $6 \times 4$ ). Exchange 24 ones for 2 tens and put this underneath the tens column. Continue multiplying the tens and hundreds by 6.

Next, we add in a place holder (0) underneath our answer in the ones column. Then, we multiply the tens ( $20 \times 4$ ). Carry on multiplying.

Add 744 and 2480 together (remember to exchange) and write your answer underneath in the correct columns.

$$\begin{array}{r} 1 \ 2 \ 4 \\ \times \quad \quad 2 \ 6 \\ \hline 7 \ 4 \ 4 \\ 1 \ 2 \quad \quad \\ \hline 2 \ 4 \ 8 \ 0 \\ \hline 3 \ 2 \ 2 \ 4 \\ \hline 1 \ 1 \end{array}$$

## Section 5 - Division

Division is splitting into equal parts or groups. Division is the opposite of multiplying. The number you are dividing by is called the divisor. The number that is being divided is called the dividend. The answer is the quotient.

Short division is used when dividing by one digit. You must know your times tables to work out the answers.

$$432 \div 5 = 86 \text{ r } 2$$

$$5 \overline{) 432} \begin{array}{l} 8 \ 6 \ \text{r} 2 \\ \underline{40} \phantom{0} \\ 32 \\ \underline{30} \\ 2 \end{array}$$

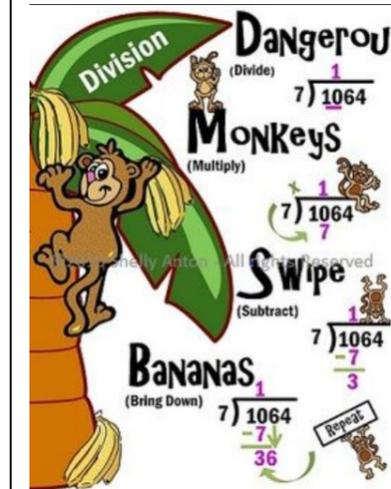
### Short Division – including decimals

$$43.68 \div 7 = 6.24$$

$$7 \overline{) 43.68} \begin{array}{l} 6 \ . \ 2 \ 4 \\ \underline{42} \phantom{00} \\ 16 \\ \underline{14} \phantom{0} \\ 28 \\ \underline{28} \\ 0 \end{array}$$

## Section 6 - Long Division

Long Division is used when the divisor (4320) is larger and the calculations become more complex. It allows you to subtract amounts from the dividend (this is 15 in the diagram).



$$15 \overline{) 4320} \begin{array}{l} 2 \ 8 \ 8 \\ \underline{30} \phantom{00} \\ 132 \\ \underline{105} \phantom{0} \\ 270 \\ \underline{210} \phantom{0} \\ 60 \\ \underline{60} \\ 0 \end{array}$$

An acronym to remember what to do is **Dangerous Monkeys Swipe Bananas**. This stands for Divide, Multiply, Subtract and Bring down.

If the number cannot be divided equally the answer will contain a remainder. This can be given in the form of a remainder, fraction or decimal.