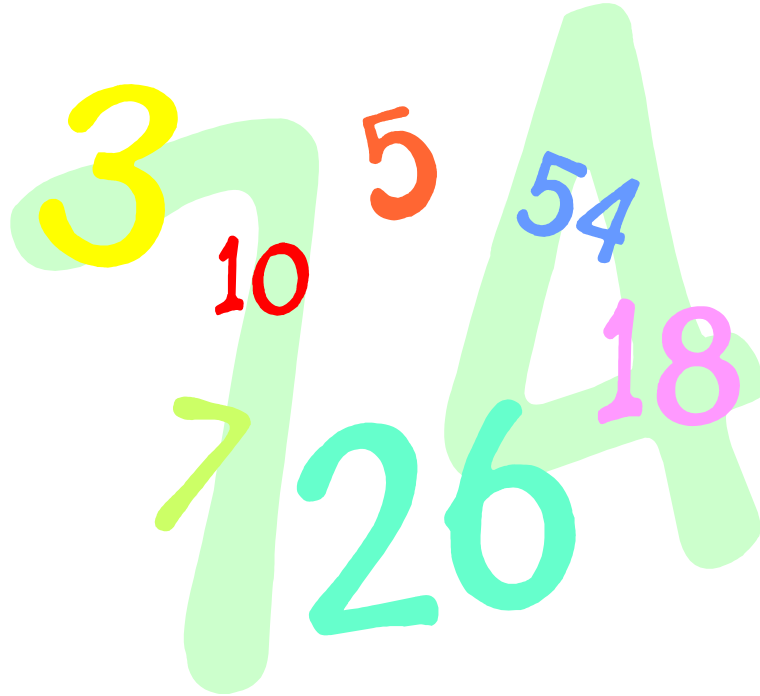


Meadowburn Primary



Numeracy Booklet

A Guide for Parents

For further information on Supporting Numeracy at Home visit:

<https://www.educationscotland.gov.uk/>

Follow the link:

What's New

Supporting Numeracy at Home

or

[http://www.educationscotland.gov.uk/parentzone/learningathome/
supportingnumeracy/index.asp](http://www.educationscotland.gov.uk/parentzone/learningathome/supportingnumeracy/index.asp)

Addition

Mental strategies



There are a number of useful mental strategies for addition. Some examples are given below.

Example Calculate $64 + 27$

Method 1 Add tens, then add units, then add together

$$60 + 20 = 80 \qquad 4 + 7 = 11 \qquad 80 + 11 = 91$$

Method 2 Split up number to be added (last number 27) into tens and units and add separately.

$$64 + 20 = 84 \qquad 84 + 7 = 91$$

Method 3 Round up to nearest 10, then subtract

$$64 + 30 = 94 \quad \text{but } 30 \text{ is } 3 \text{ too much so subtract } 3;$$
$$94 - 3 = 91$$

Written Method

When adding numbers, ensure that the numbers are lined up according to place value. Start at right hand side, write down units, carry tens.

Example Add 332 and 89

$$\begin{array}{r} 332 \\ + 89 \\ \hline \end{array} \quad \rightarrow \quad \begin{array}{r} 332 \\ + 89 \\ \hline \end{array} \quad \rightarrow \quad \begin{array}{r} 332 \\ + 89 \\ \hline \end{array}$$

1 1 1 1 1

2 + 9 = 11 3 + 8 + 1 = 12 3 + 0 + 1 = 4

Subtraction



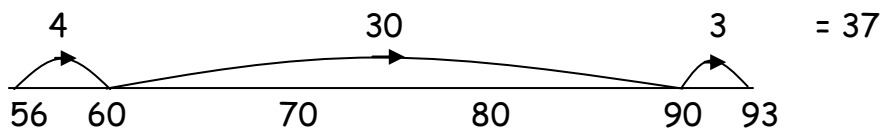
We use decomposition as a written method for subtraction (see below). Alternative methods may be used for mental calculations.

Mental Strategies

Example Calculate $93 - 56$

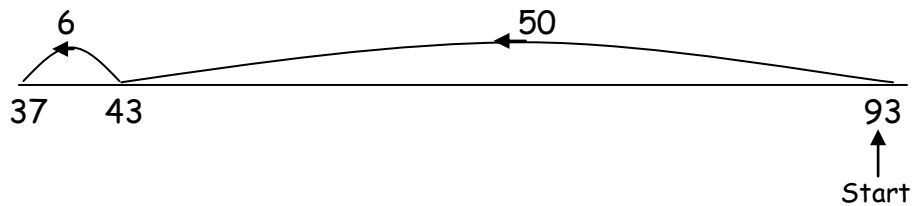
Method 1 Count on

Count on from 56 until you reach 93. This can be done in several ways e.g.



Method 2 Break up the number being subtracted

e.g. subtract 50, then subtract 6 $93 - 50 = 43$
 $43 - 6 = 37$



Written Method

Example 1 $450 - 36$

$$\begin{array}{r} 41 \\ 450 \\ - 36 \\ \hline 414 \end{array}$$

We do not
"borrow and
pay back".

Important steps for example 1

1. Say "zero subtract 6, we can't do this"
2. Look to next column exchange one ten for ten units.
3. Then say "ten take away six equals four"
4. Normal subtraction rules can be used to then complete the question.

Multiplication



It is essential that you know all of the multiplication tables from 1 to 10. These are shown in the tables square below.

x	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Mental Strategies

Example Find 39×6

Method 1

$$\begin{array}{l} 30 \times 6 \\ = 180 \end{array}$$

$$\begin{array}{l} 9 \times 6 \\ = 54 \end{array}$$

$$\begin{array}{l} 180 + 54 \\ = 234 \end{array}$$

Method 2

$$\begin{array}{l} 40 \times 6 \\ = 240 \end{array}$$

40 is 1 too many
so take away 6×1

$$\begin{array}{l} 240 - 6 \\ = 234 \end{array}$$

Division



You should be able to divide by a single digit.

Written Method

Example 1 There are 192 pupils in first year, shared equally between 8 classes. How many pupils are in each class?

$$\begin{array}{r} 24 \\ 8 \overline{) 192} \end{array}$$

There are 24 pupils in each class

Example 2 Divide 4.74 by 3

$$\begin{array}{r} 1.58 \\ 3 \overline{) 4.74} \end{array}$$

When dividing a decimal number by a whole number, the decimal points must stay in line.

Fractions

Simplifying Fractions



The top of a fraction is called the **numerator**, the bottom is called the **denominator**.
To simplify a fraction, divide the **numerator** and **denominator** of the fraction by the same number.

Example 1

(a) $\frac{20}{25} = \frac{4}{5}$

Diagram showing the simplification of $\frac{20}{25}$ to $\frac{4}{5}$. A horizontal line with an equals sign in the middle is drawn between the two fractions. Above the line, a curved line connects 20 to 4 with $\div 5$ written above it. Below the line, a curved line connects 25 to 5 with $\div 5$ written below it.

(b) $\frac{16}{24} = \frac{2}{3}$

Diagram showing the simplification of $\frac{16}{24}$ to $\frac{2}{3}$. A horizontal line with an equals sign in the middle is drawn between the two fractions. Above the line, a curved line connects 16 to 2 with $\div 8$ written above it. Below the line, a curved line connects 24 to 3 with $\div 8$ written below it.

This can be done repeatedly until the numerator and denominator are the smallest possible numbers - the fraction is then said to be in its **simplest form**.

Example 2 Simplify $\frac{72}{84}$ $\frac{72}{84} = \frac{36}{42} = \frac{18}{21} = \frac{6}{7}$ (simplest form)

Calculating Fractions of a Quantity



To find the fraction of a quantity, divide by the denominator.

To find $\frac{1}{2}$ divide by 2, to find $\frac{1}{3}$ divide by 3, to find $\frac{1}{7}$ divide by 7 etc.

Example 1 Find $\frac{1}{5}$ of £150

$$\frac{1}{5} \text{ of } \pounds 150 = \pounds 150 \div 5 = \pounds 30$$

Example 2 Find $\frac{3}{4}$ of 48

$$\frac{1}{4} \text{ of } 48 = 48 \div 4 = 12$$

$$\text{so } \frac{3}{4} \text{ of } 48 = 3 \times 12 = 36$$

To find $\frac{3}{4}$ of a quantity, start by finding $\frac{1}{4}$ then multiply by 3 (the numerator)

Percentages



Percent means out of 100.

A percentage can be converted to an equivalent fraction or decimal.

36% means $\frac{36}{100}$

36% is therefore equivalent to $\frac{9}{25}$ and 0.36

Common Percentages

Some percentages are used very frequently. It is useful to know these as fractions and decimals.

Percentage	Fraction	Decimal
1%	$\frac{1}{100}$	0.01
10%	$\frac{1}{10}$	0.1
20%	$\frac{1}{5}$	0.2
25%	$\frac{1}{4}$	0.25
$33\frac{1}{3}\%$	$\frac{1}{3}$	0.333...
50%	$\frac{1}{2}$	0.5
$66\frac{2}{3}\%$	$\frac{2}{3}$	0.666...
75%	$\frac{3}{4}$	0.75



Mathematical literacy (Key words):

Add; Addition (+)	To combine 2 or more numbers to get one number (called the sum or the total) Example: $12+76 = 88$
a.m.	(ante meridiem) Any time in the morning (between midnight and 12 noon).
Approximate	An estimated answer, often obtained by rounding to nearest 10, 100 or decimal place.
Calculate	Find the answer to a problem. It doesn't mean that you must use a calculator!
Data	A collection of information (may include facts, numbers or measurements).
Denominator	The bottom number in a fraction (the number of parts into which the whole is split).
Difference (-)	The amount between two numbers (subtraction). Example: The difference between 50 and 36 is 14 $50 - 36 = 14$
Division (\div)	Sharing a number into equal parts. $24 \div 6 = 4$
Double	Multiply by 2.
Equals (=)	Makes or has the same amount as.
Equivalent fractions	Fractions which have the same value. Example $\frac{6}{12}$ and $\frac{1}{2}$ are equivalent fractions
Estimate	To make an approximate or rough answer, often by rounding.
Evaluate	To work out the answer.
Even	A number that is divisible by 2. Even numbers end with 0, 2, 4, 6 or 8.
Factor	A number which divides exactly into another number, leaving no remainder. Example: The factors of 15 are 1, 3, 5, 15.
Greater than ($>$)	Is bigger or more than. Example: 10 is greater than 6. $10 > 6$
Least	The lowest number in a group (minimum).
Less than ($<$)	Is smaller or lower than.

	Example: 15 is less than 21. $15 < 21$.
Maximum	The largest or highest number in a group.
Minimum	The smallest or lowest number in a group.
Minus (-)	To subtract.
Most	The largest or highest number in a group (maximum).
Multiple	A number which can be divided by a particular number, leaving no remainder. Example Some of the multiples of 4 are 8, 16, 48, 72
Multiply (x)	To combine an amount a particular number of times. Example $6 \times 4 = 24$
Negative Number	A number less than zero. Shown by a minus sign. Example -5 is a negative number.
Numerator	The top number in a fraction.
Odd Number	A number which is not divisible by 2. Odd numbers end in 1, 3, 5, 7 or 9.
Operations	The four basic operations are addition, subtraction, multiplication and division.
Order of operations	The order in which operations should be done. BODMAS BODMAS represents: (B)rackets (O)rder (D)ivide (M)ultiply (A)dd (S)ubtract (Note order means a number raised to a power such as 2^2 or $(-3)^3$ Not covered at 1st or 2nd level)
Place value	The value of a digit dependent on its place in the number. Example: in the number 1573.4, the 5 has a place value of 100.
p.m.	(post meridiem) Any time in the afternoon or evening (between 12 noon and midnight).
Product	The answer when two numbers are multiplied together. Example: The product of 5 and 4 is 20.
Remainder	The amount left over when dividing a number.
Share	To divide into equal groups.
Sum	The total of a group of numbers (found by adding).
Total	The sum of a group of numbers (found by adding).