# Bishopton Primary School



Parents as Partners
Help your child with Numeracy and
Mathematics
**Second Level**

# "Making Maths Count"

Dear Parents,

We hope you find this information helpful. It is designed to provide you with ideas for supporting numeracy and mathematics at home through practical and fun activities. It also contains illustrated examples of written methods of calculations. By working together we can enhance confidence and fluency in numeracy and raise your child's attainment in mathematics.

## Maths is fun!

*When supporting numeracy at home*

- Use opportunities to learn in the real world
- Embrace mistakes and talk about how your child solved the problem
- Praise effort
- Play games and solve puzzles together

## Number
### Counting, Ordering, Reading and Writing

Your child will experience a range of activities in learning numbers up to 100,000 and to 1,000,000 by Primary 7.

1. Counting aloud forwards and backwards (starting at any number)
2. Practise of times tables
3. Count on and back in  2's ,5's, 10's and 100's
4. Discuss odd and even numbers
5. Say the number before, after and between numbers to 7 digits
6. Recognise numbers in numerals and words
7. Order written numbers up to 7 digits
8. Understand that 462 is 400 + 60 + 2

9. Work with decimals to 1 and 2 places and later to 3 places e.g.  2.1,  5.09,  10.465
10. Learning about negative numbers in the context of temperatures
11. Work with fractions, equivalent fractions, percentages and decimals

**Place Value – the value of where a digit is in a number**

| Millions | Hundred Thousands | Ten Thousands | Thousands | Hundreds | Tens | Units | Decimal point | Tenths | Hundredths | Thousandths |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 4 | 7 | 9 | 3 | 1 | 8 | • | 6 | 0 | 5 |

2,479,318.605
Two million, four hundred and seventy nine thousand, three hundred and eighteen point six, zero, five

## Addition

Your child will be adding numbers mentally including decimal numbers with more than one digit after the decimal point

- + single digit number to 2 or 3 digit numbers
- Add 2 digit numbers to 2 digit numbers
- Bond 3 digit numbers within 1000
- 4.73 + 7. 16
- addition involving monetary amounts
- £8.30 + £4.60 = £ 12.90
- addition involving measurements
  0.6kg + 3.7kg = 4.3kg

## Discussion Points:

- When we add 0 the number stays the same e.g  10,670 + 0 = 10,670
- Understand that 220 +  140 = 360 is the same as  140 + 220 = 360
- The decimal points must line up in written calculations e.g.

```
     3.0 4
+  1 2.4 3
   1 5.4 7
```

**Key Words for addition:**
add, and, plus, more, makes, equals, increase,
sum, total, altogether, how many more to make,
combined, both, join

## Examples of Numeracy Activities

- Look at a receipt from a recent shopping trip. Try adding some of the items together.
- Look at a receipt from a recent shopping trip. Try subtracting the price of some items from the total.
- Give yourself a budget e.g. £20.00. Look up an item in a catalogue/leaflet and subtract it from your budget.
- Play with dice and multiply the numbers together
- Play games on websites e.g. woodlands maths
- Look at telephone numbers and add/subtract them
- Read news reports about attendance at events e.g. at a football match there were 33,098 people

**Adding without 'carrying'**

**Example 1**

1. Begin at the units column. Add together the 3 units and the 5 units.
Write 8 in the units column.

```
  4 0 3
+ 1 9 5
_____
      8
```

2. Go to the tens column.
0 tens add on 9 tens equals 9 tens. Write 9 in the tens column.

```
  H T U
  4 0 3
+ 1 9 5
_____
    9 8
```

3. Next go to the hundreds column.  4 hundreds add 1 hundred is 5.

```
  H T U
  4 0 3
+ 1 9 5
_____
  5 9 8
```

6

# Adding with 'carrying'

'Carrying' is used in addition when the digits in the column add to more than 9 and the full number cannot be written in the column.

```
H T U
  3 4 6
+   2 8
_____
```

## Example 1

1.  Begin at the units column. Add together the 6 units and the 8 units which equals 14 units. Write 4 in the units column and carry ten units. This is shown by a small 1 'carried' next to the 8.  Go to the tens column.

```
H  T  U
  3  4  6
+    2 ₁8
_____
          4
```

2.  4 tens add on 2 tens equals 6 tens. Add the carried ten (which is shown as the small 1) to the 6 tens. There are 7 tens altogether. Write 7 in the tens column.

```
H  T  U
  3  4  6
+    2 ₁8
_____
     7  4
```

3.  Next go to the hundreds column. 3 hundreds add zero hundreds is 3 hundreds. Write 3 in the hundreds column.  The answer is 374.

```
H  T  U
  3  4  6
+    2 ₁8
_____
  3  7  4
```

7

**Example 3** with carrying

Begin at the units column.

1. 2 units add 9 units is 11 units.
   Write 1 in the units column and carry ten units. This is shown by a small 1 'carried' next to the 9.

|     | Tth | H | T | U  |
|-----|-----|---|---|----|
|     | 4   | 8 | 5 | 2  |
| +   | 2   | 6 | 7 | 19 |
|     |     |   |   | 1  |

2. Next go to the tens column. 5 tens add 7 tens is 12 tens. Add on the carried 1 (ten) equals 13 tens.

|     | Tth | H | T   | U   |
|-----|-----|---|-----|-----|
|     | 4   | 8 | 5   | 2   |
| +   | 2   | 6 | 1 7 | 1 9 |
|     |     |   | 3   | 1   |

3. Write 3 in the tens column and carry 10 tens. This is shown by a small 1 'carried' next to the 7.

Then go to the hundreds column.

4. 8 hundreds add 6 hundreds is 14 hundreds. Add on the carried 1 (hundred) equals 15 hundreds. Write 5 in the hundreds column and carry 10 hundreds. This is shown by a small 1 'carried' next to the 6.

```
Tth  H   T  U
  4  8   5  2
+ 2  ₁6  ₁7 ₁9
         5  3  1
```

5. Finally, go to the thousands column 4 thousands add 2 thousands is 6 thousands. Add on the carried 1 (thousand) equals 7 thousands.

```
Tth  H   T  U
  4  8   5  2
+ 2  ₁6  ₁7 ₁9
  7  5   3  1
```

The answer is 7531.

## Addition with 2 Decimal Places

The decimal points must line up.

```
   1 2. 3 5
+     3. 4 4
   1 5. 7 9
```

**Subtraction**

**Discussion Points:**
- When we subtract 0 the number stays the same e.g. 864 - 0 = 864
- We **EXCHANGE** we do not borrow or pay back
- Talk about numbers before and after e.g. 3056 is before 3057, 7741 is after 7740
- The number before is the same as taking one away e.g. the number before 6983 is 6982,

**Key words for Subtraction:**
Subtract, take away, minus, smaller than, less than, decrease, difference between, leave, how many left over, how many fewer than, how much less than, reduce, remain

**Subtraction**

**Example 1**

No Exchanging

$$\begin{array}{r} 4\ 7 \\ -\ 2\ 3 \\ \hline \end{array}$$

1. Begin at the units column. 7 units take away 3 units. Write 4 in the units column

$$\begin{array}{r} T\ U \\ 4\ 7 \\ -\ 2\ 3 \\ \hline 4 \end{array}$$

2. Go to the tens column
4 tens take away 2 tens, equals 2 tens. Write 2 in the tens column.

$$\begin{array}{r} T\ U \\ 4\ 7 \\ -\ 2\ 3 \\ \hline 2\ 4 \end{array}$$

The answer is 24.

**Example 2**

Exchanging

1. Begin at the units column. 3 units take away 6 I can't do because I don't have enough.

2. Go to the tens column. There are no tens to exchange so you must go the hundreds column.

3. EXCHANGE one of the 6 hundreds for 10 tens. Score out the 6 and write a small 5 above the hundreds. Put the 1 representing 10 tens in front of the 0.

4. Go back to the units column. 3 units take away 6 units I can't do.

| H | T | U |
|---|---|---|
| $^5\cancel{6}$ | $^1 0$ | 3 |
| - 1 | 7 | 6 |

| H | T | U |
|---|---|---|
| $^5\cancel{6}$ | $^1\cancel{0}\,^9$ | $^1 3$ |
| - 1 | 7 | 6 |

5. Exchange one of the 10 tens for 10 units. Score out the 10 and write 9 in the tens column. Put the **1** representing 10 units in the units column.
13 units take away 6 units leaves 7
Units write 7 in the units column.

|  | H | T | U |
|---|---|---|---|
|  | $^5\cancel{6}$ | $^1\cancel{0}\,^9$ | $^1$ 3 |
| - | 1 | 7 | 6 |
|  |  |  | 7 |

6. Move to the tens column.
9 tens take away 7 tens leaves 2 tens.
Write 2 in the tens column.

|  | H | T | U |
|---|---|---|---|
|  | $^5\cancel{6}$ | $^1\cancel{0}\,^9$ | $^1$3 |
| - | 1 | 7 | 6 |
|  |  | 2 | 7 |

7. Now move to the hundreds column. 5 hundreds take away 1 hundred leaves 4 hundreds.
Write 4 in the hundreds column.
The answer is 427.

|  | H | T | U |
|---|---|---|---|
|  | $^5\cancel{6}$ | $^1\cancel{0}\,^9$ | $^1$3 |
| - | 1 | 7 | 6 |
|  | 4 | 2 | 7 |

13

Subtraction with 2 decimal places.
The decimal point must line up.

```
  1 1. 8  5
-     3. 4  4
      8. 4  1
```

## Multiplication

Children should continue to frequently practise times tables for fluency.

### Example 1

Without Carrying

```
    T   U
    3   2
X       3
        6
```

1. Start at the units column 3 times 2 is 6 units. Write 6 in the units column.

```
    T   U
    3   2
X       3
    9   6
```

2. Next, multiply the tens. 3 times 3 tens is 9 tens. Write 9 in the tens column. The answer is 9 tens and 6 units or 96.

14

**Example 2**

With carrying 265 X 3

1.  Start at the units column. Three
    times 5 is 15. Write the 5 in the
    units and carry the ten (1)

```
    H  T  U
    2  6  5

 X     1  3
          5
    ‾‾‾‾‾‾‾‾
```

2.  Next go to the tens column.
    Three times 6 (tens) is 18 (tens)
    and add on the 1 (ten) equals 19 (tens).
    Write the 9 in the tens column and
    carry the ten (1)

3.  Then go to the hundreds
    column. Three times 2 is 6
    (tens) and add on the 1 (ten)
    equals 7 (tens).
    The answer is 795.

```
    H  T  U
    2  6  5
 X  1  1  3
    ‾‾‾‾‾‾‾‾
    7  9  5
```

# Key Words for multiplication

**multiply, multiplied by, multiplication times, lots of, groups of, product, three times, four times, ten times etc.**

**Multiply whole numbers mentally by 10, 100 and 1000.**

**1. Multiplying by 10    23 X 10 =**
To multiply by 10 we move each digit one place to the left. Put a zero in the units place.

```
  H  T  U
     2  3  X 10
= 2  3  0
```

**2. Multiplying by 100    230 X 100 =**
To multiply by 100 we move each digit two places to the left. Put a zero in the units place and the tens place.

```
 Tth Th  H  T  U
         2  3  0  X 100

=  2  3  0  0  0
```

16

**3. Multiplying by 1000     604 X 1000**
   To multiply by 1000 we move each digit three
   places to the left. Put a zero in the units
   place, the tens place and the hundreds place.

   Hth Tth Th  H  T  U
               6  0  4  X 1000

   = 6    0   4 0 0 0

**4. Multiplying a decimal number   34. 54 X 10**
   To multiply a decimal number we move each
   digit one place to the left.
   <span style="color:red">(The decimal point does not move)</span>

 a)

 H  T  U  •  tenths  hundredths

    3  4  •  5    4         X 10

 = 3  4   5  **.**  4

(You don't need to add a zero in the hundredths
column.)

b)

| Tth | H | T | U | • | tenths | hundredths |
|-----|---|---|---|---|--------|------------|
|     | 7 | 4 | • | 8 | 4 | X 100 |
| 7   | 4 | 8 | 4 |   |   |   |

(As the answer is a whole number you don't need to add a zeros in the tenths and hundredths column.)

c)

| Hth | Tth | H | T | U | • | tenths | hundredths |
|-----|-----|---|---|---|---|--------|------------|
|     |     | 4 | 0 | • | 0 | 9 | X 1000 |
| = 4 |     | 0 | 0 | 9 | 0 |   |   |

(As the answer is a whole number you don't need to add a zeros in the tenths and hundredths column but you need to show the zero units.

18

# Division

Divide whole numbers mentally by 10, 100 and 1000.

**1. Dividing by 10     460 ÷ 10 =**
To divide by 10 we move each digit one place to the right.

  H  T  U
  4  6  0 ÷ 10
=    4  6

**2. Dividing  by 100     8000  X  100 =**
To divide by 100 we move each digit two places to the right.

  Th  H  T  U
  8   0  0  0 ÷ 100
=         8  0

**3. Dividing by 1000     31,000 ÷ 1000**
To divide by 1000 we move each digit three places to the right.

  Tth Th  H  T  U
  3   1   0  0  0 ÷ 1000
=             3  1

**4. Dividing a decimal number**  273.1 ÷ 10

To divide a decimal number by 10 we move each digit one place to the right.

(The decimal point does not move)

| H | T | U | • | tenths | hundredths | | | |
|---|---|---|---|--------|------------|---|---|---|
| 2 | 7 | 3 | • | 1 | | ÷ | 10 | |
| = | 2 | 7 | • | 3 | 1 | | | |

**Example 1**   Dividing without remainders

Start each calculation with the hundreds first

Share 468 apples between 2 boxes

1. Share 4 hundreds between 2.
   How many hundreds each.
   Link to multiplication, ask
   2 X ? = 4
   Answer 2 hundreds. Write the 2 above the 4 in the hundreds column.

```
    H  T  U
    2
 2 |4  6  8
```

2. Next, divide the tens. Divide
   6 tens between 2
   Ask 2 X ? = 6
   Answer 3. Write 3 above the
   6 in the tens column.

```
H   T   U
    2   3
2   4   6   8
```

3. Now divide the units. Divide
   8 units between 2.
   Ask 2 X ? = 8
   Answer 4. Write 4 in the
   units column.

```
H   T   U
    2   3   4
2   4   6   8
```

**Example 2**   Division with remainders

1. Share 632 between 3.
   How many hundreds each?
   To link to multiplication ask
   3 X ? = 6
   Answer 2 hundreds
   Write 2 above the 6 in the
   hundreds column.

```
H   T   U
    2
3   6   3   2
```

2. Next, divide the 3 tens
   between 3.
   Ask 3 X ? = 3
   Answer 1
   Write 1 above the 3 in the tens
   column.

```
    H  T  U
       2  1
  3 | 6  3  2
```

3. Next, ask if the 2 units can
   be divided by 3.
   The answer is NO so write a
   zero above the 2.
   The remainder is 2 and is
   written as r 2.
   So  632 ÷ 3 = 210 r 2

```
    H  T  U
       2  1  0 r 2
  3 | 6  3  2
```

**Example 3**

1. Divide 569 between 4
   Share 5 hundreds between
   4 equals 1 hundred with 1
   hundred remainder. Write 1
   above the 5 hundreds. Write
   a small 1 representing 10 tens next to the
   6 tens.

```
    H  T  U
    1
  4 | 5  ¹6  9
```

22

2.  Share 16 tens between 4 equals 4.
    Write 4 in the tens column.

```
       H  T  U
       1  4
  4 |  5  ¹6  9
```

3.  Now share 9 units between 4 equals 2 units with 1 unit remainder.
    Write 2 in the units column and remainder 1 beside it.

```
       H  T  U
       1  4  2 r 1
  4 |  5  ¹6  9
```

**Key Words**

Divide, divided, split, share, shared, how many
times, each, equal pieces

# Money

## Discussion Points

- Practise money calculations involving addition, subtraction, multiplication and division
- Develop understanding of having a budget and comparing costs to determine affordability of goods
- Understand and use the terms profit and loss in activities
- Use coins and notes to make amounts up to £20
- Look at offers in shops: money off vouchers, buy one get one free, 3 for 2 offers, discount, interest rates and exchange rates in shops and banks

## Money Examples

The decimal points must line up.
Remember to include the £ sign in the answer.

# Addition & Subtraction

```
  £  7. 0  5
 +£  3.₁9₁7
  £11 . 0  2
```

```
  £  1 ⁷8. ¹0 ¹3   ⁹
 -£  1 0.  6  5
  £      7. 3  8
```

```
  £ ¹2 ¹0⁹ . ¹0⁹ ¹0
  £     7  . 9 8
  £  1 2  . 0 2
```

# Multiplication & Division

```
   £  2 . 3  6
 X        ₁  ₁3
        7 . 0  8
```

```
        £ 3. 1  2
   3  │ £ 9. 3  6
```

# Key Vocabulary

money, coin, penny, pence, pound, price, cost, buy, sell, spend, spent, pay, change, costs more, costs less, cheaper, how much, how many, total, save, budget, profit & loss, cash, afford

**Order of Calculations (BODMAS or BOMDAS)**

The BODMAS rule tells us which operations should be done first.

B – brackets
O – operations
D – divide
M – multiply
A – add
S – subtract

## Examples

1.  4 + 3 X 8 =
    Is it 7 X 8 = 56 or 4 + 24 = 28?
    Correct answer is 28

2.  10 – 8 ÷ 2          (divide first)
    = 10 – 4
    = 6

3.  (4 + 5) X 6          (brackets first)
    = 9 X 6
    = 54

4.  12 + 6 ÷ (4 – 2)      (brackets first)
    =12 + 6 ÷ 2           (then divide)
    =12 + 3              (now add)
    =15

## Fractions

**Understanding Fractions:**
- A fraction is a part of a whole
- The top of the fraction is called the numerator and is the number of parts of the whole you are dealing with.
- The bottom of the fraction is called the denominator and is the number of parts the whole has been divided into.

2 ← Numerator
6 ← Denominator

The chocolate bar has been divided into 6 pieces, therefore the denominator is 6.  2 pieces are shaded, which means the numerator is 2. So $\frac{2}{6}$ of the chocolate bar is shaded.
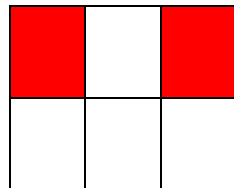
# Equivalent Fractions

It could also be said that $\frac{1}{3}$ of the chocolate bar is shaded.

$\frac{2}{6}$ and $\frac{1}{3}$ are equivalent fractions.

Equivalent fractions look different but show the same amount.

Examples:

$$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8} \qquad \qquad \frac{1}{3} = \frac{2}{6} = \frac{3}{9} = \frac{4}{12}$$

Equivalent fractions are made by multiplying or dividing the numerator and denominator by the same number.

## Simplifying Fractions

To simplify a fraction, divide the numerator and denominator of the fraction by the same number.

Example

$\frac{15}{25}$ divide top and bottom by 3 = $\frac{3}{5}$

$\frac{12}{36}$ divide top and bottom by 12 = $\frac{1}{3}$

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

**Fractions of a Quantity**

To find the fraction of a quantity, <span style="color:red">divide by the denominator</span> and <span style="color:blue">multiply by the numerator.</span>

**Example:**

Find $\frac{1}{6}$ of £ 36

= £36 ÷ 6 = 6

= £6

Find $\frac{2}{3}$ of £27

= £ 27 ÷ 3

= £9

= 2 X £9

= £18

**Improper Fractions and Mixed Fractions**

$\frac{7}{3}$ is an improper fraction because the numerator is bigger than the denominator. It means 7 thirds. If this was a pizza, seven thirds is more than 2 whole pizzas. It is $2\frac{1}{3}$ pizzas.

To convert an improper fraction into a mixed number:

1. Divide the numerator by the denominator.
2. Write down the whole number answer.
3. Then write down any remainder above the denominator.

$\frac{7}{3}$     7 ÷ 3 = 2 remainder 1    this is written as $2\frac{1}{3}$

$3\frac{2}{5}$ is a mixed number because it is a whole number and a fraction together.

To convert a mixed number to an improper fraction:
1. Multiply the whole number part by the fraction's denominator.
2. Add that to the numerator.
3. Then write the result on top of the denominator.

Eg. $3\frac{2}{5}$

   1.   5 X 3 = 15    2.  15 + 2 = 17    3. $\frac{17}{5}$

## Percentages

Percent means out of 100.
50% means $\frac{50}{100}$
A percentage can be converted to a fraction or a decimal by dividing by 100.
Example:
75% = $\frac{75}{100}$ = $\frac{3}{4}$ = 0.75

There are different ways to calculate the percentage of a quantity

**Example 1:** Find 25% of £ 60

25% of £ 60

= $\frac{1}{4}$ of £ 60

= £ 60 ÷ 4

= £ 15

## Common Percentages

| 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 |
| 50% | $\frac{1}{2}$ | 0.5 |
| 75% | $\frac{3}{4}$ | 0.75 |

# Rounding Numbers

Rounding a number means making it **simpler** but keeping its value close to what it was. Numbers can be rounded to give an approximation.

**How to round a number:**
- **Decide which is the last digit to keep**
- **Check the next digit to the right –**
  *if the number ends in 4 or below then Round Down (leave the digit as it is)*
  *If the number is 5 or more then Round Up by one*

## Examples

17**5**3 rounded to the nearest 10 is 1750
1**7**53 rounded to the nearest 100 is 1800
**1**753 rounded to the nearest 1000 is 2000

# Rounding Decimal Numbers

The same principles apply to rounding decimal numbers.

## Example
2.36   rounded to the nearest tenth is 2.4

**Examples**

1.  Round 24.**8** to a whole number
    Look at the number in the tenths position, if it is 5 or above then round the number up by one. If it is 4 or less then keep the whole number as it is.
    *So 24.8 rounded is 25*

2.  Round 320.6**2** to one decimal place
    If the digit in the hundredths position is 5 or more then round up by one. If the digit in the hundredths position is 4 or less then round down (leave the digit as it is).
    *So 320.62 rounded to 1 decimal place is 320.6*

3.  Round 6.78**7** to two decimal places.
    If the digit in the thousandths position is 5 or more then round up by one.
    If the digit in the thousandths position is 4 or less then round down (leave the digit as it is).
    *So 6.787 rounded to 2 decimal places is 6.79*
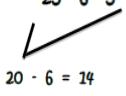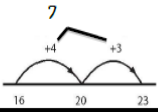
    *Remember to remove the extra numbers in the other decimal places after you have rounded.*

# Mental Maths /Number Talk Strategies

## Addition

| Adding Up in Chunks/Counting On | Reordering | Place Value - Partitioning | Making Tens/Bridging through 10 |
|---|---|---|---|
| 37 + 48  | 25 + 26 + 75 <br><br>100 + 26 = 126 | 116 + 127<br>100 + 100= 200<br>10 + 20 = 30<br>6 + 7 = 13<br>200+30+13=243 | 49 + 38 <br>1   7<br><br>50 + 37= 87 |
| **Compensation** | **Doubles/Near Doubles** | **Friendly Numbers** | **Bridging through 60** |
| 67 + 28<br>+2<br>/<br>67 + 30 = 97<br>97-2 = 95 | 16 + 17 <br>16   1<br>16 + 16= 32<br>32 + 1 = 33 | 28+47<br>+2   -2<br>30 + 45= 75 | <br>How many minutes is it to the next hour?<br> |

34

## Subtraction

| Removal or Counting Back | Reordering | Place Value - Partitioning | Adding Up/Bridging through 10 |
|---|---|---|---|
| $123 - 69$<br>$123 - (20+40+3+6)$<br>$123 - 20 = 103$<br>$103 - 40 = 63$<br>$63 - 3 = 60$<br>$60 - 6 = 54$ | $25 - 6 - 5$<br><br>$20 - 6 = 14$ | $367 - 154$<br>$367 - 100 = 267$<br>$267 - 50 = 217$<br>$217 - 4 = 213$<br><br>$367 - 100 - 50 - 4 = 213$ | $23 - 16$<br>$16 + 4 = 20$<br>$20 + 3 = 23$<br><br>7<br>+4    +3<br>16    20    23 |
| Place Value & Negative Numbers | Adjusting for Easier Numbers | Keep a Constant Difference | |
| $399 - 254$<br>$(300+90+9) - (200+50+9)$<br>$300 + 90 + 9$<br>$- \underline{200 + 50 + 4}$<br>$100 + 40 + 5$<br>$= 145$ | $123 - 59$<br>$+1$<br>$123 - 60 = 63$<br>$63 + 1 = 64$ | $151 - 98$<br>$(151 + 2) - (98 + 2)$<br>$153 - 100 = 53$<br>$151 - 98 = 53$ | |

## Multiplication & Division

| Friendly Numbers | Repeated Addition | Partial Products | Doubling and Halving |
|---|---|---|---|
| $9 \times 15$<br>$10 \times 15 = 150$<br>$150 - 15 = 135$<br><br>Don't forget to 'undo' your change! | $6 \times 15$<br>$15+15+15+15+15+15$<br>$15 + 15 = 30$<br>$30 + 15 = 45$<br>$45 + 15 = 60$<br>$60 + 15 = 75$<br>$75 + 15 = 90$ | $6 \times 125$<br>$6 \times (100 + 20 + 5)$<br>$(6 \times 100) + (6 \times 20) + (6 \times 5)$<br><br>$600 + 120 + 30 = 750$ | $24 \times 8$<br>x2    ÷2<br>$48 \times 4$<br>x2    ÷2<br>$96 \times 2$<br>x2    ÷2<br>192 |
| Breaking Factors into Smaller Factors | Grid Method | Partial Quotients | Multiplying Up |
| $12 \times 25$<br>$2 \times 6$<br>$2 \times 25 = 50$<br>$50 \times 6 = 300$ | $35 \times 7$<br><br>| × | 30 | 5 |<br>\| 7 \| 210 \| 35 \|<br>$210 + 35 = 245$ | 36 R 10<br>18 ⟌ 880<br>$- \underline{180}$  (10 x 18)<br>400<br>$- \underline{360}$  (20 x 18)<br>100<br>$- \underline{36}$  (2 x 18)<br>70<br>$- \underline{60}$  (4 x 18)<br>10 | $72 \div 8$<br>$8 \times \underline{5} = 40$<br>$8 \times \underline{4} = 32$<br>$(\underline{5} + \underline{4}) = (40 + 32)$<br>$8 \times \underline{9} = 72$ |
| Repeated Subtraction | | | |
| $24 \div 6$      $24 - 6 - 6 - 6 - 6$      $6 \times 4 = 24$ SO $24 \div 6 = 4$ | | | |

35

# Solving Equations

An equation is an expression which contains an equal sign. There are various ways to solve equations.

1. **Cover Up method**
   Cover up the letter with your finger. Look at the equation to see what number should be under your finger to make both sides equal.

   $x + 9 = 12$          $3m + 4 = 10$

   $\bigcirc + 9 = 12$    (3m means 3 X m)

   $x = 3$               $\bigcirc + 4 = 10$

                         $3m = 6$

                         $m = 2$

2. **Balancing**
   $2x + 1 = 11$

   (subtract 1 from both sides)

   $2x = 10$

   $x = 5$

# Angles
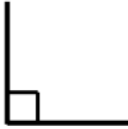


**Right** angle
(90 degrees or 90°)
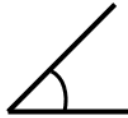
**Acute** angle
(Less than 90°)

**Obtuse** angle
(More than 90° but
less than 180°)

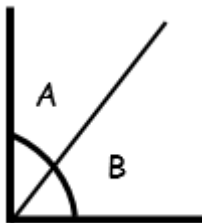**Straight** angle
(180 degrees)

**Reflex** angle
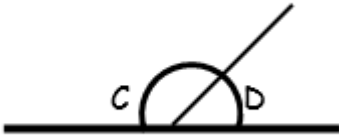(More than 180° but
less than 360°)

**Full turn**
(360°)

**Complementary Angles**: When 2 angles fit together to make a right angle they are called complementary.



**Supplementary Angles**: When 2 angles fit together to make a straight angle they are called supplementary.

**Angles in Shapes**
Angles in a triangle all add up to 180°
Angles in a quadrilateral (4 sides) add up to 360°.

**Time**

5 pm

Analogue                    Digital



17:00

**Discussion Points**
- children will practise reading, recording and converting between time in both analogue and digital clocks and 12hour and 24hour notation and words
- read and interpret minutes to and from the hour e.g. 2.55am or 4.20pm
- Use and interpret timetables and calendars to plan activities and events
- Calculate the duration of events including bridging across hours and parts of hours
- Use knowledge of time, distance and speed to estimate how long a journey should take.

**12 hour notation**
- When writing 12 hour time we need to include either a.m. or p.m. after the time (a.m. – ante meridiem, anytime in the morning between midnight and 12 noon) (p.m. – post meridiem, anytime in the afternoon or evening between 12 noon and midnight)
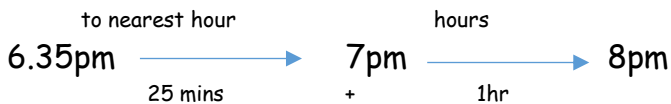
**24 hour notation**

- when writing 24 hour time the hours are written as numbers between 00 00 and 24 00
- after 12 noon hours are numbered 13, 14, 15 etc.  2.45pm = 14 45

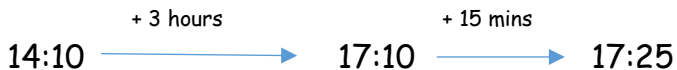To calculate time intervals we can use the counting on method

## Example 1

How long is it from 6.35pm to 8pm?

|  | to nearest hour |  | hours |  |
|---|---|---|---|---|
| 6.35pm | → | 7pm | → | 8pm |
|  | 25 mins | + | 1hr |  |

Answer: 1hr and 25mins

## Example 2

A film started at 14:10 and lasted for 3 hours and 15mins. When did it finish?

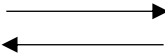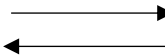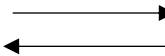|  | + 3 hours |  | + 15 mins |  |
|---|---|---|---|---|
| 14:10 | → | 17:10 | → | 17:25 |

The film finished at 17:25

## Key Vocabulary

before, after, during, morning, afternoon, midday, noon, night, today, evening, yesterday, tomorrow, day, sunset, sunrise, future, past, present, then, now, when, early, late, soon, days, weeks, months, years, midnight, time, clock, hours, minutes, seconds, o'clock, a.m., p.m., centuries, decades, seasons, how many days in - week, fortnight, month, year, analogue, digital, first, next

# Measurement

- Children will learn to convert between common units of measurement

| Length | | Length |
|---|---|---|
| 1 centimetre (cm) | is equivalent to | 10 millimetres (mm) |
| 1 metre (m) | is equivalent to | 100 centimetres (cm) |
| 1 kilometre (km) | is equivalent to | 1000 metres (m) |

| Weight | | Weight |
|---|---|---|
| 1 gram (g) | is equivalent to | 1000 milligrams (mg) |
| 1 kilogram (kg) | is equivalent to | 1000 grams (g) |

| Volume | | Volume |
|---|---|---|
| 1 litre (l) | is equivalent to | 1000 millilitres (ml) |

# Problem Solving Strategies



**C** — Circle important numbers.
- If they are written in word form, write the digits above the words.

**U** — Underline the question and important information.
- What are you being asked to solve?

**B** — Box any maths action words.
- Do you need to add, subtract, multiply or divide?

**E** — Eliminate and Evaluate.
- What information do I not need?
- What steps do I take?

**S** — Solve and show your work.
- Explain your thinking using calculations or sentences.
- Does it make SENSE? Check your answer.

**\*Remember to write your answer to the question**

43

## Useful Websites

- http://www.primarygames.com/

- https://www.sumdog.com/city

- https://www.topmarks.co.uk/maths-games/

- http://www.primaryhomeworkhelp.co.uk/maths/