Blakesley Hall Primary School

Safe, Secure and Successful

Maths

Year 6

National Curriculum expectations are that children in Year 6 are confident with the use of formal written methods for addition. Children need to be able to solve addition multi-step problems in contexts. Children will continue to use and develop their mental strategies for addition with increasingly large numbers.

Here are examples of the addition formal written methods.

```
      1   1
    9   8   6   4   2
+   1   7   5   3   0
  1   1   6   1   7   2
```

```
      1   1
    9   0   3   5   7
+   1   2   4   6   8
  1   0   2   8   2   5
```

```
      1   1
    7   0   2   5   8
+   3   1   4   6   9
  1   0   1   7   2   7
```

Encourage the children to estimate their answers before answering the question. They will apply their knowledge to problems like the one below.

5608 tickets for a charity concert were sold before the day of the concert.
On the day of the concert, another 1235 tickets were sold.

5608   1235

?
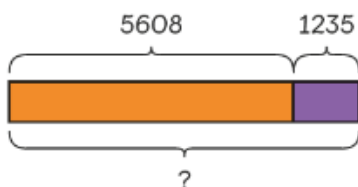
How can we find the total number of concert tickets sold?

Let's estimate.

```
    5   6   0   0
+   1   2   0   0
    6   8   0   0
```

National Curriculum expectations are that children in Year 6 are confident with the use of formal written methods for subtraction. Children need to be able to solve subtraction multi-step problems in contexts. Children will continue to use and develop their mental strategies for subtraction with increasingly large numbers.

Here are examples of the subtraction formal written methods.

1 Subtract.

(a) 62 789 − 41 321 =   **21 468**

$$
\begin{array}{r}
6\,2 \quad 7\,8\,9 \\
-\;\; 4\,1 \quad 3\,2\,1 \\
\hline
2\,1 \quad 4\,6\,8 \\
\end{array}
$$

(b) 62 987 − 14 123 =   **48 864**

$$
\begin{array}{r}
5\;\;12 \\
\cancel{6}\,\cancel{2} \quad 9\,8\,7 \\
-\;\; 1\,4 \quad 1\,2\,3 \\
\hline
4\,8 \quad 8\,6\,4 \\
\end{array}
$$

2 Find the difference.

246 120 − 120 246 =   **125 874**

$$
\begin{array}{r}
10\;11 \\
5 \quad 11\;12\;10 \\
2\,4\,\cancel{6} \quad \cancel{1}\,\cancel{2}\,\cancel{0} \\
-\;1\,2\,0 \quad 2\,4\,6 \\
\hline
1\,2\,5 \quad 8\,7\,4 \\
\end{array}
$$

$$
\begin{array}{r}
1\,1\,2\,0 \\
-\;\;\;2\,4\,6 \\
\hline
8\,7\,4 \\
\end{array}
$$

3 Find the value of 309 172 − 75 913.

Check by estimating.

$$
\begin{array}{r}
2\;10\;8 \quad 11\;6\;12 \\
\cancel{3}\,\cancel{0}\,\cancel{9} \quad \cancel{1}\,\cancel{7}\,\cancel{2} \\
-\;\;7\,5 \quad 9\,1\,3 \\
\hline
2\,3\,3 \quad 2\,5\,9 \\
\end{array}
$$

Encourage the children to estimate their answers before answering the question. They will apply their knowledge to problems like the one below.

3 🧑 bought 2 🥣 and 1 🍜. She gave the cashier three £5 notes.

Calculate the change.

She paid £5 × 3 = £15.

🥣🍜 cost £5.90 × 2 + £1.65 = £ **13.45**

£15 − £13.45 = £ **1.55**

The change is £ **1.55** .

£15
╱ ╲
£13.45 £1.55

$$
\begin{array}{r}
14 \quad 9\;\;10 \\
£\;\;1\,\cancel{5}\,.\,\cancel{0}\,\cancel{0} \\
-\;£\;1\,3\,.\,4\,5 \\
\hline
£ \quad\;\; 1\,.\,5\,5 \\
\end{array}
$$

National Curriculum expectations are that children in Year 6 can multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. Children need to be able to solve multiplication multi-step problems in contexts. Children will continue to use and develop their mental strategies for multiplication with increasingly large numbers.

Here are examples of the multiplication formal written methods.

```
3   24 × 568 = 13 632
                                   1  1              1  1
               2 3                 2 3               2 3
               5 6 8               5 6 8             5 6 8
                                                           
          ×      2 4          ×      2 4        ×      2 4
         ─────────────       ─────────────     ─────────────
          2 2 7 2             2 2 7 2            2 2 7 2
                             1 1 3 6 0         + 1 1 3 6 0
                                               ─────────────
                                                1 3 6 3 2
```

```
        5 6 8
      ×     4
     ─────────
      2 2 7 2
```

24 × 568 = 13 632

```
        5 6 8
      ×   2 0
     ─────────
    1 1 3 6 0
```

Estimate 20 × 600 = 12 000

Add the products.

Children will apply their knowledge to problems like these:

3   The number of students in a high school is 25 times the number of students in a reception class. The reception class has 276 students. How many students are there in the high school?

```
          2 7 6
      ×     2 5
     ───────────
      1 3 8 0
    + 5 5 2 0
     ───────────
      6 9 0 0
```

There are 6900 students in the high school.

Division

National Curriculum expectations are that children in Year 6 divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context

Here are examples of the division formal written methods.

3 $7192 \div 31 = $ **232**

```
         2 3 2
31 ) 7 1 9 2
   - 3 1 0 0    100
     4 0 9 2
   - 3 1 0 0    100
       9 9 2
   -   3 1 0     10
       6 8 2
   -   3 1 0     10
       3 7 2
   -   3 1 0     10
         6 2
   -     6 2      2
           0
```

```
         2 3 2
31 ) 7 1 9 2
   - 6 2 0 0  ——→ 6200 ÷ 31 = 200
       9 9 2
   -   9 3 0  ——→ 930 ÷ 31 = 30
         6 2
   -     6 2  ——→ 62 ÷ 31 = 2
           0
```

Children will use their partial tables to support their working out of long division questions.
For example, the partial tables for the 31 times table:

1 x 31 = 31

2 x 31 = 62

5 x 31 = 155

10 x 31 = 310

20 x 31 = 620

50 x 31 = 1550

100 x 31 = 3100

Children will apply their knowledge to problems like these:

2 Amira packs 1456 beads into small bags of 14 beads each. How many bags of beads does she get?

```
            104
14 )      1456
        - 1400
           56
         -  56
            0
```

$1456 \div 14 = 104$

There are 104 small bags of beads.