Blakesley Hall Primary School

Maths

Year 5

Safe, Secure and Successful

National Curriculum expectations state that children in Year 5 must be able to add whole numbers with more than 4 digits, including using formal written methods, add numbers mentally with increasingly large numbers, use rounding to check answers to calculations and determine, in the context of a problem and solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

Here are some examples of the formal written method for addition:

10 000 + 90 000 + 80 000
= 180 000

Add the hundred thousands
Add the ten thousands

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

97 531 + 86 420 = 183 951

This is the greatest possible sum, or total.

Check by estimating.
100 000 + 90 000
= 190 000

Ensure that children estimate their answers before working out the question. Children can still use place value counters to support their learning for these methods and eventually progress on using these column methods independently.

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

1 In South Korea, the currency is the won (roughly 2000 to the £).
   According to a website, travellers can expect to pay:

   37 000 won for a restaurant meal for two people.
   12 000 won for a fast-food meal for two people.
   120 000 won for a hotel room per night.
   140 000 won for a domestic return flight per person.

   (a) Find the total cost of lunch at a fast-food stall
        and dinner at a restaurant for two people.

   37 000 + 12 000 = 49 000

   37 + 12 = 49

```
    3 7   0 0 0
 + 1 2   0 0 0
   _____
   4 9   0 0 0
```

Children must be able to reason their answers verbally and explain what they are doing and why they are using the method they have chosen.

   (b) Find the total cost for two nights at the hotel.

   120 000 + 120 000 = 240 000

   120 + 120 = 240

```
  1 2 0   0 0 0
 +1 2 0   0 0 0
  _____
  2 4 0   0 0 0
```

   (c) Find the total cost of a 2-night stay at the hotel
        and a ticket for a domestic return flight.

   240 000 + 140 000 = 380 000

   240 + 140 = 380

```
  2 4 0   0 0 0
 +1 4 0   0 0 0
  _____
  3 8 0   0 0 0
```

National Curriculum expectations state that children in Year 5 must be able to subtract whole numbers with more than 4 digits, including using formal written methods, subtract numbers mentally with increasingly large numbers, use rounding to check answers to calculations and determine, in the context of a problem and solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

1   53 279 − 29 035 =   **24 244**

```
    5 3   0 0 0            2 7 9            5 3   2 7 9
  − 2 9   0 0 0          −   3 5          − 2 9   0 3 5
  _____     and    _____          _____


  _____            _____          _____
```

This is easy.

This needs a bit of thinking.

```
    4 13                                     4 13
    5̸ 3̸  thousands        2 7 9              5̸ 3̸   2 7 9
  − 2 9  thousands      −   3 5            − 2 9   0 3 5
  _____          _____            _____
    2 4  thousands        2 4 4              2 4   2 4 4
```

53 279 − 29 035 = 24 244

Check by estimating.
50 000 − 30 000
= 20 000

Ensure that children estimate their answers before working out the question.
Children can still place value counters to support their learning for these methods and eventually progress on using these column methods independently.

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

In Focus

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Four pupils used the digit cards to make 5-digit numbers with the smallest difference.

```
    9 6 4 2 0              8 0 1 2 3
  − 8 7 5 3 1            − 7 9 6 5 4
  _____            _____
      8 8 8 9                4 6 9
```

```
    9 0 1 2 3              7 0 1 2 3
  − 8 7 6 5 4            − 6 9 8 5 4
  _____            _____
      2 4 6 9                2 6 9
```

Children must be able to reason their answers verbally and explain what they are doing and why they are using the method they have chosen.

Who has the smallest difference?
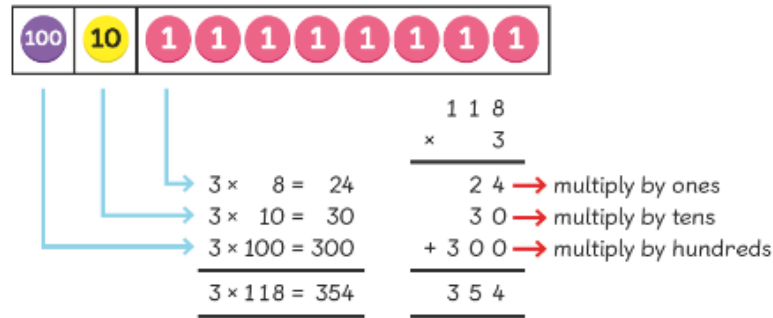Ruby has the smallest difference.

National Curriculum expectations in Year 5 are that children must be able to multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers and multiply numbers mentally drawing upon known facts.

Here are some examples of the formal written method for multiplication:

Multiplying by one digit:

$3 \times £118 =$ £354

This shows 118.
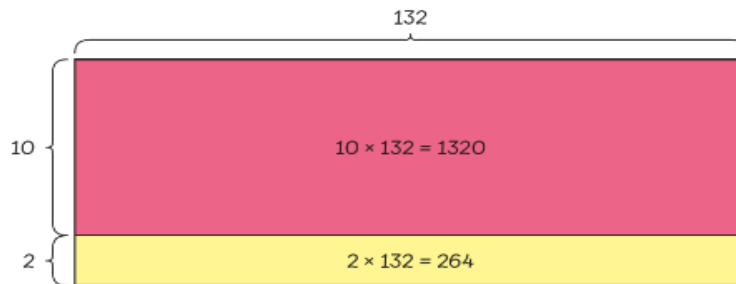
100 | 10 | 1 1 1 1 1 1 1 1

$3 \times 8 = 24$
$3 \times 10 = 30$
$3 \times 100 = 300$

$3 \times 118 = 354$

```
    1 1 8
  ×     3
    2 4 → multiply by ones
    3 0 → multiply by tens
+ 3 0 0 → multiply by hundreds
    3 5 4
```

Three sets of 8 boxes cost £354.

Long multiplication (multiplying by two or more digits):

$12 \times 132 =$ 1584

132

10   $10 \times 132 = 1320$

2   $2 \times 132 = 264$

$12 \times 132 = 1320 + 264$
$= 1584$

$12 \times 132 =$ 1584

```
      1 3 2
  ×     1 2
      2 6 4 → multiply by 2
+ 1 3 2 0 → multiply by 10
    1 5 8 4
```

Ensure all children are confident in multiplying by one digit using the formal method before progressing on to multiplying by two or more digits. Encourage the children to estimate before and check after they have completed the calculation.

It is important that all children are still rehearsing their times tables and be able to recall known facts quickly. For example, if they know that 7 x 8 = 56 then they should also know 70 x 80 = 5600.
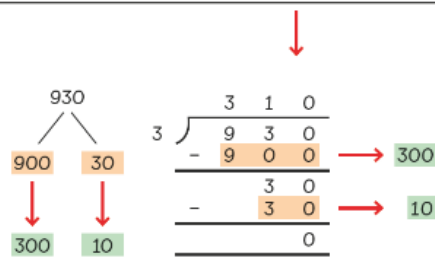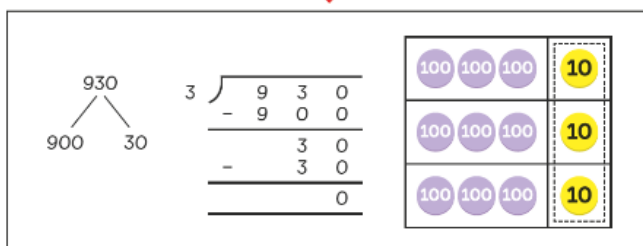
Division

National Curriculum expectations are that children in Year 5 must be able to divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context, divide whole numbers and those involving decimals by 10, 100 and 1000 and divide numbers mentally drawing upon known facts.

Here are some examples of the formal written method for short division:

2 $930 \div 3 =$ 310
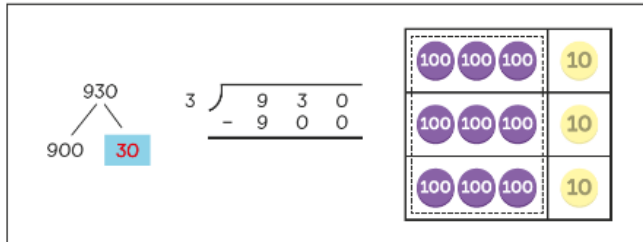
If children need support with this method, use place value counters to help the children visualise the process of dividing.

To support children with this method of division all children must use their partial tables which will aid in working out the calculation faster.
E.g. for $98 \div 7 =$

$1 \times 7 = 7$
$2 \times 7 = 14$
$5 \times 7 = 35$
$10 \times 7 = 70$
$20 \times 7 = 140$
$50 \times 7 = 350$
$100 \times 7 = 700$

This also provides children with the opportunity to estimate their answer.

(a) $98 \div 7 =$ 14

(b) $342 \div 6 =$ 57