Calculation at Chesswood
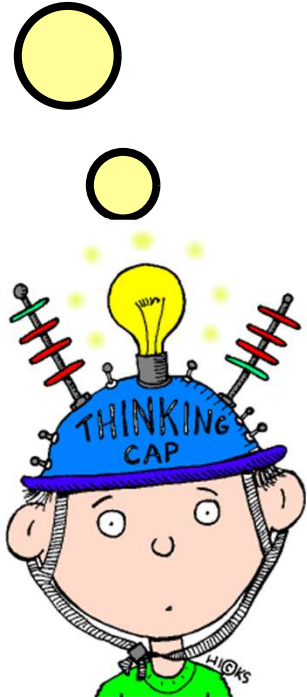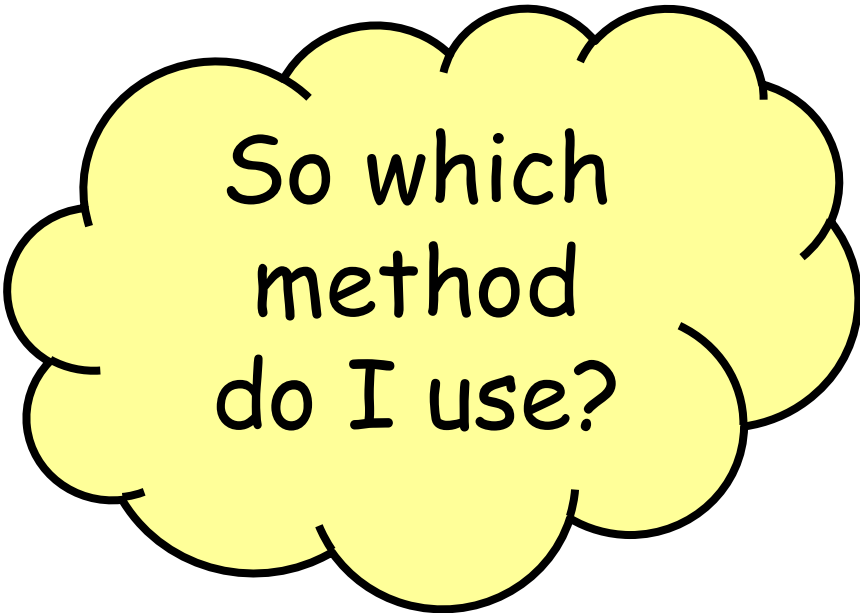
Subtraction

Number Line

↓

Partitioning

↓

Expanded Column

↓

Compact Column
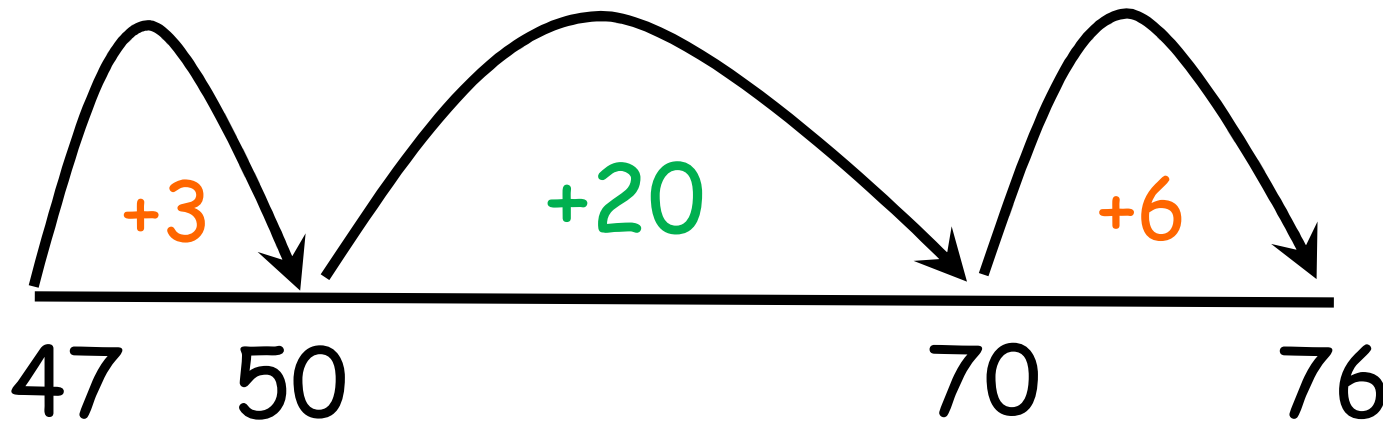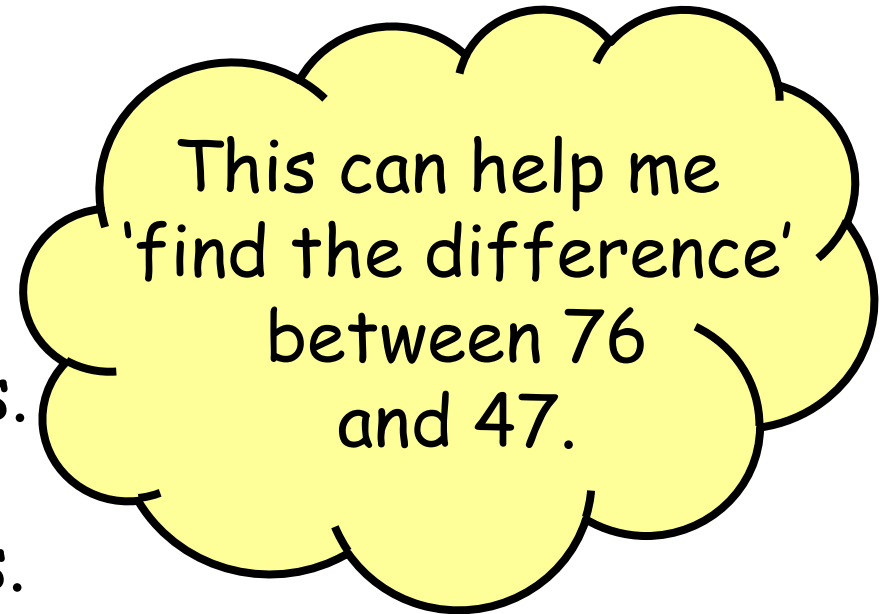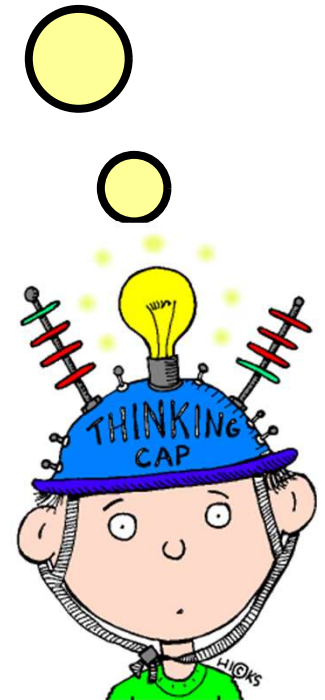
So which method do I use?

Counting on

Start with the 47 and 76 at each end of the number line.

Count on in jumps of ones or tens. Add up the jumps to find the difference between the numbers.

This can help me 'find the difference' between 76 and 47.

+3   +20   +6

47   50   70   76
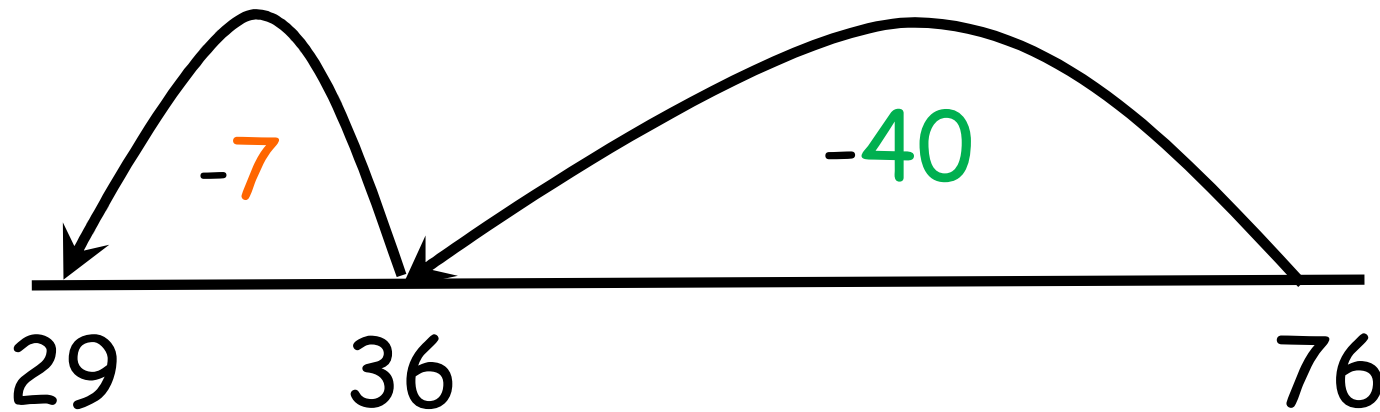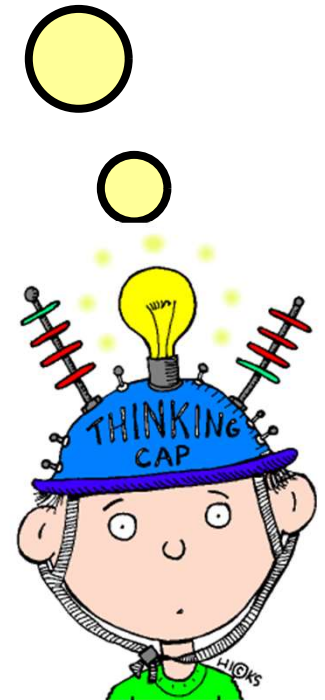
76 - 47 = 29

Year 1/2

Counting back

Start with the 76 on the right of the number line.

Then count back, partitioning the 47. First subtract the tens, then subtract the ones.

$$76 - 47 =$$
$$76 - 40 = 36$$
$$36 - 7 = 29$$

-7   -40

29   36   76

76 - 47 = 29

Year 1/2

Subtraction **3**

Horizontal Partitioning

Squared paper may help line up each number in its Ones (O) or Tens (T) columns.

I can start to partition in rows.

I will start with the ones.

T O   T O   T O
7 6 - 4 7 =
7 6 -   7 = 6 9
6 9 - 4 0 = 2 9

76 - 47 = 29

Year 2

Subtraction 4

Expanded Column

Use squared paper to write the numbers in columns.

If I subtract 7 from 6,
I get a negative number – I can't use this within a calculation!
I need to exchange a ten into ten ones: 10 + 6 = 16.
16 - 7 = 9

I can start to use my place value knowledge to subtract the ones and tens separately.

$$\begin{array}{r} \overset{60}{\cancel{7}}\overset{16}{\cancel{0}} + \cancel{6} \\ - \quad 40 + 7 \\ \hline 20 + 9 = 29 \end{array}$$

Now I can subtract:
16 - 7 = 9
60 – 40 = 20

76 - 47 = 29

Expanded Column

Use squared paper to write the numbers in columns.

When I get more confident I can subtract larger numbers.

If I subtract 7 from 6,
I get a negative number – I can't use this within a calculation!
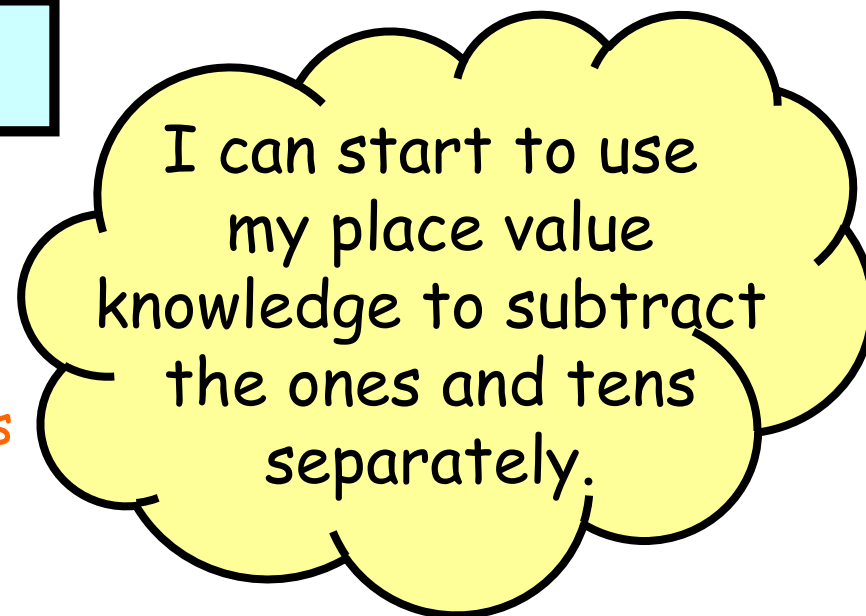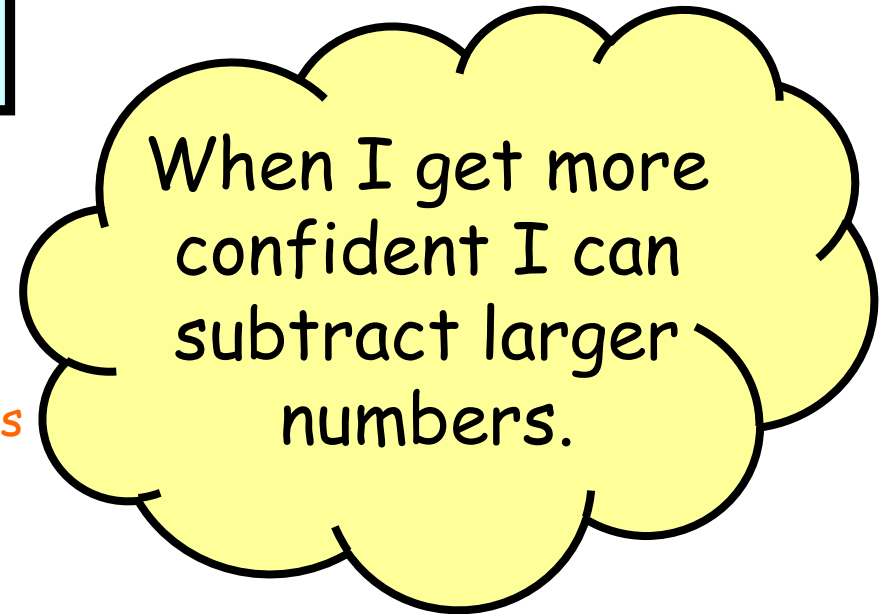I need to exchange a ten into ten ones: 10 + 6 = 16.
16 - 7 = 9

But now I can't subtract 70 from 60!
I need to exchange a hundred into ten tens: 100 + 60 = 160.
160 – 70 = 90

$$
\begin{array}{r}
\overset{200}{}\overset{160}{} \\
300 + \overset{60}{70} + \overset{16}{6} \\
-\ 100 + 70 + 7 \\
\hline
200 + 90 + 9 = 299
\end{array}
$$

376 - 177 = 199

Year 3

Subtraction 6

Compact Column

Use squared paper to write the numbers in columns.

If I subtract 7 from 6, I get a negative number – I can't use this within a calculation! I need to exchange a ten into ten ones: 10 + 6 = 16. 16 - 7 = 9
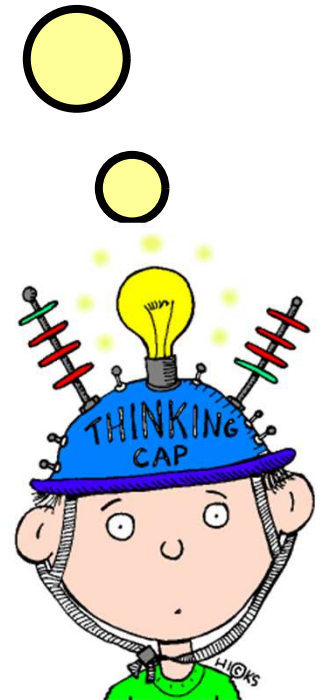
When I am more confident with place value, I can do it this way!

$$
\begin{array}{ccc}
2 & 16 & 1 \\
\cancel{3} & \cancel{7} & 6 \\
- \quad 1 & 7 & 7 \\
\hline
1 & 9 & 9 \\
\hline
\end{array}
$$

But now I can't subtract 70 from 60! I need to exchange a hundred into ten tens: 100 + 60 = 160. 160 – 70 = 90

$$376 – 177 = 199$$

Year 3 GD
Year 4