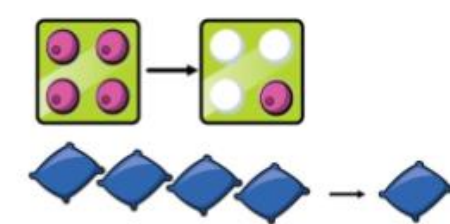
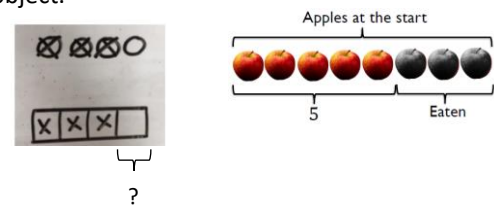
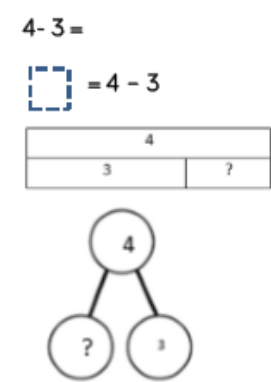

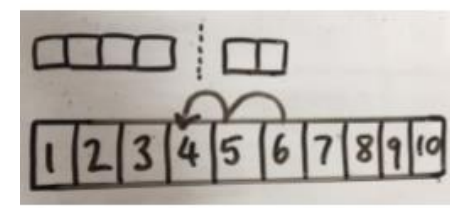
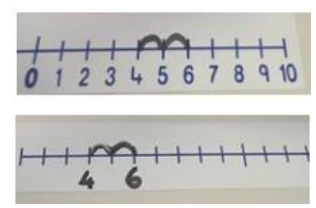


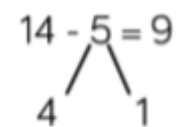


Sunnyside Primary Academy Subtraction Calculation Policy

Use NCETM Sentence Stems to support

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Skills	Concrete	Pictorial	Abstract
<p>1. Physically taking away and removing objects from a whole</p> <p>Take away, left less than, smaller, least, decrease, fewer</p>	<p>Ten frames, Numicon, cubes and other items such as beanbags could be used to explore physically taking away and counting how many are left.</p> <p>$4 - 3 = 1$</p> 	<p>Children to draw the concrete resources they are using and cross out the amount they are subtracting. The bar model should also be used. Bar model to show 1:1 correspondence where each part of the bar represents one physical object.</p> 	<p>$4 - 3 =$</p> <p></p>
<p>2. Counting back</p> <p>Count back, number line, number track</p>	<p>Using number lines or number tracks to count back.</p> <p>$6 - 2 = 4$</p> 	<p>Children to represent what they see pictorially e.g:</p> 	<p>Children to represent the calculation on a number line or number track to show their jumps. Move onto an empty number line.</p> 
<p>3. Making 10 and using number bonds.</p> <p>Bonds, partition</p>	<p>Using ten frames: $14 - 5$. Begin by making 14 on a tens frame, reinforcing 10 and 4 ones. Then subtract 4 (from the 4 on the ten frame). How many more do we need to subtract? (1). Take the one away from the 10.</p> 	<p>Children to present the ten frame pictorially, they should subtract from the ones first then full ten frame.</p> 	<p>Children to show how they can make 10 by partitioning the subtrahend. Children may do this mentally without recording as shown but must be able to verbalise their mental calculation.</p> <p>$14 - 5 = 9$</p> <p></p> <p>$14 - 4 = 10$ $10 - 1 = 9$</p>

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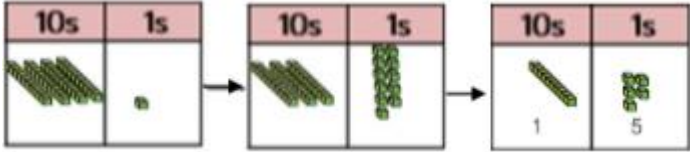
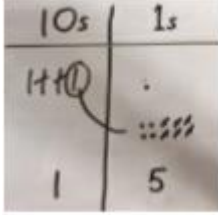
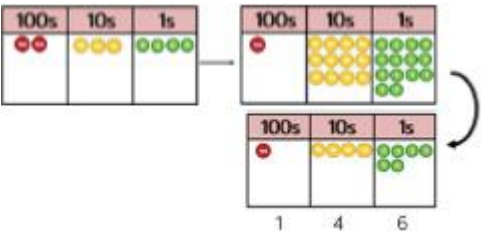
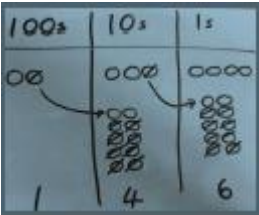
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<p>4. Finding the difference</p> <p>Difference between, count on</p>	<p>Using physical resources (e.g. Numicon, cubes, Cuisenaire). Begin with finding the difference between single digits.</p> <p>Calculate the difference between 8 and 5.</p> <p>Chn to also explore counting on on a number track and number line.</p> <p>$12 - 5 =$ Start at 5 and count on to 12. How many jumps have you counting on? (7)</p>	<p>Children to draw the cubes or other concrete objects which they have used and use the bar model to illustrate what they need to calculate. For the bar model begin with 1:1 correspondence (bar split into 10 equal parts for Peter and bar split into 3 parts for Jane). Each individual part need to be the same length. Question marks shows the difference.</p> <p>Peter 10</p> <p>Jane 3</p>	<p>Find the difference between 8 and 5.</p> <p>$8 - 5$, the difference is <input type="text"/></p> <p>Children to explore why $9 - 6 =$, $8 - 5 =$ and $7 - 4 =$ have the same difference.</p>
<p>5. Two digit subtract ones, then two digit subtract tens.</p> <p>Subtraction, minus, take away.</p>	<p>Using base 10 on a place value grid. Place value understanding should be consistently reinforced. Use 10s vertically and 1s in rows of 5 to begin with (to follow on from tens frame and so children can see bonds to 10).</p> <p>$48 - 7 = 41$</p>	<p>Children to represent the base 10 pictorially (e.g. lines for tens and dots for ones). Children should record the 10s vertically and 1s in rows of 5 to begin with. Cross off the ones subtracted. How many ones are left? Record in ones place. How many tens are left? Record in tens place.</p>	<p>Children to mentally count back to subtract.</p>

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<p>6. Two digit subtract two digit. Begin with no exchange then move to exchanging one ten for ten ones. Exchange, place value columns, subtraction, subtrahend.</p>	<p>Using base 10 on a place value grid. Place value understanding should be consistently reinforced. Use 10s vertically and 1s in rows of 5 to begin with (to follow on from tens frame and so children can see bonds to 10). Begin with two digit subtract two digit with no exchanging. Partition the subtrahend, physically take ones first then tens (same order as formal written). How many ones are left? How many tens are left? (Record in correct place)</p> <p>41-26 = 15</p> 	<p>Children to represent the base 10 pictorially (e.g. lines for tens and dots for ones). Children should record the 10s vertically and 1s in rows of 5 to begin with. Cross off the ones subtracted first then tens (same order as concrete).</p> <p>When exchanging circle the one ten and draw an arrow to the ones column, record ten ones there. Then subtract the subtrahend ones and then tens.</p> 	<p>Mentally use partitioning to subtract. Partition the subtrahend. E.g:</p> <p>38 – 17 = 21 38 – 10 = 28 28 – 7 = 21</p> <p>See Progression in Written Methods for Year 2.</p>
<p>7. Introduction to formal written method. Begin with no exchange, one exchange and then two exchanges.</p>	<p>Using place value counters. Represent the number subtracting from with place value counters and place on place value grid. Children physically exchange (e.g. one ten for ten ones, one hundred for ten tens) then physically take away.</p> <p>234 – 88</p> 	<p>Representing the place value counters pictorially, children must record the exchange.</p> 	<p>See Progression in Written Methods for Year 3.</p> <p>See Progression in Written Methods for Year 3-6. Use these examples for CPA.</p>

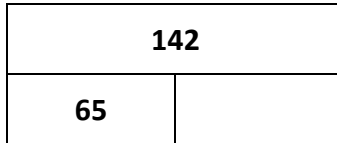
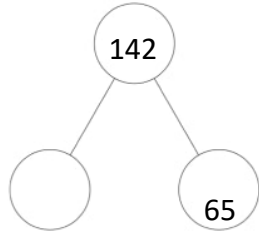
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Conceptual variation:

142 – 65



There are 142 pencils in a box but 65 have been broken. How many pencils are left to use?

$$142 - 65 = \square$$

$$142 - \square = 65$$

Find the difference between 65 and 142.

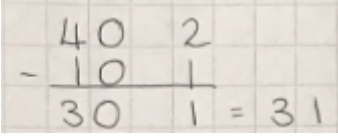
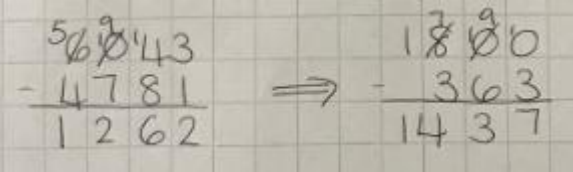
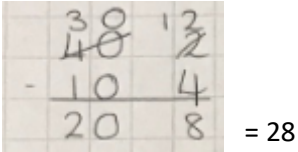
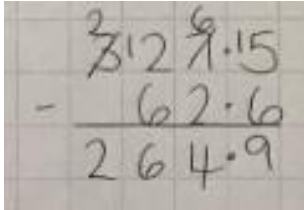
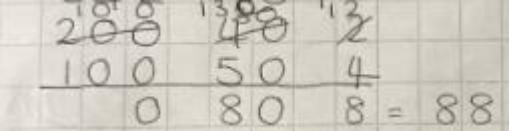
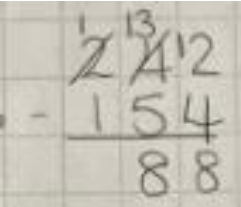
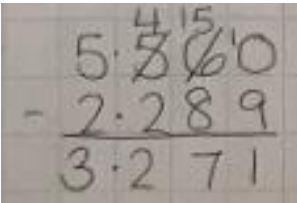
Mental Strategies:

- Count back in hundreds, tens or ones
- 1 less than a number, 10 less than a number
- Subtract mentally a near multiple of 10
- Find a small number by counting back
- Find a difference by counting up from the smaller number to the larger number (on a number line)
- Bridge through a multiple of 10 and then adjust
- Use knowledge of number facts and place value to subtract pairs of numbers
- Subtract a 2-digit number by partitioning it and then subtracting its tens and ones
- Use the relationship between addition and subtraction

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Written Methods of Subtraction			
<p>1. Expanded – no exchange 42 - 11</p> 	<p>Teaching Point Partition each number and set out as shown. Children need to start with the subtracting the ones place value column to lead into the formal written method.</p>	<p>4. Include zero in a range of place value positions and more than one zero.</p> 	<p>Teaching Point Include examples where there are a mixed number of digits. Ensure children line the digits up in the correct columns.</p>
<p>2. Expanded – 1 exchange 42 - 14</p> 	<p>Teaching Point You are exchanging one ten for tens ones – make this vocabulary explicit. This should be secure from concrete stages first.</p>	<p>5. Decimals 327.5 – 62.6</p> 	<p>Teaching Point Children must include the decimal point in the subtraction and below the equal sign, line them up like buttons on a shirt. Include examples with mixed number of digits before the decimal point and include mix of whole numbers and those with decimal places.</p>
<p>3. Expanded – 2 exchanges 242 – 154</p> <p>Expanded:</p>  <p>Then compact:</p> 	<p>Teaching Point You can progress to compact method at any step once the child is secure with their place value.</p>	<p>6. Decimals to 3d.p in context 5.560 – 2.289</p> 	<p>Teaching Point Include examples where there are mixed number of decimal places. Ensure children line the digits up in the correct columns. Encourage children to use zero as a placeholder to support exchanging as needed.</p>