|  |  |  |
| --- | --- | --- |
| **PROGRESSION** | **ADDITION** | **SUBTRACTION** |
| **Step 1**   * Number tracks and printed number lines can also be used at this step to support calculation. | Pictorial representation  https://schoolsmail.southglos.gov.uk/exchange/Claire_Hill/Inbox/No%20Subject-18.EML/1_multipart_xF8FF_2_photo.JPG/C58EA28C-18C0-4a97-9AF2-036E93DDAFB3/photo.JPG?attach=1  Call these Numicon **pieces**.  Practical representation  https://schoolsmail.southglos.gov.uk/exchange/Claire_Hill/Inbox/No%20Subject-15.EML/1_multipart_xF8FF_2_photo.JPG/C58EA28C-18C0-4a97-9AF2-036E93DDAFB3/photo.JPG?attach=1  Number sentences | Pictorial representation    https://schoolsmail.southglos.gov.uk/exchange/Claire_Hill/Inbox/No%20Subject-25.EML/1_multipart_xF8FF_2_photo.JPG/C58EA28C-18C0-4a97-9AF2-036E93DDAFB3/photo.JPG?attach=1  Practical representation    Number sentences |
| **Step 2**   * Use blank number lines * Teach to count on or back in tens first. * Use Base 10 apparatus to demonstrate the value of digits. | Number lines  Add ones    Add tens  +  +  +  +  +  Extend to using HTO  **Always add above the line from left to right.** | Number lines  Subtract ones  -  -  -  -  Subtract tens  -  -  -  -  Extend to using HTO  **Always subtract below the line from right to left.** |
| **Step 3**   * Use Base 10 apparatus to model. * Use expanded method to illustrate process if necessary. * + sign and – sign on the left. * Display steps on Maths Learning Wall so children know to start with ones. | Compact method  345 76  + 23 + 54  368 130  C:\Sync\brownl\Maths Subject Leader\Calculation Policy\Calc Pol Jan 15 images\IMG_0155.JPG 1 | Compact method  C:\Sync\brownl\Maths Subject Leader\Calculation Policy\Calc Pol Jan 15 images\IMG_0152.JPGC:\Sync\brownl\Maths Subject Leader\Calculation Policy\Calc Pol Jan 15 images\IMG_0151.JPGC:\Sync\brownl\Maths Subject Leader\Calculation Policy\Calc Pol Jan 15 images\IMG_0150.JPGC:\Sync\brownl\Maths Subject Leader\Calculation Policy\Calc Pol Jan 15 images\IMG_0153.JPGC:\Sync\brownl\Maths Subject Leader\Calculation Policy\Calc Pol Jan 15 images\IMG_0154.JPG  Use Base 10 apparatus to model the **transfer** process. |
|  | It is expected that children will reach **Step 3** by **Year 3** and be secure in using it to add and subtract numbers with up to three digits.  They can then extend their use to larger numbers and decimals. | |

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**Courtney Calculation Policy**

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| **PROGRESSION** | **MULTIPLICATION** | **DIVISION** |
| **Step 1** | Pictorial representation  Practical representation | Pictorial representation  Understanding a half    Use practical resources  Moving from a concept of halving a shape to  halving a small quantity. Use the term equal. |
| **Step 2**   * Use vocabulary ‘groups of’ when modelling process. You will add ‘groups of...’ or subtract ‘groups of....’ * Use the number line to model remainders, when moving from practical to abstract. | Repeated addition    6 x 4 = 24  *‘How many groups of 4 have you added?’* | Repeated subtraction    24 ÷ 4 = 6  *‘How many groups of 4 have you subtracted?’*  Extend repeated subtraction to include remainders. |
| **Step 3**   * It is important that the layout of the grid method TU x U will support the layout of the compact addition method. | C:\Sync\brownl\Maths Subject Leader\Calculation Policy\Calc Pol Jan 15 images\IMG_0158.JPG Grid method | Subtracting several groups together  Make clear links with multiplication  by writing a fact box.  **Fact Box**  **1 x 5 = 5**  **2 x 5 =10**  **3 x 5 = 15**  **etc.**    64 ÷ 5 = 12r4 |
| **Step 4**   * Once pupils demonstrate a good understanding of place value and are proficient users of the grid method and number lines to multiply and divide, the compact methods need to be introduced to aid speed and accuracy. | Compact methods | Compact method  https://schoolsmail.southglos.gov.uk/exchange/Claire_Hill/Inbox/No%20Subject-22.EML/1_multipart_xF8FF_2_photo.JPG/C58EA28C-18C0-4a97-9AF2-036E93DDAFB3/photo.JPG?attach=1  Extend to representing the remainder as a  decimal or fraction. |
|  | It is expected that children will reach **Step 3** by **Year 3** using the methods to multiply and divide two digit numbers by a one digit number.  In **Year 4** they will be using the methods to multiply and divide three digit numbers by a one digit number.  It is expected that children will reach **Step 4** by **Year 5** using the methods to multiply and divide four digit numbers by a one digit number.  In **Year 6** they will be using the methods to multiply and divide four digit numbers by two digit numbers. | |