**Class: MATHEMATICS PROGRAM Teacher:**

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| **TERM** | **1** | | | | **2** | | | | | **3** | | | **4** | | |  | **STRAND** | | | | | |
| **WEEK** | **1** | **2** | | **3** | | **4** | | **5** | **6** | | **7** | **8** | | **9** | **10** | **N** | | **PA** | **D** | **M** | **SG** |
| **TOPIC: ADDITION AND SUBTRACTION** | | | | | | | | **OUTCOME:**  **NS1.2** Model addition and subtraction using concrete materials; Record number sentences using drawings, numerals, symbols and words  **NS2.2** Explain and record methods for adding and subtracting; Use a formal written algorithm for addition and subtraction | | | | | | | | | | | | | | | | |
| **WORKING MATHEMATICALLY:**  **Questioning Reflecting Applying Strategies Communicating Reasoning** | | | | | | | |
| **LEARNING ACTIVITIES ( including CMIT/DENS):**   |  | | --- | | **Maths Maintenance**  Counting forwards and backwards by 5s, 10s, 100s on and off the decade  **Warm-Ups**  Complete a 100s chart in under 5 mins |   **PRE-ASSESSMENT:** Observe student use of mental strategies to solve addition and subtraction problems.  **WORKING AT NS1.2**   |  | | --- | | **Practice & Consolidation**  **Maths In A Box 1:** Cards 45 - 55  **Targeting Maths 2:** pp74,75  **Targeting Maths 3:** pp88-91 |   **Blocks on the Bowl** In pairs, students are given a collection of cubes (up to 10) and a bowl. The bowl is turned upside down on the desk. Student A places the blocks on top of the bowl and Student B counts the blocks. While Student B looks away, Student A removes some of the blocks and places them under the bowl. Student A asks Student B ‘How many blocks are under the bowl?’ Student B records their answer. They check the actual number of blocks altogether. Students swap roles and repeat the activity using a different number of blocks. *Extension:* When the students are confident with combinations up to 10, the activity could be extended to include numbers greater than 10.  **Make Your Calculator Count** Students are shown how to use the process of repeatedly adding the same number on a calculator to count eg In pairs, students use the calculator to count from one by repeatedly pressing the ‘=’ button and record the counting numbers on a paper strip. This process can be repeated by constantly adding other numbers.  **Counting-on Cards**  **Part A** The teacher prepares a set of number cards (a selection of numbers ranging from 20 to 50) and a set of dot cards (1 to 10). Each set is shuffled and placed face down in separate piles. In small groups, one student turns over the top card in each pile eg Students add the numbers represented on the cards together, and state the answer. The first student to give the correct answer turns over the next two cards.  *Variation:* Students are asked to subtract the number on the dot card from the number on the number card.  **Part B** Students discuss the strategies used in Part A. The teacher models recording strategies on an empty number line eg Students are given the cards from Part A and are asked to turn over the top card in each pile and record their strategies using their own empty number line. Students share their strategies.  **Doubles Bingo** Students are given a blank 2 × 3 grid and six counters. Students are asked to record a number in each square that is ‘double any number’ on a standard dice eg The teacher rolls the dice and states the number shown. Students ‘double the number’ on the dice and place a counter on the corresponding answer on their grid. The teacher continues to roll the dice until one student has covered all numbers on their grid.  *Variation:* Students are asked to record numbers in each square that are ‘double plus one’ or ‘double take away one’. A dice marked with numbers other than 1 to 6 could be used. (Adapted from CMIT)  **Make 100** The teacher removes the picture cards (Kings, Queens, Jacks) from a standard pack of playing cards. The Ace is used to represent one.  In small groups, each student is dealt six cards. The aim of the activity is to add all six card numbers together to make the closest total to 100 (but no greater than 100). Each student can nominate one of their cards to be a ‘tens’ card. For example, if the student was dealt the 7 card, they could nominate the 7 card to have the value 70 and add the remaining cards for a total of 93. Students could use a calculator to assist. They should be encouraged to record their calculations.  **Add or Take away** The teacher removes the picture cards (Kings, Queens, Jacks) from a standard pack of playing cards. The Ace is used to represent one. In small groups, each student is dealt four cards. The top card of the pack is then turned over to become the ‘target card’. Students attempt to make an addition or subtraction number sentence, using any of their four cards, so that the answer equals the number shown on the ‘target card’. Students who can do this collect a counter. The cards are returned to the pack, shuffled and the activity is repeated. Play continues until one student has collected ten counters.  **WORKING BEYOND NS1.2 and WORKING AT NS2.2:**  **Differences on Number Lines** In pairs, students draw an empty number line. Student A chooses two three-digit numbers and places them on the number line.  Student B uses the number line to work out and record the difference between the two numbers. Students explain the mental strategies they used to find the answer. They reflect on their method, considering whether it can be improved.  **Appropriate Calculations** Students are given a calculation such as 160 – 24 =136 and are asked to create a number of problems where this calculation would be needed. Students share and discuss responses.  **Take-away Reversals** In pairs, students choose a three-digit number without repeating any digit and without using zero eg 381. The student reverses the order of the digits to create a second number ie 183. The student subtracts the smaller number from the larger and records this as a number sentence. The answer is used to start another reversal subtraction. Play continues until zero is reached. The process could be repeated for other three-digit numbers. Students discuss their work and any patterns they have observed. *Extension:* Students repeat using four-digit numbers.  **Which Way is Best?** Students are asked to solve problems in three different ways: using a mental strategy, a formal written algorithm, and a calculator eg ‘Our class has 356 points and another class has 567 points. How many points do we need to catch up?’ Students compare the strategies used and discuss the advantages and disadvantages of each method. If students come up with different answers, they are asked to show which answer is correct.  *Variation:* Students write their own problems and swap with others. Students could use four-digit numbers.  **How Much?** Students are told that a sofa and a desk cost $1116. If the sofa costs $700 more than the desk, how much does the desk cost? Students discuss. Students could pose other similar problems to solve such as ‘What does each item cost if together they cost $1054 and one was $643 more than the other?’  Possible questions include: . What strategy did you choose to use and why? . What was the key word/s in understanding the problem? . How could you check that you have the correct solution? . Could there be more than one solution?  **ASSESSMENT:** | | | | | | | | | | | | | | | | | | | | | | | | |
| **RESOURCES:**  pack of cards, calculators, drawn dart board, paper bags, popsticks, counters, circles, teddy bear counters, numbered dice, dot dice, interlocking cubes, elastic bands, blank 2 × 3 grids  *number cards 1 to 9, calculator, paper, Base 10 material, place value chart, dice, playing cards* | | | | **LANGUAGE MODELLED:**  add, plus, equals, is equal to, take away, minus, difference between, counting on, counting back, double, double and one more, number sentence, number line, addition, subtraction, trading, estimate, combinations, patterns, difference,  altogether, subtract, sign, estimate, digit, combine, bundle ‘I have fourteen red counters and six yellow counters; I have twenty altogether.’ ‘Eleven is two and nine more.’ ‘Five and five is ten and two more is twelve.’  ‘Sixteen take away seven is equal to nine.’  ‘The difference between seventeen and twenty-six is nine.’ ‘Fifty take away thirty is twenty.’  *place value, formal algorithm, addition, subtraction, solution, answer, digit, trade, jump strategy, split strategy, compensation strategy, bridging to decades, number line, difference, multiples, exchange, swap, greater, altogether, total*  *‘Two hundred and thirty-one people are going to the concert.*  *One hundred and eighty have collected their tickets. Twenty more makes two hundred and then another thirty-one makes fifty-one. So fifty-one still have to collect their tickets.’*  *‘I left a space to show the thousands space.’*  *‘I can add four thousand and eight thousand in my head.’* | | | | | | | | | | | | | | | **EVALUATION:** | | | | | |