LEARNING AND ASSESSMENT FRAMEWORK ZONE 1

CONSOLIDATING TARGETED INTERVENTIONS

L E A R N I N G   P L A N S

LIST OF TARGETED INTERVENTIONS

SUBITISING – SEEING IT ALL

TRUSTING THE COUNT

MAGIC BEAN TOSS

EXPLORING PART-PART-WHOLE

USING PART-PART-WHOLE

PICKING THE PLUGS

BEAD FRAME DOUBLES

TEN-FRAME RACE

DICE DOUBLE

NUMBER LINE JUMP

SEARCHING FOR STRAWS

MODELLING MAB

**PUZZLING PLACE VALUE**

SUBITISING – SEEING IT ALL

Specific Teaching Focus:

To consolidate **subitising** by establishing the ability to recognise, and say, how many in a collection up to 5 without counting and by introducing part-part-whole understanding for numbers to 10.

Materials/Resources Required:

- Set of subitising cards for the numbers 1- 5

- Additional set of subitising cards for collections to 10

    See "Subitising" resources in the 'Support Materials' section of this CD-ROM
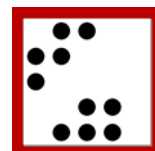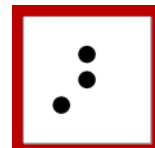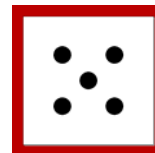
How to Implement:

1. Teacher presents subitising cards one at a time, to students asking, "*How many dots are there?"*

    These are shown relatively quickly, for 1-2 seconds, so the dots are not visible long enough to be counted individually.

2. Proceed through each card, asking "*What do you see? How do you know?"*

    Eg. *"I can see 3 because there's a 2 and a 1."*

3. Repeat the above procedure with the additional set of subitising cards for collections to 10, using subitising and part-part-whole understanding.

    Eg. *"I see 5 and 2 so there are 7 dots."*

TRUSTING THE COUNT

Specific Teaching Focus:

To consolidate **trusting the count** by establishing the ability to recognise the numerosity of numerals to 10, without having to model or count-all or recount the whole collection, using the count-on from larger strategy.

Materials/Resources Required:

- Paddle-pop sticks or age appropriate concrete materials for bundling and counting

- Plastic cups

How to Implement:

1. Place a group of less than 10 paddle-pop sticks on the floor. Eg. 7.

2. Ask students, *"How many are there? What do you see? How do you know?"*

    Then pick them up and place them in a cup.

3. Place another group of paddle-pop sticks (3 or less) on the floor. Ask students, *"how many are there now?"*

4. Ask the students, "*How many would I have altogether if I put these into the cup with the others?"*

    Having to find the total number of paddle-pop sticks in the cup without recounting them all individually will encourage 'trusting the count'.

    Eg. For 7 think 8, 9, 10.

5. Continue adding 1, 2 or 3 paddle-pop sticks for collections up to 20.

MAGIC BEAN TOSS

Specific Teaching Focus:

To consolidate **part-part-whole knowledge** by establishing the ability to see and recognise a number in terms of its parts. Eg. the ability to see 8 in terms of: 4 and 4, or 5 and 3 more, or 2 less than 10, etc.

Materials/Resources Required:

- Magic Beans (lima beans with one side sprayed gold)

How to Implement:

1. Teacher grabs a small handful of magic beans (less than 10) and tells students, "*I've got … beans."* Eg. *"I've got 8 beans."*

2. Throw them on floor and look at the number of white beans and the number of gold beans. Count and discuss what students notice. Repeat.

   In particular, discuss part-part- whole knowledge, for example, the number 8, 1 gold and 7 white, 2 and 6, 3 and 5, 4 and 4.

3. Students should then, in groups, repeat this activity with some beans, to build knowledge of part-part-whole for their collection of beans.

EXPLORING PART-PART-WHOLE

Specific Teaching Focus:

To consolidate **part-part-whole knowledge** by establishing the ability to see and recognise a number in terms of its parts, eg 10 in terms of 1 and 9, 2 and 8, 3 and 7, 4 and 6 etc.

Materials/Resources Required:

- Counters or tiles

- Blank flash cards

- Stickers

- Ten-frames (empty) for each student

How to Implement:

1. Students use 10 counters and arrange them on two flash cards.

2. Ask students to describe their arrangements, eg, I have 2 counters on one card and 8 counters on the other. Encourage students to discuss and compare arrangements with each other. Explore as many different possibilities as they can for arranging 10 counters on the flash cards.

    Ask students, "*Which arrangement was it easiest to see 10?"* Discuss their reasons.

3. Ask students to record their arrangements in their workbooks with stickers.

4. The ten-frame can be used to explore numbers less than 10. Ask students to use counters to show numbers (given orally by the teacher) on their ten-frame. Eg. *"Show the number 7."*

5. For each number, discuss and share all the ways that number can be modeled.

    Eg. *"How have you shown 7? … a three and a four … a two and a five …"*

    Explore all numbers to 10 and the part-part-whole representations that emerge on the ten-frame.

USING PART-PART-WHOLE

Specific Teaching Focus:

To consolidate **part-part-whole knowledge** by establishing the ability to see and recognise a number in terms of its parts, eg see 8 in terms of 4 and 4 or 5 and 3 more or 2 less than 10.
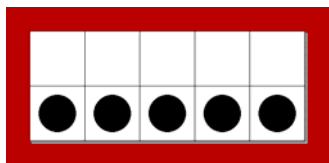

Materials/Resources Required:

*   Ten-frames with numbers represented by dots

    See "Subitising" resources in the 'Support Materials' section of this CD-ROM
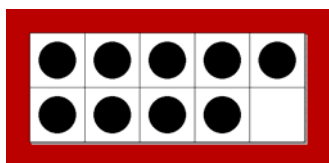
How to Implement:

1. Teacher flashes ten-frame cards with part-part-whole representations of a variety of numbers. Asks students how many they see and how they 'see' the collection.
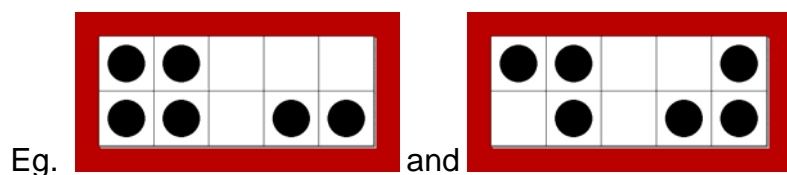
    Start with numbers below 5.

    Then show numbers to 10.

2. Question students about what they see, what number is shown, how else could this number be arranged? Let's try…

    Eg.   and

    Students should build on their understandings of numbers less than 10, and rename them in terms of their parts, such as: 6 is 4 and 2, 3 and 3, 6 is 1 less than 7, 1 more than 5, 4 less than 10, etc.

PICKING THE PLUGS

Specific Teaching Focus:

To consolidate **simple skip counting** by establishing the ability to see groups up to 5 as countable objects. Eg. counts by 2s, 5s, etc.

Materials/Resources Required:

- 2 Poly Plug (See photos below)

- 1 cloth for teacher to cover the plugs

- 1 pack of subitising cards 1 – 5

- A4 2cm square grid paper

- Six sided dice

How to Implement:

1. Use the poly-plug board and ask two students to turn over 4 plugs in each row (5 fours).

2. Ask these two students to bring their boards to the front and line them up on the floor (now 10 fours).

3. Cover all the plugs with the cloth. Seat students in front of the boards so that they can clearly see the columns and rows. Ask the students, "*I am going to slide this cover back just one row. How many blue plugs will I show?"* Ask for an answer, then slide back to reveal.

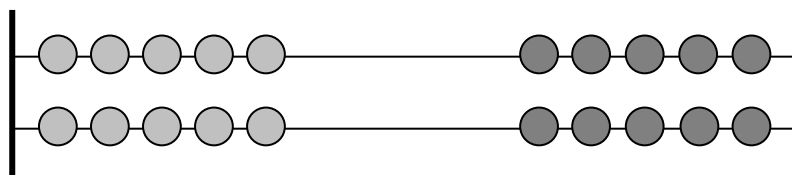4. Progressively reveal the rows asking the students, "*how many? How many now?"*

BEAD FRAME DOUBLES

Specific Teaching Focus:

To consolidate **mental strategies for addition and subtraction** by establishing doubling.
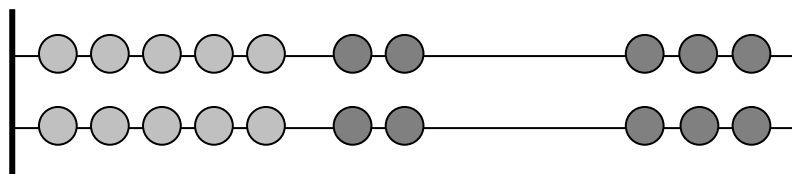
Materials/Resources Required:

- 2-row bead frames (see below) (The bead frames need to have 2 rows with 10 beads on each row, 5 of one colour and 5 of another colour)

- Ten-frames

How to Implement:

1. Teacher chooses a number, eg. 7, and ask students to show doubles of that number on their bead frames, double 7 (see below).

If set out like this on a bead frame, the students can easily see that 'double 7' is a 10 and 4 more, that is14. Ten-frames can also be used to explore this strategy.
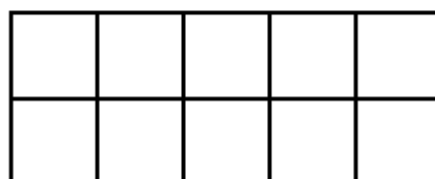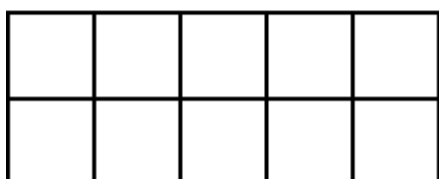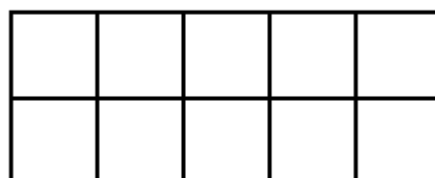
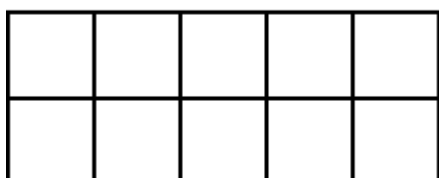2. Explore this concept with double 6, 7, 8 and 9.

TEN-FRAME RACE

Specific Teaching Focus:

To consolidate **mental strategies for addition and subtraction** by establishing make to 10 and adding by place value parts.

Materials/Resources Required:

- 6 sided & 10 sided dice

- Develop a 10 by Ten-frame game sheet (see below)

- Counters
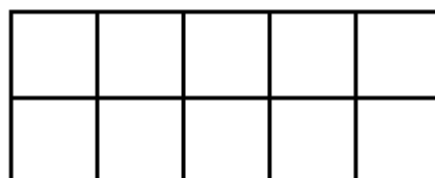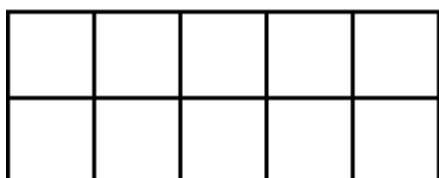
How to Implement:

1. Provide each student or group of students with a 10 by ten-frame game sheet (see above) and ask them to roll a ten-sided dice. For each number rolled, students should place that number of counters on the ten-frame game sheet.

    In order to reinforce 'make to ten' strategies and adding by place value parts, students should say, before each roll of the dice, what they need to throw to fill the ten-frame, eg. if they have covered 6 from their first roll, then they must say that they need a 4 to get to 10.
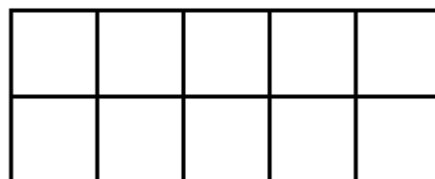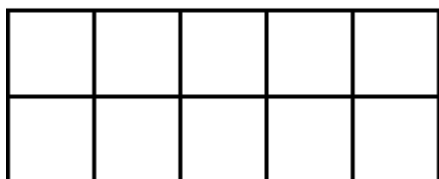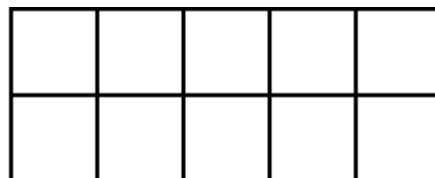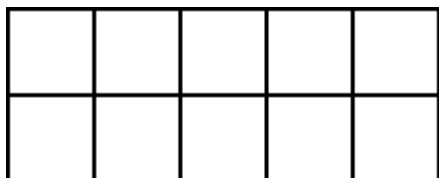
2. Students continue rolling the dice and placing counters on the ten-frames using their knowledge of part-part-whole and each time saying, for example, I have 3 tens and 4 ones, 34. I need 6 to get to 40.

    The game is over when one student has filled all of the ten-frames on their sheet.

DICE DOUBLE

Specific Teaching Focus:

To consolidate **mental strategies for addition and subtraction** by establishing doubles, part-part-whole knowledge, make to ten and place value based strategies.

Materials/Resources Required:

*   6 sided & 10 sided dice

*   Blank 10 x 10 grids

*

How to Implement:

1. Students, in pairs, roll a 6-sided dice and double the number rolled, recording their results on the 10 x 10 grid.

    Eg. if a 4 is rolled, students double it, 8: shade in 8 squares and record 8 in the appropriate cell. If their next throw is a 3, they double 3, 6 and use an efficient strategy, eg to find 8 and 6 more: 8 and 2 is 10 and 4 more, 14.

							8		
			14						

Encourage students to use other strategies including place value strategies. Eg. If 6 is thrown next, 12 needs to be added to 14. Think: 14 and 10 more, 24 and 2, 26.

							8		
			14						
			24		26				

2.   The 10x10 grid is used to record each turn. Encourage students to use efficient strategies to determine where they will shade after each throw of the dice, rather than just counting and shading by ones.

3.   The first to 100 wins. Discuss, *"Is it possible to get to 99 on the grid?"* Discuss that doubling whole numbers always gives an even number.

   Note: A 0-99 number chart if used in this activity is problematic as the zero space is counted as 1 which leads to a miss count. For the example above, recording 8, would actually be numbered 7 (see below).

0	1	2	3	4	5	6	7		

4.   Extend the game by using a 10 sided dice and the 10 x 10 grid but starting at a number that leads students to work with numbers greater than 100, eg 51 to 150, 81 to 180 or 131 to 230 board. So for a throw of 8, 16 needs to be shaded, shade 10 to 60 and 6 more 66 (remembering the first count is 51).

51									60
					66				

NUMBER LINE JUMP

Specific Teaching Focus:

To consolidate **mental strategies for addition and subtraction** by establishing count on from larger, double and near doubles and make to ten strategies.

Materials/Resources Required:

- White board markers and white board

- 6 sided & 10 sided dice

How to Implement:

1. Teacher at the white board draws an unlabelled open number line.
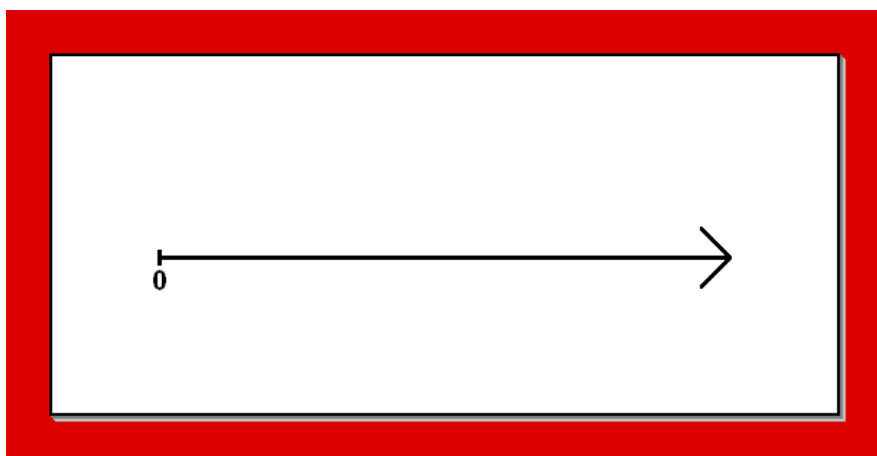
2. Each student takes a turn rolling a 10 sided dice and the teacher begins by making the jump on the number line that represents the number rolled.

For the example pictured above, the first throw is 8 and the next throw is a 10, using place value strategies, 8 and 10 more is 18. The next throw is 6, using part-part-whole strategies and make to 10, student would say 18 and 2 is 20 and 4 more 24.
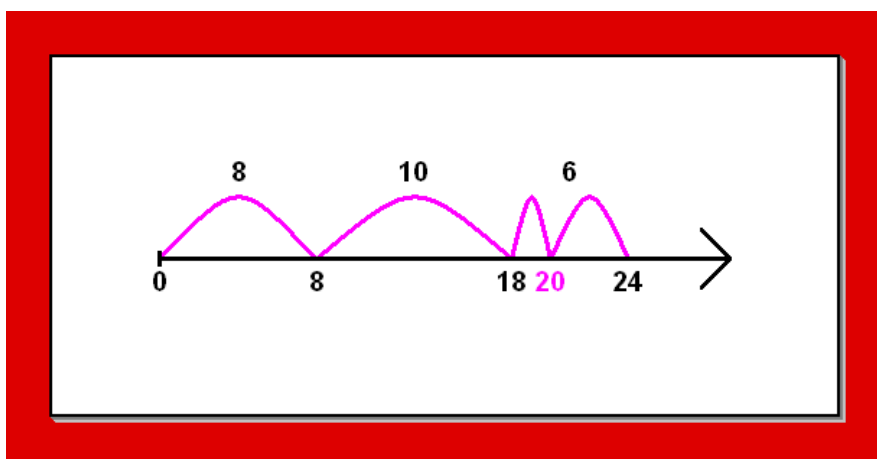
Ask individual students to use efficient strategies, eg, part-part-whole, doubles, near doubles, place value in relation to tens, for each new number rolled.

Show the proportion of the jump according to the size of the number. After reaching a pre designated number, the teacher can pass the white board marker to a student who can then be in charge of estimating the size of the jumps according to the number that was thrown.

Follow up suggestions:

■ This activity can be applied in the same way for subtraction. Eg. By starting at a given number and take-away according to the roll of the dice continuing using efficient strategies such as make back to ten.

SEARCHING FOR STRAWS

Specific Teaching Focus:

To consolidate **2 digit place value** by establishing the ability to work flexibly with ones and tens through making, naming and recording.

Materials/Resources Required:

• Large collection of straws or paddle-pop sticks

How to Implement:

1. Students sit in front of the teacher in a circle (small group or whole class) and take a handful of straws/paddle-pop sticks and count them out.

2. Teacher asks students for an efficient way to count them, ie. grouping them in fives or tens. Discuss the value of working with bundles of ten. Students experience bundling objects into tens and recording as appropriate. Scaffold by using a model similar to below (look at bundles in terms of place value parts).

tens	ones

3. Repeat this process a number of times, using different sized handfuls (make).

4. Students name these numbers. Eg, *"4 tens and 3 ones, forty three."*

5. Then students record. Eg. "43".

Follow up suggestions:

▪ Encourage students to rename collections in a variety of ways.

   Eg. A collection of 24 straws is:

   2 tens and 4 ones.

   1 ten and 14 ones.

   or 24 ones.

MODELLING MAB

Specific Teaching Focus:

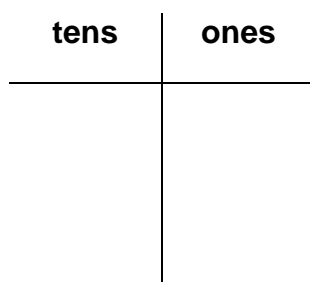To consolidate **2 digit place value** by establishing the ability to work flexibly with ones and tens to make, name, record, compare and order.

Materials/Resources Required:

• MAB

• 10 sided dice

How to Implement:

1. To make, name, and record numbers to 99. Ask students to model (make) a number, eg. "35" using the MAB. Name the number, eg, *"3 tens and 5 ones, thirty five"* and record, "35".

    Give students another example. Eg. *"Make me 4 tens and 2 ones"*, and again ask students to make, name and record.

    Repeat this using various numbers, including zero in the ones place.

2. Students then make their own number and record it on paper and share with the class.

3. Students should be given the opportunity to compare the numbers they make with each other, eg, 54 and 45, " 45 is smaller because even though there is 1 more in the ones there is 1 less in the tens".

4. Encourage students to order (smallest to largest and vise versa) and rename the numbers they have made in as many ways as possible.

    Eg. 42 is:

    4 tens and 2 ones.

    3 tens and 12 ones.

    2 tens and 22 ones.

    1 ten and 32 ones.

    42 ones.

Follow up suggestions:

▪ Students throw 2 ten sided dice and decide which numeral they would like to make. Eg. If a 6 and 3 are thrown they can make 63 or 36. Again students can make, name, record, compare and order their numbers.

PUZZLING PLACE VALUE

Specific Teaching Focus:

To consolidate **2 digit place value** by establishing the ability to work flexibly with ones and tens, through comparing, ordering and counting forwards and backwards in place value parts.

Materials/Resources Required:

- 0-99 number chart

- Cardboard templates of various shapes (see below for an example)

- Blue-tac

- Coloured counters

- 10-sided dice

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24		26	27	28	29
30	31	32	33			36	37	38	39
40	41	42	43		45	46	47	48	49
50	51	52	53	54	55	56	57	58	59

How to Implement:

1. Place a cardboard template over a small area on the 0-99 number chart (see above).

2. Ask students to suggest which numbers are covered up and how they know.

   eg. if 34 and 44 are covered, ask them to explain how they know what they are - ie. they can see 24 so the one underneath is 10 more.

3. Use a variety of template shapes and cover various sections of the 100 squares and discuss.

4. Discuss different methods of working out the same missing number.

Follow up suggestions:

- Laminate the 0-99 chart, cut into puzzle pieces and have students reconstruct the chart.

- Have a 0-99 number chart with numbers missing for student to complete (see below).

0	1	2	3	4	5	6			9
			13	14	15				19
20			23	24	25	26			
30			33	34	35	36			
40			43	35	45	46	47	48	49
50	51	52	53	54	55	56	57	58	59

Follow up suggestions: