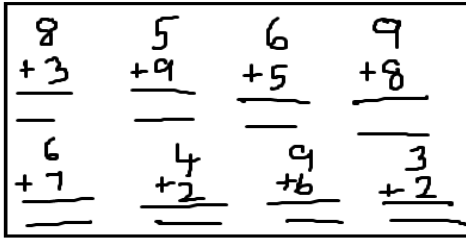
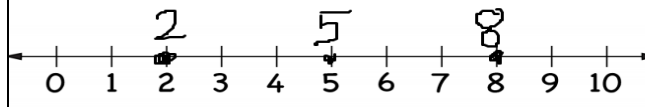
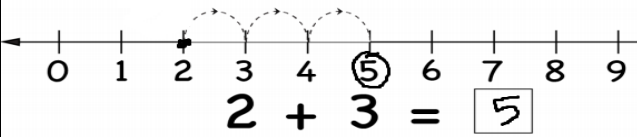
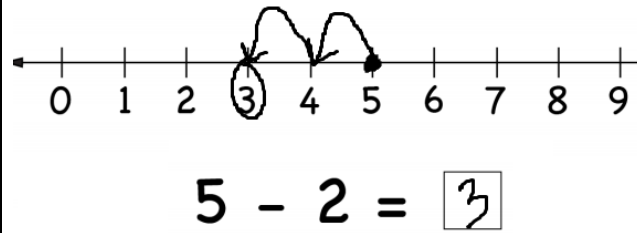







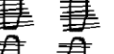
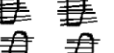

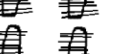
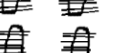
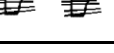
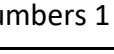
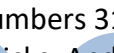
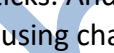
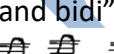









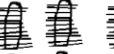








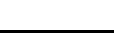
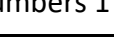




8	Consolidate – addition – subtraction –mixed problems (mishrakriye)		Laminated problem cards and worksheets from 1d 8.1 to 1d 8.9
9	<b>Decomposition</b>		
a		Use worksheets to practice decomposition	Worksheets 1d 9.1 to 1d 9.8
<b>SUMMATIVE 1a-1b-1c-1d</b>			<b>Worksheet S1a – 1d</b>

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Level 2a

2a	Concept	Process	Materials
1	<b>Number line (1-10)</b>		
a	Introduction	<p>Students mark different numbers on the number line. Use the laminated number lines. Teacher reads the number and students marks the respective numbers on the number line. Students can do this activity in pairs once the teacher is sure that they are able to do it by themselves.</p> <p>Once they are comfortable using the laminated number line they can start drawing the number line and marking the numbers in their notebooks.</p> <p><b>REMEMBER : Number line always starts with</b></p> 	
b	Addition using number line	Number line is to be drawn in the notebook	

		 <p>and do addition as shown below. ( Recollect the jumping on number line activity they did in Level 1) Teacher to say that “addition is MOVING FORWARD”</p>	
c	Consolidate through worksheets	Reinforce through worksheets for addition using number line	Worksheets from 2a 1.1 to 2a 1.6
d	Subtraction using number line.	Number Line is to be drawn in the notebook and do subtraction as shown below. Teacher is to say that “Subtraction is MOVING BACKWARD”	
			
e	Consolidate through worksheets	Reinforce through worksheets for addition using number line	6 Worksheets from 2A1.7 to 2A1.12
<b>2</b>	<b>Place Value (1-50)</b>		
a	Numbers 21 to 30	Make numbers 21 to 30 on floor using ice cream sticks. And the numbers can be written on floor using chalk. Teacher asks how many “hatthu and bidi” are there in each number.	

		<p>20  </p> <p>21   —</p> <p>22   — —</p> <p>23   — — —</p> <p>24   — — — —</p> <p>25   — — — — —</p> <p>26   — — — — — —</p> <p>27   — — — — — —</p> <p>28   — — — — — —</p> <p>29   — — — — — —</p> <p>30   </p>	
b	Writing Numbers 1 to 30	Write numbers 1 to 30 in the notebook.	
c	Numbers 31 to 40	<p>Make numbers 31 to 40 on floor using ice cream sticks. And the numbers can be written on floor using chalk. Teacher asks how many “hatthu and bidi” are there in each number.</p> <p>30   </p> <p>31    —</p> <p>32    — —</p> <p>33    — — —</p> <p>34    — — — —</p> <p>35    — — — — —</p> <p>36    — — — — — —</p> <p>37    — — — — — —</p> <p>38    — — — — — —</p> <p>39    — — — — — —</p> <p>40    </p>	
d	Writing Numbers 1 to 40	Write numbers 1 to 40 in the notebook.	

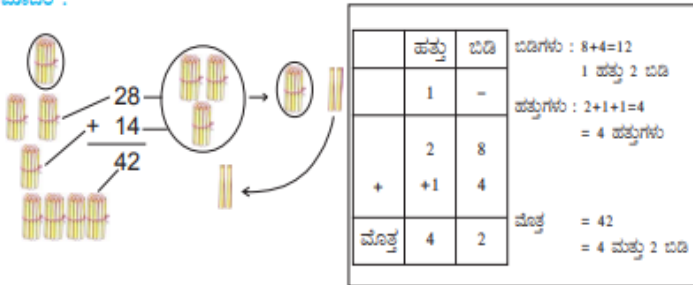
e	Numbers 41 to 50	<p>Make numbers 41 to 50 on floor using ice cream sticks. And the numbers can be written on floor using chalk. Teacher shall ask how many “HATHU and BIDI are there in each number.</p>	
f	Consolidate through worksheets	Reinforce through worksheets for place value 1-50	Worksheets from 2a 2.1 to 2a 2.4
<b>3</b>	<b>Before, after number (1-50)</b>		
	Consolidate through worksheets	Worksheets for practicing before, after and in between of numbers from 1 to 50	Worksheets from 2a 3.1 to 2a 3.4
<b>4</b>	<b>Greater than – less than (1-50)</b>		
	Consolidate through worksheets	Worksheets for practicing bigger or smaller numbers from 1 to 50	Worksheets from 2a 4.1 to 2a 4.4
<b>5</b>	<b>Ascending and Descending order (1-50)</b>		
a	Consolidate through worksheets	Worksheets to practice ascending and descending order of numbers from 1 to 50	Worksheets from 2a 5.1 to 2a 5.4
<b>6</b>	<b>Extending numbers (50-100)</b>		
a	Numbers 51 to 70	Same steps as for numbers from 1 to 50	
b	Numbers 71 to 100	Same steps as for numbers from 1 to 50	

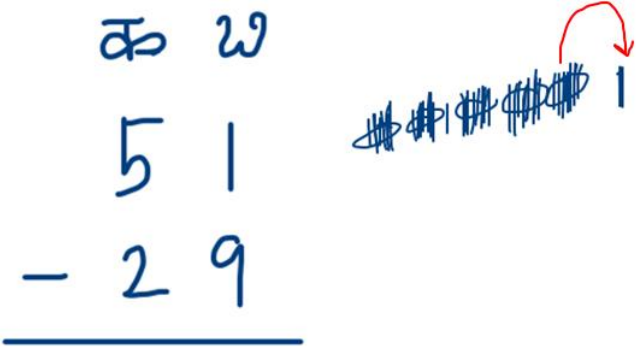
c	Repeat all concepts for 1-100 <i>Before after, in between</i> <i>Greater than –less than</i> <i>Ascending –Descending</i> <i>orders</i>	Worksheets to practice missing numbers, before and after, greater than or less than, ascending -descending order of numbers 1-100	Worksheets from 2a 6.1 to 2a 6.12
	SUMMATIVE 1a- 2a		Worksheet S1a -2a

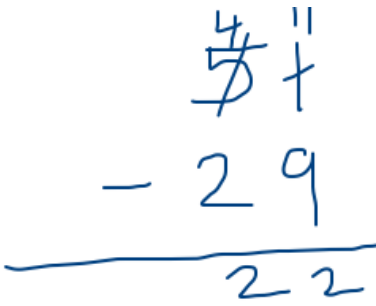

**Level 2b**

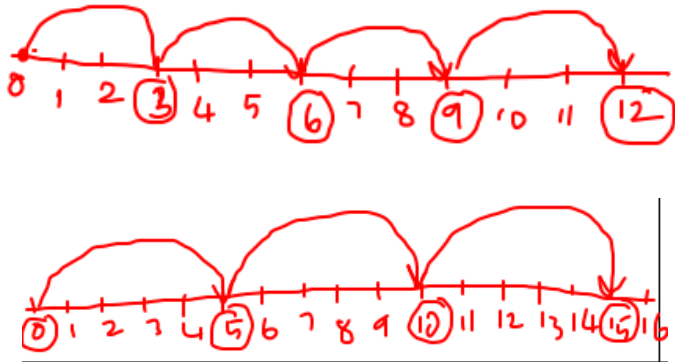
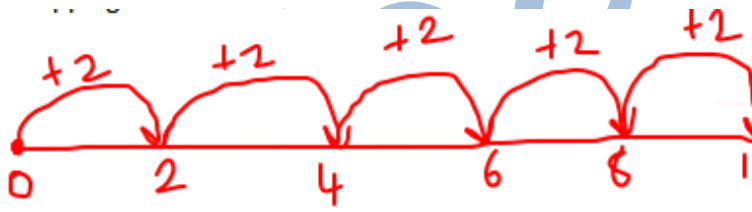
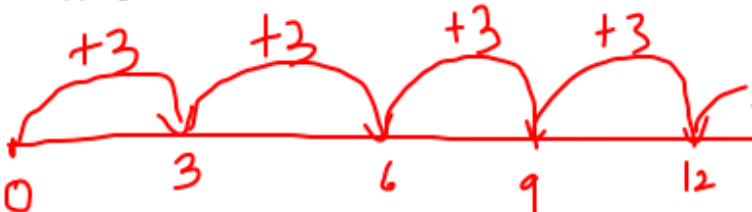
2b	Activity	Process	Materials
1	<b>Addition of two digit numbers without regrouping (without carryover)</b>		
a	INTRODUCTION  Adding two digit numbers	<p>Tell a story. Eg: Ayesha has 14 chocolates and Ravi has 32 chocolates. If Ravi gives all his chocolates to Ayesha, how many chocolates does Ravi have now? How many chocolates does Ayesha have?</p> <p>Ask one of the students to pick 14 ice cream sticks and another student to pick 32 ice cream sticks. Ask "How many hatthu and bidi are there in your hand?"</p> <p>Depict the problem as in mathematical language:</p>	

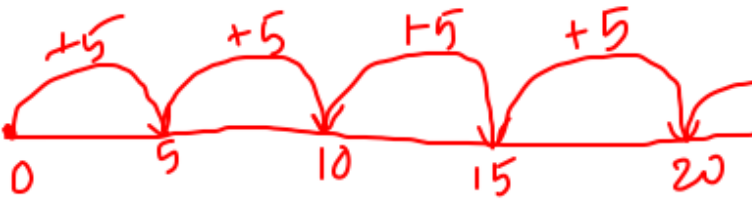
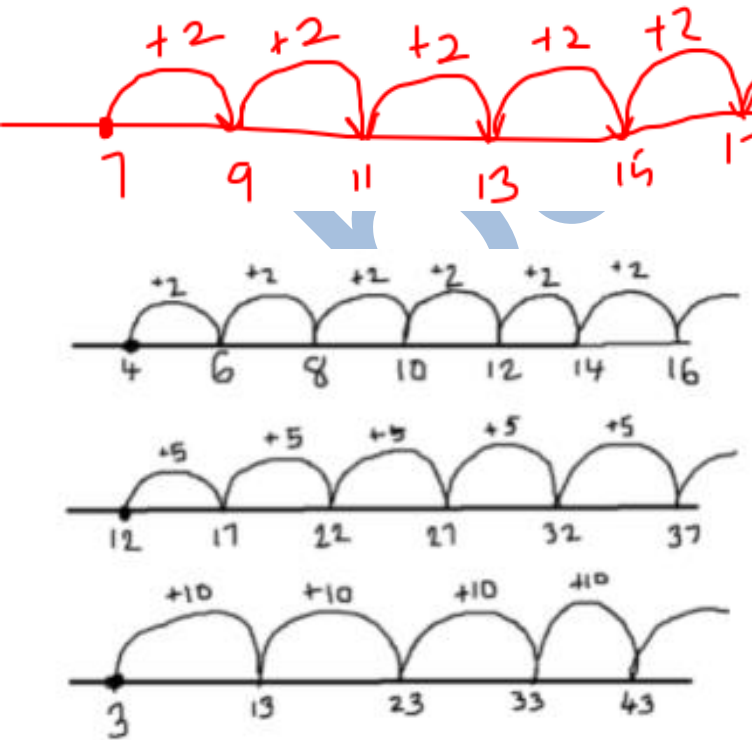
		<p>Write on the floor as shown and keep the sticks. Count all the bidi first (6). Write the number (6). Then count all the hattu bundles. Write 4 beside 6. Now read the whole number – 46. (nalavattharu). That is the sum.</p> <p>Repeat this several times with practical problems from life. Each time, the student has to represent the numbers as sticks then numbers and then writes the total sum as shown above.</p> <p>Student copies the same problems in their notebooks.</p>	
b	Consolidate through worksheets	<p>Students solve problems independently using sticks. Use problem cards or worksheets available in the class.</p> <p>Next step – students do problems without sticks</p>	Laminated problem cards and Worksheets 2b 1.1 to 2b 1.8
2	<b>Subtraction of two digit numbers without regrouping (without borrowing)</b>		
a	INTRODUCTION Subtracting two digit numbers	<p>Tell a story: <i>Ravi has 47 chocolates and he wants to give away 24 chocolates to his friend, Ashok. How many chocolates will be left with Ravi after he gives 24 chocolates to Ashok?</i></p> <p>Ask one of the students to pick 47 ice cream sticks.</p> <p>Ask “How many hatthu and bidi are there?”</p> <p>“How many chocolates are to be given to Ashok?” (Response:24)</p> <p>Ask: <i>How many hatthu and bidi are there in 24? So we need to take away 24 from 47.</i></p> <p><i>We will start with bidis. 4 bidis are to be taken away from 7 bidis. Is it possible? (yes)</i></p> <p><i>How many bidis are remaining? (3)</i></p> <p><i>Then take away 2 hatthus . How many hatthus are remaining? (2)</i></p>	


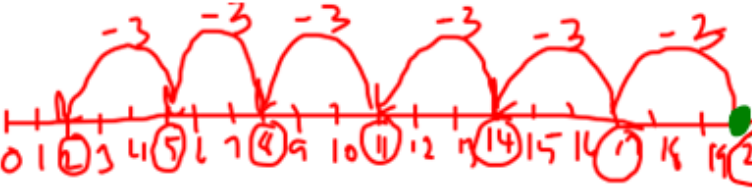
		So when we took away 24 from 47 we got 23 as remaining. Repeat this several times with different questions.	
b	Consolidate through worksheets	Students can solve problems independently using sticks. Use problem cards or worksheets available in the class.  Next step – students do problems without sticks	Laminated problem cards and Worksheets 2b 2.1 to 2b 2.8
<b>3</b>	<b>Addition with regrouping</b>		
a	INTRODUCTION  Addition by regrouping	<p><b>ಉದ್ದೇಶ :</b> 1 ರಿಂದ 50 ರ ವರೆಗಿನ ಸಂಖ್ಯೆಗಳನ್ನು ಬಳಸಿ (ಮೊತ್ತ 50 ಕ್ಕೆ ಮೀರದಂತೆ) ದಶಕ ರಹಿತ ಸಂಕಲನ ಮಾಡುವುದು.</p> <p><b>ಸಾಮಗ್ರಿ :</b> ಹತ್ತರ ಕಡ್ಡಿ ಕಟ್ಟುಗಳು, ಬಿಡಿ ಕಡ್ಡಿಗಳು 1 ರಿಂದ 50 ರವರೆಗಿನ ಮಿಂಚುಪಟ್ಟಿಗಳು.</p> <p><b>ಕಲಿಸುವ ಕ್ರಮ :</b></p> <p><b>ಮಾದರಿ :</b></p>  <p><b>ಹಂತ 1 :</b> ಮೊದಲು ಬಿಡಿ ಕಡ್ಡಿಗಳಿಗೆ ಬಿಡಿ ಕಡ್ಡಿಗಳನ್ನು ಕೂಡಿಸಿದಾಗ ಬರುವ ಹನ್ನೆರಡು ಕಡ್ಡಿಗಳಲ್ಲಿ ಕಟ್ಟುಹಾಕಿ ಒಂದು ಹತ್ತರ ಕಟ್ಟು ಮಾಡುವುದು, ಉಳಿದ ಎರಡು ಬಿಡಿ ಕಡ್ಡಿಗಳನ್ನು ಸೂಚಿಸುವ ಅಂಕಿಯನ್ನು ಮೊತ್ತದಲ್ಲಿ ಸ್ಥಾನಕ್ಕನುಗುಣವಾಗಿ ಬರೆಯುವುದು.</p> <p><b>ಹಂತ 2 :</b> ಹತ್ತರ ಕಟ್ಟುಗಳನ್ನು ಕೂಡಿಸುವಾಗ, ಬಿಡಿ ಕಡ್ಡಿಗಳನ್ನು ಕೂಡಿದಾಗ ಬಂದ ಹತ್ತರ ಕಟ್ಟನ್ನೂ ಕೂಡಿಸಿಕೊಂಡು ಕೊಡಬೇಕು. ಬಂದ ಮೊತ್ತವನ್ನು ಸ್ಥಾನಕ್ಕನುಗುಣವಾಗಿ ಮೊತ್ತದಲ್ಲಿ ಬರೆಯುವುದು.</p> <p><b>ಸೂಚನೆ :</b> ಎರಡು ಸ್ಥಾನಗಳ ದಶಕ ಸಹಿತ ಸಂಕಲನದಲ್ಲಿ ಬಿಡಿ ಸ್ಥಾನದಲ್ಲಿನ ಅಂಕಗಳನ್ನು ಕೂಡಿದಾಗ ಬಂದ ಮೊತ್ತವು 10 ಅಥವಾ ಅದಕ್ಕಿಂತ ಹೆಚ್ಚಾದಾಗ ಆ ಸಂಖ್ಯೆಯ ಬಿಡಿಸ್ಥಾನವನ್ನು ಮೊತ್ತ (ಒಟ್ಟು) ದಲ್ಲಿ ಬರೆದು ಹತ್ತರ ಸ್ಥಾನದ ಅಂಕಿಯನ್ನು ಹತ್ತರ ಸ್ಥಾನಕ್ಕೆ ವರ್ಗಾಯಿಸಿ, ಅನಂತರ ಆ ಹತ್ತನ್ನು ಸೇರಿಸಿಕೊಂಡು ಹತ್ತುಗಳನ್ನು ಕೂಡಿ ಬಂದ ಮೊತ್ತವನ್ನು ಸ್ಥಾನಕ್ಕನುಗುಣವಾಗಿ ಬರೆಯುವುದನ್ನು ಹಲವು ಚಟುವಟಿಕೆಗಳ ಮೂಲಕ ಪುನರಾವರ್ತಿತ ಮನದಟ್ಟು ಮಾಡಿಸುವುದು.</p> <p><b>ಶಿಕ್ಷಕರ ಗಮನಕ್ಕೆ :</b> ಶಿಕ್ಷಕರು ಈ ಹಂತಕ್ಕೆ ಬಂದ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಹಲವು ಲೆಕ್ಕಗಳನ್ನು ನೋಟ್‌ಪುಸ್ತಕದಲ್ಲಿ ಮಾಡಿಸಿ ಕಲಿಕಾಂಶದ ಸಂಪೂರ್ಣ ಮನವರಿಕೆ ಮಾಡಿಸಿದ ನಂತರವೇ ಅಭ್ಯಾಸ ಚಟುವಟಿಕೆಯಲ್ಲಿ ತೊಡಗಿಸುವುದು.</p>	
b	Consolidate through worksheets	Students can solve problems independently first using sticks. Use problem cards or worksheets available in the class.	Worksheets 2b 3.1 to 2b 3.8

		Then move to without using sticks.	
4	<b>Subtraction with regrouping.</b>		
a	INTRODUCTION Subtracting by regrouping	<p>Let us try to subtract 29 from 51 using sticks.</p> <p>51 – 29 Write the problem on the floor as shown here.</p>  <p>Ask the students to put the 5 groups of 10 ( hatthugalu) on the “5”, the 1 single on the “1”,</p> <p>We need to take away 29 from 51. We need to start from bidigalu.</p> <p>Ask them if they can take 9 bidikalu away from the 1 bidi. No, of course not. Tell them that you need to “regroup” the hatthugalu sticks so that you can take away the 9. Take one of the group from the 5 hathugalu , <b>undo the elastic band</b> and put the 10 sticks with the 1 so you now have <b>11</b>. Can we take 9 from 11 now? Yes. What is remaining once you take away 9 sticks? 2 right? Put the “2” in the “Bidi” column . Now we have to take way 2 hathugalu from 4 hathugalu. Point to the fact that now we have only 4 hathugalu with us after regrouping one.</p> <p>So you take away 2 hathugalu from 4 hathugalu and you are left with 2 Hathugalu. Have them count the answer and tell you what number is remaining after the subtraction is done.</p>	

		<p>On the floor or whiteboard, show them how you cross off the “51” and write ‘4 and 11’ above it so students can see you “regrouped” the “51” into ‘4 groups of 10 and 11’ which still add up to ‘51’. They can see how they got ‘2’ when they took away the 9 from the 11, and then they can see how they got ‘2 groups of 10’ when they took ‘2 groups of 10’ away from the ‘4 groups of 10’ which was regrouped into ‘4 groups of 10 and 11’.</p> 	
b	Consolidate through worksheets	<p>Students can solve problems independently using the sticks. Use problem cards or worksheets available in the class.</p> <p>Then move to without using sticks.</p>	Worksheets from 2b 4.1 to 2b 4.8
5	<b>Skip jumping – forward (0 -100)</b>		
a	<p>INTRODUCTION</p> <p>Skipping forward - Part 1 (starting from zero)</p>	<ol style="list-style-type: none"> <li>1. Create a number line in a notebook or on a board or floor (at least 0 to 20). Let the students also draw it in their books or on the floor.</li> <li>2. Mark the number zero on the number line</li> <li>3. Tell the student: <i>Let's skip jump on the number line. Let's skip 2 first.</i> Draw an arrow from 0 to 2 and then 2 to 4 and then from 4 to 6 and so on till the end of the number line.</li> <li>4. Mark those numbers with a circle.</li> </ol> 	

		<p>4. Repeat it for skips of 3 and 5.</p> 	
<p>b</p>	<p>Skipping forward - Part 2 (starting from zero)</p>	<p>This time we will not write all the numbers on the number line. We will only mark out 0 at the beginning of the number line. And we will jump 2 at a time. You can look in the previous work if you have doubt on which number to come next.</p> <p>1) Skip 2's</p>  <p>2) Skip 3's</p>  <p>3) Skip 5's</p>	

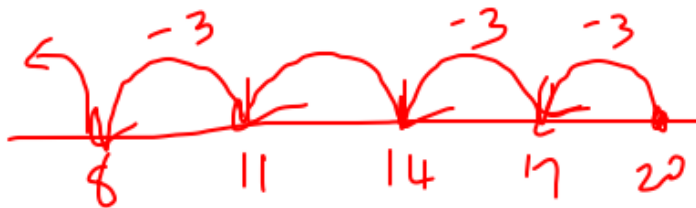
		 <p>Go as much as the students want to go. Writing the number line on the floor will be best for them to work on.</p>	
c	<p>Skipping forward - Part 3 (starting from any number)</p>	<p>At this level students are encouraged to start their number line from <b>any number of their choice</b>. For example, a number line starting from 7 and then doing skip jumping in 2's will look like this:</p>  <p>Students can try any number of their choice. Like it was done earlier, let students write and explore as much as they want. ( writing the number line on the floor will be the best option)</p>	

d	Consolidate through worksheets	Worksheets to familiarize skip jumping	Worksheets from 2b 5.1 to 2b 5.4
6	<b>Skip jumping – backward (0 - 100)</b>		
a	Introduction – Skipping backward Part 1 (starting from zero)	<p>Draw a number line 0- 20. Mark the number 20 on it. Say: <i>Let's go backwards from 20 jumping 2 at a time.</i> Mention again that going backward is equivalent to subtraction. <i>That is, when we are going backward we are subtracting 2.</i></p>  <p>This one ends at zero</p> <p>Now try the same with skipping 3 at a time and then 5 at a time, starting from 20( you can even try starting from 30 or beyond if we draw the number line on the floor)</p> 	
b	Skipping backward - Part 2 (starting from twenty)	<p>This time we will not write all the numbers on the number line. We will only mark 20 at the end of the number line. And we will jump backward 2 at a time. You can look in the previous work if you have doubt on which number to come next.</p>	

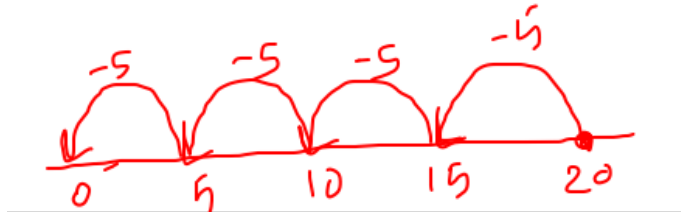
1. Skip 2's



2. Skip 3's



3. Skip 5's



You can start from 30 also.

c Skipping backward - Part 3 (starting from any number)

Start from any number on the number line and continue going backwards, in intervals of 2 ,3, 5 or 10.



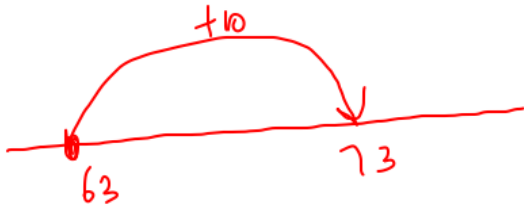
See the example. Students can use ganitmala if they are finding it difficult to conceptualise. The starting point can be **of students' choice**. In the examples below the starting numbers are 53,36 and 95


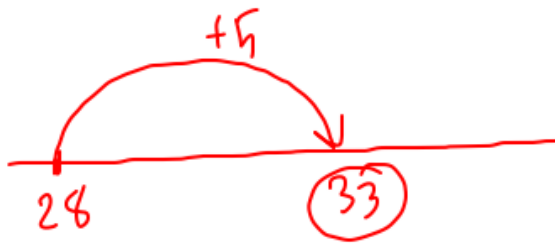
Use the floor to draw the number line and let students explore it. It is important to spend time on this. Ask questions like *how many jumps did you make to reach 23 from 53 - when you jumped 2 at a time?*

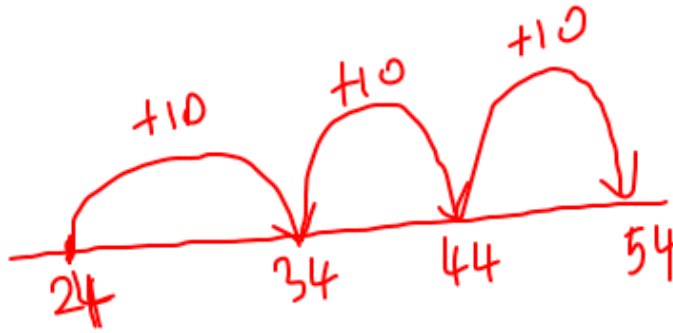
d	Consolidate through worksheets	Worksheets to familiarize skip jumping	Worksheets from 2b 6.1 to 2b 6.4

**Level 2c**

2c	Activity	Process	Materials
1	<b>Addition using number line (two digit)</b>		
a	<p>Introduction</p> <p>Adding 10 to any number on a number line</p>	<p>Adding 10 to any number on a number line</p> <p>Here teacher shows the student how to add 10 to a number using a number line( Students are already familiar with skip jumping as an operation. This can be considered as a reinforcement of the same)</p> <p>3+10 We are at 3 and then we will go 10 steps forward ( that is, a jump which is equal to 10 steps)</p>	

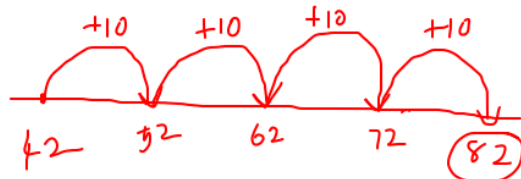
		<p>That means <math>3+10 = 13</math>. If any student is struggling with it, help her learn it by jumping one number at a time as shown below</p>  <p>Once she is comfortable with this do the direct jump of 10 in one shot.</p> <p>More examples are below.</p> <p><b><math>25+10= 35</math></b></p>  <p><b><math>63+10=73</math></b></p> 	
<p>b</p>	<p>Adding a one digit number to any number using number line.</p>	<p>This is to practice problems where a single digit is added to any number of student's choice.</p> <p>In the beginning students do it by jumping one at a time if she wants, like the example below.  <math>28+5</math> In order to solve this problem we start at 28 and then move 5 steps forward</p>	

		 <p>So <math>28 + 5 = 33</math>. Let the students do some practice of similar problems.</p> <p>Then encourage them to do it in a single jump by calculating the result in their minds ( if the students have mastered the additin facts, this will be easier to them)</p> <p><b>28+5</b></p>  <p>Do many similar problems of adding 10 and adding one digit to any number of their choice for a couple of sessions.</p>	
c	<p>Adding a 10, 20, 30, 40, 50, 60.....to any number using a number line.</p>	<p>Once the students are comfortable adding 10 and asingle digit to a number using number line, adding multiples of 10 can be introduced</p> <p>For example <b>24 + 30</b></p> <p>In this problem we are starting at 24 and then moving 30 steps forward. This can be thought as jumping 10 steps thrice.Because 30 has 3 hatthu (tens) in it.</p>	



Another example

$42 + 40$



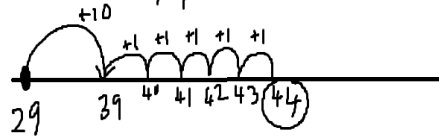
So  $42 + 40 = 82$

Once students are comfortable doing it in their mind, they can even jump 40 at a time as shown below. (only after they are comfortable with this idea)

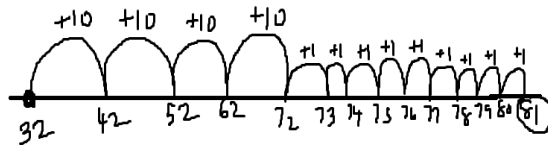


d	Adding any number to any number using number line	<p>Here we will use all the learning we had from last 3 steps. Examples as below.</p> <p>When the student wants to move 10s and units at a time.</p>	
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$$29 + 15 = 44$$

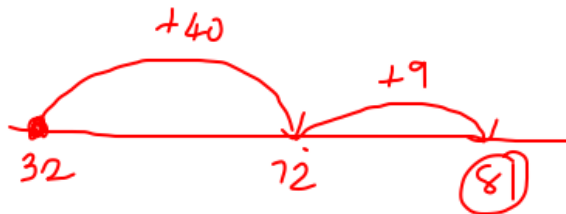


$$32 + 49 = 81$$



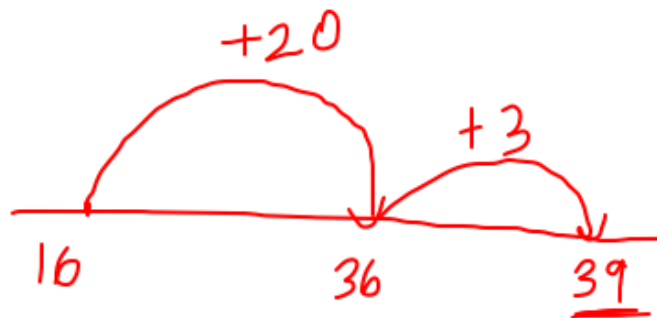
When the students are comfortable jumping all the tens in one shot and all the ones in one shot.

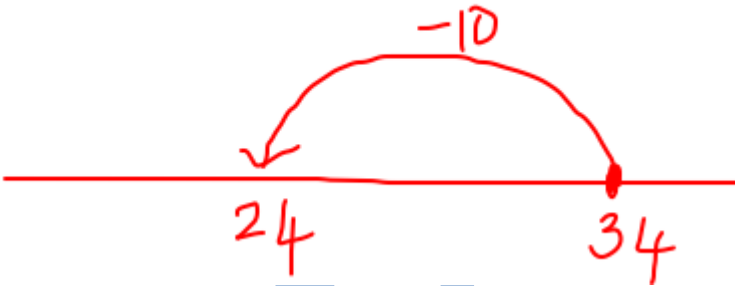
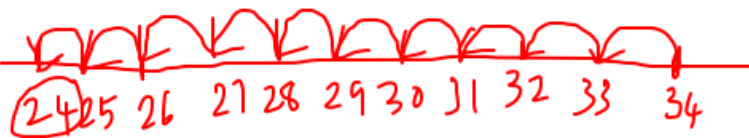
$$32 + 49$$

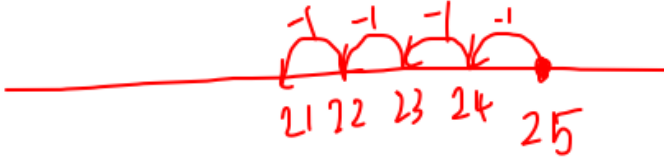
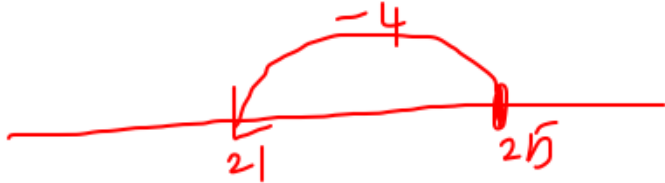
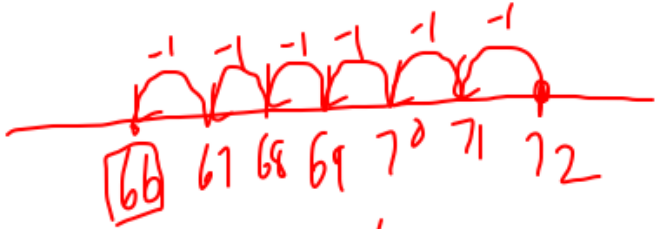


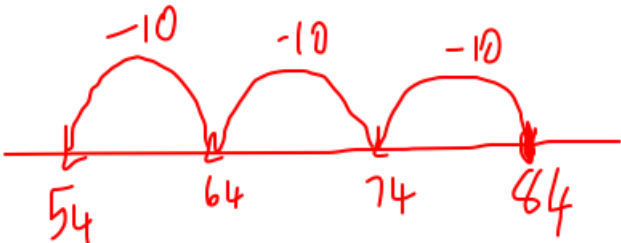
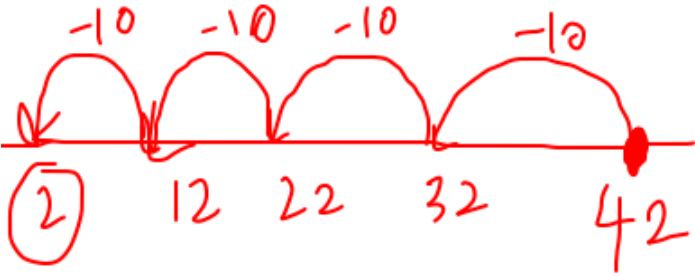
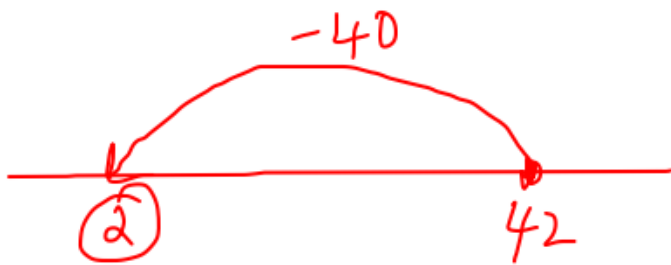
$$32 + 49 = 81$$

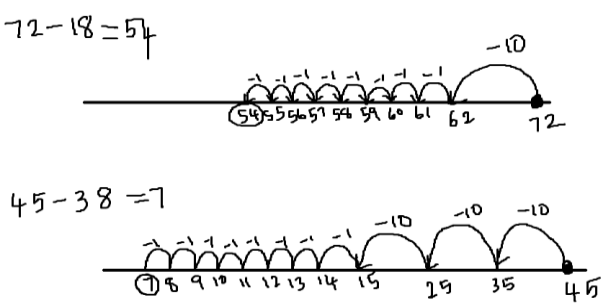
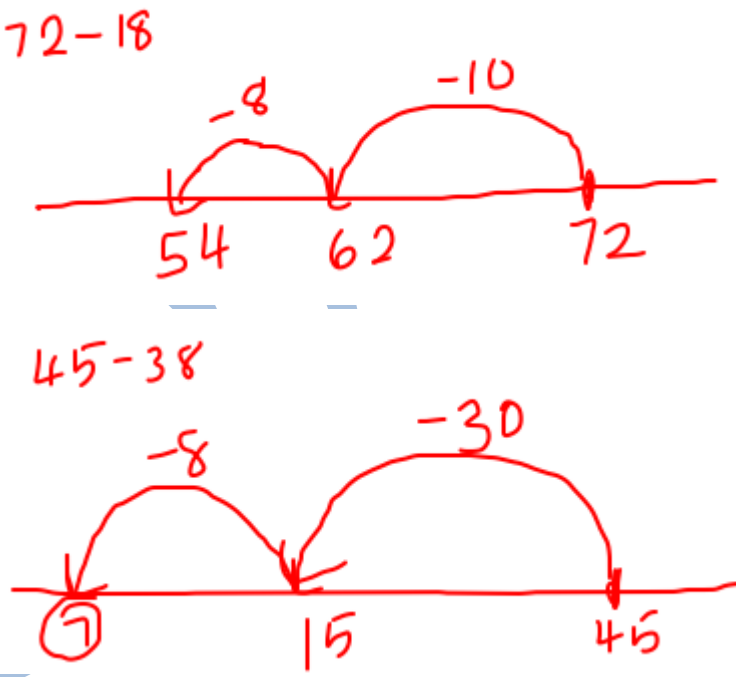
$$16 + 23$$

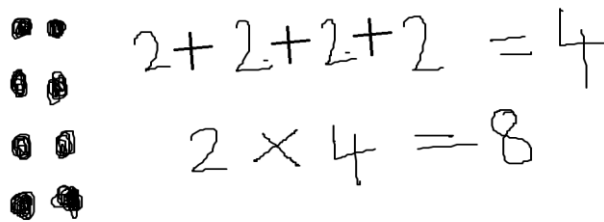


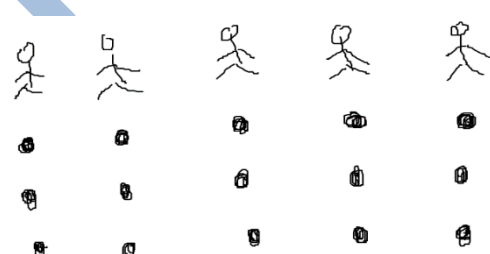
e	Independent	Worksheets to practise addition using number line	Worksheets 2c 1.1 to 2c 1.6
2	<b>Subtraction using number line.</b>		
a	<p>INTRODUCTION</p> <p>Subtracting 10 from any number on a number line</p>	<p>Similar to adding 10</p> <p>We will draw an open number line and decide a number 10 or greater than 10 to be subtracted from.</p> <p>For example let's subtract 10 from 34. It can be like this</p>  <p>We mark the number 34 at the right end of the open number line. Since it is subtraction, we move backward from 34 by 10. So we will reach 24. If a student has trouble doing it in one shot, let her do it by doing 10 small steps as shown below and later move to as shown above.</p>  <p>(This is required only if the student is not able to the subtract as shown in the first example.)</p>	

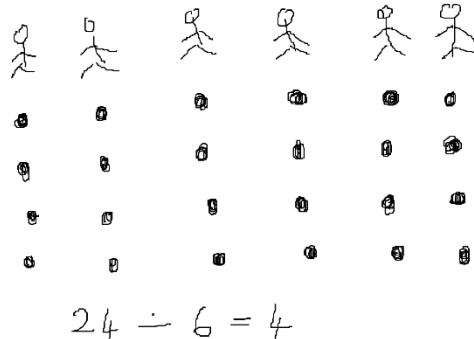
<p>b</p>	<p>Subtracting a single digit number from any number</p>	<p>Similar to addition.</p> <p>Examples are as shown below</p> <p><b>25-4</b></p>  <p>If the students are comfortable doing the subtraction in one shot, they can do that also as shown below.</p>  <p><b>72-6</b></p> <p>We can either go backward 6 times one step each or we can go backward once 6 units. Both ways are fine. Students should be able to do it one shot after some practice, that's our objective.</p> <p><math>72-6 = 66</math></p>  	
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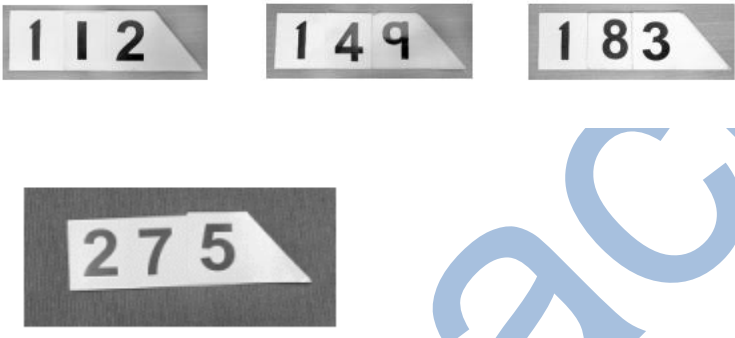
<p>c</p>	<p>Subtracting 10, 20, 30, 40, 50, 6....from any number using number line.</p>	<p>Once the students are comfortable subtracting 10 and a single digit to a number using number line, subtracting multiples of 10 can be introduced</p> <p>For example <b>84 - 30</b></p> <p>In this problem we are starting at 84 and then moving 30 steps backward. This can be thought as jumping 10 steps thrice. Because 30 has 3 hatthu in it.</p>  <p>Another example  <b>42 - 40</b></p>  <p>Once students are comfortable doing it in their mind, they can jump 40 at a time as shown below. ( only after they are comfortable with this idea)</p> 	
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d	Subtracting any number from any number using number line	<p>We will combine all the learnings from the previous 3 steps to do this.</p>  <p>When the students are comfortable jumping all the tens in one shot and all the ones in one shot. They should be able to work it out as shown below</p> 	
e	Consolidate through worksheets	Worksheets to practise SUBtraction using number line	Worksheets 2c 2.1 to 2c 2.6
3	<b>Multiplication</b>		
a	INTRODUCTION	Learning Multiplication as repeated addition.	

		<p>Teacher asks questions like: Example 1 <i>Lakshmi went to the shop and bought some chocolates. Each chocolate costs 2 rupees. What is the total cost if she bought 4 chocolates?</i></p> <p>Teacher first uses stones to demonstrate how it is calculated.</p>  <p><math>2+2+2+2=8</math> <math>2 \times 4 = 8</math></p> <p><math>2+2+2+2=2 \times 4 = 8</math></p> <p>The multiplication sign can be introduced here. <b><u>Repeatedly say that <math>2 \times 4</math> means 2 is added 4 times.</u></b></p> <p>Teacher can ask more questions and encourage students to ask questions of similar kind. This can be done with a group of 4-5 students.</p>	
b	Independent practice	<p>Solving multiplication problems using the idea of repeated addition. Students can choose to solve multiplication problems of their choice.</p> <p><b>Note: Due to the usage of Kannada language <math>3 \times 4</math> means 3 is added four times (and not the other way round) So we will be following this language throughout and at some point we will teach students that we can consider <math>3 \times 4</math> as 3 is added 4 times or 4 is added three times.</b></p>	Worksheets 2c 3.1 to 2c 3.4
4	Creating multiplication tables.	<p>Using the concept of <i>repeated addition</i>, students can create multiplication tables of numbers from 2 to 10. Students can use stones for this if they need.</p>	<b>Note: It is important for students to understand multiplication as <u>repeated addition</u> and then they need to create the multiplication table. Only</b>

		$2 \times 1 = 2 = 2$ $2 \times 2 = 2 + 2 = 4$ $2 \times 3 = 2 + 2 + 2 = 6$ $2 \times 4 = 2 + 2 + 2 + 2 = 8$ $2 \times 5 = 2 + 2 + 2 + 2 + 2 = 10$ $2 \times 6 = 2 + 2 + 2 + 2 + 2 + 2 = 12$ $2 \times 7 = 2 + 2 + 2 + 2 + 2 + 2 + 2 = 14$ $2 \times 8 = 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 16$ $2 \times 9 = 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 18$ $2 \times 10 = 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 20$ <p>Once they create the multiplication table, students can be encouraged to learn the multiplication table 'by heart'.</p>	<p>after these two levels should they progress to learning the tables 'by heart' – that is, by rote.</p>
5	Division.	<p>Division is introduced as <i>equal distribution</i>.</p> <p>Teacher can start the conversation among 4-5 students. Teacher can bring some chocolates or pebbles and ask one of the students to distribute it equally among all of them.</p> <p>Example: <i>There are 5 students and 15 pebbles.</i></p> <p>The student may use any strategy to distribute the pebbles. She may distribute one pebble at a time to each one or she may distribute 3 pebbles at a time to each student.</p> <p>Once the student has distributed the pebbles correctly the teacher draws stick figures and uses stones as chocolates to show the whole operation.</p> <p>Introduce the sign for division also here.</p>  $15 \div 5 = 3$	

		<p>Teacher asks other questions of similar kinds. Eg: <i>There are 24 chocolates and is to be divided equally among 6 children. How many chocolates does each child get?</i></p> <p>Teacher draws stick figures on the floor. Use different colored counters or pebbles as chocolates and distribute them among the “people” (stick figures drawn on the floor) and see how many chocolates are there with each person?</p> 	
6	100s		
a	INTRODUCTION	<p>Students are given a bunch of ice-cream sticks more than 100 in number. Then ask them to make bundles of tens (hatthu). Once they make it, there will be more than 10 hatthu bundles and some bidi.</p> <p>Let us imagine a situation where they arrived at 13 hatthu and 6 bidi. <i>Reinforce the idea that whenever we have a 10 we group them into one.</i></p> <p>So here we have 13 hatthu. From this we can group 10 hatthu into one single group. Use a rubber band to keep these 10 hatthu bundles together and tell the students that 10 hatthu is called <b>ondunooru</b> (one hundred). So here we have 1 nooru, 3 hatthu and 6 bidi.</p> <p>Simultaneously show them the place value cards and create 136 using it. Repeat the idea that 136 has one 100 and one 30 and one 6. Or in other words 136 has 1 nooru, 3 hatthu and 6 bidi.</p> <p>So: <b>Ondunooranalakku (One hundred and four)</b></p>	Ice cream sticks. Place value cards.

			
b	Numbers from 100 to 500.	Let students explore numbers from 100 to 200 using place value cards. And allow students to split the numbers into nooru - hatthu- bidis. 	Worksheets 2c 6.1 to 2c 6.8

**Level 3a**

3a	Activity	Process	Materials
<b>1</b>	<b>All operations with numbers 1-500</b>		
a	Addition of numbers till 500.	Using place value system and using number line( as it was done for two digit numbers	Worksheets 3a 1.1 to 3a 1.5
b	Subtraction of numbers till 500.	Using place value system and using number line( as it was done for two digit numbers	Worksheets 3a 1.6 to 3a 1.10
c	Before - after		Worksheets 3a 1.11 to 3a 1.13
d	Greater than – less than		Worksheets 3a 1.14 to 3a 1.16