Resident’s Assignment

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**Subject Area:** Math/ Addition **Date of giving Assignment:**

**Faculty:** Shah Ji **Date of submission of Assignment:** 15th Dec.16

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**Addition: Write and show the different strategies children use/opt in Class 1 and 2.**

**As per my understanding** we help child to learn addition to develop additive thinking, which include joining and separating both approaches together. We cannot separate subtraction from addition; they both go hand in hand. Addition and subtraction is an important part of our day to day life, while purchasing things from the market to making food at home (we count no. of people and no. of measured cups required for making food) we use addition and subtractions both. When we purchase multiple things from the market we do addition but if we find anything expensive and leave that thing out of to be purchased items then we do subtraction and deduct the amount of that particular item from the total we need to pay. When a small child once aware how to do addition and subtraction starts using the same in their daily life for example – from calculating total no. of students and deducting absentees out of it and share the total student present in the class that day, they also calculate total no. of books they carry and total no. of sweets they need to carry or distribute for their birthday treat. So addition and subtraction are inseparable from our daily life.

**How to teacher teach addition in grade 2-** To teach addition**, I** have observed teacher starts with the revision of number facts of 5,6,7,8,9,10 which children already done in grade 1. Examples as below:

1+4 1+5 1+6 1+7

2+3 2+4 2+5 2+6

3+4

0+5 6+0 4+2 3+3 7+0 8+0 4+4 5+3

1+8 1+9

2+7 2+8

3+7

5+4 3+6 5+5 4+6

When children get through with these number facts then teacher start with pure sums without number line till 20. Examples are:

3 and 3🡪6 6 and 4 🡪10 2 and 5🡪7 6 and 6🡪12

5 and 4🡪9 6 and 5🡪11 7 and 6🡪 13 9 and 9🡪18

Once children are able to do these pure sums proficiently till 20, teacher start giving jumps one number to another, forward jumps (above 20) for addition, and for this they begin with small number jumps. They introduce this one number to another through story and model it on the board then on the basis of the same story provide the situation and call a child to take jumps and reach the number given for example: for - 24 to 35 Teacher make children understand the importance of reaching the landmark numbers (10, 20, 30, 40, 50….so on) to take correct jumps. She also helps the child to break the number to take appropriate jumps. From 24 she teaches to reach 30 first and then on 35.

For Examples: (all examples given in the assignment are taken from children’s journals)

* 36 to 48

+4 +8

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36 40 48

* Different strategies:

+10 +2

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36 46 48

+5 +7

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* 36 41 48

When students get proficiency to take 2 jumps correctly teacher increase the level of jumps required to reach, such as from 2 jumps to multiple jumps. I have observed while taking jumps children do addition or use number facts in their minds to take appropriate jumps. Children who face difficulty taking jumps use ganit mala as well. Here teacher also throw the challenge to take jumps using different strategies and in less jumps which builds up adding small numbers and take big jumps. I have seen children taking jump of together to show lesser jumps to reach the number.

**Example of multiple jumps:**

* 45 to 69

+5 +10 +9

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45 50 60 69

Different strategies:

+15 +9

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45 60 69

+10 +10 +4

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45 55 65 69

20 +4

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45 65 69

After Forward jumps teacher teach them backward jumps to develop subtraction. It also starts with small jumps to big jumps. Teacher make the concept clear that while forwards jumps we should move from left to right above the number line and while taking backward jumps move right to left below the number line, Which help them to understand this abstract concept more clearly. They also understand that subtraction happens from big number to small number. They also make the arrows towards the direction they are moving forward or backward also towards the number they are moving.

**Backwards one number to another example:**

* 100 to 82

82 90 100

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-8 -10

* 38 to 25

25 30 38

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-5 -8

* 65 to 25 ( multiple backward jumps)

25 30 40 60 65

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-5 -10 -10 -5

After child reaches to take appropriate forward and backward jumps, teacher keep checking how efficiently children are able to take these jumps logically (without using ganit mala) and provide them pure sums again above 20, but teacher don’t use + and = symbols.

**Examples:**

32 and 12 🡪46 40 and 12 🡪 52

54 and 26 🡪 80 63 and 24 🡪 87

36 and 16🡪52

Once children get familiar with jumps and number facts teacher begin the next step for addition using malas, children make their own colorful beads malas using different patterns out of those malas teacher discuss the following questions and provide problem situations to solve:

* If A is having 20 beads in his mala and B is having 35 beads then

1. Whose mala is longer?
2. Whose Mala is shorter?
3. If A want to make big mala as B have then how many beads A need to **put** in her mala?
4. If B wants to make same mala as A have then how many beads B need to **take out** from her mala?
5. Now A and B decided to make one mala out of both mala beads together, how many beads will be in the new mala?

While discussing/giving problem sums teacher never use words- add or subtract, so that child can use his/her mind to find the solution of the same, if teacher introduce such words then children only look for these(add/less) words only to solve the problem. Also put and take out are the words which child use in day to day life. While doing these mala sums children show the strategy on the number line only. While doing addition of both the mala’s together on number line children have the no. of jumps should take, and they need to break the number to take appropriate jumps. In a very subtle way teacher take children from “and” to “+” symbol.

Such as:

* 20+35

+10 10 +10 +5

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20 30 40 50 55

+10 +10

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35 45 55

Here teacher see which all strategies children are using to break numbers(USING NUMBER FACTS) to add, they are breaking big number or small number to add.

I have seen those children make mistakes whose number facts concept is not clear; to improve their understanding teacher make them practice the same more and more. Basically children make mistakes while landing on the wrong number, with the difference of one or two no.

Now for children- word problem books (Printed) are ready which they will start doing from January onwards, then will get to know which all other strategies teacher will share with children for addition.