

Dear Third Grade Parents,

We are excited to begin our exploration into Math this year with your students. Your students were very fortunate to have many experiences with problem solving and gaining knowledge in number sense last year in second grade. We are continuing to build on their knowledge and skills in third grade by giving students the opportunity to explore problems and share their reasoning and solutions. It is important that students solve math problems using problem-solving methods that are meaningful to them. This may be different to how you traditionally learned to add and subtract, but research and the Common Core Standards support students being able to make sense of a method rather than relying on traditional algorithms. Here are a few examples of how your student may solve addition or subtraction problems.

Addition:

Method 1: Breaking Numbers Apart

$$\begin{aligned} 34 + 23 & \quad 30 + 20 = 50 \\ & \quad 4 + 3 = 7 \\ & \quad 50 + 7 = 57 \end{aligned}$$

Method 2: Using picture representations

$$34 + 23 \quad \begin{array}{|c|c|c|c|} \hline \text{||||} \\ \hline \text{||||} \\ \hline \text{||||} \\ \hline \text{||||} \\ \hline \end{array} + \begin{array}{|c|c|c|} \hline \text{||||} \\ \hline \text{||||} \\ \hline \text{|||} \\ \hline \end{array} = \begin{array}{|c|c|c|c|c|c|c|c|c|} \hline \text{||||} \\ \hline \text{||||} \\ \hline \text{||||} \\ \hline \text{||||} \\ \hline \text{||||} \\ \hline \text{||||} \\ \hline \text{||||} \\ \hline \text{|||} \\ \hline \end{array}$$

$$34 + 23 = 57$$

Method 3: Using a 100 Chart

$$34 + 23$$

31	32	33	<u>34</u>	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	<u>57</u>	58	59	60

Start at 34 and count up 23 to 57 OR

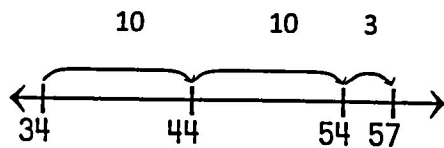
Because we know  $23 = 10 + 10 + 3$  then - Start at 34; add on 10 to 44; add on 10 more to 54; add on 3 more to 57

$$34 + 23 = 57$$

#### Method 4: Using a Number Line

$$34 + 23$$

$$23 = 10 + 10 + 3$$



$$34 + 23 = 57$$

#### Method 5: Traditional

Please make sure students know the value of the numbers they are adding when using the traditional algorithm.

$$34$$

$$+ 23$$

$$57$$

Step 1: Add the ones  $4 + 3 = 7$

Step 2: Add the tens  $30 + 20 = 50$

The answer is 57.

Subtraction:

#### Method 1: Using a 100 Chart

$$68 - 36$$

31	<u>32</u>	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	<u>68</u>	69	70

Start at 68 and count back 36 to 32 OR

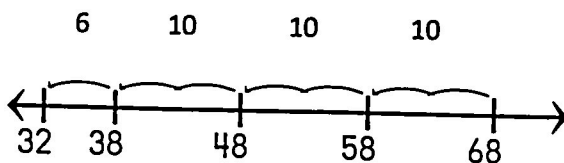
Because we know  $36 = 10 + 10 + 10 + 6$  THEN Start at 68; count back 10 to 58; then count back 10 to 48; then count back another 10 to 38; then count back 6

$$68 - 36 = 32$$

#### Method 2: Using a Number Line to take away

$$68 - 36$$

$$36 = 10 + 10 + 10 + 6$$



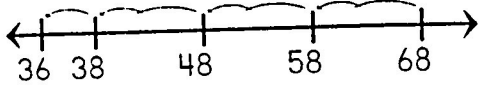
Method 3: Using a Number line to count back with known numbers

$$68 - 36$$

How much is it to go back from 68 to 36?

$$2 \quad 10 \quad 10 \quad 10$$

$$10 + 10 + 10 + 2 = 32$$



$$68 - 36 = 32$$

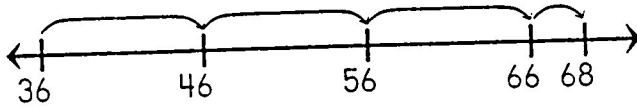
Method 4: Using a Number Line to count up

$$68 - 36$$

How much is it on the number line from 36 to 68?

$$10 \quad 10 \quad 10 \quad 2$$

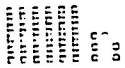
$$10 + 10 + 10 + 2 = 32$$

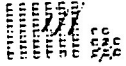


$$68 - 36 = 32$$

Method 5: Using a picture representation

$$68 - 36$$



then cross out 36  there are 32 left

$$68 - 36 = 32$$

Method 6: Breaking numbers apart

$$68 - 36$$

$$68 = 60 + 8 \quad \text{and} \quad 36 = 30 + 6$$

$$60 - 30 = 30$$

$$8 - 6 = 2$$

$$30 + 2 = 32$$

$$68 - 36 = 32$$

\*\* This may not be a good method for some students when you have to borrow from the tens.

### Method 7: Traditional

Please make sure students know the value of the numbers they are adding when using the traditional algorithm.

68

Step One:  $8 - 6 = 2$

-36

Step Two:  $60 - 30 = 30$

32

The answer is 32.

With Borrowing:

<sup>6</sup>/<sub>7</sub> 12

Step One: You have to borrow 10 from 70 to make the 2 ones turn into 12

-25

The 70 is now 60.

47

Step Two: Subtract  $12 - 5 = 7$

Step Three: Subtract  $60 - 20 = 40$

The answer is 47.

Students may choose to use one or several of these methods. They may even come up with a different one that makes sense to them. If they can tell you about it, and use the method correctly on several problems, let them use it.

Please support your child in finding the method that is meaningful for them.

If you have any questions, please let your teacher know or contact me.

Thanks,

Lea Anne West

Math Facilitator