

The 100-chart is a useful tool for a first grade student when working with addition.

1	2	3	4	5	6	7
11	12	13	14	15	16	17
21	22	23	24	25	26	27
31	32	33	34	35	36	37
41	42	43	44	45	46	47
51	52	53	54	55	56	57

$$14 + 30 =$$

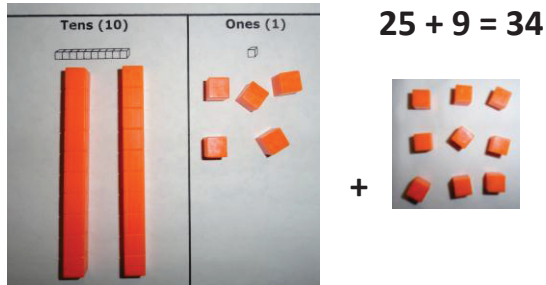
This section of the 100-chart shows how a student has started at a two-digit number (14) and added a multiple of ten (30) to find a total of 44.

Once students understand the concrete models they move to the written form. A student could solve a problem using the *partial sums* strategy.

$$54 + 9 = 54$$

$$50 + (4 + 9) = \text{OR} \quad \begin{array}{r} + 9 \\ 54 \\ \hline 63 \end{array}$$

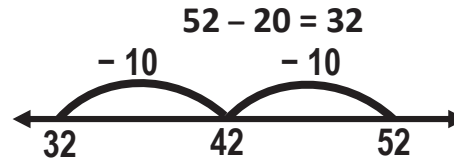
$$50 + 13 = 63 \quad \begin{array}{r} + 50 \\ 13 \\ \hline 63 \end{array}$$



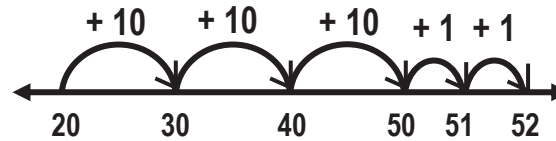
$$25 + 9 = 34$$

2 tens and 5 ones + 9 more ones

Once again, the *open number line* can be used when doing subtraction.



The above example shows how a student may do the subtraction problem  $52 - 20$ . The example below shows the same problem using the *adding up* strategy.



The student has started at 52 and counted back to 20 which shows a solution of 32. All first graders have to continually explain their thinking.

As with addition, the 100-chart is a valuable model when doing a subtraction problem.

41	42	43	44	45
51	52	53	54	55
61	62	63	64	65
71	72	73	74	75
81	82	83	84	85
91	92	93	94	95

$$93 - 40 = 53$$

*This student has started at 93 and subtracted 40 to get 53.*

***First grade students will add and subtract within 20, demonstrating fluency for addition and subtraction within 10.***

# Parent Roadmap

## Grade 1

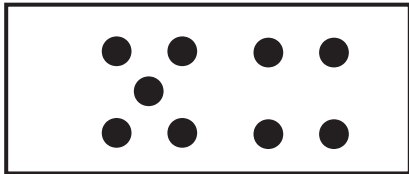


**Strategies for addition and subtraction**

# Math

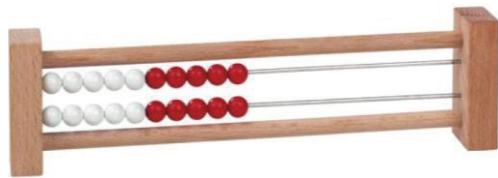


First grade students need to be able to count all, count on or rearrange the dots in order to add. In this example, a child may start with five dots and count on four dots to make nine dots. It is also possible to see four groups of two dots to make eight dots and one extra dot to see nine dots.

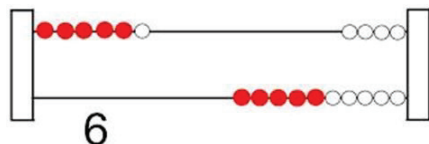


## Rekenreks

(Beads used for counting)



First grade students have to be able to mentally rearrange beads to model strategies for addition and subtraction. The use of rekenreks fosters instant recognition of sets (subitization), fluency and computation with addition and subtraction. In this example, the student may see 6 as 5 red beads and 1 white bead.



## Making a Ten



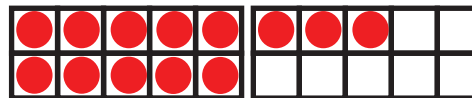
$$8 + 6 =$$

$$\begin{array}{c} 2 \quad 4 \end{array}$$

$$10 + 4 = 14$$

The goal is for students to *make a ten*. In this example, the child moved two dots from the second ten-frame to completely fill one ten-frame. Four dots were left over. After much practice with the ten-frames, the written model should be included.

## Break to a Ten



$$13 - 5 =$$

$$\boxed{13 - 3} - 2 =$$

$$10 - 2 = 8$$

In this example, students will break the 5 into a 3 and a 2. The 3 allows the 13 to subtract to a 10. The 2 can easily be taken away from the 10 to make an 8.

First graders also add using the *doubles* strategy. This example shows two ways in which students can do the problem  $6 + 8$ .

$$6 + 8 =$$

$$6 + 6 + 2 =$$

$$6 + 6 = 12$$

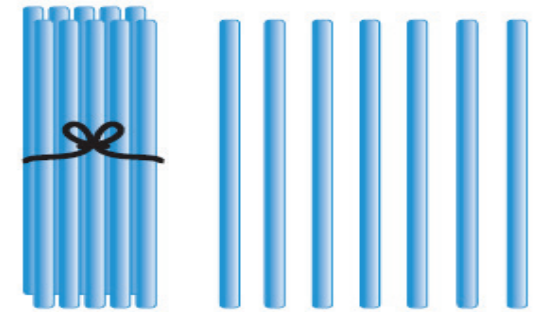
$$12 + 2 = 14$$

OR

$$6 + 2 + 8 =$$

$$8 + 8 = 16$$

$$16 - 2 = 14$$



10

7

Students start by building representations of a collection of 10 things to make a bundle of ten ones called a *ten*. This picture shows one ten and some more ones (7).

## Working with Base 10 Blocks



Students build numbers using base tens. Here, a student has built the number 35 using 3 tens and 5 ones.

A first grader learns to use an *open number line* for addition and subtraction problems.

$$37 + 6 = 43$$

