Strategies for Subtraction

Second graders will continue to focus on **place value methods** to subtract. By using different strategies, they gain a deeper understanding of place value that will eventually lead to using the standard algorithm in later grades. The purpose of these strategies is to encourage flexible thinking to decompose (take apart) the numbers in a variety of ways. Below are **some** strategies we teach in second grade – there are many different ways students can subtract. As students gain an understanding of numbers and place value, we encourage them to develop their own strategies to use for subtraction.

Using a hundreds chart

Students will start with the first number. Then break the second number into tens and ones. On the chart, use the columns to subtract the tens and the rows to subtract the ones.

$$53 - 36 = 17$$

30   6

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	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	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Break apart strategy

This method can be used when a ten does not need to be decomposed. With this method, both numbers get broken into expanded form and students subtract the tens, then the ones. Finally, they add those numbers to get the difference.

$$36 \ - \ 24$$

30   6   20   4

$$30 - 20 = 10$$
$$6 - 4 = 2$$

Then 10 + 2 = 12

Draw a number line

Students use an un-numbered number line to show their thinking. In the example below, they start with the largest number and then break apart the second number. The larger jumps represent the tens. (Students can break apart and model the numbers in many different ways when using this strategy.)
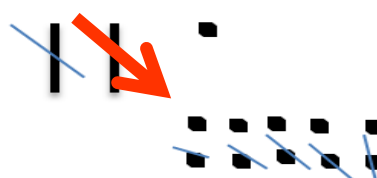
$$72 - 23 = 49$$

49   50   51   52   62   72

Draw a model

Students draw a model of the tens and ones blocks we use in the classroom. Draw a model of the first number (21). Then analyze the ones. If the student cannot subtract the ones, then decompose a 10 (a ten becomes 10 ones). Finally, subtract the second number (they cross out 1 ten and 5 ones).

21 – 15 =

The difference is 6 ones or 6.

Subtract the tens then ones

Students break apart one of the numbers. Subtract the tens to get a new difference. Then subtract the ones from that number.

$$32 - 14$$

10   4

32 - 10 = 22

22 – 4 = 18

Equal addition strategy

This is used for problems when you would need to decompose a ten. Analyze the second number and decide how much needs to be added to make the number a multiple of 10. Add that amount to both numbers and then subtract.

$$63 - 17$$

$$63 + 3 = 66$$
$$-17 + 3 = 20$$

So 66 – 20 = 46