# Developing Computational Fluency in Grade 1

Addition: Making Tens

Making tens is an important strategy for fluency. Students work with ten-frames (below). They combine dots to fill a ten-frame. Below, we moved 2 dots from 5 to make a ten. The result is 10 + 3.

$$8 + 5$$
$$2 \quad 3$$
$$10 + 3$$
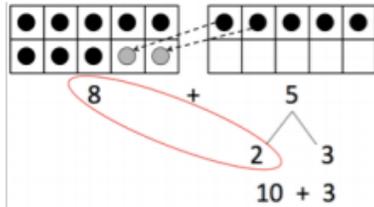
We can apply the combinations of tens to add other numbers. In 58 + 5, we might break apart 5 into 2 + 3 and then add the 2 to 58 making the next ten which is 60.

$$58 + 5$$
$$2 \quad 3$$
$$60 + 3$$

Subtraction Using Ten Frames

We can also use tens for subtraction. The ten-frame below shows 14. To subtract 14-9, we can break 9 into 4 and 5. We can subtract the 4 from 14 giving us 10. Then, 5 less than 10 is 5. Eventually, this will become automatic for students.

$$14 - 9$$
$$4 \quad 5$$
$$14 - 4 = 10, \text{ then } 10 - 5 = 5$$
$$\text{So, } 14 - 9 = 5$$
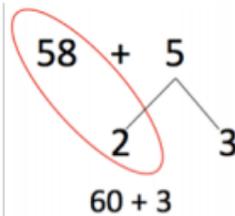
Working with Base Ten Blocks
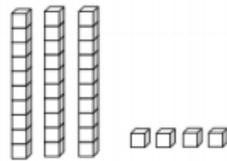
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Base ten blocks are a math tool that help us build numbers. The rod is equal to 10 and the single cube is equal to 1.

Addition with Base Ten Blocks

58 + 5

58 is
5 tens
8 ones
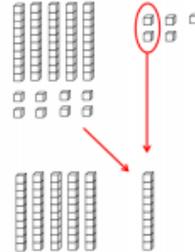
We add
5 more
ones.

We combine ones to make a new ten.

In 58 + 5, we make a new ten from the ones (8 + 2). This leaves us with 6 tens and 3 ones leftover. So, 58 + 5 = 63

Subtraction with Base Ten Blocks

80 – 30

In first grade, we work with taking tens from tens. Below, there are 8 tens (80) and we take away 3 tens (30) leaving 5 tens (50). So, 80 - 30 = 50
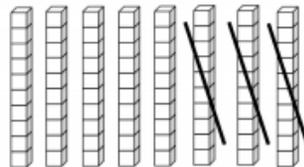
Hundreds Chart

The hundreds chart is a useful math tool. Students can add and subtract on the hundreds chart.

14 + 30 = 44

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

A student started at 14 and jumped down 3 rows of 10 (30) to equal 44.

90 – 40 = 50

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

A student started at 90 and jumped up 4 rows of 10 (40) to equal 50.

Addition and Subtraction on Number Lines

Number lines are useful for adding and subtracting. At first, students will jump in increments of 1. They will develop more efficient strategies and jumps as their number sense improves. This experience develops mental math skills and supports work with algorithms. These number lines show 58 + 7 with jumps of 1, by breaking 7 apart, and one single jump.
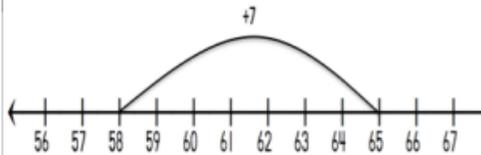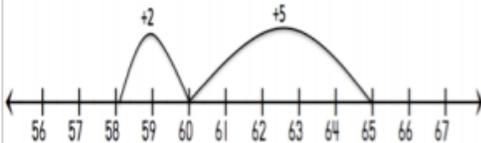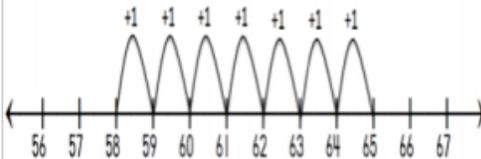
When subtracting, we can count back from a number or we can count up from one number to another to find the difference. The number lines show examples for 60 - 40.
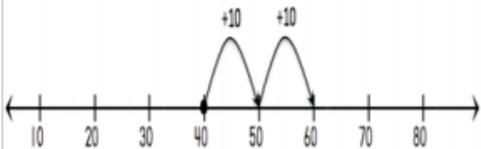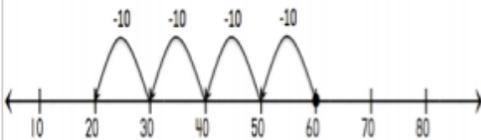
Addition: Partial Sums

Students may break numbers apart to add tens with tens and ones with ones. They find "parts" of the sum and can then combine to find the total sum.

$58 + 5 =$

$50 + (8 + 5) =$

$50 + 13 = 63$

$58 + 5 =$

$8 + 5 = 13$

$50 + 13 = 63$

Subtraction: Place Value

Students apply their knowledge of subtracting single digit numbers and place value to subtract multiples of 10.

$50 - 20 = 30$

$5 - 2 = 3$

$5 \text{ tens} - 2 \text{ tens} = 3 \text{ tens}$

$50 - 20 = 30$

Addition: Properties

Students can add numbers by using the properties of addition to rearrange or group the numbers.

$4 + 8 + 6 =$

$4 + 6 + 8 =$

$10 + 8 = 18$

Commutative Property rearranging the numbers
$8 + 6 = 6 + 8$

Associative Property grouping the numbers
$4 + 6 + 8$

Thurgood Marshall Family Math Night

Grade 1