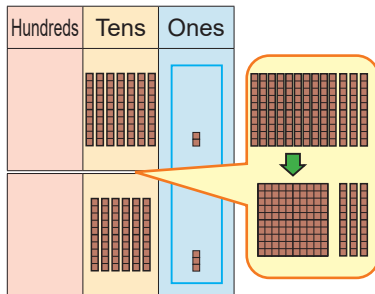# 7 - 1 Addition Algorithm (1)

Example Calculate $72 + 63$ by using the algorithm.

Hundreds	Tens	Ones
	7	2
+	6	3

Line up the numbers vertically in each place.

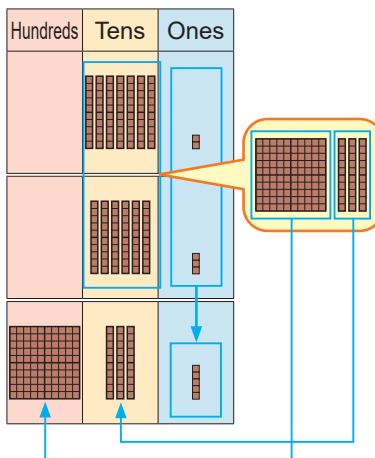**Calculation of the ones place**
$$2 + 3 = 5$$

Calculation of the tens place
$$7 + 6 = 13$$

Hundreds	Tens	Ones
	7	2
+	6	3
1	3	5

Write a 3 in the tens place.
Regroup 1 to the hundreds place.
Write a 1 in the hundreds place.

$$72 + 63 = 135$$

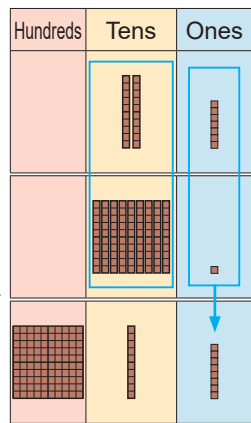Calculate the following problems by using the algorithm.

1

Hundreds	Tens	Ones
	7	2
+	5	3

2

Hundreds	Tens	Ones
	8	4
+	6	3

3

Hundreds	Tens	Ones
	2	7
+	9	1

4

Hundreds	Tens	Ones
	5	1
+	7	6

5
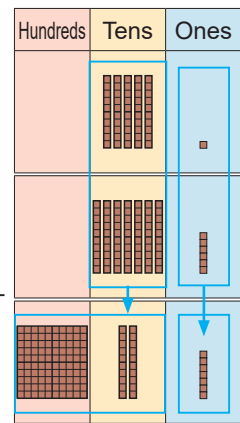
Hundreds	Tens	Ones
	9	5
+	5	3

6

Hundreds	Tens	Ones
	4	8
+	7	1

7

Hundreds	Tens	Ones
	5	3
+	8	2

8

Hundreds	Tens	Ones
	6	1
+	5	5

9

Hundreds	Tens	Ones
	8	4
+	9	3

10

Hundreds	Tens	Ones
	6	0
+	7	6

11

Hundreds	Tens	Ones
	6	3
+	6	2

12

Hundreds	Tens	Ones
	3	8
+	7	1

13

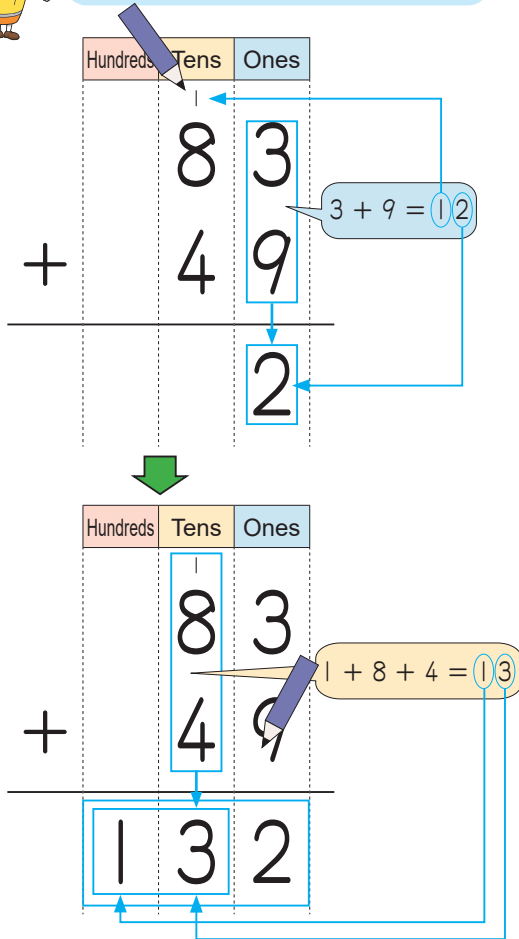| Hundreds	Tens	Ones
	8	8
+	7	0

Addition and Subtraction

Addition Algorithm (2)

Example Calculate $83 + 49$ by using the algorithm.

Don't forget to write a 1.

Hundreds	Tens	Ones
8	3	
+ 4	9	

$3 + 9 = 12$

Line up the numbers vertically in each place.

Calculation of the ones place

$$3 + 9 = 12$$

Regroup 1 to the tens place.

Calculation of the tens place

The regrouped 1 and 8 make 9.

$$9 + 4 = 13$$

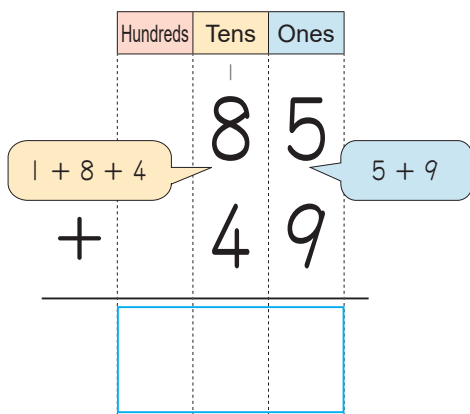| Hundreds	Tens	Ones
8	3	
+ 4	9	
1	3	2

$1 + 8 + 4 = 13$

Write a 3 in the tens place.

Write a 1 in the hundreds place.
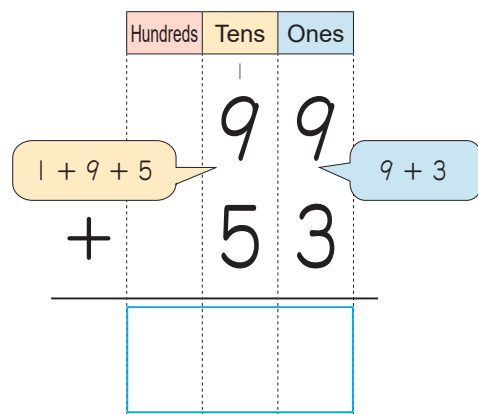
$$83 + 49 = 132$$

Calculate the following problems by using the algorithm.

1

Hundreds	Tens	Ones
	8	5
+	4	9

$1 + 8 + 4$ $5 + 9$

2

Hundreds	Tens	Ones
	9	9
+	5	3

$1 + 9 + 5$ $9 + 3$

3

Hundreds	Tens	Ones
	7	7
+	8	8

1 + 7 + 8   7 + 8

4

Hundreds	Tens	Ones
	9	8
+	3	8

1 + 9 + 3   8 + 8

5

Hundreds	Tens	Ones
	7	5
+	4	8

6

Hundreds	Tens	Ones
	9	4
+	7	7

7

Hundreds	Tens	Ones
	5	2
+	7	9

8

Hundreds	Tens	Ones
	1	6
+	9	8

9

Hundreds	Tens	Ones
	7	8
+	8	7

10

Hundreds	Tens	Ones
	4	9
+	7	6

11

Hundreds	Tens	Ones
	4	6
+	9	4

12

Hundreds	Tens	Ones
	6	1
+	5	9

13

Hundreds	Tens	Ones
	9	7
+	3	3

Addition Algorithm (3)

Example Calculate $68 + 37$ by using the algorithm.

Hundreds	Tens	Ones
	6	8
+	3	7
		5

$8 + 7 = 15$

Hundreds	Tens	Ones
	6	8
+	3	7
1	0	5

$1 + 6 + 3 = 10$
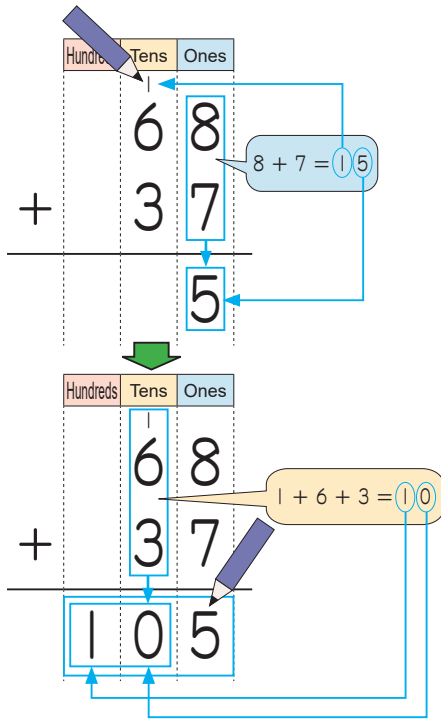
Line up the numbers vertically in each place.

Calculation of the ones place

$$8 + 7 = 15$$

Regroup 1 to the tens place.

Calculation of the tens place

The regrouped 1 and 6 make 7.

$$7 + 3 = 10$$

Write a 0 in the tens place.

Write a 1 in the hundreds place.

$68 + 37 = 105$

Calculate the following problems by using the algorithm.

1

Hundreds	Tens	Ones
	1	7
+	8	4

$1 + 1 + 8$ $7 + 4$

2

Hundreds	Tens	Ones
	2	9
+	7	6

$1 + 2 + 7$ $9 + 6$

3

Hundreds	Tens	Ones
	7	3
+	2	9

4

Hundreds	Tens	Ones
	6	8
+	3	6

5

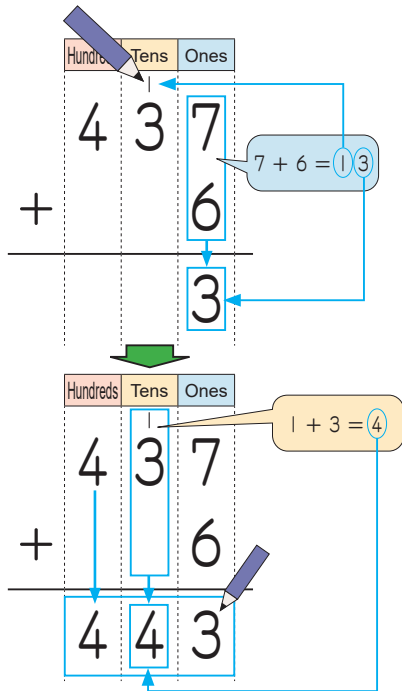| Hundreds	Tens	Ones
	4	9
+	5	1

Addition Algorithm (4)

Example Calculate $437 + 6$ by using the algorithm.

Hundreds	Tens	Ones
4	3	7
+		6
		3

$7 + 6 = 13$

Hundreds	Tens	Ones
4	3	7
+		6
4	4	3

$1 + 3 = 4$

Line up the numbers vertically in each place.

Calculation of the ones place

$$7 + 6 = 13$$

Regroup 1 to the tens place.

Calculation of the tens place

The regrouped 1 and 3 make 4.

Write a 4 in the tens place.

Write a 4 in the hundreds place.

$437 + 6 = 443$

Calculate the following problems by using the algorithm.

1

Hundreds	Tens	Ones
3	8	7
+		6

$1 + 8$

$7 + 6$

2

Hundreds	Tens	Ones
2	4	9
+		9

$1 + 4$

$9 + 9$

3

Hundreds	Tens	Ones
8	6	4
+		8

4

Hundreds	Tens	Ones
5	6	6
+		6

5

Hundreds	Tens	Ones
2	6	7
+		7

7 - 5

Addition Problems (5)

Example Calculate $719 + 33$ by using the algorithm.

Hundreds	Tens	Ones
7	1	9
+	3	3
		2

$9 + 3 = 12$

Hundreds	Tens	Ones
7	1	9
+	3	3
7	5	2

$1 + 1 + 3 = 5$
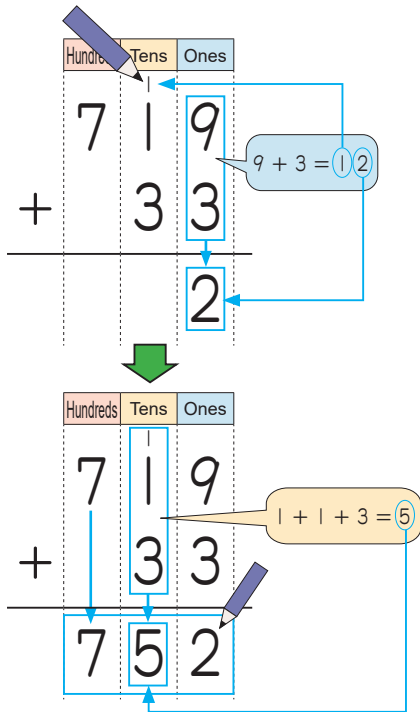
Line up the numbers vertically in each place.

Calculation of the ones place

$$9 + 3 = 12$$

Regroup 1 to the tens place.

Calculation of the tens place

The regrouped 1 and 3 make 4.

$$4 + 1 = 5$$

Write a 5 in the tens place.

Write a 7 in the hundreds place.

$719 + 33 = 752$

Calculate the following problems by using the algorithm.

1

Hundreds	Tens	Ones
7	1	9
+	5	5

$1 + 1 + 5$ $9 + 5$

2

Hundreds	Tens	Ones
1	6	8
+	1	9

$1 + 1 + 5$ $8 + 9$

3

Hundreds	Tens	Ones
6	3	7
+	4	8

4

Hundreds	Tens	Ones
5	4	5
+	2	7

5

Hundreds	Tens	Ones
3	1	5
+	6	6

7 - 6 Addition and Subtraction
Addition Problems

Example There are 47 red ribbons and 89 white ribbons. How many ribbons are there altogether?

Math Sentence: $47 + 89 = 136$

Answer 136 ribbons

$$\begin{array}{ccc} & 4 & 7 \\ + & 8 & 9 \\ \hline 1 & 3 & 6 \end{array}$$

1 My friend has 56 pieces of paper. Later, he bought 67 pieces of paper. How many pieces of paper does he have altogether?

Math Sentence

Answer ___ pieces of paper

2 75 boys and 35 girls participated in the school festival. How many children participated in the school festival altogether?

Math Sentence

Answer ___ children

3 I read 124 pages of a book yesterday. I read another 37 pages today. How many pages did I read altogether.

Math Sentence

Answer ___ pages

Subtraction Algorithm (1)

Example Calculate $125 - 63$ by using the algorithm.

Hundreds	Tens	Ones
1	2	5
−	6	3
		2

$5 - 3 = 2$

Line up the numbers vertically in each place.

Calculation of the ones place

$$5 - 3 = 2$$

Calculation of the tens place

You cannot take 6 from 2, so you need to regroup from the hundreds place.

$$12 - 6 = 6$$

Hundreds	Tens	Ones
	12	
1̸	2	5
−	6	3
	6	2

$12 - 6 = 6$

Write a 6 in the tens place.

There is nothing in the hundreds place.

$$125 - 63 = 62$$

Calculate the following problems by using the algorithm.

1

Hundreds	Tens	Ones
	12	
1	2	5
−	5	3

$12 - 5$ $5 - 3$

2

Hundreds	Tens	Ones
	15	
1	5	4
−	7	3

$15 - 7$ $4 - 3$

3

Hundreds	Tens	Ones
1	2	8
−	3	1

4

Hundreds	Tens	Ones
1	1	9
−	9	6

5

Hundreds	Tens	Ones
1	1	3
−	8	3

7 - 8 Subtraction Algorithm (2)

Example Calculate $163 - 79$ by using the algorithm.

Hundreds	Tens	Ones
	5	13
1	6̸	3̸
−	7	9
		4

$13 - 9 = 4$

Line up the numbers vertically in each place.

Calculation of the ones place

You need to regroup from the tens place.
$$13 - 9 = 4$$
Write a 4 in the ones place.

Hundreds	Tens	Ones
	15	
1̸	6̸	3
−	7	9
	8	4

$15 - 7 = 8$

Calculation of the tens place

Since you regrouped, it became 5.
You need to regroup from the hundreds place.
$$15 - 7 = 8$$
Write an 8 in the tens place.
There is nothing in the hundreds place.

$$163 - 79 = 84$$

Calculate the following problems by using the algorithm.

1

Hundreds	Tens	Ones
1	6	3
−	8	9

$15 - 8$ $13 - 9$

2

Hundreds	Tens	Ones
1	4	2
−	5	4

$13 - 5$ $12 - 4$

3

Hundreds	Tens	Ones
1	4	5
−	8	6

4

Hundreds	Tens	Ones
1	3	4
−	4	7

5

Hundreds	Tens	Ones
1	5	0
−	8	9

67

7 - 9　Subtraction Algorithm (3)

Example Calculate $104 - 37$ by using the algorithm.

Hundreds	Tens	Ones
	10	
1̶	0̶	4
−	3	7

Hundreds	Tens	Ones
	9̶ 1̶0̶	14
1̶	0̶	4̶
−	3	7
		7

$14 - 7 = 7$

Hundreds	Tens	Ones
	9	
1̶	0̶	4̶
−	3	7
	6	7

$9 - 3 = 6$

Line up the numbers vertically in each place.

Calculation of the ones place

You cannot regroup from the tens place, so you need to regroup from the hundreds place first.
Then, you need to regroup from the tens place.

$$14 - 7 = 7$$

Calculation of the tens place

Since you regrouped, it becomes 9.

$$9 - 3 = 6$$

Write a 6 in the tens place.
There is nothing in the hundreds place.

$$104 - 37 = 67$$

Calculate the following problems by using the algorithm.

1

Hundreds	Tens	Ones
	10 9	16
1	0	6
−	7	8

$9 - 7$　　$16 - 8$

2

Hundreds	Tens	Ones
	10 9	13
1	0	3
−	5	6

$9 - 5$　　$13 - 6$

3

Hundreds	Tens	Ones
1	0	4
−	6	5

4

Hundreds	Tens	Ones
1	0	2
−	4	7

5

Hundreds	Tens	Ones
1	0	1
−	5	9

Example Calculate $282 - 6$ by using the algorithm.

Hundreds	Tens	Ones
	7	12

$$2\ 8\ 2$$
$$-\ \ \ \ 6$$
$$\overline{\ \ \ \ \ \ 6}$$

$12 - 6 = 6$

Hundreds	Tens	Ones
	7	

⑦

$$2\ 8\ 2$$
$$-\ \ \ \ 6$$
$$\overline{2\ 7\ 6}$$

Line up the numbers vertically in each place.

Calculation of the ones place

You need to regroup from the tens place.

$$12 - 6 = 6$$

Write a 6 in the ones place.

Calculation of the tens place

Since you regrouped, it becomes 7.
Write a 7 in the tens place.

Then, write a 2 in the hundreds place.

$$282 - 6 = 276$$

Calculate the following problems by using the algorithm.

1

Hundreds	Tens	Ones
	7	12

$$2\ 8\ 2$$
$$-\ \ \ \ 7$$

$12 - 7$

2

Hundreds	Tens	Ones
	6	15

$$3\ 7\ 5$$
$$-\ \ \ \ 8$$

$15 - 8$

3

Hundreds	Tens	Ones

$$5\ 6\ 7$$
$$-\ \ \ \ 9$$

4

Hundreds	Tens	Ones

$$8\ 9\ 2$$
$$-\ \ \ \ 5$$

5

Hundreds	Tens	Ones

$$7\ 6\ 4$$
$$-\ \ \ \ 6$$

7 - 11 Subtraction Algorithm (5)

Example Calculate $271 - 34$ by using the algorithm.

Hundreds	Tens	Ones
	6	11

$$\begin{array}{ccc} 2 & 7 & 1 \\ - & 3 & 4 \\ \hline & & 7 \end{array}$$

$11 - 4 = 7$

Line up the numbers vertically in each place.

Calculation of the ones place

You need to regroup from the tens place.
$$11 - 4 = 7$$
Write a 7 in the ones place.

Calculation of the tens place

Since you regrouped, it becomes 6.
$$6 - 3 = 3$$
Write a 3 in the tens place.
Then, write a 2 in the hundreds place.

$$271 - 34 = 237$$

Hundreds	Tens	Ones
	6	

$$\begin{array}{ccc} 2 & 7 & 1 \\ - & 3 & 4 \\ \hline 2 & 3 & 7 \end{array}$$

$6 - 3 = 3$

Calculate the following problems by using the algorithm.

1

Hundreds	Tens	Ones
	6	11

$$\begin{array}{ccc} 2 & 7 & 1 \\ - & 4 & 5 \\ \hline & & \end{array}$$

$6 - 4$ $11 - 5$

2

Hundreds	Tens	Ones
	3	16

$$\begin{array}{ccc} 5 & 4 & 6 \\ - & 2 & 7 \\ \hline & & \end{array}$$

$3 - 2$ $16 - 7$

3

Hundreds	Tens	Ones

$$\begin{array}{ccc} 4 & 4 & 3 \\ - & 2 & 9 \\ \hline & & \end{array}$$

4

Hundreds	Tens	Ones

$$\begin{array}{ccc} 3 & 6 & 2 \\ - & 4 & 7 \\ \hline & & \end{array}$$

5

Hundreds	Tens	Ones

$$\begin{array}{ccc} 6 & 7 & 0 \\ - & 5 & 6 \\ \hline & & \end{array}$$

Subtraction Problems

Example There are 126 students in my school. Today 38 students are absent. How many students are in my school today?

Math Sentence $126 - 38 = 88$

Answer 88 students

	1	2	6
−		3	8
		8	8

1 My sister had 138 pieces of paper. She used 45 of them. How many pieces of paper does she have now?

Math Sentence

Answer ☐ pieces of paper

−		

2 My father had 183 stamps. He sold 97 stamps. How many stamps does he have now?

Math Sentence

Answer ☐ stamps

−		

3 There are 633 books in the school library. Now 28 books are checked out. How many books are in the library now?

Math Sentence

Answer ☐ books

−		

1 Calculate the following problems by using the algorithm.

1 67 + 41

```
      6 7
  +   4 1
```

2 53 + 84

```
      5 3
  +   8 4
```

3 34 + 70

```
      3 4
  +   7 0
```

4 79 + 53

```
  +
```

5 86 + 76

```
  +
```

6 97 + 89

```
  +
```

7 867 + 4

```
  +
```

8 639 + 37

```
  +
```

9 428 + 24

```
  +
```

2 Calculate the following problems by using the algorithm.

1 139 − 64

```
    1 3 9
  −   6 4
```

2 117 − 46

```
    1 1 7
  −   4 6
```

3 179 − 95

```
    1 7 9
  −   9 5
```

4 145 − 87

5 136 − 49

6 175 − 98

7 102 − 76

8 961 − 8

9 545 − 27

3 Answer the following questions.

1 In my classroom there are 54 students. In the next classroom there are 47 students. How many students are there in the two classrooms?

Math Sentence

Answer   students

2 There were 124 people in the national park today. 58 of them went back. How many people are there in the national park now?

Math Sentence

Answer   people

73