

Chinese TakeAway

Subtraction



**Subtraction
distractions**

Borrow & pay-back 'Milk bottle' method

5 0 0 0

- 1 2 5 8



Borrowing 'Milk bottle' method

5 0 0¹⁰

- 1 2 5 8

Borrowing method

$$\begin{array}{r} 500^{10} \\ - 1258 \\ \hline 2 \end{array}$$

Borrowing method

$$\begin{array}{r} 500^1 0 \\ - 125_1 8 \\ \hline 2 \end{array}$$

Borrowing method

$$\begin{array}{r} 50^{10}0^{10} \\ - 125_18 \\ \hline 2 \end{array}$$

Borrowing method

$$\begin{array}{r} 50^{10}0^{10} \\ - 125_18 \\ \hline 42 \end{array}$$

Borrowing method

$$\begin{array}{r} 50^{10}0^{10} \\ - 12_15_18 \\ \hline 42 \end{array}$$

Borrowing method

$$\begin{array}{r} 5 \text{ } ^1 0 \text{ } ^1 0 \text{ } ^1 0 \\ - 1 \text{ } 2 \text{ } _1 5 \text{ } _1 8 \\ \hline 4 \text{ } 2 \end{array}$$

Borrowing method

$$\begin{array}{r} 5 \text{ } ^1\text{0} \text{ } ^1\text{0} \text{ } ^1\text{0} \\ - 1 \text{ } 2 \text{ } 5 \text{ } 8 \\ \hline 7 \text{ } 4 \text{ } 2 \end{array}$$

Borrowing method

$$\begin{array}{r} 5^1 0^1 0^1 0 \\ - 1_1 2_1 5_1 8 \\ \hline 7 4 2 \end{array}$$

Borrowing method

$$\begin{array}{r} 5^1 0^1 0^1 0 \\ - 1_1 2_1 5_1 8 \\ \hline 3 7 4 2 \end{array}$$

Borrow & pay-back 'Milk bottle' method

$$\begin{array}{r} 5^1 0^1 0^1 0 \\ - 1_1 2_1 5_1 8 \\ \hline 3 7 4 2 \end{array}$$

Decomposition Method

5 0 0 0

- 1 2 5 8

Decomposition Method

5 0 0[?] 0

- 1 2 5 8

Decomposition Method

5 0[?] 0[?] 0

- 1 2 5 8

Decomposition Method

5[?] 0[?] 0[?] 0[?]

- 1 2 5 8

Decomposition Method

⁴~~5~~ ¹0 0 0

- 1 2 5 8

Decomposition Method

$$\begin{array}{cccc} & 4 & 9 & & \\ & \cancel{5} & \cancel{0} & 0 & 0 \\ & & & & \end{array}$$

$$\begin{array}{cccc} - & 1 & 2 & 5 & 8 \\ \hline \hline \end{array}$$

Decomposition Method

⁴~~5~~ ⁹~~0~~ ⁹~~0~~ ¹0

- 1 2 5 8

Decomposition Method

$$\begin{array}{r} 4 \\ \cancel{5} \end{array} \begin{array}{r} 9 \\ \cancel{0} \end{array} \begin{array}{r} 9 \\ \cancel{0} \end{array} \begin{array}{r} 1 \\ 0 \end{array}$$

$$\begin{array}{r} - \\ 1 \end{array} \begin{array}{r} 2 \\ 5 \end{array} \begin{array}{r} 8 \end{array}$$

$$2$$

Decomposition Method

⁴~~5~~ ⁹~~0~~ ⁹~~0~~ ¹0

- 1 2 5 8

4 2

Decomposition Method

~~⁴5~~ ~~¹0~~ ~~¹0~~ ¹0

- 1 2 5 8

7 4 2

Decomposition Method

⁴~~5~~ ⁹~~0~~ ⁹~~0~~ ¹0

- 1 2 5 8

3 7 4 2

Decomposition

$$\begin{array}{r} \overset{4}{\cancel{5}} \overset{9}{\cancel{0}} \overset{9}{\cancel{0}} \overset{1}{0} \\ - \quad 1 \quad 2 \quad 5 \quad 8 \\ \hline 3 \quad 7 \quad 4 \quad 2 \end{array}$$

updated?

$$\begin{array}{r} \overset{4}{\cancel{5}} \overset{9}{\cancel{0}} \overset{9}{\cancel{0}} \overset{1}{0} \\ - \quad 1 \quad 2 \quad 5 \quad 8 \\ \hline 3 \quad 7 \quad 4 \quad 2 \end{array}$$

Decomposition

$$\begin{array}{r} \overset{4}{\cancel{5}} \overset{9}{\cancel{0}} \overset{9}{\cancel{0}} \overset{1}{0} \\ - \quad 1 \quad 2 \quad 5 \quad 8 \\ \hline 3 \quad 7 \quad 4 \quad 2 \end{array}$$

Borrowing

$$\begin{array}{r} 5 \overset{1}{0} \overset{1}{0} \overset{1}{0} \\ - \quad 1_1 \quad 2_1 \quad 5_1 \quad 8 \\ \hline 3 \quad 7 \quad 4 \quad 2 \end{array}$$

Invisible number line

Effectively changing subtraction
into addition

1258

$$\begin{array}{r} 5000 \\ - 1258 \\ \hline \end{array}$$

Invisible number line

Effectively changing subtraction
into addition

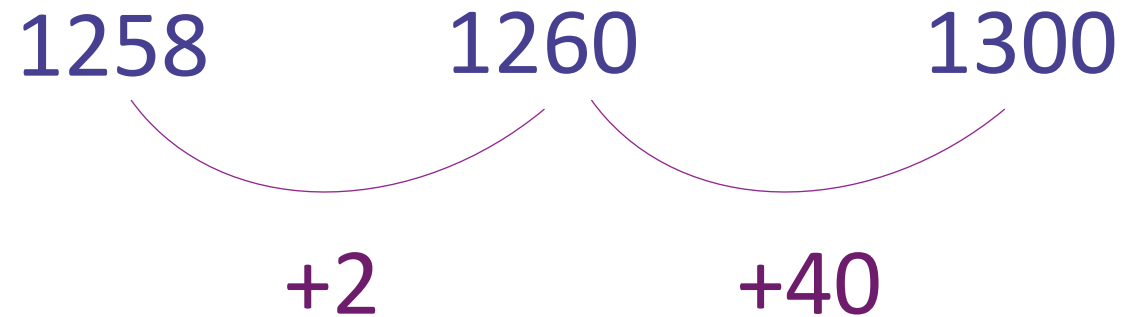
$$\begin{array}{r} 5000 \\ - 1258 \\ \hline \hline \end{array}$$

$$\begin{array}{ccc} 1258 & & 1260 \\ & \frown & \\ & +2 & \end{array}$$

Invisible number line

Effectively changing subtraction
into addition

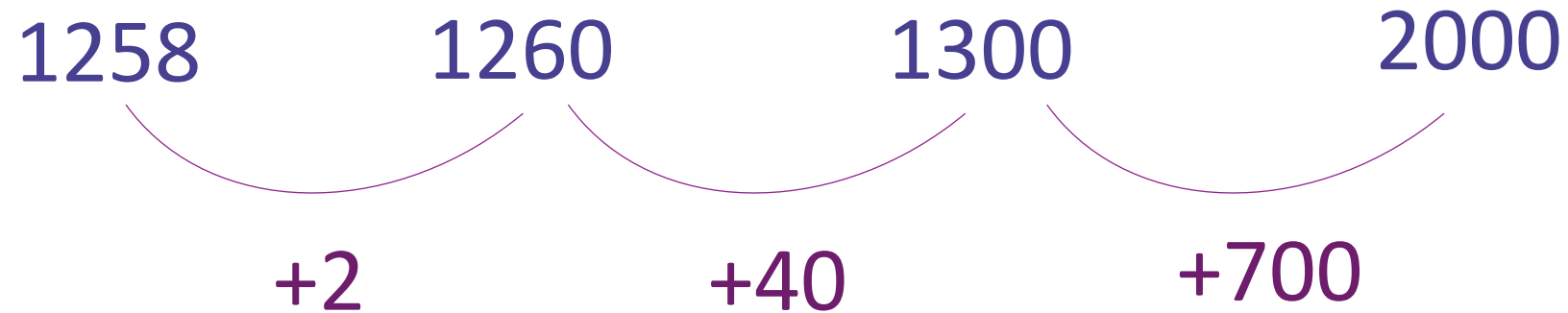
$$\begin{array}{r} 5000 \\ - 1258 \\ \hline \hline \end{array}$$



Invisible number line

Effectively changing subtraction
into addition

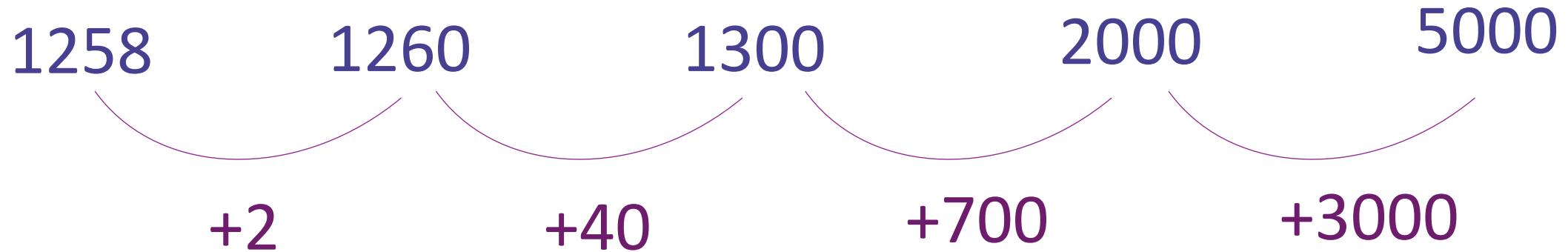
$$\begin{array}{r} 5000 \\ - 1258 \\ \hline \hline \end{array}$$



Invisible number line

Effectively changing subtraction
into addition

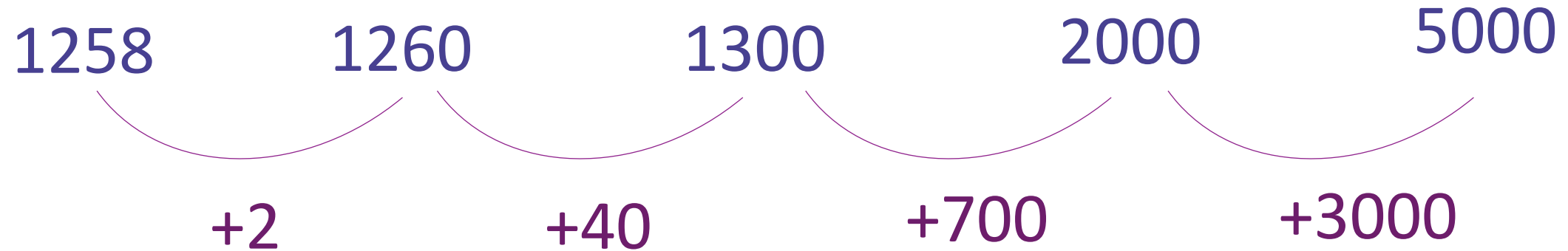
$$\begin{array}{r} 5000 \\ - 1258 \\ \hline \hline \end{array}$$



Invisible number line

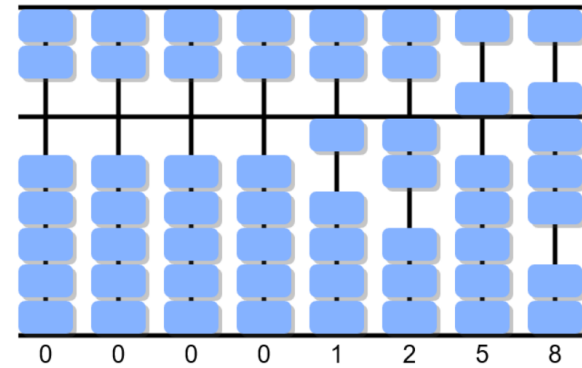
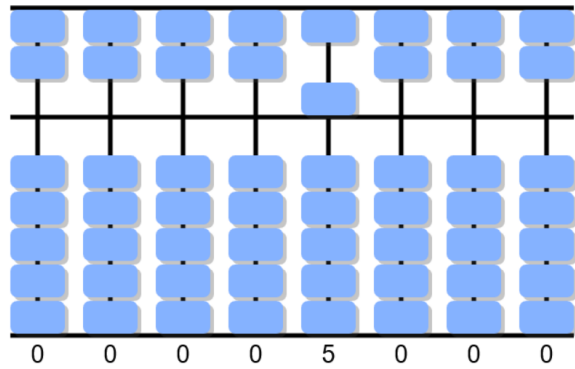
Effectively changing subtraction
into addition

$$\begin{array}{r} 5000 \\ - 1258 \\ \hline \hline \end{array}$$



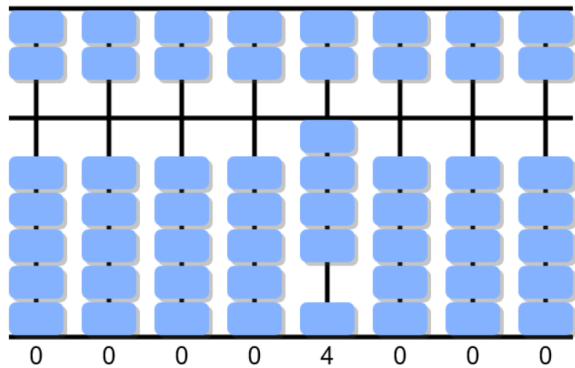
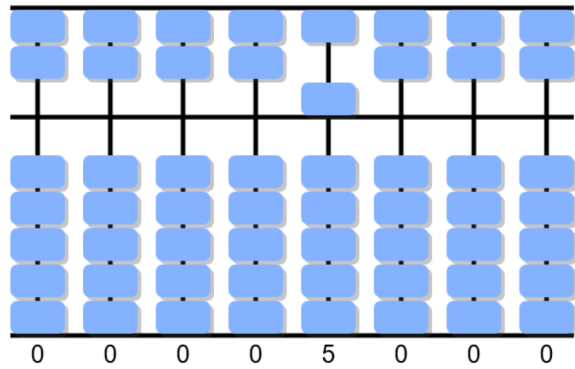
Answer: 3742

Chinese Takeaways



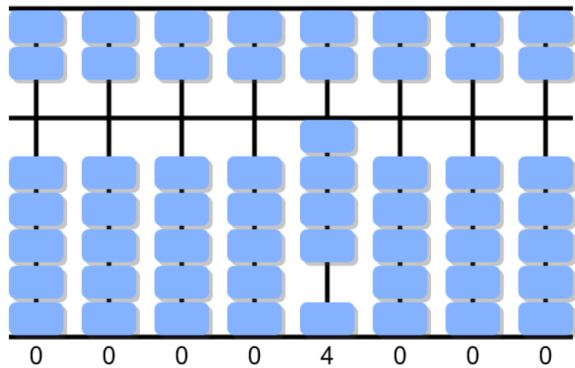
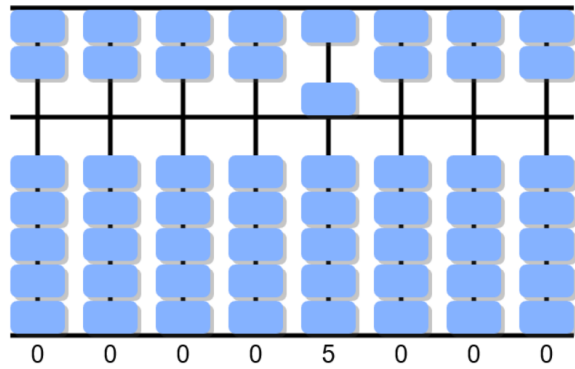
$$\begin{array}{r} 5000 \\ - 1258 \\ \hline \end{array}$$

Chinese Takeaways



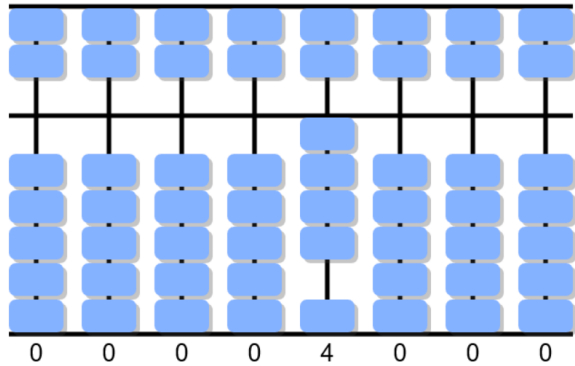
$$\begin{array}{r} 5000 \\ - 1258 \\ \hline 4 \end{array}$$

Chinese Takeaways



$$\begin{array}{r} 5000 \\ - 1258 \\ \hline 4 \end{array}$$

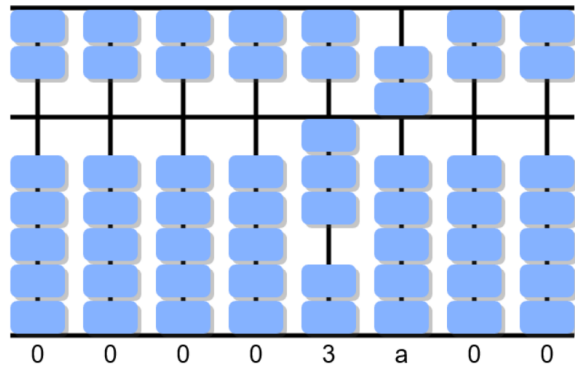
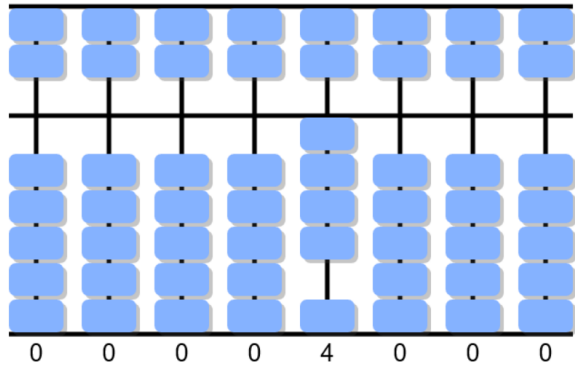
Chinese Takeaways



$$\begin{array}{r} 5000 \\ - 1258 \\ \hline \end{array}$$

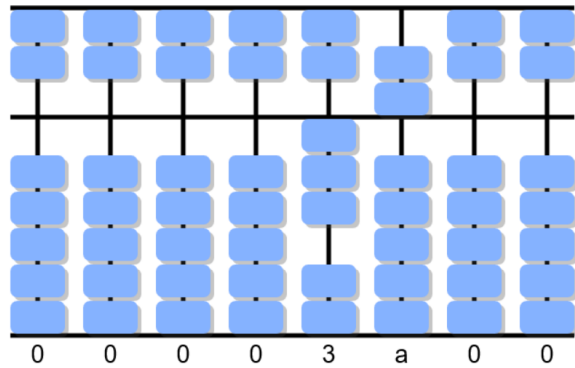
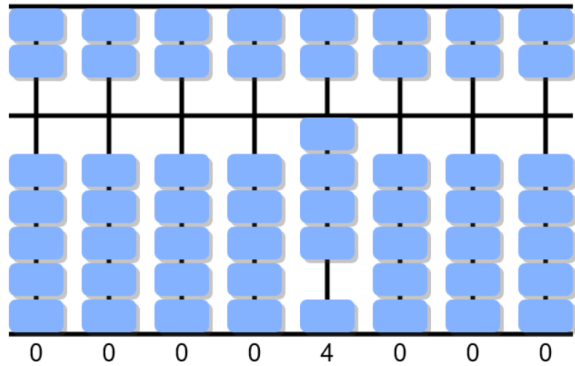
~~4~~
3

Chinese Takeaways



$$\begin{array}{r}
 5000 \\
 - 1258 \\
 \hline
 \cancel{4} \\
 3
 \end{array}$$

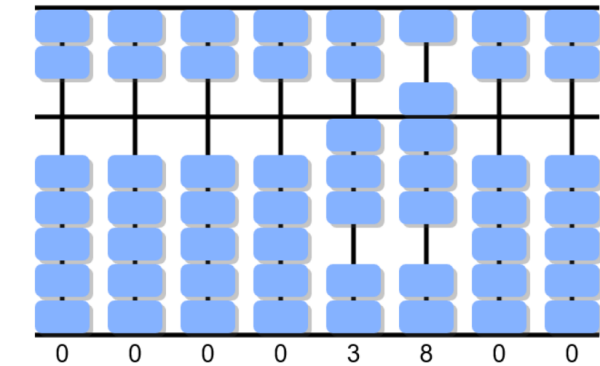
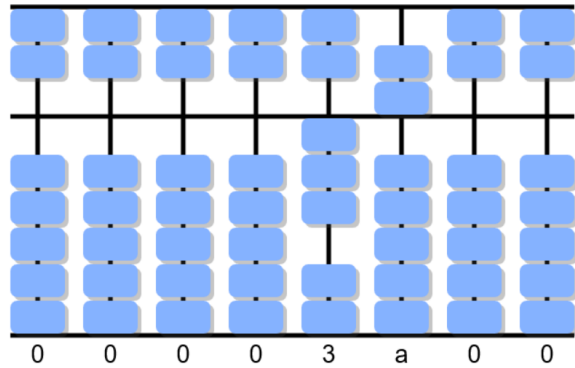
Chinese Takeaways



$$\begin{array}{r} 5000 \\ - 1258 \\ \hline \end{array}$$

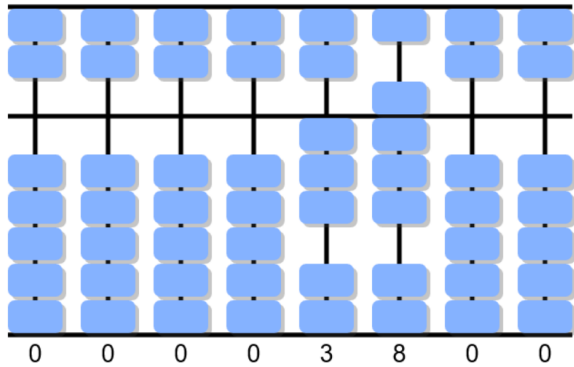
~~4~~
3

Chinese Takeaways



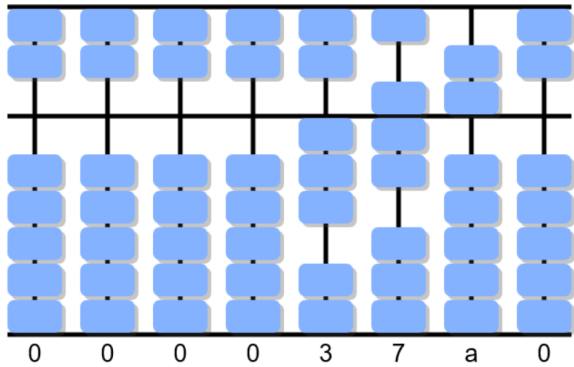
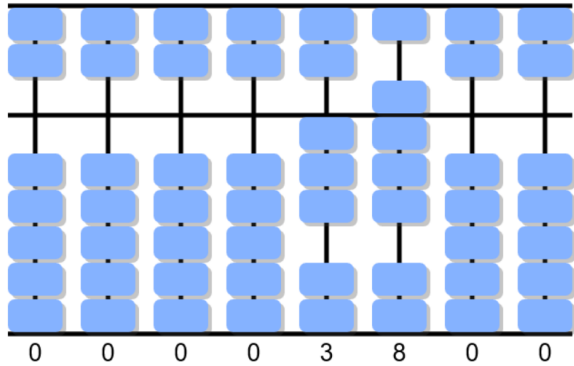
$$\begin{array}{r} 5000 \\ - 1258 \\ \hline \cancel{4}8 \\ 3 \end{array}$$

Chinese Takeaways



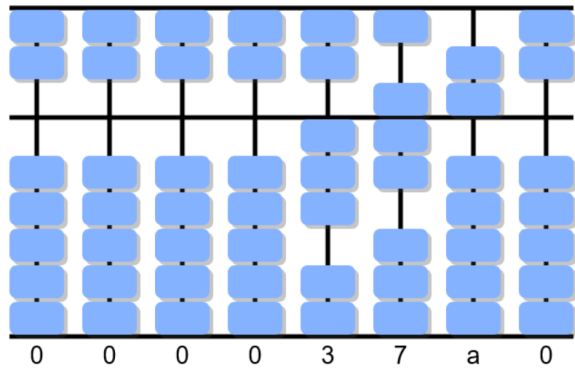
$$\begin{array}{r} 5000 \\ - 1258 \\ \hline \cancel{4}8 \\ 3\quad 7 \end{array}$$

Chinese Takeaways



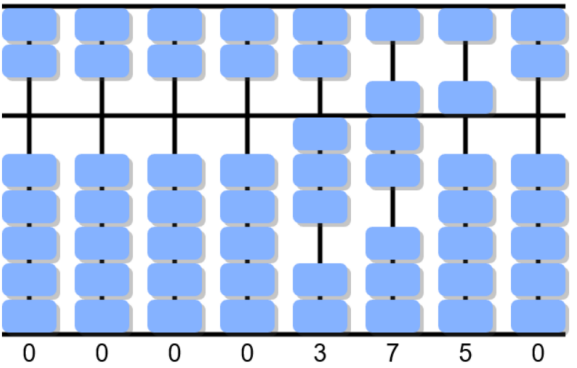
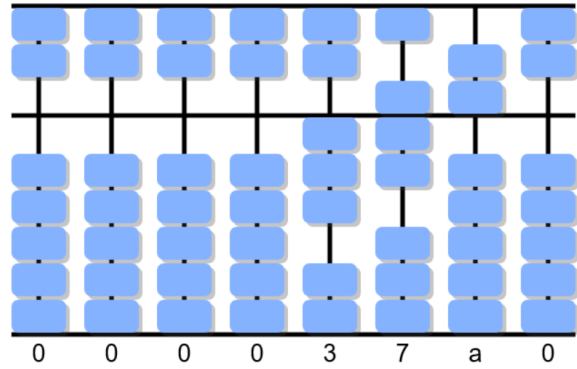
$$\begin{array}{r}
 5000 \\
 - 1258 \\
 \hline
 \cancel{4}8 \\
 37
 \end{array}$$

Chinese Takeaways



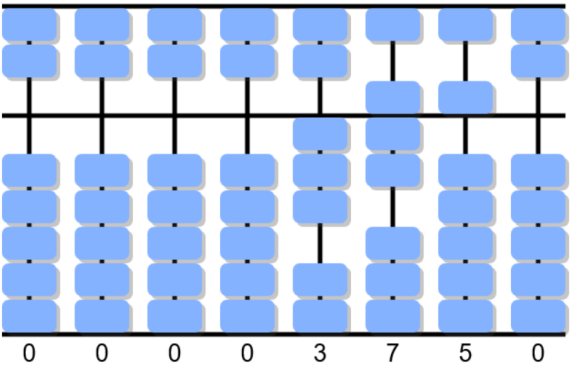
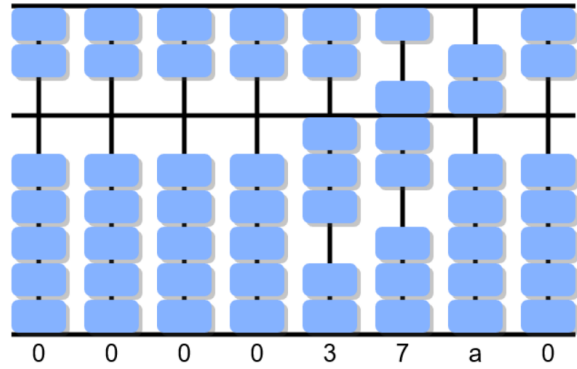
$$\begin{array}{r} 5000 \\ - 1258 \\ \hline \cancel{4}8 \\ 37 \end{array}$$

Chinese Takeaways



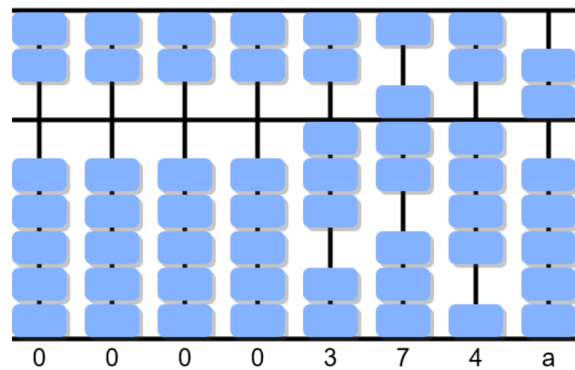
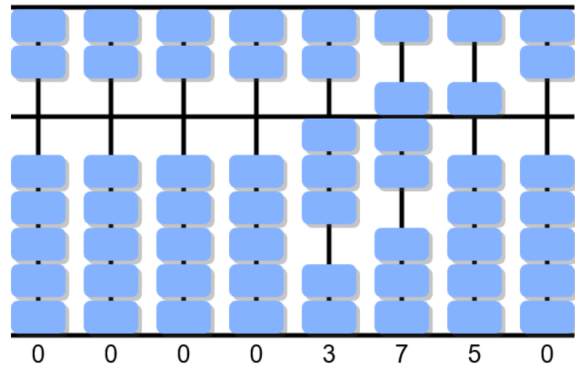
$$\begin{array}{r} 5000 \\ - 1258 \\ \hline \cancel{4}85 \\ 37 \end{array}$$

Chinese Takeaways



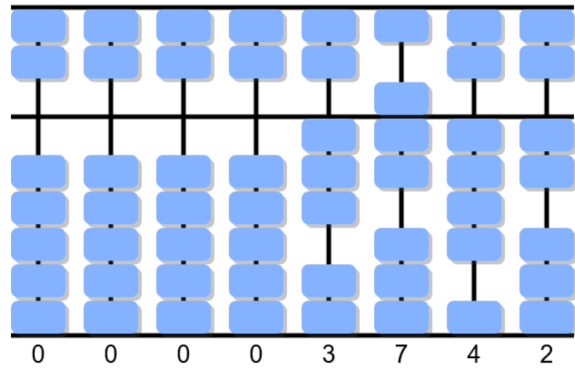
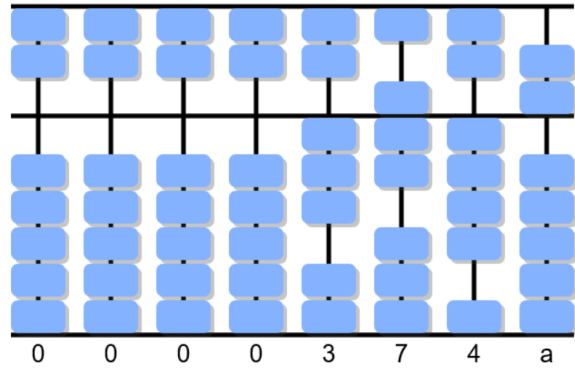
$$\begin{array}{r} 5000 \\ - 1258 \\ \hline \cancel{4}85 \\ 37 \end{array}$$

Chinese Takeaways



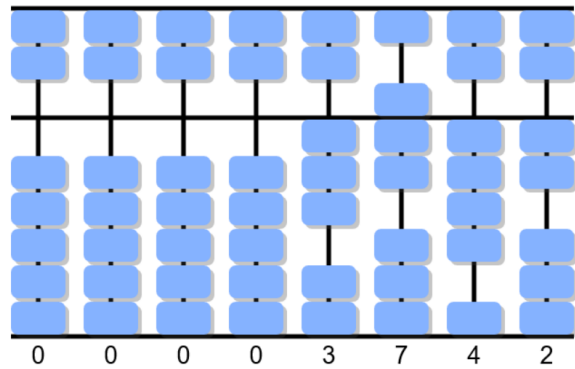
$$\begin{array}{r}
 5000 \\
 - 1258 \\
 \hline
 \cancel{4}8\cancel{5} \\
 3 \quad 7 \quad 4
 \end{array}$$

Chinese Takeaways



$$\begin{array}{r} 5000 \\ - 1258 \\ \hline \cancel{4} \cancel{8} \cancel{5} 2 \\ \phantom{\cancel{4} \cancel{8} \cancel{5} 2} 3 4 \end{array}$$

Chinese Takeaways



$$\begin{array}{r} 5000 \\ - 1258 \\ \hline \cancel{4}\cancel{8}\cancel{5}2 \\ 374 \end{array}$$

Some of the 'ease' in Chinese Takeaways is lost in translation

$$-8 = -10 + 2$$

Borrow and pay-back

Decomposition

Invisible Number line

Chinese Abacus

Please let me know of any other 'pupil-proof' subtraction methods?

Subtractions

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