

PLACE VALUE & SUBTRACTION

Algorithm Lab • Tens, Ones, and Exchange

Objective: *Subtract by place value, exchanging units without changing the quantity.*

DO THIS Show each number by place value. Exchange a unit when you need to, then subtract.

EXCHANGE One ten is ten ones — the quantity does not change.

EXAMPLE

T	O
5	2

1 ten becomes 10 ones

$$\begin{array}{r} 52 \\ - 28 \\ \hline 24 \end{array}$$

52 = 40 + 12.

Exchange one ten for ten ones, then subtract.

BUILD & SUBTRACT Show the number, then subtract by place value.

1

Th	H	T	O
2	9	5	4

$$\begin{array}{r} 2954 \\ - 2258 \\ \hline \end{array}$$

2

Th	H	T	O
5	3	5	8

$$\begin{array}{r} 5358 \\ - 1328 \\ \hline \end{array}$$

3

Th	H	T	O
3	2	4	0

$$\begin{array}{r} 3240 \\ - 1670 \\ \hline \end{array}$$

INDEPENDENT PRACTICE Subtract. Keep your columns aligned.

1

$$\begin{array}{r} 5469 \\ - 4408 \\ \hline \end{array}$$

2

$$\begin{array}{r} 4242 \\ - 3260 \\ \hline \end{array}$$

3

$$\begin{array}{r} 5644 \\ - 4747 \\ \hline \end{array}$$

4

$$\begin{array}{r} 1590 \\ - 1168 \\ \hline \end{array}$$

5

$$\begin{array}{r} 3353 \\ - 2209 \\ \hline \end{array}$$

6

$$\begin{array}{r} 7568 \\ - 2507 \\ \hline \end{array}$$

7

$$\begin{array}{r} 6680 \\ - 6670 \\ \hline \end{array}$$

8

$$\begin{array}{r} 5638 \\ - 1098 \\ \hline \end{array}$$

9

$$\begin{array}{r} 8143 \\ - 1010 \\ \hline \end{array}$$

PROVE IT Check with addition.

1 $1276 + \square = 3115$

2 $4684 + \square = 5760$

3 $2538 + \square = 2828$

To subtract I: exchanged a unit kept columns aligned checked with addition

TEACHER EDITION

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Objective: *Subtract by place value, exchanging units without changing the quantity.*

DO THIS Show each number by place value. Exchange a unit when you need to, then subtract.

EXCHANGE One ten is ten ones — the quantity does not change.

EXAMPLE

T	O
5	2

$$\begin{array}{r} 52 \\ - 28 \\ \hline 24 \end{array}$$

1 ten becomes 10 ones

$52 = 40 + 12.$

Exchange one ten for ten ones, then subtract.

BUILD & SUBTRACT Show the number, then subtract by place value.

1

Th	H	T	O
2	9	5	4

$$\begin{array}{r} 2954 \\ - 2258 \\ \hline 696 \end{array}$$

2

Th	H	T	O
5	3	5	8

$$\begin{array}{r} 5358 \\ - 1328 \\ \hline 4030 \end{array}$$

3

Th	H	T	O
3	2	4	0

$$\begin{array}{r} 3240 \\ - 1670 \\ \hline 1570 \end{array}$$

INDEPENDENT PRACTICE Subtract. Keep your columns aligned.

1

$$\begin{array}{r} 5469 \\ - 4408 \\ \hline 1061 \end{array}$$

2

$$\begin{array}{r} 4242 \\ - 3260 \\ \hline 982 \end{array}$$

3

$$\begin{array}{r} 5644 \\ - 4747 \\ \hline 897 \end{array}$$

4

$$\begin{array}{r} 1590 \\ - 1168 \\ \hline 422 \end{array}$$

5

$$\begin{array}{r} 3353 \\ - 2209 \\ \hline 1144 \end{array}$$

6

$$\begin{array}{r} 7568 \\ - 2507 \\ \hline 5061 \end{array}$$

7

$$\begin{array}{r} 6680 \\ - 6670 \\ \hline 10 \end{array}$$

8

$$\begin{array}{r} 5638 \\ - 1098 \\ \hline 4540 \end{array}$$

9

$$\begin{array}{r} 8143 \\ - 1010 \\ \hline 7133 \end{array}$$

PROVE IT Check with addition.

1 $1276 + 1839 = 3115$

2 $4684 + 1076 = 5760$

3 $2538 + 290 = 2828$

TEACHER NOTES Answer key & guidance

Answers: aligned vertical differences
Common error: Subtracting the smaller digit from the larger in each column

Strategy: Rename one unit as ten of the next-smaller unit
Prompt: "Do you have enough ones, or must you exchange a ten?"

To subtract I: exchanged a unit kept columns aligned checked with addition