

## 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
8	8	2	8

$$\begin{array}{r} 8828 \\ - 1157 \\ \hline \end{array}$$

2

Th	H	T	O
4	8	4	6

$$\begin{array}{r} 4846 \\ - 2209 \\ \hline \end{array}$$

3

Th	H	T	O
2	7	5	8

$$\begin{array}{r} 2758 \\ - 1555 \\ \hline \end{array}$$

**INDEPENDENT PRACTICE** Subtract. Keep your columns aligned.

1

$$\begin{array}{r} 7961 \\ - 1221 \\ \hline \end{array}$$

2

$$\begin{array}{r} 2550 \\ - 2241 \\ \hline \end{array}$$

3

$$\begin{array}{r} 9129 \\ - 1712 \\ \hline \end{array}$$

4

$$\begin{array}{r} 6182 \\ - 6093 \\ \hline \end{array}$$

5

$$\begin{array}{r} 6366 \\ - 1227 \\ \hline \end{array}$$

6

$$\begin{array}{r} 5028 \\ - 3847 \\ \hline \end{array}$$

7

$$\begin{array}{r} 1884 \\ - 1015 \\ \hline \end{array}$$

8

$$\begin{array}{r} 9078 \\ - 7540 \\ \hline \end{array}$$

9

$$\begin{array}{r} 8107 \\ - 5915 \\ \hline \end{array}$$

**PROVE IT** Check with addition.

1  $6739 + \square = 9421$

2  $1973 + \square = 9397$

3  $4987 + \square = 6293$

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

TEACHER EDITION

## 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

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

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
8	8	2	8

$$\begin{array}{r} 8828 \\ - 1157 \\ \hline 7671 \end{array}$$

2

Th	H	T	O
4	8	4	6

$$\begin{array}{r} 4846 \\ - 2209 \\ \hline 2637 \end{array}$$

3

Th	H	T	O
2	7	5	8

$$\begin{array}{r} 2758 \\ - 1555 \\ \hline 1203 \end{array}$$

**INDEPENDENT PRACTICE** Subtract. Keep your columns aligned.

1

$$\begin{array}{r} 7961 \\ - 1221 \\ \hline 6740 \end{array}$$

2

$$\begin{array}{r} 2550 \\ - 2241 \\ \hline 309 \end{array}$$

3

$$\begin{array}{r} 9129 \\ - 1712 \\ \hline 7417 \end{array}$$

4

$$\begin{array}{r} 6182 \\ - 6093 \\ \hline 89 \end{array}$$

5

$$\begin{array}{r} 6366 \\ - 1227 \\ \hline 5139 \end{array}$$

6

$$\begin{array}{r} 5028 \\ - 3847 \\ \hline 1181 \end{array}$$

7

$$\begin{array}{r} 1884 \\ - 1015 \\ \hline 869 \end{array}$$

8

$$\begin{array}{r} 9078 \\ - 7540 \\ \hline 1538 \end{array}$$

9

$$\begin{array}{r} 8107 \\ - 5915 \\ \hline 2192 \end{array}$$

**PROVE IT** Check with addition.

1  $6739 + \underline{2682} = 9421$

2  $1973 + \underline{7424} = 9397$

3  $4987 + \underline{1306} = 6293$

**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