

## 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
9	6	9	1

$$\begin{array}{r} 9691 \\ - 1315 \\ \hline \end{array}$$

2

Th	H	T	O
5	2	2	1

$$\begin{array}{r} 5221 \\ - 4643 \\ \hline \end{array}$$

3

Th	H	T	O
6	7	6	5

$$\begin{array}{r} 6765 \\ - 4620 \\ \hline \end{array}$$

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

1

$$\begin{array}{r} 2740 \\ - 1476 \\ \hline \end{array}$$

2

$$\begin{array}{r} 8398 \\ - 5408 \\ \hline \end{array}$$

3

$$\begin{array}{r} 5456 \\ - 5158 \\ \hline \end{array}$$

4

$$\begin{array}{r} 2451 \\ - 2441 \\ \hline \end{array}$$

5

$$\begin{array}{r} 5000 \\ - 3990 \\ \hline \end{array}$$

6

$$\begin{array}{r} 4759 \\ - 1187 \\ \hline \end{array}$$

7

$$\begin{array}{r} 8910 \\ - 6655 \\ \hline \end{array}$$

8

$$\begin{array}{r} 6017 \\ - 3235 \\ \hline \end{array}$$

9

$$\begin{array}{r} 3656 \\ - 1973 \\ \hline \end{array}$$

**PROVE IT** Check with addition.

1  $1217 + \square = 9756$

2  $1018 + \square = 2286$

3  $3841 + \square = 4819$

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

TEACHER EDITION

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**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
9	6	9	1

$$\begin{array}{r} 9691 \\ - 1315 \\ \hline 8376 \end{array}$$

2

Th	H	T	O
5	2	2	1

$$\begin{array}{r} 5221 \\ - 4643 \\ \hline 578 \end{array}$$

3

Th	H	T	O
6	7	6	5

$$\begin{array}{r} 6765 \\ - 4620 \\ \hline 2145 \end{array}$$

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

1

$$\begin{array}{r} 2740 \\ - 1476 \\ \hline 1264 \end{array}$$

2

$$\begin{array}{r} 8398 \\ - 5408 \\ \hline 2990 \end{array}$$

3

$$\begin{array}{r} 5456 \\ - 5158 \\ \hline 298 \end{array}$$

4

$$\begin{array}{r} 2451 \\ - 2441 \\ \hline 10 \end{array}$$

5

$$\begin{array}{r} 5000 \\ - 3990 \\ \hline 1010 \end{array}$$

6

$$\begin{array}{r} 4759 \\ - 1187 \\ \hline 3572 \end{array}$$

7

$$\begin{array}{r} 8910 \\ - 6655 \\ \hline 2255 \end{array}$$

8

$$\begin{array}{r} 6017 \\ - 3235 \\ \hline 2782 \end{array}$$

9

$$\begin{array}{r} 3656 \\ - 1973 \\ \hline 1683 \end{array}$$

**PROVE IT** Check with addition.

1  $1217 + \underline{8539} = 9756$

2  $1018 + \underline{1268} = 2286$

3  $3841 + \underline{978} = 4819$

**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