

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

T	O
6	8

$$\begin{array}{r} 68 \\ - 17 \\ \hline \end{array}$$

2

T	O
1	6

$$\begin{array}{r} 16 \\ - 11 \\ \hline \end{array}$$

3

T	O
6	0

$$\begin{array}{r} 60 \\ - 44 \\ \hline \end{array}$$

4

T	O
1	9

$$\begin{array}{r} 19 \\ - 18 \\ \hline \end{array}$$

INDEPENDENT PRACTICE

Subtract. Keep your columns aligned.

1

$$\begin{array}{r} 65 \\ - 10 \\ \hline \end{array}$$

2

$$\begin{array}{r} 94 \\ - 67 \\ \hline \end{array}$$

3

$$\begin{array}{r} 98 \\ - 48 \\ \hline \end{array}$$

4

$$\begin{array}{r} 26 \\ - 20 \\ \hline \end{array}$$

PROVE IT

Check with addition.

1 $58 + \square = 68$

2 $18 + \square = 63$

3 $67 + \square = 78$

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

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

T	O
6	8

$$\begin{array}{r} 68 \\ - 17 \\ \hline 51 \end{array}$$

2

T	O
1	6

$$\begin{array}{r} 16 \\ - 11 \\ \hline 5 \end{array}$$

3

T	O
6	0

$$\begin{array}{r} 60 \\ - 44 \\ \hline 16 \end{array}$$

4

T	O
1	9

$$\begin{array}{r} 19 \\ - 18 \\ \hline 1 \end{array}$$

INDEPENDENT PRACTICE Subtract. Keep your columns aligned.

1

$$\begin{array}{r} 65 \\ - 10 \\ \hline 55 \end{array}$$

2

$$\begin{array}{r} 94 \\ - 67 \\ \hline 27 \end{array}$$

3

$$\begin{array}{r} 98 \\ - 48 \\ \hline 50 \end{array}$$

4

$$\begin{array}{r} 26 \\ - 20 \\ \hline 6 \end{array}$$

PROVE IT Check with addition.

1 $58 + \underline{10} = 68$

2 $18 + \underline{45} = 63$

3 $67 + \underline{11} = 78$

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

