

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

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

$52 = 40 + 12$.

Exchange one ten for ten ones, then subtract.

1 ten becomes 10 ones

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

1

T	O
2	6

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

2

T	O
2	2

$$\begin{array}{r} 22 \\ - 17 \\ \hline \end{array}$$

3

T	O
5	8

$$\begin{array}{r} 58 \\ - 27 \\ \hline \end{array}$$

4

T	O
1	9

$$\begin{array}{r} 19 \\ - 15 \\ \hline \end{array}$$

INDEPENDENT PRACTICE Subtract. Keep your columns aligned.

1

$$\begin{array}{r} 32 \\ - 23 \\ \hline \end{array}$$

2

$$\begin{array}{r} 85 \\ - 28 \\ \hline \end{array}$$

3

$$\begin{array}{r} 84 \\ - 72 \\ \hline \end{array}$$

4

$$\begin{array}{r} 67 \\ - 20 \\ \hline \end{array}$$

5

$$\begin{array}{r} 49 \\ - 47 \\ \hline \end{array}$$

6

$$\begin{array}{r} 82 \\ - 18 \\ \hline \end{array}$$

7

$$\begin{array}{r} 37 \\ - 22 \\ \hline \end{array}$$

8

$$\begin{array}{r} 63 \\ - 62 \\ \hline \end{array}$$

PROVE IT Check with addition.

1 $45 + \square = 57$

2 $22 + \square = 30$

3 $19 + \square = 72$

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

TEACHER EDITION

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2	6

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

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T	O
2	2

$$\begin{array}{r} 22 \\ - 17 \\ \hline 5 \end{array}$$

3

T	O
5	8

$$\begin{array}{r} 58 \\ - 27 \\ \hline 31 \end{array}$$

4

T	O
1	9

$$\begin{array}{r} 19 \\ - 15 \\ \hline 4 \end{array}$$

INDEPENDENT PRACTICE Subtract. Keep your columns aligned.

1

$$\begin{array}{r} 32 \\ - 23 \\ \hline 9 \end{array}$$

2

$$\begin{array}{r} 85 \\ - 28 \\ \hline 57 \end{array}$$

3

$$\begin{array}{r} 84 \\ - 72 \\ \hline 12 \end{array}$$

4

$$\begin{array}{r} 67 \\ - 20 \\ \hline 47 \end{array}$$

5

$$\begin{array}{r} 49 \\ - 47 \\ \hline 2 \end{array}$$

6

$$\begin{array}{r} 82 \\ - 18 \\ \hline 64 \end{array}$$

7

$$\begin{array}{r} 37 \\ - 22 \\ \hline 15 \end{array}$$

8

$$\begin{array}{r} 63 \\ - 62 \\ \hline 1 \end{array}$$

PROVE IT Check with addition.

1 $45 + 12 = 57$

2 $22 + 8 = 30$

3 $19 + 53 = 72$

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