

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
8	1

$$\begin{array}{r} 81 \\ - 63 \\ \hline \end{array}$$

2

T	O
3	0

$$\begin{array}{r} 30 \\ - 25 \\ \hline \end{array}$$

3

T	O
1	8

$$\begin{array}{r} 18 \\ - 11 \\ \hline \end{array}$$

4

T	O
6	9

$$\begin{array}{r} 69 \\ - 34 \\ \hline \end{array}$$

INDEPENDENT PRACTICE

Subtract. Keep your columns aligned.

1

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

2

$$\begin{array}{r} 22 \\ - 19 \\ \hline \end{array}$$

3

$$\begin{array}{r} 55 \\ - 39 \\ \hline \end{array}$$

4

$$\begin{array}{r} 88 \\ - 11 \\ \hline \end{array}$$

PROVE IT

Check with addition.

1 $13 + \square = 97$

2 $15 + \square = 36$

3 $20 + \square = 66$

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

TEACHER EDITION

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52 = 40 + 12.

Exchange one ten for ten ones, then subtract.

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

1

T	O
8	1

$$\begin{array}{r} 81 \\ - 63 \\ \hline 18 \end{array}$$

2

T	O
3	0

$$\begin{array}{r} 30 \\ - 25 \\ \hline 5 \end{array}$$

3

T	O
1	8

$$\begin{array}{r} 18 \\ - 11 \\ \hline 7 \end{array}$$

4

T	O
6	9

$$\begin{array}{r} 69 \\ - 34 \\ \hline 35 \end{array}$$

INDEPENDENT PRACTICE Subtract. Keep your columns aligned.

1

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

2

$$\begin{array}{r} 22 \\ - 19 \\ \hline 3 \end{array}$$

3

$$\begin{array}{r} 55 \\ - 39 \\ \hline 16 \end{array}$$

4

$$\begin{array}{r} 88 \\ - 11 \\ \hline 77 \end{array}$$

PROVE IT Check with addition.

1 $13 + \underline{84} = 97$

2 $15 + \underline{21} = 36$

3 $20 + \underline{46} = 66$

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

