FAITH THINKERS
Traditional Arithmetic & Logic

Name: _____

# 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 | 0 |

$$\begin{array}{r} 60 \\ -\ 29 \\ \hline \end{array}$$

2

| T | O |
|---|---|
| 4 | 8 |

$$\begin{array}{r} 48 \\ -\ 30 \\ \hline \end{array}$$

3

| T | O |
|---|---|
| 9 | 0 |

$$\begin{array}{r} 90 \\ -\ 43 \\ \hline \end{array}$$

4

| T | O |
|---|---|
| 6 | 9 |

$$\begin{array}{r} 69 \\ -\ 67 \\ \hline \end{array}$$

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

1 $\begin{array}{r} 53 \\ -\ 27 \\ \hline \end{array}$

2 $\begin{array}{r} 98 \\ -\ 97 \\ \hline \end{array}$

3 $\begin{array}{r} 66 \\ -\ 20 \\ \hline \end{array}$

4 $\begin{array}{r} 69 \\ -\ 35 \\ \hline \end{array}$

5 $\begin{array}{r} 96 \\ -\ 86 \\ \hline \end{array}$

6 $\begin{array}{r} 59 \\ -\ 24 \\ \hline \end{array}$

7 $\begin{array}{r} 58 \\ -\ 37 \\ \hline \end{array}$

8 $\begin{array}{r} 58 \\ -\ 22 \\ \hline \end{array}$

**PROVE IT** Check with addition.

1. 15 + ☐ = 61
2. 19 + ☐ = 99
3. 33 + ☐ = 75

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

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TEACHER EDITION

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| 5 | 2 |

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

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 | 0 |

$$\begin{array}{r} 60 \\ -\ 29 \\ \hline 31 \end{array}$$

2

| T | O |
|---|---|
| 4 | 8 |

$$\begin{array}{r} 48 \\ -\ 30 \\ \hline 18 \end{array}$$

3

| T | O |
|---|---|
| 9 | 0 |

$$\begin{array}{r} 90 \\ -\ 43 \\ \hline 47 \end{array}$$

4

| T | O |
|---|---|
| 6 | 9 |

$$\begin{array}{r} 69 \\ -\ 67 \\ \hline 2 \end{array}$$

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

1
$$\begin{array}{r} 53 \\ -\ 27 \\ \hline 26 \end{array}$$

2
$$\begin{array}{r} 98 \\ -\ 97 \\ \hline 1 \end{array}$$

3
$$\begin{array}{r} 66 \\ -\ 20 \\ \hline 46 \end{array}$$

4
$$\begin{array}{r} 69 \\ -\ 35 \\ \hline 34 \end{array}$$

5
$$\begin{array}{r} 96 \\ -\ 86 \\ \hline 10 \end{array}$$

6
$$\begin{array}{r} 59 \\ -\ 24 \\ \hline 35 \end{array}$$

7
$$\begin{array}{r} 58 \\ -\ 37 \\ \hline 21 \end{array}$$

8
$$\begin{array}{r} 58 \\ -\ 22 \\ \hline 36 \end{array}$$

**PROVE IT** Check with addition.

1. 15 + 46 = 61
2. 19 + 80 = 99
3. 33 + 42 = 75

**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