

Number Detective Moves

Use place value to solve addition and subtraction mysteries.

GRADE 3 • 3.PAR.2.2

3.PAR.2.2 "Apply part-whole strategies, properties of operations and place value understanding, to solve problems involving addition and subtraction within 10,000..."

NAME _____

DATE _____

BREAK APART NUMBERS

Break each number into thousands, hundreds, tens, and ones. Add or subtract the parts, then combine them. Use a blank in an equation to show a number you need to find.

WORKED EXAMPLE

Solve: $4,728 + 1,356 = \underline{\hspace{2cm}}$

1. Break apart 4,728 and 1,356 by place value.
2. Add the parts: $4,000 + 1,000 = 5,000$, $700 + 300 = 1,000$, $20 + 50 = 70$, and $8 + 6 = 14$.
3. Combine: $5,000 + 1,000 + 70 + 14 = 6,084$.

Answer: $4,728 + 1,356 = 6,084$

PRACTICE 6 problems

- 1** Solve. Show a place-value strategy: $3,468 + 2,157 = \underline{\hspace{2cm}}$

ANSWER _____

- 2** Solve. Show a place-value strategy: $7,203 - 1,486 = \underline{\hspace{2cm}}$

ANSWER _____

- 3** Find the missing number: $4,900 + \underline{\hspace{2cm}} = 7,642$

ANSWER _____

- 4** Find the missing number: $\underline{\hspace{2cm}} - 2,735 = 3,108$

ANSWER _____

- 5** Find the missing number: $6,010 - \underline{\hspace{2cm}} = 2,789$

ANSWER _____

- 6** Solve. You may use compensation: $1,999 + 3,006 = \underline{\hspace{2cm}}$

ANSWER _____

APPLY IT Show your work

- 1** The robotics club collected 3,275 bottle caps on Monday and 1,948 bottle caps on Tuesday. How many bottle caps did it collect altogether? Write an equation with a blank, solve it, and tell how you checked.

WORK SPACE

ANSWER _____

- 2** The school game club printed 8,400 scorecards. It used 3,657 scorecards at a tournament. How many scorecards were left? Write an equation with a blank, solve it, and tell how you checked.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A science club had 3,875 beads for making keychains. It received 2,468 more beads, then used some beads. There were 4,910 beads left. How many beads were used? Write an equation with a blank. Explain how you found it.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Solve. Show a place-value strategy: $3,468 + 2,157 = \underline{\hspace{2cm}}$	$3,468 + 2,157 = 5,625$
2	Solve. Show a place-value strategy: $7,203 - 1,486 = \underline{\hspace{2cm}}$	$7,203 - 1,486 = 5,717$
3	Find the missing number: $4,900 + \underline{\hspace{2cm}} = 7,642$	$4,900 + 2,742 = 7,642$
4	Find the missing number: $\underline{\hspace{2cm}} - 2,735 = 3,108$	$5,843 - 2,735 = 3,108$
5	Find the missing number: $6,010 - \underline{\hspace{2cm}} = 2,789$	$6,010 - 3,221 = 2,789$
6	Solve. You may use compensation: $1,999 + 3,006 = \underline{\hspace{2cm}}$	$1,999 + 3,006 = 5,005$

PART 2 • APPLY IT

- $3,275 + 1,948 = \underline{\hspace{2cm}}$; $\underline{\hspace{2cm}} = 5,223$. Check: $5,223 - 1,948 = 3,275$.** Add the two daily amounts. Check by subtracting one addend from the total.
- $8,400 - 3,657 = \underline{\hspace{2cm}}$; $\underline{\hspace{2cm}} = 4,743$. Check: $4,743 + 3,657 = 8,400$.** Subtract the scorecards used from the number printed. Check by adding the amount left and the amount used.

CHALLENGE

$3,875 + 2,468 - \underline{\hspace{2cm}} = 4,910$; $\underline{\hspace{2cm}} = 1,433$. First, $3,875 + 2,468 = 6,343$. Then, $6,343 - 4,910 = 1,433$.

Accept accurate place-value, compensation, or inverse-operation strategies. Accept equivalent equations that use a blank for the unknown and correctly justify the answer with a related addition or subtraction equation.