

Smart Number Choices

Estimate, solve, and explain addition and subtraction.

GRADE 4 • 4.CE.1

4.CE.1 "The student will estimate, represent, solve, and justify solutions to single-step and multistep problems, including those in context, using addition and subtraction with whole numbers..."

NAME _____

DATE _____

ESTIMATE OR EXACT?

Estimate first to check size. Align thousands, hundreds, tens and ones (Th, H, T, O) for the standard algorithm; regroup as needed. Use exact counts for an exact record, but estimates can answer approximate planning questions. State why your choice fits the task.

WORKED EXAMPLE

A museum expects 3,482 and 2,719 visitors. Estimate to the nearest hundred, then add exactly using place-value columns.

1. $3,500 + 2,700 = 6,200$.

2. Ones: $2 + 9 = 11$. Tens: $8 + 1 + 1 = 10$.

Hundreds: $4 + 7 + 1 = 12$. Regroup each time.

3. Thousands: $3 + 2 + 1 = 6$.

Answer: 6,201 visitors: a little more than 6,200. The estimate is only 1 less.

	Th	H	T	O
	1	1	1	
	3	4	8	2
+	2	7	1	9
	6	2	0	1

PRACTICE 4 problems

- 1** Estimate $7,643 + 1,286$ by rounding to hundreds. Then use the standard algorithm. Compare the exact answer with your estimate.

- 2** Estimate $9,204 - 4,687$ by rounding to hundreds. Then use the standard algorithm. Explain one regrouping.

- 3** A cafeteria has 5,238 apples and serves exactly 5,000 lunches, one apple each. Its inventory report needs the leftover count. Should the report use an estimate or exact answer? Find it.

- 4** A library has 3,756 books, receives 2,489 and lends 1,675. Round to hundreds to estimate. Write an equation, solve exactly and explain whether the result is reasonable.

APPLY IT Show your work

1

The District Book Drive goal is 500,000 books. Estimate the collected total using the nearest ten thousand. Write equations to find the exact total and how many more are needed. Explain which count belongs on the final inventory.

DISTRICT BOOK DRIVE

Group	Books Collected
North Schools	128,475
Central Schools	96,820
South Schools	143,650

2

A video has 684,250 views, then gains 137,890 and 92,675. Estimate to the nearest hundred thousand. Write an equation and calculate the exact total. Explain which answer fits an exact views report.

CHALLENGE One step up

A comic convention printed 425,680 tickets. It sold 178,945 tickets on Friday and 163,728 tickets on Saturday. Round each number to the nearest ten thousand and estimate how many tickets remain. Then find the exact number of tickets remaining. Write a sentence using both between and closer to to refine your estimate.

Check estimates, aligned place values, regrouping, equations, units and reasonableness. Estimate/exact decisions depend on the stated purpose; estimates can establish sufficiency when a safe bound is clear. Do not insist that every real-life decision needs an exact count.

PRACTICE 1

$7,600 + 1,300 = 8,900$; exact $8,929$. It is 29 more than the estimate. Ones 9; tens 12, carry 1; hundreds 9; thousands 8.

PRACTICE 2

$9,200 - 4,700 = 4,500$; exact $4,517$. Regroup to 8 thousands, 11 hundreds, 9 tens and 14 ones before subtracting; the estimate is 17 less.

PRACTICE 3

Use the exact difference for the inventory: $5,238 - 5,000 = 238$ apples. An estimate could show roughly enough, but would not give the required leftover count.

PRACTICE 4

$3,800 + 2,500 - 1,700 = 4,600$ estimated. $3,756 + 2,489 = 6,245$; $6,245 - 1,675 = 4,570$ books. The exact count is 30 below the estimate.

APPLY IT 1

Estimate: $130,000 + 100,000 + 140,000 = 370,000$ books. Exact total: 368,945; still needed: 131,055.

Use the exact count for the final inventory.

Add the three group totals to get 368,945. Subtract that total from 500,000 to get 131,055.

APPLY IT 2

Estimate: 900,000 views. Exact total: 914,815 views. The team should report the exact total.

Round the numbers to 700,000, 100,000, and 100,000 for an estimate of 900,000. Add the original numbers to get 914,815.

CHALLENGE

Estimate: 90,000 tickets. Exact answer: 83,007 tickets. The exact answer is between 80,000 and 90,000 and is closer to 80,000.