

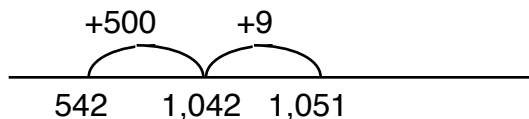
GRADE 3: Add/Subtract Three Digit Numbers With and Without Regrouping

The goal is for students to develop computational fluency, learning a variety of strategies to use to solve problems. Students will look at the numbers involved in the problem and will then decide on a method that best fits the situation. The following are some of the strategies for solving addition/subtraction problems in third grade. The majority of these strategies help students develop a strong sense of number and number relationships which are very important life skills.

| ADDITION | SUBTRACTION |
|--|--|
| <p>LANDMARK & FRIENDLY #'s:</p> $996 + 246 =$ <ul style="list-style-type: none"> • Move 4 from 246 to 996. The new problem is now a mental math problem: $1,000 + 242 = 1,242$ | <p>LANDMARK & FRIENDLY #'s:</p> $931 - 588 = (+12 \text{ to change } 588 \text{ to } 600)$ $931 - 600 = 331$ $331 + 12 = 343 \text{ (Subtracted 12 too many, add back)}$ |
| <p>COMPENSATION:</p> <ul style="list-style-type: none"> • Knowing since $150 + 150 = 300$, $148 + 152 = 300$. (Compensating one number for a change on the other number.) | <p>COUNTING ON (for small differences):</p> $968 - 964 = 4$ <p>Start at 964 and count up to 968. Just difference between 8 and 4!</p> |
| <p>DECOMPOSE (break apart) & COMPOSE (put together):</p> $\begin{array}{r} 559 \\ + 546 \\ \hline \end{array}$ $500 + 500 = 1,000$ $1,000 + 90 = 1,090$ $1,090 + 15 = 1,105$ | <p>CONSTANT DIFFERENCE (add/remove same amount from each number):</p> <ul style="list-style-type: none"> • $641 - 339 (+1 \text{ to each}) = 642 - 340 = 302$ • $650 - 348 = (-300 \text{ each})$ $350 - 48 = 302$ resulting in a much simpler problem |
| <p>NUMBER COMBINATIONS:</p> <ul style="list-style-type: none"> • Doubles, Doubles ± 1 $16 + 15 = 15 + 15 + 1 = 31$ • Making 10's, $16 + 14 = 20 + 10 = 30$ • Using Known Facts $7 + 8 = 15$ so $7 + 9 = 16$ | <p>NUMBER COMBINATIONS:</p> <ul style="list-style-type: none"> • Doubles, Doubles ± 1 $17 - 9 = 18 - 9 - 1 = 9 - 1 = 8$ • Making 10's $17 - 9 = 17 - 10 + 1 = 7 + 1 = 8$ • Using Known Facts $23 - 12 = 24 - 12 - 1 = 11$ |

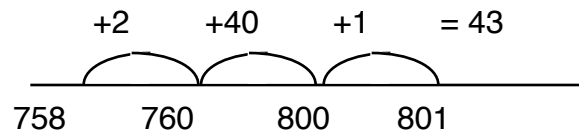
Open Number Line: Used to model "leaps" for adding/subtracting numbers by decomposition. Builds strong number sense. Students can start at either number and count up or back. The size of the "leaps" will vary with ability.

$$542 + 509 =$$



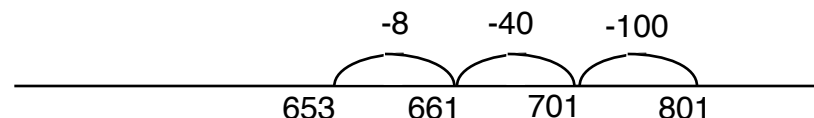
$$801 - 758 = 43$$

* start at 758, count up for small differences



$$801 - 148 = 653$$

*start at 801, count back for large differences



Traditional algorithm: Calculating sums of a list of numbers quickly & accurately.

$$\begin{array}{r} 21 \\ 500 \\ 456 \\ 389 \\ + 871 \\ \hline 2,21 \end{array}$$

Traditional
(Important for adding lists
of numbers.)

Negative Algorithm:

$$\begin{array}{r} 601 \\ - 449 \\ \hline 200 - 40 - 8 = 152 \\ \text{Negative \& \# Sense:} \\ (600 - 400 = 200 \\ 0 - 40 = -40 \\ 1 - 9 = -8 \\ \hline 152) \end{array}$$

These strategies are developed in the following unit(s) in our curriculum:
Mathematical Thinking, Landmarks in the Hundreds, Up & Down the Number Line, Combining & Comparing.