Accessible Algorithms for Addition

Introduce the accessible algorithms presented below when students learn about adding with and without regrouping. Support students' use of the algorithm whenever they are working on multi-digit or decimal addition.

Show All Totals Method

Use with *Houghton Mifflin Math*, Ch 4, Lessons 3, 4, 6 and 7.

This method breaks an addition problem into its components. Students can use the algorithm to solve addition problems in either direction, from left to right (as they read) or right to left.

Show All Totals with Multi-Digit Addition

Left-to-Right	Right-to-Left
268	268
+ 124	+ 124
300	12
80	80
12	300
392	392

For less-advanced students, an optional transitional method that shows place-value meanings can be used.

$$268 = 200 + 60 + 8$$
$$+\ 124 = 100 + 20 + 4$$
$$392 = 300 + 80 + 12$$

Students can use this method until they are ready to use the Show All Totals Method or the New Groups Below Method.

New Groups Below Method

Use with *Houghton Mifflin Math*, Ch 4, Lessons 3, 4, 6 and 7.

New Groups Below with Multi-Digit Addition

Common Method	New Groups Below Method
$\overset{1}{2}68$	268
+ 124	+ 12$\overset{1}{4}$
392	392

With this new method, students can see the 12 resulting from adding 8 ones and 4 ones, and only add the new ten after having added the original tens digits (in the case above, 6 tens and 2 tens).

Advantages of the Accessible Algorithm

- In the traditional "ones above" algorithm, students add one to the top number, hold that number in their head, and then add on another number. This can lead to error. In the accessible algorithm, a student finds the total in the tens column and simply increases this total by one.

- Writing the "new one" below keeps the total of the ones visible as a teen number. This helps to keep the grouping process meaningful.

- Many students complain that putting a one in the tens column changes the problem, which in fact it does. The new one below does not change the problem.