

## Grade 1: Addition within 100

© ITEM ADAPTED WITH PERMISSION FROM LEARNING HEROES, A PROJECT OF NEW VENTURE FUND. CONTACT LEARNING HEROES, A PROJECT OF NEW VENTURE FUND, DIRECTLY FOR TERMS OF USE

**1.NBT.C.4** – Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

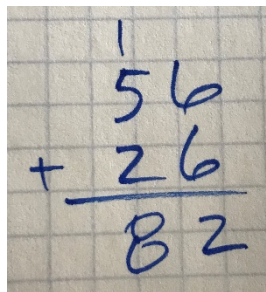
$$\begin{array}{r} 56 \\ + 26 \\ \hline \end{array}$$

### Solution

Correct if student writes the number 82.

The best way to find the sum is to take advantage of place value, adding ones to ones and tens to tens.

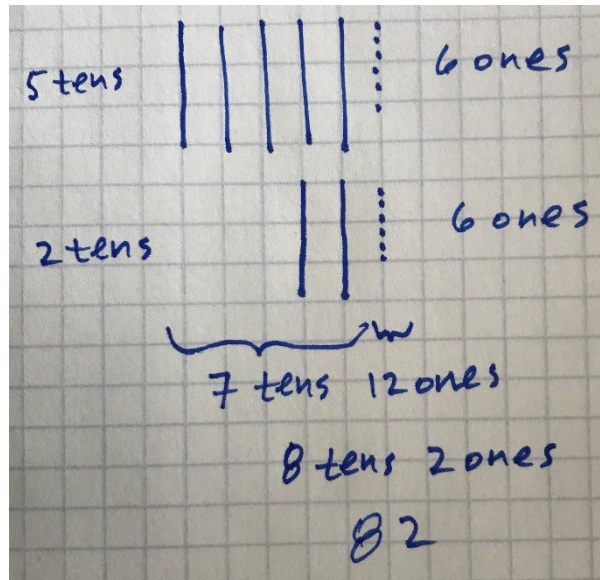
There are several ways this can be done. Some first graders might use the standard algorithm to organize their work:



A photograph of a student's handwritten work on grid paper. The student has written the addition problem 56 + 26 = 82 using the standard algorithm. A vertical line is drawn to the left of the numbers, and a horizontal line is drawn under the 26. The sum 82 is written below the horizontal line.

Many students will first combine the tens ( $50 + 20 = 70$ ), next combine the ones ( $6 + 6 = 12$ ), and finally add these results to obtain the final answer:  $70 + 12 = 82$ . This approach is fine in grade 1. As problems get more complicated, students will learn increasingly efficient procedures culminating in the standard algorithms.

Some students may draw pictures of tens and ones to help them find the sum. In the diagram to the right, a long line represents a ten and a dot represents a one. The top part of the picture shows 56, and the part beneath that shows 26. Effectively, the diagram explains why the numerical procedures give the right answer. Students should be able to show what is going on; diagrams like these will be useful in second grade when students learn to add and subtract three-digit numbers. However, in second grade students will be expected to find sums like  $56 + 26$  fluently, working with the number symbols themselves rather than using diagrams or objects for support.



Finally, some students might try using mental arithmetic. For example, they could use a compensation approach: consider that if we were to increase 26 by four, and decrease 56 by four, then we would have an equivalent but easier problem:  $52 + 30 = 82$ . This approach shows good number sense—it is the kind of thinking that will be valuable later on in algebra. However, compensation and other opportunistic approaches don't generalize well to calculations like  $8753 - 2476$ , which is why students need to learn systematic methods based on place value. And for most first graders, trying to add  $56 + 26$  mentally will likely result in a wrong answer because of a mistake along the way.

### Elaboration on Alignment

The problem is to find the sum of two two-digit numbers, where the sum is less than 100 and the problem requires a regrouping step. The addition in the ones place is supposed to be easy, and that's why a doubles fact was chosen; an appreciable number of students will probably just know that  $6 + 6 = 12$ .

### Learn More

See a digital version of this task at Learning Heroes' Readiness Check:

<https://bealearninghero.org/readiness-check>

Name: \_\_\_\_\_

$$\begin{array}{r} 56 \\ + 26 \\ \hline \end{array}$$