

Vertical Progression:

TS Gold	<p>20. Uses number concepts and operations</p> <p>20b. Quantifies</p> <p>8. Uses a variety of strategies (counting objects or fingers, counting on, or counting back) to solve problems with more than 10 objects.</p>
Kindergarten	<p>K.OA.A. Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.</p> <ul style="list-style-type: none"> ○ K.OA.A.2: Solve addition and subtraction word problems, and add or subtract within 10, e.g., by using objects or drawing to represent the problem.
1st Grade	<p>1.OA.A Represent and solve problems involving addition and subtraction.</p> <ul style="list-style-type: none"> ○ 1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. ○ 1.OA.A.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
2nd Grade	<p>2.OA.A Represent and solve problems involving addition and subtraction.</p> <ul style="list-style-type: none"> ○ 2.OA.1 Use addition and subtraction within 100 to solve one and two step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions e.g. by using drawings and equations with a symbol for the unknown number to represent the problem. ○

Students will demonstrate command of the ELG by:

- Modeling addition and subtraction word problems using objects, drawings, and equations with unknown numbers in different positions.
- Solving addition and subtraction word problems up to 20 using multiple strategies.
- Explaining why they chose a particular strategy.
- Using objects, drawings, or equations with a symbol to find the unknown addend in a story problem.
- Solving word problems with unknown numbers in different positions (e.g., $6 + _ = 8$, $_ + 2 = 8$, $6 + 2 = _$).
- Adding three whole numbers whose sum is less than or equal to 20.

Vocabulary:

- addend
- adding to
- addition
- decompose
- difference
- equal (=)
- equation
- less than
- number
- putting together
- solve
- subtraction
- sum
- symbol
- taking apart
- taking from
- unknown
- whole numbers
- word problems

Sample Instructional/Assessment Tasks:

1) Standard 1.OA.A.1

Source: Illustrative Mathematics

Item Prompt: At the Park

Part A. There were 7 children at the park. Then 4 more showed up. How many children were at the park all together?

Part B. There were 7 children at the park. Some more showed up. Then there were 11 children in all. How many more children came?

Part C. There were some children at the park. Four more children showed up. Then there were 11 children at the park. How many children were at the park to start with?

Correct Answer: Students may use objects, pictures, or equations to represent their solutions. The solutions show equations with a question mark representing the unknown value, but other symbols are often used. For example, $4 + ? = 11$ might also be written $4 + \underline{\quad} = 11$ or $4 + \square = 11$.

Part A. Total Unknown: There were 11 children in all. Possible equation: $7+4=?$

Part B. Addend Unknown: 4 more children came. Possible equation: $7+?=11$

Part C. Start Unknown: There were 7 children in the park to start with. Possible equation: $?+4=11$

2) Standard: 1.OA.A.2

Source: Illustrative Mathematics

Item Prompt:

Jasmine has eight daisies and three vases - one large, one medium-sized and one small.

She puts 5 daisies in the large vase, 2 in the medium vase and 1 in the small vase.

- Can you find another way to put daisies so that there are the most in the large vase and least in the small vase?
- Try to find as many ways as you can put the daisies in the vases with the most in the large vase and the least in the smallest vase. If you think you have found them all, explain how you know those are all the possibilities.

Correct Answer:

The full list is:

- 8 in the large, and none in the others, which we abbreviate as 8,0,0.
- 7 in large, 1 in medium, 0 in small, which we abbreviate as 7,1,0.
- 6,2,0; 6,1,1; 5,3,0; 5,2,1; 4,4,0; 4,3,1; 4,2,2; 3,3,2

If students and the teacher decide to not allow empty vases or equal numbers, there are only two possibilities, the other being 4,3,1. It is likely that at least equal amounts will be allowed, in which case there are five possibilities.

One full solution strategy is to first decide how many are in the first vase, and then decide from there how many in the second and third vases.