

Vertical Progression:

CAS Preschool Standards	<p>Quantities can be represented and counted.</p> <ul style="list-style-type: none"> ○ Count and represent objects including coins to 10 (Personal Financial Literacy) ○ Match a quantity with a numeral.
TS Gold	<p>20: Uses number concepts and operations</p> <ul style="list-style-type: none"> ○ Counts: Verbally counts to 20; counts 10-20 objects accurately; knows the last number states how many in all; tells what number (1-10) comes next in order by counting. ○ Quantifies: Recognizes and names the number of items in a small set (up to five) instantly; combines and separates up to five objects and describes the parts.
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.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. ○ K.OA.A.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem. ○ K.OA.A.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$). ○ K.OA.A.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation. ○ K.OA.A.5 Fluently add and subtract within 5.
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. <p>1.OA.C Add and subtract within 20.</p> <ul style="list-style-type: none"> ○ 1.OA.C.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).

Students will demonstrate command of the ELG by:

- Using manipulatives and drawings to represent addition and subtraction problems within ten.
- Modeling and solving addition and subtraction **word problems** within ten using objects, drawings, or numbers.
- Using appropriate grade level academic and content language to explain and justify their solutions orally.
- Using multiple strategies to solve addition and subtraction word problems.
- Decomposing numbers less than or equal to ten in more than one way and record each decomposition using a drawing or equation.
- Identifying the different combinations that make 10.
- Demonstrating ways of making 10 with 2 addends by drawing a picture or make an equation.
- Identifying how many more it takes to get 10, when starting from a numbers 1-9.
- Adding and subtracting fluently within 5.

Vocabulary:

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|--------------|--------------------|------------------------|
| • add | • equation | • subtract |
| • addend | • minus | • subtraction |
| • addition | • model | • sum |
| • adding to | • number name | • take apart/take from |
| • compose | • numeral | • ten |
| • decompose | • pairs | • teens |
| • difference | • plus | • word problem |
| • equal | • putting together | |

Sample Instructional/Assessment Tasks:

1) Standard: K.OA.A.1

Source: <https://gradecommoncoremath.wikispaces.hcpss.org/Assessing+KOA>

Solve:

1. Tom has 4 blue cars. Nancy has 3 red cars. How many cars do they have all together?
2. Jenny made 9 cookies with her mom. She gave 5 cookies away to her friends. How many cookies does Jenny have left?
3. Solve the equations and draw a picture to match.

$$5 + 2 = \underline{\quad}$$

$$\underline{\quad} = 3 + 3$$

$$\underline{\quad} = 1 + 6$$

$$0 + 8 = \underline{\quad}$$

2) Standard: K.OA.A.2

Source: <https://gradecommoncoremath.wikispaces.hcpss.org/Assessing+KOA2>

Solve:

1. I see 8 crayons. 4 crayons are red, and the rest are blue. How many crayons are blue?
2. Three kids are in the art room. Some more kids come in, and now there are 8 kids in the art room. How many kids came in?

3) Standard: K.OA.A.3

Source: Illustrative Mathematics

(<https://www.illustrativemathematics.org/content-standards/K/OA/A/3/tasks/177>)

Task: Make 9

Make 9 in as many ways as you can by adding two numbers between 0 and 9.

Solution: Students may use objects or drawings to find the decompositions and then should record the decompositions by drawing pictures or writing equations. Students should include two or more of the following possible decompositions. Note that the “9” may appear on either side of the equal sign.

Possible equations:

$$0+9 = 9; 1+8 = 9; 2+7 = 9; 3+6 = 9; 4+5 = 9;$$

$$5+4 = 9; 6+3 = 9; 7+2 = 9; 8+1 = 9; 9+0 = 9$$

Commentary:

Because of the limited reading skills of kindergarten students, this task should be introduced by the teacher, followed by the students carrying out the activity. Teachers should have counters on hand for students to use.

There are two other tasks that are very similar to this but which have contexts. As with several other tasks in the set, any number between 2 and 10 can be used in place of 9 to address K.OA.3. Although not necessary to meet this standard, listing the possible pairs of numbers in a systematic way might help the student show that s/he has found all of the possible number pairs that make 9.