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|  |  |
| --- | --- |
| **Addition Fluency Within 10** | |
| There are 6 birds in the park. 2 more arrive. How many birds are in the park?  What is the answer to 4 joined with 3? | |
| **OPERATIONS AND ALGEBRAIC THINKING**  **Add and subtract within 20.**  **NC.1.OA.9** Demonstrate fluency with addition and subtraction within 10. | |
| **Not Yet Proficient** | * Focus on addition and subtraction word problems within 5 (Kindergarten expectation). * Stuck in the Sink (Kindergarten [lesson](https://tools4ncteachers.com/resources/0-kindergarten/lessons/cluster-5/c5oa1-stuck-in-the-sink.docx).) * Provide students with counters or cubes and a ten frame or number path (see below) to help them solve the tasks. * Roll and Write using two dot cubes (see below). * Addition Compare with two dot cubes (see below). |
| **Progressing** | * Focus on addition and subtraction word problems within 10. * Pose tasks such as 4 joined with 2 and 4 joined with 3. Students need access to a 10 frame and manipulatives. Ask students questions such as *How does making a 5 help when I join 4 and 2?* * Provide students with counters or cubes and a ten frame or number path (see below) to help them solve the tasks. * Ten Frames [Lesson](https://tools4ncteachers.com/resources/1-first-grade/lessons/cluster-2/oa9-ten-frames0-10.docx) (0-9). * Roll and Write using one number cube and one dot cube (see below). * Addition Compare with one number cube and one dot cube (see below). |
| **Meets Expectations** | * Continue with more experiences to deepen understanding of NC.1.OA.9 with a focus on subtraction. * Work on addition and subtraction combinations within 12 and then within 15. As you increase in number size, students still need opportunities to work with concrete manipulatives such as counters, multi-link (pop) cubes, and tools such as double ten frames, number lines, and number paths. |

**Roll and Write**

Students get 2 dice. Give students either 2 dot cubes (to promote counting all) or 1 dot cube and 1 number cube (to promote counting on). Students roll two number dice, find the sum, and then write down the equation or the numbers used to find the sum. For example, 3 + 4 would be written on the row with 7 on the left.

|  |  |
| --- | --- |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |
| 6 |  |
| 7 |  |
| 8 |  |
| 9 |  |
| 10 |  |
| 11 |  |
| 12 |  |

**Addition Compare**

Students play in partners or groups of 3. Students get 2 dice. Give students either 2 dot cubes (to promote counting all) or 1 dot cube and 1 number cube (to promote counting on). Students roll two number die, find the sum, and compare the sum against the people they are playing with. The person with the highest sum wins. Students can record their sums on paper or their notebook using the frame: “\_\_\_\_ joined with \_\_\_\_ is the same as \_\_\_\_\_.”

\_\_\_ joined with \_\_\_\_\_ is the same as \_\_\_\_\_\_\_

\_\_\_ joined with \_\_\_\_\_ is the same as \_\_\_\_\_\_\_

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\_\_\_ joined with \_\_\_\_\_ is the same as \_\_\_\_\_\_\_

Number Path (0-10)

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| --- |
| 0 |
| 1 |
| 2 |
| 3 |
| 4 |
| 5 |
| 6 |
| 7 |
| 8 |
| 9 |
| 10 |

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|  |  |
| --- | --- |
| **Subtraction Fluency Within 10** | |
| There are 7 birds in the park. Then 3 fly away. How many birds are now in the park?  What is the answer to 8 take away 5? | |
| **OPERATIONS AND ALGEBRAIC THINKING**  **Add and subtract within 20.**  **NC.1.OA.9** Demonstrate fluency with addition and subtraction within 10. | |
| **Not Yet Proficient** | * Focus on subtraction word problems within 5 (Kindergarten expectation). * Provide students with counters or cubes and a ten frame or number path (see below) to help them solve subtraction tasks. * One Less (Kindergarten [Dog](https://tools4ncteachers.com/resources/0-kindergarten/lessons/cluster-6/oa1-one-less-dog.docx) lesson). * Toss the Counters (see below). * Subtraction Compare with two dot cubes (see below). |
| **Progressing** | * Focus on subtraction word problems within 10. * Pose tasks such as 7 take away 3 and 6 take away 2. Students need access to counters or cubes as well as a ten frame or number path (see below). * Ten Frames [Lesson](https://tools4ncteachers.com/resources/1-first-grade/lessons/cluster-2/oa9-ten-frames0-10.docx) (0-9). * Coin Drop [Lesson](https://tools4ncteachers.com/resources/0-kindergarten/lessons/cluster-6/oa4-coin-drop.docx). * Subtraction Compare with 1 number cube and 1 dot cube (see below). * Cover Up (see below). |
| **Meets Expectations** | * Continue with more experiences to deepen understanding of NC.1.OA.9 with a focus on word problems. * Work on addition and subtraction combinations within 12 and then within 15. When first working with larger numbers, students need opportunities with concrete manipulatives such as counters and multi-link (pop) cubes and tools such as number lines, double ten frames, and number paths. |

**Toss the Counters**

Students toss a set of counters. The number should be between 5 and 10. Count the number of red and yellow counters.

|  |  |
| --- | --- |
| **Red** | **Yellow** |
|  |  |
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|  |  |
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**Subtraction Compare**

Students play in partners or groups of 3. Students get 2 dice. Give students either 2 dot cubes (to promote counting all) or 1 dot cube and 1 number cube (to promote counting on). Students roll two number die, find the difference, and compare the difference against the people they are playing with. The person with the highest difference wins. Students can record their differences on paper or their notebook using the frame: “\_\_\_\_ take away \_\_\_\_ is the same as \_\_\_\_\_” OR use the recording sheet below.

\_\_\_ take away \_\_\_\_\_ is the same as \_\_\_\_\_\_\_

\_\_\_ take away \_\_\_\_\_ is the same as \_\_\_\_\_\_\_

\_\_\_ take away \_\_\_\_\_ is the same as \_\_\_\_\_\_\_

\_\_\_ take away \_\_\_\_\_ is the same as \_\_\_\_\_\_\_

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\_\_\_ take away \_\_\_\_\_ is the same as \_\_\_\_\_\_\_

\_\_\_ take away \_\_\_\_\_ is the same as \_\_\_\_\_\_\_

\_\_\_ take away \_\_\_\_\_ is the same as \_\_\_\_\_\_\_

**Cover Up** (Adapted from Kathy Richardson’s Developing Number Concepts)

Students start with a given number of counters. The number should be between 5 and 10 based on students’ performance. One student covers some of the counters up with their hands and leaves some counters showing. The other student needs to determine how many counters are hidden. Students can use the following frame to talk with each other, “There were \_\_\_ counters. I see \_\_\_ counters and \_\_\_ counters are covered up,” OR use the space below to record their work.

“There were \_\_\_ counters. I see \_\_\_ counters and \_\_\_ counters are covered up.”

“There were \_\_\_ counters. I see \_\_\_ counters and \_\_\_ counters are covered up.”

“There were \_\_\_ counters. I see \_\_\_ counters and \_\_\_ counters are covered up.”

“There were \_\_\_ counters. I see \_\_\_ counters and \_\_\_ counters are covered up.”

“There were \_\_\_ counters. I see \_\_\_ counters and \_\_\_ counters are covered up.”

“There were \_\_\_ counters. I see \_\_\_ counters and \_\_\_ counters are covered up.”

“There were \_\_\_ counters. I see \_\_\_ counters and \_\_\_ counters are covered up.”

“There were \_\_\_ counters. I see \_\_\_ counters and \_\_\_ counters are covered up.”

“There were \_\_\_ counters. I see \_\_\_ counters and \_\_\_ counters are covered up.”

“There were \_\_\_ counters. I see \_\_\_ counters and \_\_\_ counters are covered up.”

“There were \_\_\_ counters. I see \_\_\_ counters and \_\_\_ counters are covered up.”

“There were \_\_\_ counters. I see \_\_\_ counters and \_\_\_ counters are covered up.”

“There were \_\_\_ counters. I see \_\_\_ counters and \_\_\_ counters are covered up.”

“There were \_\_\_ counters. I see \_\_\_ counters and \_\_\_ counters are covered up.”

“There were \_\_\_ counters. I see \_\_\_ counters and \_\_\_ counters are covered up.”

“There were \_\_\_ counters. I see \_\_\_ counters and \_\_\_ counters are covered up.”

“There were \_\_\_ counters. I see \_\_\_ counters and \_\_\_ counters are covered up.”

“There were \_\_\_ counters. I see \_\_\_ counters and \_\_\_ counters are covered up.”

“There were \_\_\_ counters. I see \_\_\_ counters and \_\_\_ counters are covered up.”

Number Path (0-10)

|  |
| --- |
| 0 |
| 1 |
| 2 |
| 3 |
| 4 |
| 5 |
| 6 |
| 7 |
| 8 |
| 9 |
| 10 |

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|  |  |
| --- | --- |
| **Problem-Type: Change Unknown Tasks** | |
| 6 students were at the lunch table. More students joined them. Now there are 11 students at the lunch table. How many joined them?  There are 13 pencils on the desk. Mrs. Wiley gives some of them away. Now there are 9 pencils on the desk. How many pencils did Mrs. Wiley give away? | |
| **OPERATIONS AND ALGEBRAIC THINKING**  **Represent and solve problems.**  **NC.1.OA.1** Represent and solve addition and subtraction word problems, within 20, with unknowns, by using objects, drawings, ~~and equations with a symbol for the unknown number to represent the problem~~, when solving:   * Add to/Take from-Change Unknown * Put together/Take Apart-Addend Unknown * ~~Compare-Difference Unknown~~   **Add and subtract within 20.**  **NC.1.OA.6** Add and subtract, within 20, using strategies such as:   * Counting on * Making ten * Decomposing a number leading to a ten * Using the relationship between addition and subtraction * Using a number line * Creating equivalent but simpler or known sums | |
| **Not Yet Proficient** | * Check to see if the student can solve an Add to Result Unknown problem. If not, provide experiences for those types of tasks. * Pose another Change Unknown task and have the students represent the task with cubes as you tell the story. Use numbers less than 6 or 10 based on students’ performance. Increase to numbers within ten if student is successful. * Use a Beginning, Middle, End diagram to “tell” the story. Use a question for the middle box. What needs to happen in the middle of the story? * As you pose another change unknown problem, use the following questions to support students: *How many students were there at the beginning? What happened at the end? Can you show you how many students were at lunch at the end? What happened to change the number of students? (more students came to lunch) How many more students were there?* |
| **Progressing** | * If the student recognizes that the problem is a join problem but attempts to join the two quantities, ask the student to retell the story and explain what happened to the original amount of 6. * Use a Beginning, Middle, End diagram to “tell” the story. Use a question for the middle box. What needs to happen in the middle of the story? * Pose another change unknown task using numbers within 10. Ask the following questions: *Can you retell the story? Can you show me with cubes how the number of students changed? Do you know how many students were at lunch at the beginning At the end?* * If students need manipulatives to solve the problem correctly, provide them with opportunities to use manipulatives and then record their work on paper for the problem situation. * If the student recognizes the structure of the problem, but makes a computation error, support the student in using an accessible strategy (start at 6 and count on). Model making a ten or counting back to a ten. * If the student is unable to write the correct equation, have the student model the situation with the cubes as you notate the equation. Ask the student: *Why did I write a 6 first? Or Why did I write a 13 first? Why did I put a question mark next? What does the 10 represent?* Then switch roles and the teacher models with the cubes as the student writes the equation. |
| **Meets Expectations** | * Pose more change unknown tasks within 20. * Ask the students to write their own Add to/ Change Unknown Problems when given an equation. * Give students addition and subtraction equations and ask them to write story problems that match the equations. * Encourage students to explain why the solution path could be adding on to 6 or subtracting from 11. |

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| --- | --- |
| **Problem-Type: Put Together/Take Apart-Addend Unknown** | |
| There are 10 flowers in the yard. 6 flowers are yellow and the rest are red. How many red flowers are in the yard? | |
| **OPERATIONS AND ALGEBRAIC THINKING**  **Represent and solve problems.**  **NC.1.OA.1** Represent and solve addition and subtraction word problems, within 20, with unknowns, by using objects, drawings, and equations with a symbol for the unknown number to represent the problem, when solving:  • Add to/Take from-Change Unknown  • Put together/Take Apart-Addend Unknown  • Compare-Difference Unknown  **Understand and apply the properties of operations.**  **NC.1.OA.4** Solve an unknown-addend problem, within 20, by using addition strategies and/or changing it to a subtraction problem.  **Add and subtract within 20.**  **NC.1.OA.6** Add and subtract, within 20, using strategies such as:  • Counting on  • Making ten  • Decomposing a number leading to a ten  • Using the relationship between addition and subtraction  • Using a number line  • Creating equivalent but simpler or known sums | |
| **Not Yet Proficient** | * Check to see if the student can solve an Add to Result Unknown problem. If not, provide experiences for those types of tasks. * Ask the student to solve a Put Together/Take Apart Total Unknown problem. If the student is successful, see if the student can solve a Put Together/Take Apart Both Addends Unknown. If not, provide instruction with this problem type first. * Ask the student*: How many flowers in the group of flowers are in the yard?* (establishing the whole) *What are two colors of flowers?* (establishing the two parts). *Do we know how many of one color?* *What do we need to find out?* * Model the problem with cubes. *If we only have 6 yellow cubes, what should we do now?* * Use numbers within six and model other problems of this type. |
| **Progressing** | * If the student recognizes that the problem is a part/part/whole problem but attempts to join the two quantities, ask the student to retell the story and explain the total number of flowers. *What would happen if you added the 4 flowers?* * Ask: *Can you retell the story? Can you show me with cubes how we would have to change the number of yellow flowers to get to 10 flowers? How can you keep track of the number of red flowers? How many flowers should we have when we count the yellow and red flowers?* * If the student recognizes the structure of the problem, but makes a computation error, support the student in using an accessible strategy (start at 6 and count on). Model making a ten or counting back to a ten. |
| **Meets Expectations** | * Ask the students to write their own Put Together/Take Apart Addend Unknown Problems. * Give students equations and ask them to write story problems that match the equations. * Encourage students to explain why the solution path could be adding on to 6 or subtracting from 10. * If students need manipulatives to solve the problem correctly, provide them with opportunities to use manipulatives and then record their work on paper for the problem situation. * If the student is unable to write the correct equation, have the student model the situation with the cubes as you notate the equation. Ask the student: *Why did I write a 6 first?* Or: *Why did I write a 10 first?* *Why did I put a question mark next? What does the 10 represent?* Then switch roles and the teacher models with the cubes as the student writes the equation. |

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|  |  |
| --- | --- |
| **Determine if an Equation is True** | |
| **Read the number sentence below.**  **Is this equation equal? Circle Yes or No. 7 = 10 - 3** | |
| **OPERATIONS AND ALGEBRAIC THINKING**  **Work with addition and subtraction equations.**  **NC.1.OA.7** Apply understanding of the equal sign to determine if equations involving addition and subtraction are true. | |
| **Not Yet Proficient** | * Focus only on numbers within 10. * Ask students to explain the meaning of the equal sign. * Allow students opportunities to explore equations and discuss with them that *equals* means *has the same value as*. * Pose equations and have the student use manipulatives to determine if they are true or not. Ask the student to use words to explain the actions and then ask the student to write equations as the teacher models them. * Have the student “read” the equations using the words “is equal to “or “has the same value as” each time the equals sign shows up. * Ask students to identify if the following equalities are true:   4 = 1 5 – 3 = 2 |
| **Progressing** | * Focus on numbers within 20. * Ask students to explain the meaning of the equal sign. * Ask students to identify if the following equalities are true.   16 – 7 = 9 12 + 2 = 13   * Use cubes, number balances, and number lines to model the quantities and describe if they are equal or not equal. * Provide explicit instruction that the = sign does not mean “the answer comes next.” |
| **Meets Expectations** | * Continue with experiences to deepen the understanding of NC.1.OA.7. * Using number balances, cubes, and number lines, begin instruction by asking students to identify if two expressions are equal or not equal.   (ex. 7 + 5 = 3 + 9)   * Include equations with larger numbers such as 36 + 4 = 4 + 36 to encourage generalizations beyond comfortable numbers. * Provide opportunities for students to identify if the equations are true by exploring three addends as one of the two expressions. (ex. 2 + 5 + 4 = 12 or 3 + 7 + 4 = 10 + 4) |

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|  |  |
| --- | --- |
| **Commutative Property within a Word Problem (Agree/Disagree)** | |
| There are 3 boys and 6 girls on John’s baseball team. There are 6 boys and 3 girls on his brother’s team. John says each team has the same number of players because he thinks that 3 + 6 and 6 + 3 are the same amount.  Do you agree or disagree with John? Explain your thinking with pictures, numbers, or words. | |
| **OPERATIONS AND ALGEBRAIC THINKING**  **Work with addition and subtraction equations.**  **NC.1.OA.3** Apply the commutative and associative properties as strategies for solving addition problems. | |
| **Not Yet Proficient** | * Play Red and Yellow Counters with 5 counters (see below). * Ask student to show these addends of 5 using a five frame and two-color counters, two different color unifix cubes, or similar manipulative. * Ask student to write the corresponding equations when using manipulatives to show their addends of 5. * Ask student to practice making oral statements that include the two addends with 5 as the answer. (Ex. I know that 4 + 1 = 5.) |
| **Progressing** | * Play Red and Yellow Counters with 8 or 10 counters (see below). * Ask student to show addends of 10 using a ten frame and two-color counters, two different color unifix cubes, or similar manipulative. * Allow students to represent and discuss how 3 yellow counters joined with 6 red counters is equal to 6 yellow counters joined with 3 red counters. * Ask student to write the corresponding equations when using manipulatives to show their addends of 10. * Ask student to practice making oral statements that include the two addends with 10 as the answer. (Ex. I know that 4 + 6 = 10.) |
| **Meets Expectations** | * Provide opportunities to deepen understanding of concepts in NC.1.OA.3. * Provide opportunities for students to relate addition and subtraction. (ex. Fact Families) * Pose word problems that include opportunities for the associative property. * Pose three addend addition tasks that allow students to use manipulatives (ex. unifix cubes or two color counters) and ten frames. * Ask student to write corresponding equations for word problems. * Ask student to write explanations that include reasoning about make a ten strategy. |

**Red and Yellow Counters**

Students start with a given number of counters (e.g., 5, 8, or 10). Students drop 2 color counters and count how many red and yellow counters there are. They record on a table how many red and yellow counters there are. They also record the equation.

Example:

|  |  |  |
| --- | --- | --- |
| **Red** | **Yellow** | **Equation** |
| 4 | 1 | 4 + 1 = 5 |
| 1 | 4 | 1 + 4 = 5 |
| 2 | 3 | 2 + 3 = 5 |
| 1 | 4 | 1 + 4 = 5 |