**Next Steps Document- Kindergarten, Cluster 5**

The intended purpose of this document is to provide teachers with a tool to determine student understanding and suggest instructional moves that may help guide a student forward in their learning of a concept or standard. This guide is not an exhaustive list of strategies.

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| **Kindergarten: Cluster 5**  **Number Relations Between and Among 1-10** | |
| **NC.K.CC.1 Know number names and recognize patterns in the counting sequence by:**  **● Counting 100 by ones.**  **● Counting to 100 by tens.**  **NC.K.CC.2 Count forward beginning from a given number within the known sequence, instead of having to begin at 1.**  **NC.K.CC.5 Count to answer “How many?” in the following situations:**  **● Given a number from 1-20, count out that many objects.**  **● Given up to 20 objects, name the next successive number when an object is added, recognizing the quantity is one more/greater.**  **● Given 20 objects arranged in a line, a rectangular array, and a circle, identify how many.**  **● Given 10 objects in a scattered arrangement, identify how many.**  **NC.K.CC.6 Identify whether the number of objects, within 10, in one group is greater than, less than, or equal to the number of objects in another group, by using matching and counting strategies.**  **NC.K.CC.7 Compare two numbers, within 10, presented as written numerals.**  **NC.K.OA.1 Represent addition and subtraction, within 10:**  **● Use a variety of representations such as objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, or expressions.**  **● Demonstrate understanding of addition and subtraction by making connections among representations.**  **NC.K.OA.3 Decompose numbers less than or equal to 10 into pairs in more than one way using objects or drawings, and record each decomposition by a drawing or expression.**  **NC.K.OA.4 For any number from 0 to 10, find the number that makes 10 when added to the given number using objects or drawings, and record the answer with a drawing or expression.**  **NC.K.OA.6 Recognize and combine groups with totals up to 5 (conceptual subitizing).** | |
| **Not Yet** | **Students that are consistently scoring “Not Yet” could have a variety of errors. These errors may include not being able to count 10 objects in a line, array, or circle (K.CC, foundation for K.OA standards). Students at this level may not yet be able to rote count to 10.** |
| **Next Steps:**  **For students who are not yet able to count by 1s from 1 or count by 10s (K.CC.1):**   * Provide experiences for students to work with a partner or teacher to orally rote count by 1s or 10s. Provide opportunities for students to use a hundreds board to support counting (both 1s and 10s). * Provide several towers, each 10 connected cubes tall. Or, provide several chains, each 10 paper clips long. Have students count by 10s. Do not use base ten blocks or any other “pre-grouped” manipulative since students at this level are not able to unitize or naturally see a group of 10 as 10 objects that have been grouped together.   **For students who are not yet able to count a set of 10 objects (K.CC.5, foundation for K.OA.1, K.OA.3, K.OA.4):**   * Provide opportunities for students to count sets of objects within 5. Remind them to move counters one at a time as they count. Work with students to ensure that they are demonstrating tagging and one-to-one correspondence. * Provide opportunities for students to count objects by placing counters/cubes on a number path or 10s chart (hundreds board with only numbers 1 to 10. Number paths and 10s charts are good resources since they include each written numeral which helps students to keep track of the number of objects they have. * Play games that involve students pulling number cards (numbers and pictures) from a stack of cards and counting out that set with objects with the use of a number path or 10s chart. Discuss with students that when we count a set of objects the last number that we say is the total number of objects in that set. “When I counted the group I had 1, 2, 3, and 4. Since the last number I said was 4 that means that I have 4 counters.”   **For students who are not yet able to solve addition and subtraction problems (K.OA.1, K.OA.2):**   * In small groups or with individual students, use K.OA.1 tasks as a context for counting (K.CC.5). “There are 4 dogs in the park.” Have students represent them on a number path. “How do you know you have 4?” Now 1 more dog comes. Have students represent the new dog on their number path. “How many dogs are there now?” Most students will have to count all the objects from 1 again to find the answer. Work with students on counting strategies as they determine the final answer. * Focus primarily on addition. Focus on low numbers and situation in which only 1 is added. Based on research, having students learn about addition through word problems and situations in context they are likely to have a deeper understanding than tasks such as “4 joined with 1” or “4 plus 1.” Tasks that are not in word problems have no context and no meaning for students- avoid posing them until students have had ample time to solve word problems that involve addition and subtraction situations.   **For students who are not yet able to count on from a given number (K.CC.2):**   * While addition word problems may seem like a natural opportunity to talk about counting on (K.CC.2) research says that students may struggle counting on when solving word problems and K.CC.2 should first include just rote counting on from a given number. Start with smaller numbers. * Work with students on extending a counting sequence that the teacher starts. Example- “I am going to start counting and I want you to take over for me…. Teacher- “1, 2, 3, 4...your turn. What number comes after 4?” * Build and count on: Students draw two number cards and make a 2-digit number. They then begin counting on from that number. Their partner or teacher checks their accuracy and provides feedback.   **For students who are not yet able to decompose numbers within 5 (K.OA.3, K.OA.4):**   * Provide activities in which students naturally divide a quantity into 2 groups. The examples below, *On the Plate* and *Red or Yellow*, allow students to see the entire quantity decomposed. The last example, *Snap It*, requires students to determine the missing part (K.OA.4) which is a more challenging concept.   + On the Plate: Students drop a set number of counters onto a paper plate that has a line drawn down the middle of it. Students count the number of counters on each side of the plate then record it on a recording sheet or their math journal. On the Plate and similar activities are an appropriate starting point for students who are not yet able to determine the missing part of a number (K.OA.4).  |  |  |  |  |  | | --- | --- | --- | --- | --- | | **On the Plate** | |  | **Red or Yellow** | | | **Left side** | **Right side** |  | **Red** | **Yellow** | | 7 | 1 | 2 | 6 | | 5 | 3 | 4 | 4 | | 8 | 0 | 0 | 8 |  * + Red or Yellow: Students lightly drop a group of counters onto their paper. They count the red and yellow counters and record them on a table that is similar to the one above.   + Snap It: Students start with a set number of multi-link cubes connected (e.g., 10 cubes). Students put it behind their back and snap it into 2 smaller pieces. They look at one part, and try to determine determine how many cubes are in the piece they cannot see. Snap it is more difficult since students find the missing part (K.OA.4). |

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| **Progressing** | **Students who are “Progressing” are able to count a group of 10 objects in a line, array, or circle and use their counting skills to explore the other standards in their cluster. Students at this level are working on comparing numbers (K.CC.6, K.CC.7), counting on from a given number (K.CC.2) and working on finding the missing part when a number is decomposed (K.OA.4). Students at this level are also working on determining whether word problems are addition or subtraction and using various ways to represent those situations (K.OA.1, K.OA.2).** |
| **Next Steps:**  **For students who are progressing in solving addition and subtraction problems (K.OA.1, K.OA.2):**   * In small groups or with individual students, use K.OA.1 tasks as a context for counting (K.CC.5). “There are 4 dogs in the park.” Have students represent them on a number path. “How do you know you have 4?” Now 1 more dog comes. Have students represent the new dog on their number path. “How many dogs are there now?” Most students will have to count all the objects from 1 again to find the answer. Work with students on counting strategies as they determine the final answer. * Focus primarily on addition. Focus on low numbers and situations in which only 1 is added. Based on research, having students learn about addition through word problems and situations in context they are likely to have a deeper understanding than tasks such as “4 joined with 1” or “4 plus 1.” Tasks that are not in word problems have no context and no meaning for students- avoid posing them until students have had ample time to solve word problems that involve addition and subtraction situations.   **For students who are progressing to count on from a given number (K.CC.2):**   * Work with students on extending a counting sequence that the teacher start. Example- “I am going to start counting and I want you to take over for me…. Teacher- “1, 2, 3, 4...your turn. What number comes after 4?” * Allow students to reference a hundreds board (numbers 1 to 100) to support their work. Talk with students and work on situations when we count on from a number that has a 9 in the ones place. “If I was going to keep counting on from 57 what would I say?” “After 57, 58, and 59 how do I figure out the next number?” * Build and count on: Students draw two number cards and make a 2-digit number. They then begin counting on from that number. Their partner or teacher checks their accuracy and provides feedback. * Provide additional practice using Tools4NCTeachers [Center Ideas](https://tools4ncteachers.com/resources/0-kindergarten/additional-resources/cluster-5/center-ideas5.docx).   **For students who who are progressing to decompose numbers within 5 (K.OA.3, K.OA.4):**   * Provide activities in which students naturally divide a quantity into 2 groups. The examples below, *On the Plate* and *Red or Yellow*, allow students to see the entire quantity decomposed. The last example, *Snap It*, requires students to determine the missing part (K.OA.4) which is a more challenging concept.   + On the Plate: Students drop a set number of counters onto a paper plate that has a line drawn down the middle of it. Students count the number of counters on each side of the plate then record it on a recording sheet or their math journal. On the Plate and similar activities are an appropriate starting point for students who are not yet able to determine the missing part of a number (K.OA.4).  |  |  |  |  |  | | --- | --- | --- | --- | --- | | **On the Plate** | |  | **Red or Yellow** | | | **Left side** | **Right side** |  | **Red** | **Yellow** | | 7 | 1 | 2 | 6 | | 5 | 3 | 4 | 4 | | 8 | 0 | 0 | 8 |  * + Red or Yellow: Students lightly drop a group of counters onto their paper. They count the red and yellow counters and record them on a table that is similar to the one above.   + Snap It: Students start with a set number of multi-link cubes connected (e.g., 10 cubes). Students put it behind their back and snap it into 2 smaller pieces. They look at one part, and try to determine determine how many cubes are in the piece they cannot see. Snap it is more difficult since students find the missing part (K.OA.4). * [Instructional & Assessment Tasks](http://tools4ncteachers.com/kindergarten-cluster-5/) (middle column).   **For students who are progressing on standards related to comparing numbers (K.CC.6 and K.CC.7):**   * Provide experiences for comparing two quantities using counters. Students can compare numbers by lining up counters where each set has a match. For example, if comparing four black cubes and three white cubes students may line them up and determine there are more more black cubes since there is one extra after matching them up. * Build and compare: Students draw a number card and build that quantity with counters/cubes. Students draw a 2nd number card and also build that quantity. Students determine which quantity is larger and explain how they know. * Find one larger, find one smaller: Students draw a number card and build that quantity with counters/cubes. Students then write a number that is smaller than that number and also write a number that is larger than that number. * Once students have been introduced to strategies for comparing two quantities, provide additional practice using Tools4NCTeachers [Center Ideas](https://tools4ncteachers.com/resources/0-kindergarten/additional-resources/cluster-5/center-ideas5.docx). * Lesson: [Comparing Lollipops](https://tools4ncteachers.com/resources/0-kindergarten/lessons/cluster-5/comparing-lollipops-cc6-7.docx) * [Instructional and Assessment Tasks](http://tools4ncteachers.com/kindergarten-cluster-5/) (middle column). |

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| **Meets Expectation** | **Students that are consistently scoring “Meets Expectation” in this cluster have met all standards with proficiency.** |
| **Next Steps:**  **For students who have demonstrated proficiency in addition and subtraction word problems (K.OA.1, K.OA.2):**   * Provide opportunities for students to solve addition and subtraction word problems within 15. Provide them with number paths, number lines, or double ten frames, and concrete objects (counters, cubes) to support their work.   **For students who have demonstrated proficiency decomposing numbers (K.OA.3) and finding missing parts of a number (K.OA.4) within 10:**   * Provide many opportunities for students to solve missing parts activities (K.OA.4) for numbers within 10. Encourage on a variety of strategies including counting on and counting back to develop understanding of combinations for addition and subtraction.   **For students who have demonstrated fluency with addition and subtraction within 5 (K.OA.5):**   * Pose fluency games with number cards and dice that involve addition within 10. This is a focus in first grade so there is no need to rush students and force automatic recall or memorization of facts. |

Five Frame

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Ten Frame

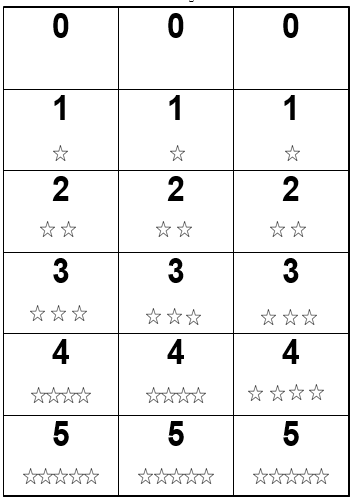
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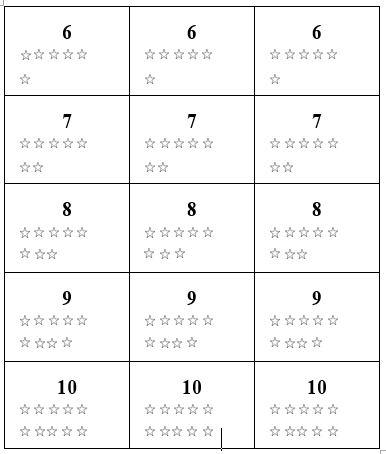
Double Ten Frame

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Primary Number Cards (Adapted from Investigations, TERC)



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**20s chart**

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| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |