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| **NC.2.OA.1**  **Allen’s Pets** | |
| **Domain** | Operations and Algebraic Thinking  Number and Operations in Base Ten |
| **Cluster** | Represent and solve problems involving addition & subtraction.  Use place value understanding and properties of operations to add and subtract. |
| **Standard(s)** | **NC.2.OA.1** Represent and solve addition an subtraction word problems, within 100, with unknowns in all positions, by using representations and equations with a symbol for the unknown number to represent the problem, when solving:   * One-Step problems: * Add to/Take from –Start Unknown * Compare-Bigger Unknown * Compare Smaller-Unknown * Two-Step problems involving single digits: * Add to/Take from- Change Unknown * Add to/Take from- Result Unknown   **NC.2.NBT.5** Demonstrate fluency with addition and subtraction, within 100, by:   * Flexibly using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. * Comparing addition and subtraction strategies and explaining why they work.   Selecting an appropriate strategy in order to efficiently compute sums and differences. |
| **Materials** | SF, Pencil, Paper, counters and base ten materials available |
| **Task** | Provide materials to the student. Read the problem to the student: *Allen has cats and dogs. He has 16 pets. If he has at least 10 cats, how many cats and dogs could he have? Find as many different ways as you can. Use words, numbers or pictures to explain your reasoning. Write a number sentence for each combination*. Prompt if needed: *Can you find another combination?* |

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| **Continuum of Understanding** | | |
| **Not Yet Proficient** | * Needs prerequisite skills |  |
| **Progressing** | * Identifies one or more combinations that do not equal 16. * Finds only 1 or 2 combinations, even with prompting. * Relies on ‘counting all’ as primary strategy for solving the problem. * One or more equations are inaccurate. * Explanation is lacking in detail or non-existent. | Strategy(ies) Used:   * Trial and Error * Counting All * Counting On * Basic Facts * Commutative property * Doubles * Doubles +/- 1, 2 * Other:   Possible Combinations\*:  10 + 6 = 16  11 + 5 = 16  12 + 4 = 16  13 + 3 = 16  14 + 2 = 16  15 + 1 = 16  \*Similar combinations due to the commutative property of addition. |
| **Meets Expectation** | * Finds 4 or more combinations. * Uses strategies other than counting. * Provides a clear explanation. * Equations are accurate. |

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| **Standards for Mathematical Practice** |
| **1. Makes sense and perseveres in solving problems.** |
| **2. Reasons abstractly and quantitatively.** |
| **3. Constructs viable arguments and critiques the reasoning of others.** |
| **4. Models with mathematics.** |
| 5. Uses appropriate tools strategically. |
| 6. **Attends to precision.** |
| 7. Looks for and makes use of structure. |
| 8. Looks for and expresses regularity in repeated reasoning. |

Allen has cats and dogs. He has 16 pets. If he has at least 10 cats, how many cats and dogs could he have?

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| Find as many different ways as you can.  Use words, numbers or pictures to explain your reasoning.  Write a number sentence for each combination. |