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| **NC.2.OA.4****Array of Tiles** |
| **Domain** | Operations and Algebraic Thinking |
| **Cluster** | Work with equal groups of objects to gain foundations for multiplication.Understand place value. |
| **Standard(s)** | **2.OA.4** Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.  |
| **Materials** | Pencil, paper, 16 square tiles. |
| **Task** | Provide the materials to the student. Read the problem to the student: *Use 8 tiles to make an array. Describe the array.* Prompt if needed: *How many rows are there? How many columns are there?* Then say: *Draw a picture of your array. Write an equation to illustrate your array.*When the student has finished with the first array, say: *Use 8 more tiles to make a different array. Describe the array.* Prompt if needed: *How many rows are there? How many columns are there?* Then say: *Draw a picture of your array. Write an equation to illustrate your array.* |

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| **Continuum of Understanding** |
| **Not Yet Proficient** | * Needs prerequisite skills
 |  |
| **Progressing** | * Uses 8 tiles, but does not create an array.
* Creates one array but does not create a second array that is different or correct.
* If skip counts, counts incorrectly.
* Drawing(s) does not represent array(s) created.
* Equation(s) does not indicate repeated groups.
 | Strategy(ies) Used:* Skip Counts
* Makes Tens
* Basic Facts
* Creates easier or known sums
* Doubles
* Other:

Possible Solutions:1 row of 8 8 + 08 rows of 11 + 1 + 1 + 1 + 1 + 1 + 1 + 1 = 84 rows of 22 + 2 + 2 + 2 = 82 rows of 44 + 4 = 8 |
| **Meets Expectation** | * Creates two different arrays with the tiles.
* Drawings accurately represent arrays created.
* Equations indicate repeated groups

(e.g., 2 + 2 + 2 + 2 = 8). |

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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. |

**One-more-than - Two-more-than**

Use the strategy of one-more-than and two-more- than to solve these problems.

|  |  |
| --- | --- |
| 1. **1 + 9 = \_\_\_\_\_\_\_**
 | 1. **2 + 8 = \_\_\_\_\_\_\_**
 |
| 1. **7 + 1 = \_\_\_\_\_\_\_**
 | 1. **7 + 2 = \_\_\_\_\_\_\_**
 |
| 1. **6 + 1 = \_\_\_\_\_\_\_**
 | 1. **5 + 1 = \_\_\_\_\_\_\_**
 |
| 1. **\_\_\_\_\_\_\_ = 6 + 2**
 | 1. **\_\_\_\_\_\_\_ = 1 + 8**
 |
| 1. **\_\_\_\_\_\_\_ = 9 + 2**
 | 1. **\_\_\_\_\_\_\_ = 4 + 2**
 |

**Facts with Zero**

Use the strategy of Zero Facts to solve these problems.

|  |  |
| --- | --- |
| 1. **0 + 9 = \_\_\_\_\_\_\_**
 | 1. **0 + 8 = \_\_\_\_\_\_\_**
 |
| 1. **7 + 0 = \_\_\_\_\_\_\_**
 | 1. **4 + 0 = \_\_\_\_\_\_\_**
 |
| 1. **0 + 0 = \_\_\_\_\_\_\_**
 | 1. **5 + 0 = \_\_\_\_\_\_\_**
 |
| 1. **\_\_\_\_\_\_\_ = 3 + 0**
 | 1. **\_\_\_\_\_\_\_ = 0 + 1**
 |
| 1. **\_\_\_\_\_\_\_ = 7 + 0**
 | 1. **\_\_\_\_\_\_\_ = 2 + 0**
 |

**Doubles Plus Two**

Use the strategy of Near Doubles: Plus Two to solve these problems.

|  |  |
| --- | --- |
| 1. **7 + 9 = \_\_\_\_\_\_\_**
 | 1. **6 + 8 = \_\_\_\_\_\_\_**
 |
| 1. **7 + 5 = \_\_\_\_\_\_\_**
 | 1. **6 + 4 = \_\_\_\_\_\_\_**
 |
| 1. **2 + 4 = \_\_\_\_\_\_\_**
 | 1. **5 + 7 = \_\_\_\_\_\_\_**
 |
| 1. **\_\_\_\_\_\_\_ = 3 + 5**
 | 1. **\_\_\_\_\_\_\_ = 3 + 1**
 |
| 1. **\_\_\_\_\_\_\_ = 8 + 6**
 | 1. **\_\_\_\_\_\_\_ = 9 + 7**
 |

**Doubles Plus One**

Use the strategy of Near Doubles: Plus One to solve these problems.

|  |  |
| --- | --- |
| 1. **9 + 8 = \_\_\_\_\_\_\_**
 | 1. **7 + 8 = \_\_\_\_\_\_\_**
 |
| 1. **6 + 7 = \_\_\_\_\_\_\_**
 | 1. **4 + 5 = \_\_\_\_\_\_\_**
 |
| 1. **0 + 1 = \_\_\_\_\_\_\_**
 | 1. **5 + 6 = \_\_\_\_\_\_\_**
 |
| 1. **\_\_\_\_\_\_\_ = 3 + 4**
 | 1. **\_\_\_\_\_\_\_ = 1 + 2**
 |
| 1. **\_\_\_\_\_\_\_ = 8 + 9**
 | 1. **\_\_\_\_\_\_\_ = 2 + 3**
 |

**Make-Ten Facts**

Use the strategy of Making Tens to solve these problems.

|  |  |
| --- | --- |
| 1. **7 + 9 = \_\_\_\_\_\_\_**
 | 1. **6 + 8 = \_\_\_\_\_\_\_**
 |
| 1. **7 + 5 = \_\_\_\_\_\_\_**
 | 1. **6 + 9 = \_\_\_\_\_\_\_**
 |
| 1. **8 + 4 = \_\_\_\_\_\_\_**
 | 1. **5 + 9 = \_\_\_\_\_\_\_**
 |
| 1. **\_\_\_\_\_\_\_ = 3 + 9**
 | 1. **\_\_\_\_\_\_\_ = 8 + 3**
 |
| 1. **\_\_\_\_\_\_\_ = 8 + 9**
 | 1. **\_\_\_\_\_\_\_ = 7 + 8**
 |

**Doubles Plus Two**

Use the strategy of Near Doubles: Plus Two to solve these problems.

|  |  |
| --- | --- |
| 1. **9 + 7 = \_\_\_\_\_\_\_**
 | 1. **7 + 5 = \_\_\_\_\_\_\_**
 |
| 1. **6 + 4 = \_\_\_\_\_\_\_**
 | 1. **3 + 5 = \_\_\_\_\_\_\_**
 |
| 1. **8 + 6 = \_\_\_\_\_\_\_**
 | 1. **4 + 6 = \_\_\_\_\_\_\_**
 |
| 1. **\_\_\_\_\_\_\_ = 3 + 5**
 | 1. **\_\_\_\_\_\_\_ = 7 + 9**
 |
| 1. **\_\_\_\_\_\_\_ = 5 + 7**
 | 1. **\_\_\_\_\_\_\_ = 6 + 8**
 |

**Make Ten Extend-with 7**

Use the strategy of Making Tens to solve these problems.

|  |  |
| --- | --- |
| 1. **9 + 7 = \_\_\_\_\_\_\_**
 | 1. **7 + 5 = \_\_\_\_\_\_\_**
 |
| 1. **7 + 4 = \_\_\_\_\_\_\_**
 | 1. **3 + 7 = \_\_\_\_\_\_\_**
 |
| 1. **7 + 6 = \_\_\_\_\_\_\_**
 | 1. **7 + 8= \_\_\_\_\_\_\_**
 |
| 1. **\_\_\_\_\_\_\_ = 5 + 7**
 | 1. **\_\_\_\_\_\_\_ = 7 + 9**
 |
| 1. **\_\_\_\_\_\_\_ = 8 + 7**
 | 1. **\_\_\_\_\_\_\_ = 7 + 4**
 |

**Making Connections**

Solve.

|  |  |
| --- | --- |
| 4 + 5 = \_\_\_\_\_\_\_ | 6 – 4 = \_\_\_\_\_\_\_ |
| 2 + 6 = \_\_\_\_\_\_\_ | 8 - 3 = \_\_\_\_\_\_\_ |
| 5 + 2 = \_\_\_\_\_\_\_ | 8 – 6 = \_\_\_\_\_\_\_ |
| 7 – 2 = \_\_\_\_\_\_\_ | 9 – 4 = \_\_\_\_\_\_\_ |
| 4 + 2 = \_\_\_\_\_\_\_ | 9 – 6 = \_\_\_\_\_\_\_ |
| 8 – 5 = \_\_\_\_\_\_\_ | 3 + 5 = \_\_\_\_\_\_\_ |
| 7 – 5 = \_\_\_\_\_\_\_ | 6 + 2 = \_\_\_\_\_\_\_ |
| 9 – 5 = \_\_\_\_\_\_\_ | 5 + 2 = \_\_\_\_\_\_\_ |

**Build Up Through Ten**

Use the strategy of making tens to solve the problems.

|  |  |
| --- | --- |
| 1. **13 - 9 = \_\_\_\_\_\_\_**
 | 1. **15 - 9 = \_\_\_\_\_\_\_**
 |
| 1. **14 - 8 = \_\_\_\_\_\_\_**
 | 1. **13 - 8 = \_\_\_\_\_\_\_**
 |
| 1. **12 - 8 = \_\_\_\_\_\_\_**
 | 1. **11 - 8= \_\_\_\_\_\_\_**
 |
| 1. **\_\_\_\_\_\_\_ = 14 - 9**
 | 1. **\_\_\_\_\_\_\_ = 12 - 9**
 |
| 1. **\_\_\_\_\_\_\_ = 15 - 8**
 | 1. **\_\_\_\_\_\_\_ = 11 - 9**
 |

**Back Down Through Ten**

Use the strategy of using ten to solve the problems.

|  |  |
| --- | --- |
| 1. **14 - 6 = \_\_\_\_\_\_\_**
 | 1. **15 - 6 = \_\_\_\_\_\_\_**
 |
| 1. **13 - 4 = \_\_\_\_\_\_\_**
 | 1. **14 - 5 = \_\_\_\_\_\_\_**
 |
| 1. **12 - 3 = \_\_\_\_\_\_\_**
 | 1. **11 - 2= \_\_\_\_\_\_\_**
 |
| 1. **\_\_\_\_\_\_\_ = 15 - 7**
 | 1. **\_\_\_\_\_\_\_ = 13 - 5**
 |
| 1. **\_\_\_\_\_\_\_ = 14 - 6**
 | 1. **\_\_\_\_\_\_\_ = 11 - 3**
 |