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| **Developing Fluency with Multiplication and Division** | | |
| Models with concrete materials and counts by 1s | Uses skip-counting forward and backward | Works flexibly with numbers (e.g., uses repeated addition or subtraction, familiar facts, commutative property)  “5 + 5 + 5 = 15  I know 2 × 5 = 10 and one more group of 5 is 15,  so 3 × 5 = 15.  I know 5 × 3 = 15, so 3 × 5 also equals 15.” |
| **Observations/Documentation** | | |
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| **Developing Fluency with Multiplication and Division (con’t)** | | |
| Uses distributive property to help with unfamiliar facts    “7 × 5 = 35” | Applies multiplicative thinking to compare quantities (solve ratio problems)    “For each hand there are 5 fingers. The ratio of hands to fingers is 1:5. That means I multiply by 5. So, on 2 hands there are 2 × 5, or 10 fingers.” | Fluently multiplies and divides  “I just know that 7 × 5 = 35.” |
| **Observations/Documentation** | | |
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| **Multiplying 1-Digit Numbers** | | | |
| Groups objects and counts by 1s | Groups objects and skip-counts    “2, 4, 6, 8” | Uses repeated addition    “2 + 2 + 2 + 2 = 8.” | Models using multiplicative thinking    “4 rows of 2 is 8.” |
| **Observations/Documentation** | | | |
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| Understands relationship between operations  “I can think of 2 + 2 + 2 + 2 = 8  as 4 groups of 2.” | Uses multiplication symbol  “4 × 2 = 8” | Multiplies fluently (e.g., uses properties of multiplication)  “4 × 2 = 8  2 × 4 = 8” | Creates and solves problems involving equal groups  4 × 2 = 8  “There are 4 bicycles in the shed. How many wheels  are there altogether?” |
| **Observations/Documentation** | | | |
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