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| **Generalizing and Representing Patterns** |
| Identifies how a pattern repeats, increases, or decreases and describes pattern rule.“This is a decreasing pattern. The pattern rule is: Start with 14 red tiles and take away 2 tiles each time.” | Represents patterns using tables or charts and describes the pattern rule.“The table shows the number of tiles decreases by 2 each time.”

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| TermNumber | Number of Blocks  |
| 1 | 8 |
| 2 | 16 |
| 3 | 24 |

 | Represents patterns using graphs and describes the pattern rule.“By looking at the graph, I see that the number of tiles starts at 14 and decreases by 2 with each term.” | Represents patterns symbolically and writes the pattern rule.18, 17, 15, 12, 8, …“Pattern rule: Start at 18 and take away 1. Increase the number taken away by 1 each time.” |
| **Observations/Documentation** |
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| **Generalizing and Representing Patterns (con’t)** |
| Extends patterns using repeated addition/subtraction, multiplication, and division.18, 17, 15, 12, 8, …“The next term would have 8 – 5 = 3 squares. It would be the last term because I cannot take 6 away from 3. Decreasing patterns end but repeating and increasing patterns don’t.” | Creates patterns and explains the pattern rule.“I created an increasing pattern with the pattern rule: Start at 1. Multiply the term number by itself.” | Uses patterns to solve problems.How many counters are in Term 8?“64 counters; I used the rule and multiplied the term number by itself: 8 × 8 = 64.” | Fluently identifies, creates, and extends various patterns to solve real-life problems.Naomi beaded bracelets using 4 plain and 12 patterned beads.“Plain beads: Multiply the number of bracelets by 4: 4*n*Patterned beads: Multiply the number of bracelets by 8: 8*b*.” |
| **Observations/Documentation** |
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| **Extending Patterns to Solve Problems** |
| Determines the pattern rule. 100, 97, 91, 86, 70, 55, 37, 16“The pattern rule is: Start at 100 and subtract 3. Increase the number subtracted by 3 each time.” | Uses pattern rule to determine missing values.How would you determine the missing value for week 5?“The pattern rule is: Start at 25 and add 10. Then increase the amount added by 5 each time. Week 5 is 70 + 25 = 95.” | Extends patterns using mathematical expressions.3, 8, 13, 18, 23, 28“I can use the expression5*n* – 2 to extend the pattern, where *n* represents the term number. The seventh term would be 5 × 7 - 2 = 33.” | Flexibly describes and solves problems using mathematical expressions and properties. “To determine the output number, multiply the input number by 2 and subtract 1. I would use the expression 2*n*-1, where *n* is the term number, to find the missing values: 2 × 5 - 1 = 9 , 2 × 4 - 1 = 7.” |
| **Observations/Documentation** |
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