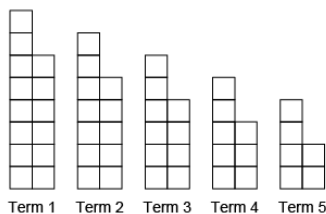


Activity 4 Assessment

Patterning Consolidation

Generalizing and Representing Patterns

Identifies how a pattern repeats, increases, or decreases and describes pattern rule.



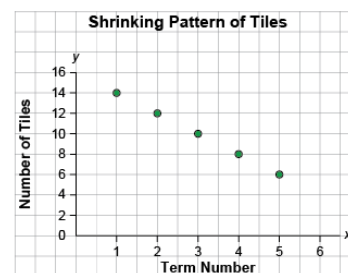
“This is a decreasing pattern. The pattern rule is: Start with 14 red tiles and take away 2 tiles each time.”

Represents patterns using tables or charts and describes the pattern rule.

Term Number	Number of Tiles
1	14
2	12
3	10
4	8
5	6

“The table shows the number of tiles decreases by 2 each time.”

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.”

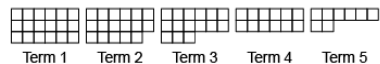
Observations/Documentation

Activity 4 Assessment

Patterning Consolidation

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.

Term Number	Picture	Number of Counters
1		1
2		4
3		9
4		16

“I created an increasing pattern with the pattern rule: Start at 1. Multiply the term number by itself.”

Uses patterns to solve problems.

Term Number	Picture	Number of Counters
1		1
2		4
3		9
4		16

How many counters are in Term 8?

“64 counters; I used the rule and multiplied the term number by itself: $8 \times 8 = 64.$ ”

Fluently identifies, creates, and extends various patterns to solve real-life problems.

Number of Bracelets	Number of Plain Beads	Number of Patterned Beads
1	4	12
2	8	24
3	12	36
...
8	32	96

Naomi beaded bracelets using 4 plain and 12 patterned beads.

“Plain beads: Multiply the number of bracelets by 4: $4n$
Patterned beads: Multiply the number of bracelets by 8: $8b.$ ”

Observations/Documentation

Activity 4 Assessment

Patterning Consolidation

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?

Week	Practice Time (min)
1	25
2	$35 = 25 + 10$
3	$50 = 35 + 15$
4	$70 = 50 + 20$
5	
6	$125 = 95 + 30$

“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 expression $5n - 2$ to extend the pattern, where n represents the term number. The seventh term would be $5 \times 7 - 2 = 33$.”

Flexibly describes and solves problems using mathematical expressions and properties.

Input	Output
10	19
9	17
8	15
7	13
6	11
5	
4	

“To determine the output number, multiply the input number by 2 and subtract 1. I would use the expression $2n - 1$, where n is the term number, to find the missing values: $2 \times 5 - 1 = 9$, $2 \times 4 - 1 = 7$.”

Observations/Documentation