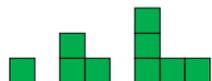


Activity 9 Assessment Consolidation

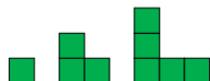
Generalizing and Representing Increasing and Decreasing Patterns

Recognizes that a pattern increases or decreases



“The terms are getting bigger.”

Identifies how a pattern changes (describes rule)



“It grows by 2 tiles each time.”

Represents patterns symbolically and writes rules using addition or subtraction

1, 3, 5, ...
“Start at 1 and add 2 each time.”
17, 14, 11, ...
“Start at 17 and take away 3 each time.”

Extends patterns using repeated addition and subtraction

$$357 - 9 = 348$$

$$357 - 12 = 345$$

$$357 - 15 = 342$$

$$357 - 18 = 339$$

“I added 3 to the number taken away and subtracted 3 from the difference.”

Observations/Documentation

Finds missing terms or errors in patterns

3, 8, 13, 18, 22, 28,
“Start at 3 and add 5 each time.
 $18 + 5 = 23$, so 22 should be 23.”

32, 28, ★, 20, 16, 12, 8,
“Start at 32 and subtract 4 each time.
 $28 - 4 = \star$, so ★ is 24.”

Creates patterns and explains pattern rules

“85, 75, 65, 55,
I started with my house number and took away 10 each time.”

Uses patterns to solve problems

“If I save 2 quarters a day, when will I have 10 quarters?
2, 4, 6, 8, 10
I will have 10 quarters after 5 days.”

Identifies and extends patterns involving multiplication

| | | | | | |
|--------|---|---|---|---|----|
| Input | 1 | 2 | 3 | 4 | 5 |
| Output | 2 | 4 | 6 | 8 | 10 |

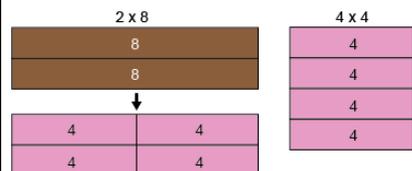
“Each input number is multiplied by 2.”

Observations/Documentation

Activity 9 Assessment Consolidation

Identifying Equivalent Expressions

Models expressions concretely to determine equivalence



"I could trade rods for other rods to make both models look the same. So, 2×8 and 4×4 are equivalent."

Use number relationships or mental math strategies to determine equivalence

$$9 + 7 \text{ and } 42 - 27$$

" $9 + 7$: take 1 from 9 and give it to 7 to make $8 + 8$, or 16.

$42 - 27$: add 3 to each number to make $45 - 30$, or 15.

Since 15 doesn't equal 16, the expressions are not equivalent."

Uses equal sign as balance (left side equals right side) and not equal sign as imbalance

$$2 \times 8 = 4 \times 4$$

$$9 + 7 \neq 42 - 27$$

"The equal sign means that the expressions on both sides are worth the same amount."

Records an equation with an unknown to match a given situation

"I started with 12 stickers. My friend gave me some more. Now I have 21 stickers.

$$12 + \blacksquare = 21$$

I used a box to represent the unknown, but I could have used a different shape."

Observations/Documentation