# Unit 6 Lesson 2: How Does it Change?

1 Squares in a Figure (Warm up)

Student Task Statement

How does each expression represent the number of small squares in the figure?
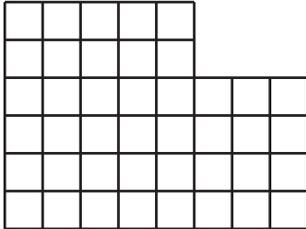
- Expression A: $6 \cdot 8 - 2 \cdot 3$

- Expression B: $4 \cdot 8 + 2 \cdot 5$

- Expression C: $8 + 8 + 8 + 8 + 5 + 5$

- Expression D: $5 \cdot 6 + 3 \cdot 4$

2 Patterns of Dots

Student Task Statement

Pattern 1

| Step 0 | Step 1 | Step 2 | Step 3 |

Pattern 2

| Step 0 | Step 1 | Step 2 | Step 3 |
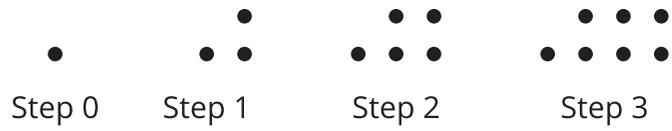
1. Study the 2 patterns of dots.
    a. How are the number of dots in each pattern changing?

    b. How would you find the number of dots in the 5th step in each pattern?

2. Complete the table with the number of dots in each pattern.

| step	number of dots in Pattern 1	number of dots in Pattern 2
0		
1		
2		
3		
4		
5		
10		
n		

3. Plot the number of dots at each step number.

Pattern 1

number of dots vs step number

Pattern 2

number of dots vs step number
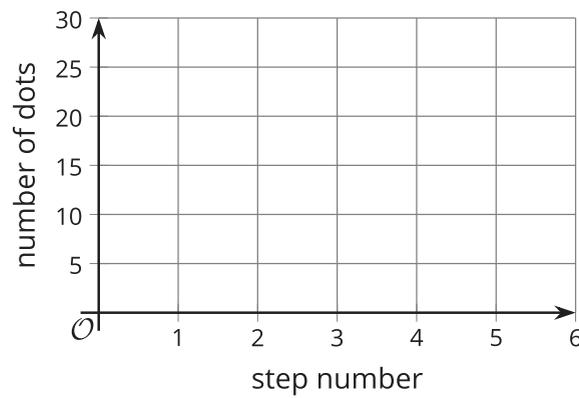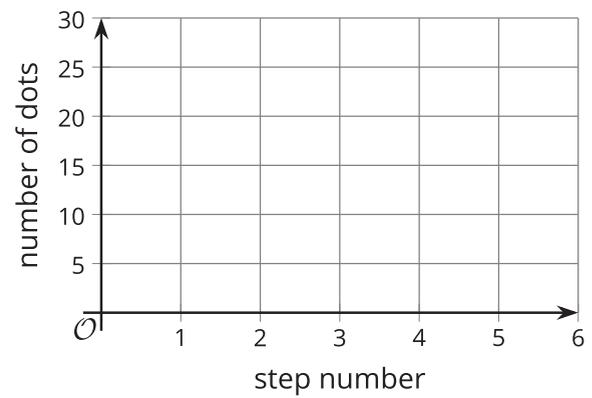
4. Explain why the graphs of the 2 patterns look the way they do.

3 Expressing a Growth Pattern

Student Task Statement

Step 1   Step 2   Step 3
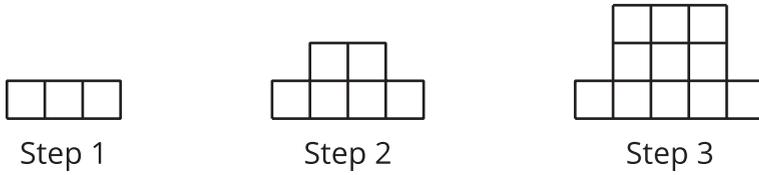
Here is a pattern of squares.

1. Is the number of small squares growing linearly? Explain how you know.

2. Complete the table.

step	number of small squares
1	
2	
3	
4	
5	
10	
12	
n	

3. Is the number of small squares growing exponentially? Explain how you know.