

## Today's Schedule

- Seats
- Questionnaire
- Disclosure
- Remind
- Group Activity
- Video

## Staircase Towers

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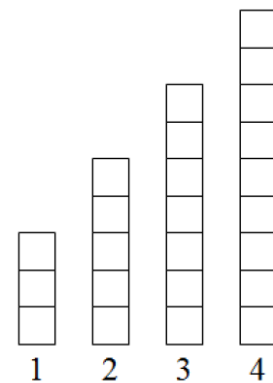
SM2

Below is a staircase tower that is made by starting with 3 cubes and adding two cubes to get each successive tower.

How many cubes will be in the 10<sup>th</sup> tower?

How many cubes will be in the n<sup>th</sup> tower?

How do you know?



\*Make a poster of your groups answers and thinking. Link the diagram to your rule or formula to determine the number of cubes in the n<sup>th</sup> tower. Be ready to explain your group's thinking to the class!

## SM2 Review

### Linear

- line

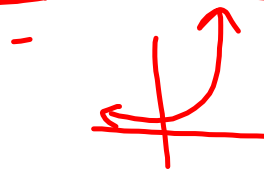
★ adds or subtracts  
same # each time

-  $y = mx + b$   
           ↑          ↑  
       slope      y-intercept

x	y
1	5
2	7
3	9
4	11

> +2

### Exponential



★ multiplying or  
dividing by same  
# each time

x	y
1	1
2	3
3	9
4	27

> .3

- eqn:  $y = b \cdot a^x$

SM3H

For the following sequence of figures, assume the pattern continues to grow in the same manner. Describe what the  $n^{\text{th}}$  figure will look like and determine the number of blocks that would be needed for this figure with a rule or formula.

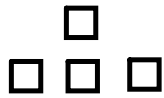


Figure 1

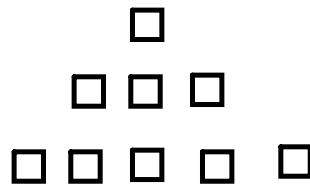


Figure 2

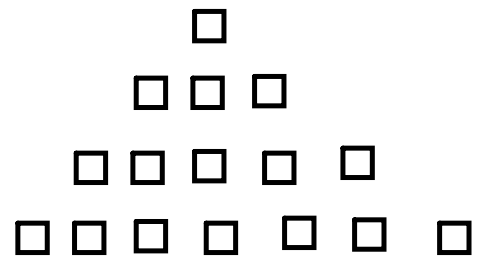


Figure 3

\*Make a poster of your groups answers and thinking. Link the diagram to your rule or formula to determine the number of cubes in the  $n^{\text{th}}$  tower. Be ready to explain your group's thinking to the class!

# SM3H Review

## Linear

- constant rate of change/slope
- straight line
- proportional when line goes through (0,0).

• predictable (equation)

$$y = mx + b$$

$\uparrow$                        $\uparrow$   
 slope                  y-intercept  
                                  (0,b)

x	y
1	5
2	8
3	11
4	14

$\rightarrow +3$   
 $\rightarrow +3$   
 $\rightarrow +3$

## Exponential

- asymptote at x-axis
- increases fast

$$y = b \cdot a^x$$

x	y
1	2
2	4
3	8
4	16

$\rightarrow \cdot 2$   
 $\rightarrow \cdot 2$   
 $\rightarrow \cdot 2$

## Quadratic

- $y = x^2$
- $y = a(x-c)(x-d)$
- $y = a(x-h)^2 + k$
- $y = ax^2 + bx + c$
- $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

• parabola

x	y
1	1
2	4
3	9
4	16

$\rightarrow +3$   
 $\rightarrow +5$   
 $\rightarrow +7$