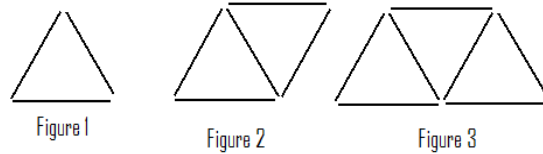


## Studying Constant Rate of Change with Recursive Sequences



- The Empire State Building has 102 floors and is 1250 feet high. How high are you when you reach the 80th floor?
  - Explain your reasoning.
- 
- A 25-story building has floors at the described heights. What recursive sequence can describe the heights?
  - Find the height of the 4th and 10th floors?
  - Which floor is 215 feet above ground?
  - How high is the 25th floor?
  - Explain your reasoning
  - Model this on the graphing calculator

Floor Number	Basement (0)	1	2	3	4	...	10	...	...	25
Height (ft)	-6	7	20	33				...	215	...



- Make figure 1-3
- Determine how many toothpicks it takes to make each figure.
- Determine the number of toothpicks on each perimeter.
- Make figures 4-6.
- Collect a table of data about each picture.
- What is a rule for finding the number of toothpicks in each figure.
- What is the rule for find the perimeter of each figure.
- Make figure 10.
- Confirm your table values by writing a recursive procedure on the calculator.



- Make a row of squares rather than triangles.
- Label the first three figures: 1, 2, and 3.
- Determine how many toothpicks it takes to make each figure.
- Determine the number of toothpicks on each perimeter.
- Collect a table of data about each picture.
- What is a rule for finding the number of toothpicks in each figure.
- What is the rule for find the perimeter of each figure.
- Make figure 10.
- Confirm your answers for figure 10 by checking it on the calculator by setting up a recursive sequence.