

1-9

Activity: Sequencing Patterns

Patterns, Equations, and Graphs

This is an activity for you and a classmate. You may wish to discuss your results as a class when everyone has finished. An equation can be used to generate a list of numbers. Depending on the type of equation, you may also be able to see a pattern.

1. Consider $y = 3x + 1$. What do you get for y when $x = 1$? $x = 2$?
Complete the table below by finding y for each given value of x .

x	1	2	3	4	5	6
$y = 3x + 1$						

2. Now look at the differences between the entries in your table. What pattern do you see?
3. Based on the pattern, can you determine the y value when $x = 7$? $x = 8$?
(Do not use the equation to evaluate.)
4. Consider $y = -4x + 5$. What do you get for a y value when $x = 1$? $x = 2$?
Complete the table below by finding y for each given value of x .

x	1	2	3	4	5	6
$y = -4x + 5$						

5. Look at the differences between the entries in your table. What pattern do you see?
6. Consider a more general equation of the form $y = ax + b$ where a and b are constants. What is y when $x = 1$?
7. Based on what you have seen, what can you do with y when $x = 1$ to find y when $x = 2$, $x = 3$, and so on?