# Unit 4 Linear Multiple Representations

## 4.1 Write and graph equations in slope-intercept form  A1.4.B

## 4.2 Represent a linear function with multiple representations  A1.3.B

## 4.3 Arithmetic Sequences  A1.7.C

### Unit Materials:
- CPM Book:  sections 4.1.2 through 4.2.4 (SKIP 4.1.1)
- Supplemental Materials:  Arithmetic Sequences (on-line)

### In this CPM unit you will:
- Given a linear graph write the equation of the line in slope-intercept form.
- Given an equation in slope-intercept form graph the line.
- Identify the slope and y-intercept given a rule, table, graph, or linear situation.
- Create a table, graph and rule for a linear situation.
- Translate between LINEAR tables, graphs, rules, and situations.

### Supplemental material that needs to be covered:
- Write recursive and explicit rules for an arithmetic sequence.
- Identify the “starting point” and the “growth rate” (initial value and common difference) for an arithmetic sequence.
- Use the explicit rule to find ANY term in a given sequence.

### Planned Teaching Window:  9/10/12 - 10/5/12

### Unit should be Tested by 10/12/12

### Vocabulary associated with/introduce in this unit:
- Arithmetic sequence, common difference, consecutive, continuous, discrete, equation, explicit, growth, initial, rate of change, recursive, rule, sequence, slope, slope-intercept form, starting value, term, variables, y-intercept.

### State EOC Examples:
- Find an equation for a line with y-intercept equal to 2 and slope equal to 3.
- Use only the equation to describe the graph:  \( y = \frac{1}{2}x + 3 \)
- Write a recursive formula for the arithmetic sequence 5, 9, 13, 17, … What is the slope of the line that contains the points associated with these values and their position in the sequence? How is the slope of the line related to the sequence?
- Given that \( a_1 = 3 \) and \( a_n = a_{n-1} + 7 \)
  - Find an explicit formula for this sequence
  - Find \( a_5 \)
  - Find \( n \) so that \( a_n = 361 \)