Cluster Title: Build a function that models a relationship between two quantities.

Standard F.BF.1c(H): Write a function that describes a relationship between two quantities.

c) Compose functions. For example, if T(y) is the temperature in the atmosphere as a function of height, and h(t) is the height of a weather balloon as a function of time, then T(h(t)) is the temperature at the location of the weather balloon as a function of time.

Concepts and Skills to Master

• Apply function operations to find the composite of two functions.

Supports for Teachers

Critical Background Knowledge		
• Recognize that <i>f(x)</i> is another name for <i>y</i> , domain and range of a function		
Academic Vocabulary		
function notation, $f(g(x))$, $f \circ g$		
Suggested Instructional Strategies		Pasources
Suggested Instructional Strategies		Resources
Successive Discounts:		 Illuminations
http://illuminations.nctm.org/LessonDetail.aspx?ID=L667		
Sample Formative Assessment Tasks		
Skill-Based Task:	Problem Task:	
Given $f(x) = x - 3$ and $g(x) = 2x - 7$, find $f(g(x))$ and $g(f(x))$.	The manufacturer of a computer is offering two discounts on	
Provide the domain and the range for each	last year's model. The first discount is a \$200 rebate, and the	
r forde the domain and the range for edon.	second discount is 20% off the regular price. Find composite	
	functions that describe how a sustained price. Find composite	
	functions that describe now a customer could receive both	
	discounts. Which composite function will provide the	
	customer with the largest discount? (Sullivan, College	
	Algebra, p. 408)	