Common Core State Standards for Mathematics		
Domain: Interpreting Functions		
Interpret Functions in Context (F-IF.4-6)		
High School		
Score 4.0	**In addition to Score 3.0, in-depth inferences and applications that go beyond instruction to the standard. The student will:** • determine a function, in functional notation, given a description of the key features of its graph	**Example Activities** Determine a function in functional notation that has zeros at (0, -2), (0, -1) and (0,2). One possible solution is found by multiplying (x + 2) (x + 1) (x – 2) Solution: f(x) = $x^3 + x^2 - 4x - 4$
	3.5 In addition to score 3.0 performance, in-depth inferences and applications with partial success.	
Score 3.0	**The student will:** • sketch graphs, showing key features given a verbal description of the relationship (e.g., intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior, periodicity) (F-IF.4) • relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes (F-IF.5) • calculate and interpret the average rate of change of a function over a specified interval (F-IF.6) • estimate the rate of change from a graph. (F-IF.6) **The student exhibits no major errors or omissions.**	Students will work individually and will be given a set of problem situations that can be represented as polynomial functions. The students will be required to sketch the graph and label key features such as intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior, periodicity for each of the verbal descriptions. Students will then be asked to participate in a carousel activity in which they will rotate to different partners to check and verify the accuracy of one problem at a time. Each time the students rotate to a new partner they must agree upon a common solution between the two of them. If there is disagreement they must discuss and come to an agreement.
	2.5 No major errors or omissions regarding 2.0 content and partial knowledge of the 3.0 content	

Score 2.0	**There are no major errors or omissions regarding the simpler details and processes as the student will:**
	• recognize or recall specific vocabulary, such as:
	  ○ intercepts, rate of change, intervals, relative maximums and minimums, symmetries, end behavior, periodicity
	• perform basic processes, such as:
	  ○ interpret graphs and tables of functions by listing key features such as: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries (F-IF.4)
	
	However, the student exhibits major errors or omissions regarding the more complex ideas and processes.
		Students will be placed in groups of three. The groups will be given several unique polynomials to work with. The group will graph each polynomial and each student within the group will be assigned specific function characteristics that they will be responsible for determining for each of the polynomials assigned to their group. Working within their assigned roles the groups will determine the intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior, periodicity for each of their assigned polynomials. Once the teacher has verified the accuracy of these characteristics, the groups will be changed to place all students who worked on like characteristics in groups together. These students will write a general summary about the function characteristics they were assigned. Students will then return to their original group but will trade which function characteristics they are responsible for. The process will then repeat as before until all students have experienced working with all function characteristics.

	1.5 Partial knowledge of the 2.0 content but major errors or omissions regarding the 3.0 content	
Score 1.0	**With help, a partial understanding of some of the simpler details and processes and some of the more**	

	complex ideas and processes.		
	0.5	With help, a partial understanding of the 2.0 content but not the 3.0 content	
Score 0.0	**Even with help, no understanding or skill demonstrated.**		