Appendix 1: Implementing Teaching Standards

Standard F.IF.7: Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.

a. Graph exponential functions, showing intercepts and end behavior

This standard is used during the time the students have to graphically represent the data gathered on the technology they chose. The key features of the graph will allow the students to depict this representation as an exponential function that changes at a rapid pace. Students must possess knowledge on how to properly graph functions and how to properly identify the type of function that was graphed.

Standard F.IF.9: Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).

When the students must identify the type of function illustrated from the graph, this thoroughly shows the standard, because correctly identifying the function from the graph will allow connections of exponential functions and it's properties to be made.

Standard F.LE.1: Distinguish between situations that can be modeled with exponential functions.

a. Prove that exponential functions grow by equal factors over equal intervals
b. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another

The final portion of the curriculum unit is the Problem Based Task, where students become problem solvers, in finding the best savings account for a business to use. To accurately find the solution of this task, the students will have to use the Compound Interest Formula to calculate the amount of money the business will have after an amount of time, with a fixed interest rate, and the compounding frequency. This activity will allow the students to identify and recognize a situation that shows an exponential growth or decay and make connections to this real world and the math content.

Standard F.LE.3: Observe, using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly.

The entire unit stresses the comparison of exponential functions to linear functions. Students are accustomed to linear functions, but during this unit they need to be able to identify exponential functions through the many representations (graphs, tables, and equations). When students gather data and represent it graphically this standard will be used to show the students' understanding of exponential functions and how it differs from linear functions