

## **Unit Guide**

### **Fostering a Deeper Understanding of Exponential Relationships Through Problem Solving**

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My unit for the Delaware Teacher's Institute will be a 9<sup>th</sup> grade unit on exponential relationships and functions. I have taught exponential function units many times using various approaches, but one thing is pretty much always the same; my students do not like it and they do not understand it. In our 9<sup>th</sup> grade curriculum, the exponential functions unit follows the linear functions unit. I have noticed in the past that students do not seem to be able to solve problems involving exponential relationships in the same way they do with linear relationships. Their understanding of exponential equations is often limited to memorizing the form  $y = ab^x$  where the value of  $a$  is your "starting point" and the value of  $b$  is your "scale factor". This unit will cover exponential growth and decay functions as well as simplifying exponential expressions using properties of exponents. I would like to deepen students' understanding by giving them more in depth problems that involve real world applications of exponential patterns and provide an opportunity to gain an in-depth understanding of the characteristics of exponential functions and expressions.