Grade level: 9-12
Subject: Algebra II
Time required: 30 minutes

Modeling Engine Power

by – Kelli Slaten

Activity overview

In this activity, students use the TI-Nspire handheld to determine if a linear model or a quadratic model best fits a set of given data involving engine power. Students look at the pattern of data points and the sum of squares of the deviations to determine which model fits the data.

Concepts

Modeling with linear and quadratic functions

Teacher preparation

Students need to be familiar with linear and quadratic functions, linear regression concepts, and modeling linear relationships from real-world data.

Classroom management tips

This activity is primarily student-centered and self-guided. Screenshots are included on the student worksheet to help them check their own results on the handheld.

TI-Nspire Applications

Lists & Spreadsheets, Data & Statistics

Assessment and evaluation

- *Teachers could conduct informal assessments during the activity by having students explain their ideas.*
- *After the activity, teachers should have a class discussion about modeling and get students' ideas about other real-world data that might fit a quadratic model.*

Activity extensions

- *This activity can be extended by examining the same problem or similar problems using a system of equations and finding three data points.*

Student TI-Nspire Document

ModelingEnginePower_StudentWS.doc