Lesson Outline

Teacher Name: **M. Perry / D. Tsambis**

School: **Pine Richland High School**

Course Title: Honors **Physics / Honors Intro to Analysis**

Topic/Unit: **Sound Intensity Lab**

Model Topic: **Sound Intensity vs. Distance**

Modeling Tools: **Net Logo, Microsoft Excel**

Please provide a brief description for each section.

1. Describe the preparation you will do with the students prior to the model.

Physics: Introduce sound intensity

Intro to Analysis: Unit on Linear Regression Analysis including transformations for non-linear functions

2. Describe the learning objectives related to the model and how you will achieve them.

Use NetLogo to generate sound intensity model and generate data to perform linear regression analysis in Excel and compare model to subsequently collected data set.

- Students will generate model data in Physics class
- Perform regression analysis of data in Math class
- Test model with data collected in field
- Student will gain exposure to using spreadsheet software to perform analysis

3. Describe the discussion questions you will use after the model.

Does the model fit actual collected data?
Does it do so exactly? What are possible sources of error?
Briefly describe how best fit equation was determined.
Discussion of coefficient calculated

4. Describe the type of student assessment you will use.

Students will generate lab report detailing analysis.