UNIT 1 CP
SCIENTIFIC THINKING in EXPERIMENTAL SETTINGS

Instructional Goals

Experimental Design & Data Analysis
- Identify questions, concepts, and testable hypotheses that guide scientific investigations.
- Design and safely conduct methodical scientific investigations, including experiments with controls.
- Use statistics to summarize, describe, analyze, and interpret results.
- Formulate and revise scientific investigations and models using logic and evidence.
- Use a variety of tools and technologies to improve investigations and communications.
- Recognize and analyze alternative explanations and models using scientific criteria.
- Communicate and defend scientific ideas.

Graphing Methods
- Create a graph from a table of data sing best graphing practices.
- Determine the slope, y-intercept and equation of a line.
- Describe the physical meaning of the slope and y-intercept of a linear graph.
- Determine the best fit curve for a graph of data points.
- Derive a mathematical model (equation) from a graphical representation.
- Use a graph and/or mathematical model to answer additional questions (interpolate, extrapolate).

Activities:
- UNIT 1 CP LAB 1 - Spaghetti Bridge
- UNIT 1 CP WORKSHEET 1 - Units
- UNIT 1 CP WORKSHEET 2 - Graphing & Interpreting Data
- UNIT 1 CP WORKSHEET 3 - Equations of Lines
- UNIT 1 CP QUIZ 1 - Linear Graphs
- CP Graphical Methods-Summary
- UNIT 1 CP LAB 2 - Introduction to Logger Pro
- UNIT 1 CP WORKSHEET 4 - Scientific Method
- UNIT 1 CP WORKSHEET 5 - Best Fit Curves
- UNIT 1 CP QUIZ 2 - Best Fit Curves
- UNIT 1 CP LAB 3 - Period of a Pendulum
- UNIT 1 CP REVIEW
- UNIT 1 CP TEST