

Gentle Touch Background Handout

1. Define curve fitting.

Completing this document provides you with the general background knowledge necessary to complete and understand the various parts of this activity, including linking the activity to a real-world application.

2. What is the benefit of curve fitting?

3. The most basic units measured and used by electrical engineers are:

4. Draw the symbols or units used by electrical engineers.

5. Using an analogy, draw a diagram that explains the relationship between voltage, resistance and current.

6. What is the equation for Ohm's law and how can it be used? Give an example, with real values.
Hint: What if you are given two of the three unknown variables?

7. In your own words, summarize Newton's second law of motion.

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8. **Amdahl's law gives us the maximum expected improvement to an overall system when only part of the system is improved. For example, we can add more cores to a computer, which would result in a much faster computer. From the curve fitting graphs, intuitively analyze what will happen if we keep on adding cores?**

9. **What is regression?**

10. **Draw correlation graphs for strong correlation and no correlation.**

11. **Define a line of best fit.**

12. **In your own words, explain how you can use residuals on a scatter plot to check which line is the best fit.**

13. **List the procedure to calculate the line of best fit using a calculator.**

14. **Discuss with your neighbors the engineering challenge given to you at the end of the presentation. Now that you have a better understanding of it, re-state the challenge in your own words.**