Reverse Engineering

Project Scope

A reverse engineering project should be of enough complexity to allow the student to gain an understanding of how something works in detail, without being overwhelming.

- Select and acquire at least one product (typically, mechanical in nature), disassemble the unit, then mount and label all components.
- A successful entry may have sub-components that are further disassembled
- The tools used can be simple or complex, but the methods and sequence for disassembly should be documented.

Project Display and Description

A successful entry in this category will have the components of the product mounted and labeled to show the following:

- The overall unit and operation of the unit is described
- Each component is described adequately, material is identified, and its function explained
- Components are arranged so that they are located to the assembled unit correctly

A paper describing the operation and functionality of all of the components should be created and may include:

- Illustrations or images of components and how they fit together
- A description of the steps for deconstruction
- Any notes or logs that are taken during the disassembly
- A description of how the original object actually functions

Entry, Review and Judging

An entry in this category will be reviewed and judged on the following:

- Entry rules and general requirements judging points
- Preparation and display of the components or subcomponents of the original object
- Descriptive paper showing accuracy in explanation of components and overall operation.

Additional Items Which Will Affect the Review and Judging Conclusions

- Shows completeness of thought and cause and effect are clearly identified
- Project scope is reasonable and allows for disassembly to adequate levels
- The understanding of how the object works is not generally understood
- High degree of complexity or complex disassembly procedure required