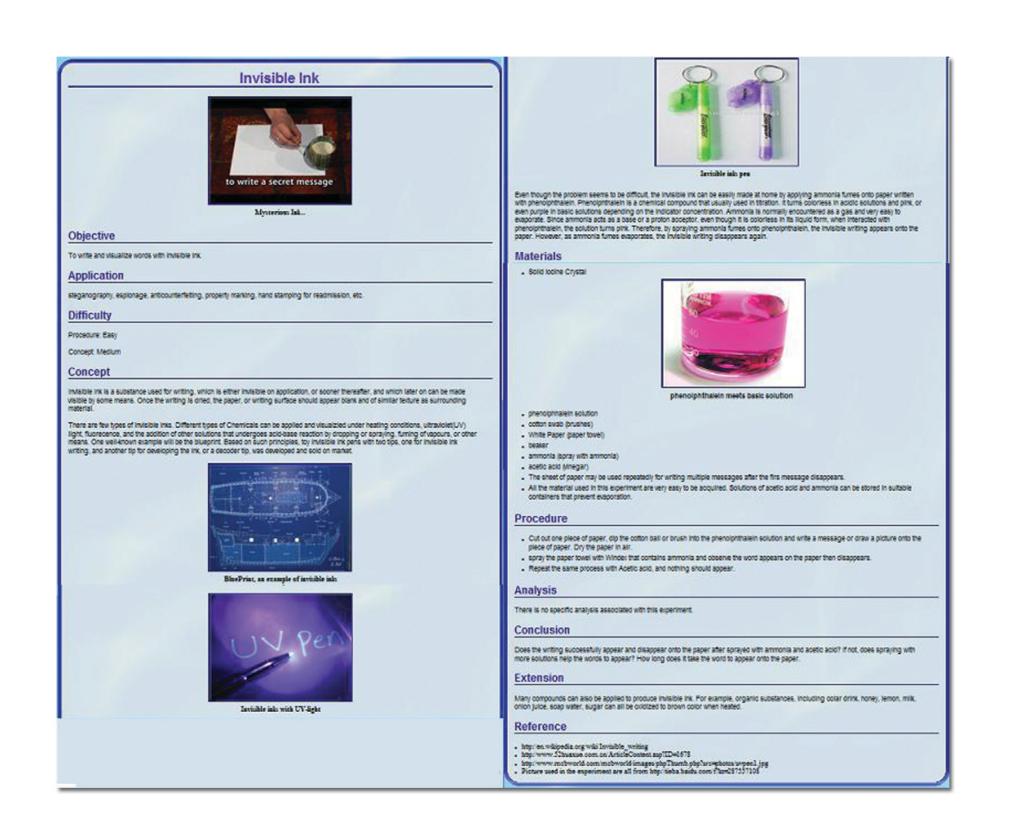
## INTRODUCTION OF INNOVATIVE SCIENCE PROJECTS

- Objective: To provide innovative project ideas
- Sections for a science experiment guide:
  - o Objective: the purpose of the project
  - o Difficulty: difficulty level to operate and understand concept behind the project
  - o Concept: the theoretical basis behind the project
  - o Materials: equipment required for the project
  - o Procedure: the steps used in the project
  - o Results: the parameters should be collected
  - o Analysis: clarify how to interpret the data
  - o Conclusion: what does stuent learn from the project
  - o Extension: extension of the project to solve problems in real life
  - o Reference: the sources of information used in the project guide



Project Ideas

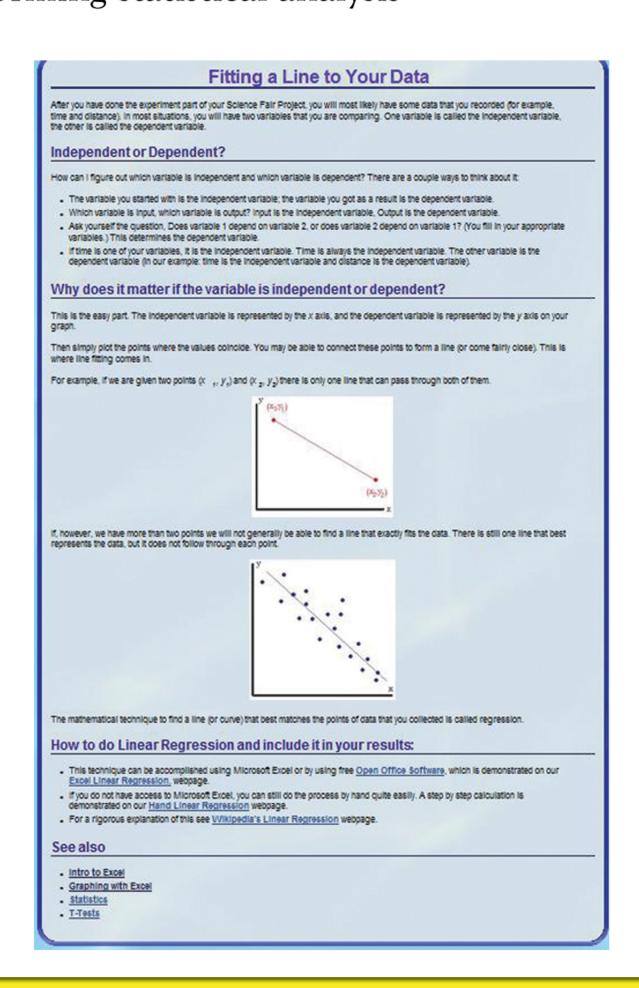
Data Analysis

Lab Techniques

Presentation

## Contemporary Science Fair Projects http://sciencefair.math.iit.edu

- Objective: provide instructions for high school students to record data, analyze them and present them on report
- Contents:
- o For report writing
- > Explained basic sections used in scientific report
- > Instructions for referencing resources
- o For collecting quantitative data during the experiment
- > Explained basic sections should be included in lab notebook
- o For analyzing the data using Microsoft Excel
- > Graphing the data
- > Performing linear regression
- > Performing statistical analysis





## LAB TECHNIQUES AND SAFETY CONCERNS

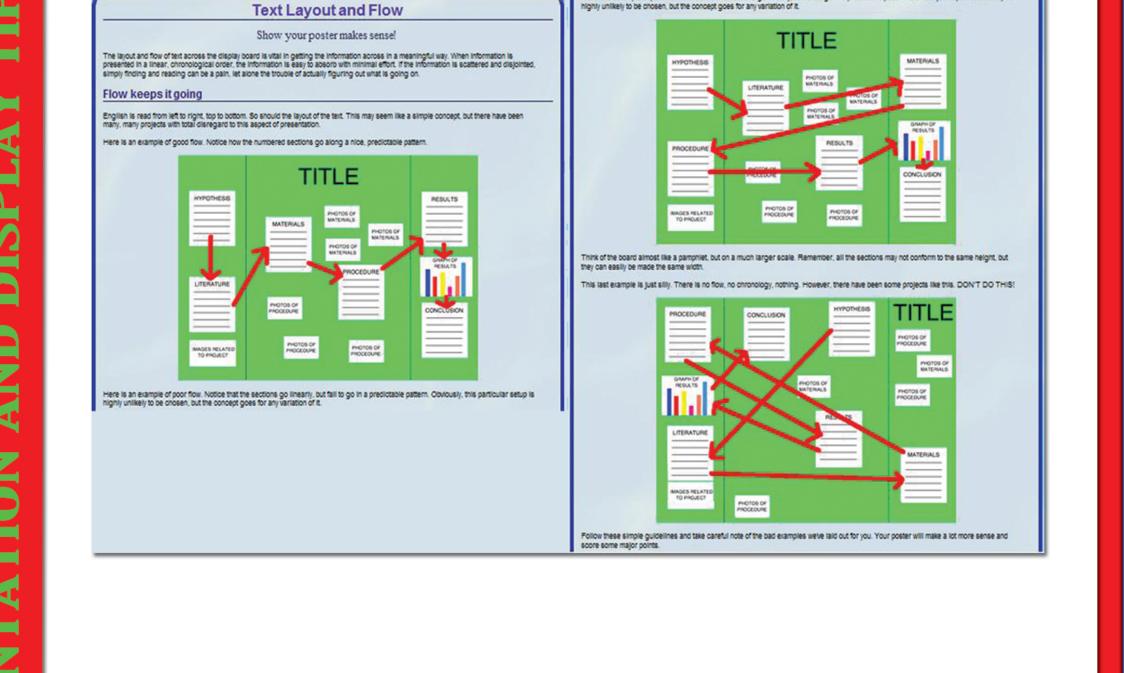
Objective: provide CPS students instructions and procedures of basic techniques required for completing scientific project in different subjects

Using a balance

Clear the balance pan of any debris. Make sure it is clean.

An electrical balance will produce a digital readout of the weight. Record and you are finished

- General layouts used in each technique guide:
- o Definition: what can the technique do in a scientific experiment
- o Application: the area of study the technique can be applied to
- o Difficulty: difficulty level for performing the technique
- o Concept: the theoretical basis behind the project
- o Materials: equipments used
- o Procedure: the detailed steps of the technique
- o Analysis: clarify how to interpret the data
- o Reference: the sources of information used in the project guide



- Objective: provide instructions for CPS students to effectively present their projects during science fairs
- Contents:
- o For posters
- > Instructions for organizing information
- > Instructions for choosing background and themes
- > Instructions for balancing the different section
- > Instructions for emphasizing ideas and titles
- > Examples of good and bad posters
- o For presentations
- > Instructions for how to behave during presentation
- > Instructions for how to prepare for presentation