Middle School Science Fair Project Guidelines:
Grades 5 - 8

Judging a Science Project
During judging, students will be asked to describe their investigation and the experimental process they carried out. Special attention will be placed on knowledge and enthusiasm for the project, as well as the student's oral presentation skills.

The judges will evaluate the student's:
- Ability to communicate the purpose
- Experimental plan
- Ability to identify essential experimental components (variables, constants)
- Method for data collection and summary of experiment
- Conclusions drawn from data

Other key areas to be evaluated are:
- Originality of idea,
- Quality of exhibit display, &
- Clarity of exhibit.

A Science Project Is…
- Trying to answer a specific question or solve a problem by experimenting, making observations, recording data and drawing conclusions.
- An opportunity for students to experience the use of the scientific method through real-life experiences.

A Science Project Is Not…
- Making a model (volcano, solar system, etc.)
- Show-and-Tell
- A book report
- Poster displays on scientific literature

Science Fair
Online Resources
- Science Buddies
  http://www.sciencebuddies.org/
- Science Fair Project Resource Guide
  http://www.ipl.org/div/projectguide/
- Successful Science Fair Projects
  http://faculty.washington.edu/chudler/fair.html
- All Science Fair Projects
  http://www.all-scienc-fair-projects.com/
- Exploratorium: Science Fair
  http://www.exploratorium.edu/lc/pathfinders/scifairs/index.html
- Try Science!
  http://tryscience.org/
- Make It Solar
  http://www.makeitsolar.com/science-fair-information/01-the-scientific-method.htm
- Science Project
  http://www.scienceproject.com/projects/index/intermed.asp

Display Board
- Projects must be displayed on a standard stand-alone tri-fold board.
- Boards should be neat and attractive.
- Marquee headings and information on colorful paper is encouraged.
- Label all parts of the project.
- No living organisms (mold, plants, etc.) should be displayed.
- No props attached. No free standing items. Pictures only.
The Norristown Area School District Science Fairs are conducted for the purpose of encouraging and motivating students in grades five through eight to embrace scientific inquiry. Each participant is challenged to use the scientific method to conduct a controlled investigation.

Students are encouraged to seek assistance from parents/guardians and teachers in choosing a topic, conducting experiments, and gathering materials. However, the finished project is expected to reflect the work, thoughts, and efforts of the student.

Science Categories
Students may do a project in the following science categories:
- Biochemistry
- Botany
- Chemistry
- Computer Science
- Consumer Science
- Earth and Space
- Engineering
- Environmental Science
- Mathematics
- Physics
- Zoology

Projects must be experiments...
Models or demonstrations will not be accepted for the Science Fair.

Essential Components of A Successful Project

Each project must follow the Scientific Method and must include the following components:
- **Project Title/Problem**: What do you want to find out?
- **Purpose**: Why do you want to do this project?
- **Hypothesis**: What do you think will happen?
- **Materials**: What do you need to complete the project?
- **Procedure**: How can you test what will happen?
- **Data Results/Observations**: What happened?
- **Abstract/Conclusion**: What did this experiment show?
- **Oral Presentation**: Can you explain your project?
- **Research Paper/Lab Book**: What did I learn?

**PROJECT TITLE / PROBLEM**
The problem is the scientific question to be solved. It also serves as the title of the project. The title should be stated in the form of a question that can be answered through experimentation.

**PURPOSE**
The purpose is a written statement that explains why the topic was chosen and what the student hopes to learn. Describe the problem that is to be solved. The purpose should be one that can be answered through an experiment.

**HYPOTHESIS**
The hypothesis should be based on a cause and effect relationship and should be written as an “If...then” statement. It is a prediction about what will happen during the experiment.

MATERIALS
All materials being used in the experiment should be identified in list form. Include quantities and sizes.

PROCEDURES
Procedures should be written as a step-by-step description of the investigation that tests the hypothesis and includes at least three trials. The variables should be identified in this section.

DATA RESULTS & OBSERVATIONS
Observations made and data collected during the investigation are presented in the Data Results section. Students must use tables, charts, graphs, and diagrams to show and explain their results. Use METRIC units only (cm, m, mL, L, g, kg).

ABSTRACT
The abstract is an overview of the experiment or a summary of your science fair project and should be limited to 250 words. It includes the hypothesis, methods and materials, observations and results, and the conclusions they led to. The abstract allows the reader to quickly understand the project.

CONCLUSION
The conclusion is a written statement confirming what was learned during the investigation. In the conclusion, explain if the hypothesis was supported or not supported and what was learned from the data. If the results of your science experiment did not support your hypothesis, don't change your results; simply explain why things did not go as expected. Describe what could have been done to improve the experiment next time.

ORAL PRESENTATION
The student demonstrates full knowledge and provides personal responses about what was learned as a result of the investigation. Students will be able to use note cards during the presentation.

RESEARCH PAPER / LAB BOOK
The research paper is a written statement that includes background information on the project topic along with what was learned from the experiment. This will include a title page, table of contents, introduction, background information, discussion or summary of experiment, data & graphs, conclusion, and a bibliography (using MLA format).