

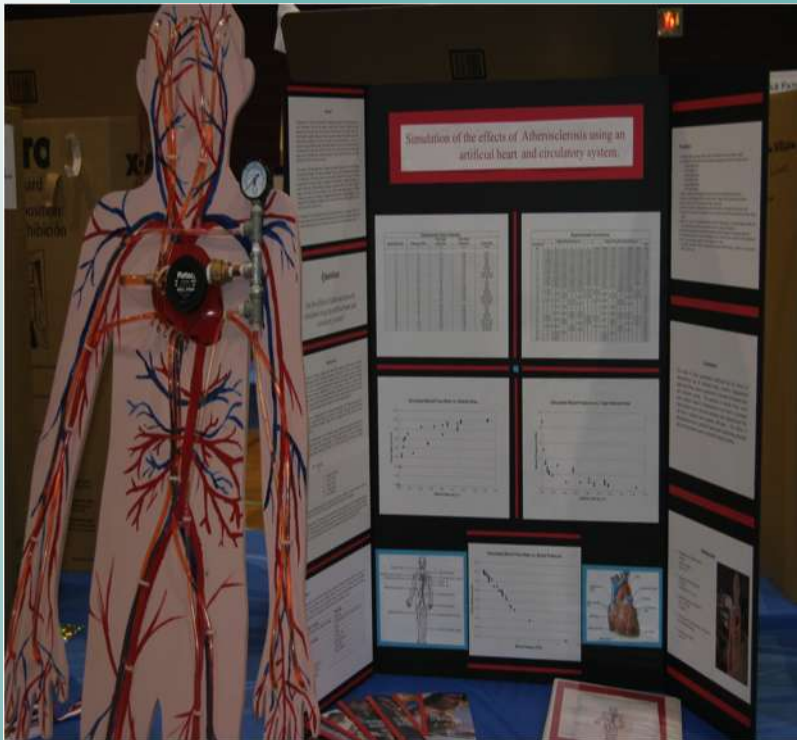
22nd Annual

Chester County Science Research Competition

# How to Develop a Science Fair Project

2011-2012

# Science Fair



- What is Science Research?
- Where Can I Get My Research Project Idea ?
- How Do I Develop My Idea into an Experiment?
- Putting Your Thoughts into Action
- Before You Start to Experiment
- Experimentation, Data Collection and Sharing Your Results
- The Scientific Method
- Your Log Book
- Special Things to Remember
- Great Projects
- Is Entering the Science Fair All About Winning?

# What is Science Research?

Science research is an opportunity for **you** to investigate an idea that you find interesting. Research involves gathering a lot of information about your question by observing, asking questions, reading books and exploring your topic on the Internet.



# Where Can I Get My Research Project Idea?



- The idea for your investigation can come from many people and places.
- Libraries have books that are written to give you ideas for your project.
- Talking with a classmate, teacher or adult may help you develop your idea.
- Simply observing the world around you may help you think of an idea.

# Where Can I Get My Research Project Idea?

- There are Internet sites that list many ideas to research and investigate. Your teacher can help you find the best websites for you.
- Sometimes ideas to investigate come from adding a little "twist" to someone else's idea.
- The very best ideas are yours and come from your built-in super computer,

**your brain!**



# How Do I Develop My Idea into an Experiment?



After you have learned (researched) everything you can about your project idea, try to think of a way to express your question as a statement that describes what you think will happen. I believe...

**This is your hypothesis!**

# How Do I Develop My Idea into an Experiment?

- Your next task is to find a way to test your hypothesis.
- You can test your hypothesis by conducting an **experiment** and **gathering data**? Books in your library, parents and your teachers will give you information about conducting experiments.



# Putting Your Thoughts into Action!



- Your discussions with your teacher or adult sponsor will help you to decide if it is safe for you to conduct your experiment.
- Their job is very important so you want to be sure to listen to them very carefully.
- Safety should be your most important consideration.

# Before You Start Your Experiment!

- You must now have your teacher or adult sponsor and your parents help you fill out your paperwork.
- You will need the following forms:
  1. Checklist for Adult Sponsor #1
  2. Student Checklist #1A
  3. Research Plan
  4. Approval Form #1B
- All of your approval forms will be available from your teacher or science fair sponsor.



# Paperwork Paperwork, Paperwork, Why, Why, Why?

Your science fair project should help you find the answer to a question you have. To be sure you get to that answer in a safe way, the paperwork ensures that you and your teacher/ sponsor have thought out your procedures very carefully and that your parents know exactly what you are going to do. Our primary goal is to keep you safe and sound during your science fair experience.



# Experimentation and Data Collection



When you have all of your paperwork completed, you can begin to conduct your experiment and collect data.

Be sure to talk frequently with your teacher or adult sponsor about how your investigation is going.

# Collecting Data

The data you collect will help you to find an answer to your hypothesis. Your data could be in the form of answers to survey questions or measurements of time, distance or speed. You will want to think carefully about your data. What is it telling you? Does your data agree or disagree with your hypothesis? Accuracy is very important when recording your data.



# Sharing Your Results

Your science fair project is an opportunity for you to share the results of your experiment with classmates, adults and other people interested in your research. Organize your science fair board in a logical way. Check carefully for spelling and grammar errors. Be sure to include graphs, charts and pictures.



# The Scientific Method

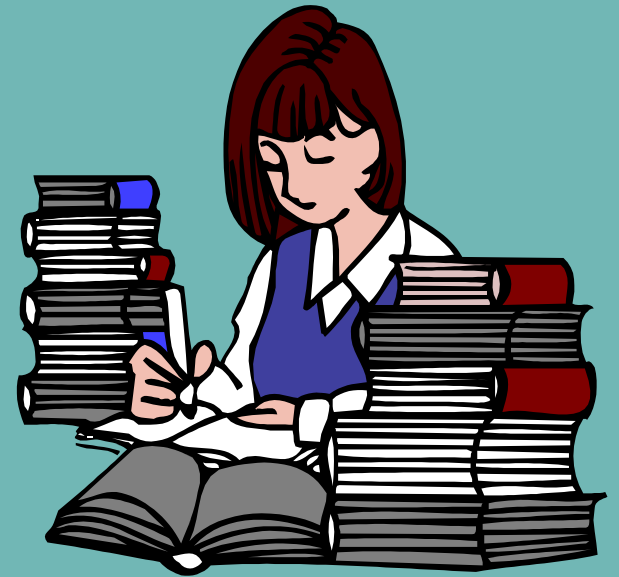
The process we are describing is one that most scientists use to find the solutions to questions they have. It is called the **scientific method**.

The Steps of the Scientific Method are:

- After you think of an interesting topic, **gather information** (research) about the topic.
- **Form a hypothesis** that describes what you think will happen.
- **Test your hypothesis** (experiment) to find out if your idea is true or not.
- **Collect and analyze** the data collected from your experiment.
- **Share your results** in your science fair exhibit.

# Keeping a Log Book A Science Fair Must Do!

One of your most valuable pieces of work resulting from your science fair project will be your log book or journal. This should be a day by day account of your work. Your log book will give you an accurate record of the things you do and learn each day. It will also give the judges a very in-depth look into the time, thought and effort you put into your science fair project. Be sure to include dates, observations and your thoughts in each entry.



# Writing My Abstract

Your abstract is a summary of the work you did while investigating your topic. It should have no more than 250 words and be divided into three paragraphs.

Paragraph One will describe what you were investigating.

Paragraph Two will tell how you did your investigation.

Paragraph Three will tell what you learned by doing your investigation.



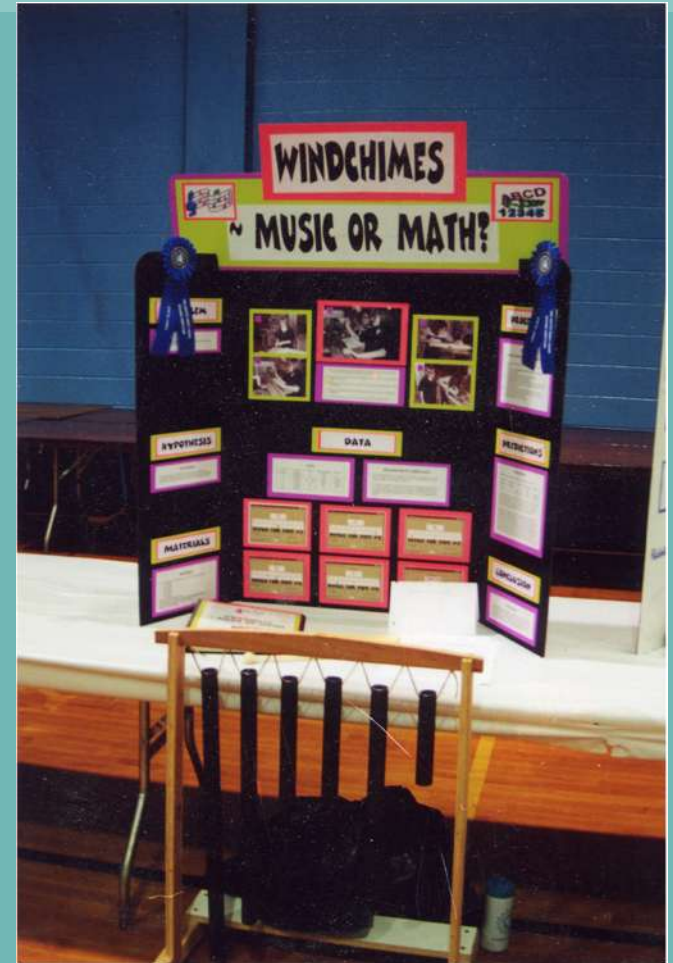
# Special Things to Remember

- Find a roomy, quiet and safe place to do your project.
- Keep an accurate logbook detailing all the things you do each day of your project.
- Gather your data accurately.
- Take pictures of your activities.
- Think of a clear and concise way for you to display your data.
- Design graphs and other visuals to show your results.
- Keep your work organized.
- Remember: Neatness and accuracy count

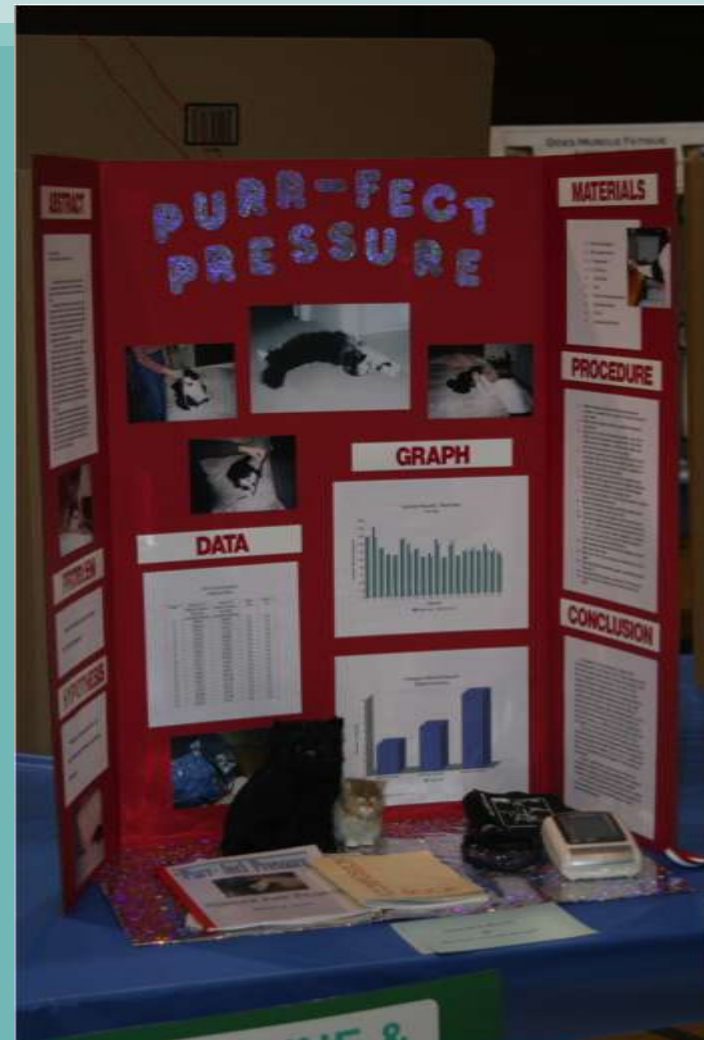
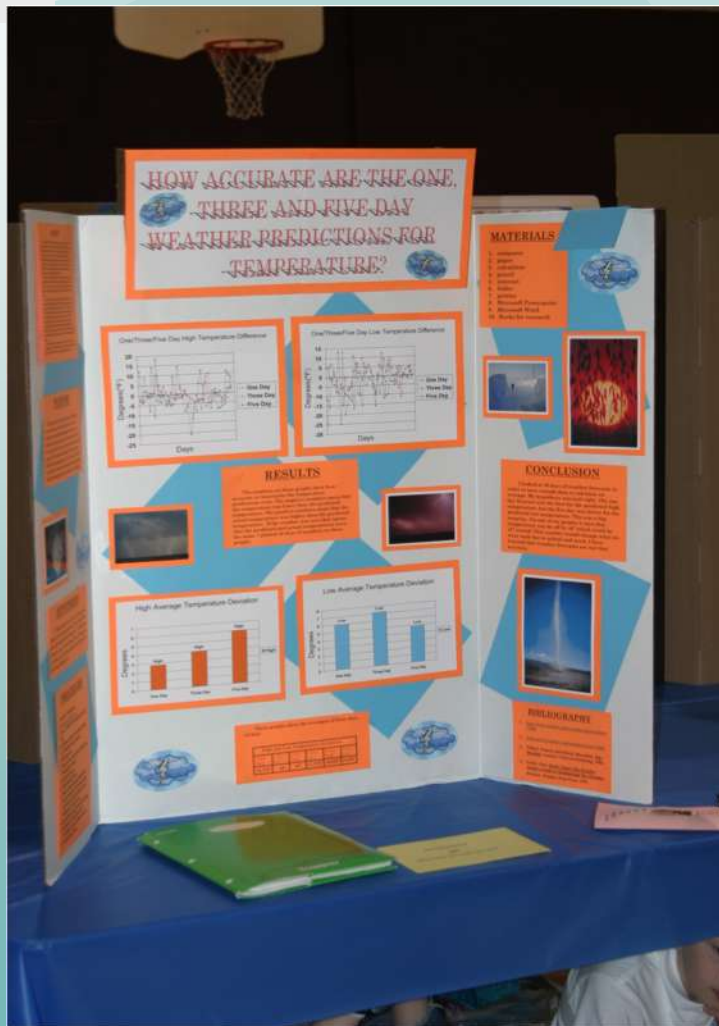


# How Does a Great Science Fair Project Look?

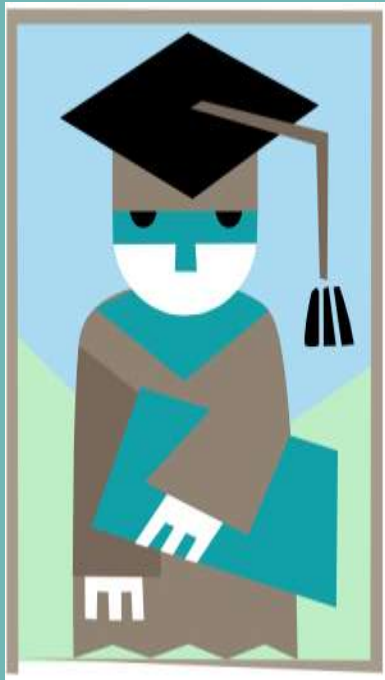
- An outstanding science fair project is neat and well organized.
- The display clearly shows the:
  - Title
  - Hypothesis
  - Materials
  - Procedure
  - Results
  - Conclusion
  - Pictures, charts or graphs
- Special attention is given to spelling and grammar.



# More Great Projects



# Is Entering the Science Fair All about Winning?



- **ABSOLUTELY NOT!**
- Everyone who enters the science fair is a winner. You have taken information learned in school, developed an idea to explore and worked through a difficult process. **You will have grown wiser and more knowledgeable as a student and as person.**
- Sometimes your hypothesis turns out to be true, sometimes it does not.
- Remember, you sometimes learn more when your experiment doesn't turn out just like you think it will.