



**Moorestown
Science Fair
Kickoff and Mentoring meeting**

February 11, 2014

Sponsored by PACE

Agenda

- * Types of science fair projects
- * The Scientific Method
- * Resources for project ideas
- * Meetings with Mentors by grade level
- * Career Mentor meetings

Types of Science Fair Projects

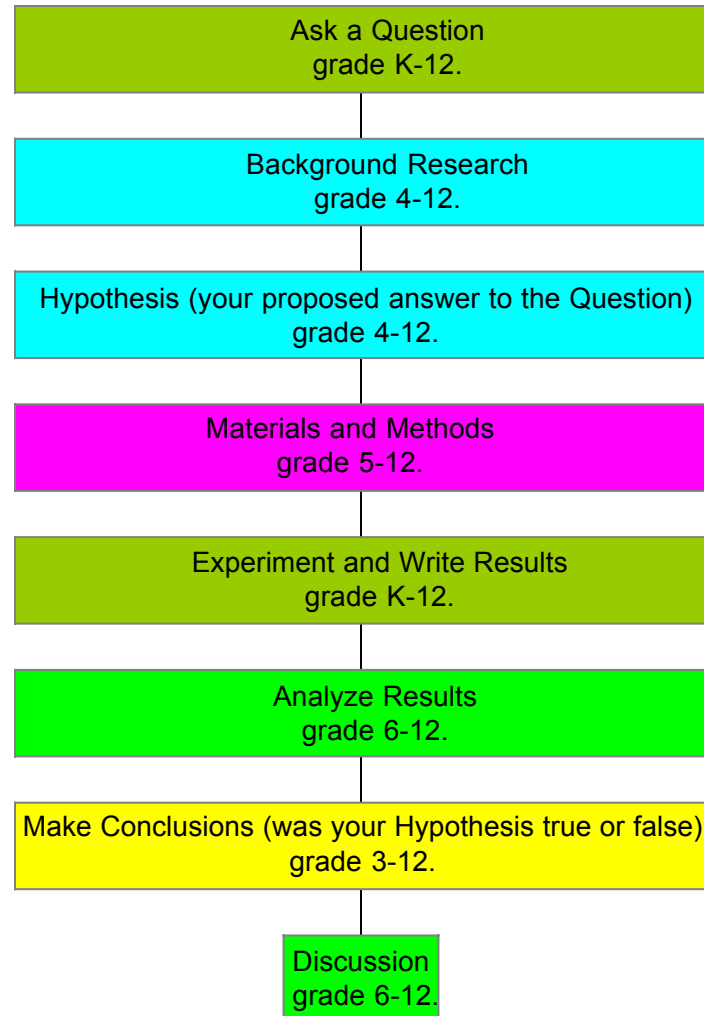
- * **Investigative** - ask a question, make a hypothesis, test your hypothesis using an experiment and make conclusions from your experiment.
- * Research and Poster - do research on something that interests you by reading books or websites, write about what you found and make a display of it.
- * Model Building - build a model to show something scientific that interests you.

The Scientific Method



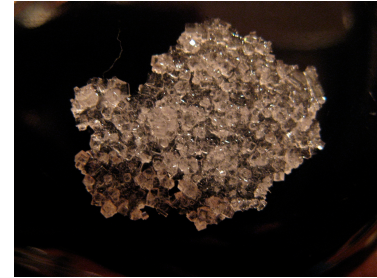
Definition: a research method used by scientists when they do experiments

Scientific Method and grade level suggestions



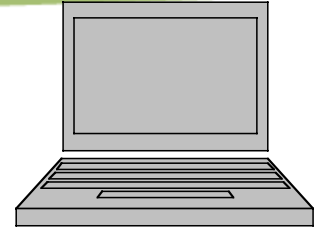
Start with a ?

- * Pick something that interests you and about which you have questions.
- * Example:
- * Crystal Size and Shape
- * How does temperature affect the size and shape of salt crystals?





Research your topic



- * Read about crystals in books and on the internet.
- * What affects crystal shape?
- * What affects crystal growth?
- * What types of crystals can you grow at home?

Make a Hypothesis

- * Based on your research, state what you think the answer to your question might be.
Educated guess.
- * Example hypothesis:
- * Salt crystals grown at room temperature will be larger than those grown in the refrigerator or freezer. The crystal shape will stay the same at all temperatures.



Materials and Methods

- * Make a list of all the materials you will need to test your hypothesis.
- * Materials: Salt, water, refrigerator, jars, ruler, pencil, string
- * Write down all the steps you will take to do your experiment.
- * Methods: 1. Dissolve salt in water
2. Tie a string to a pencil.
3.
4.



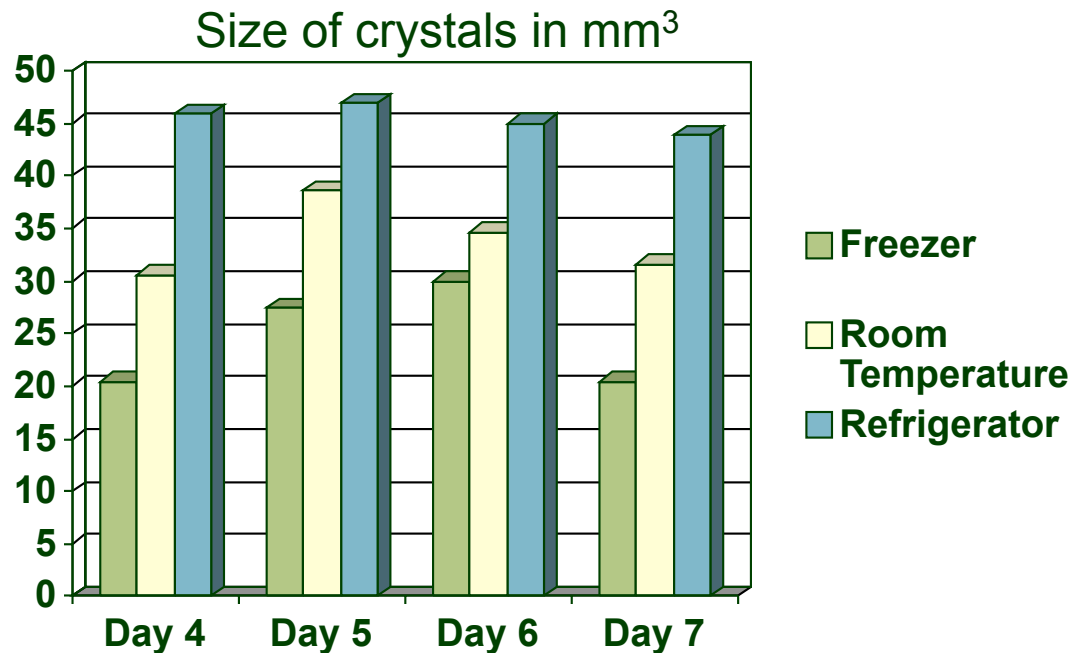


Do an Experiment

- * Follow the methods and do an experiment to test your hypothesis.
- * Change only 1 variable at a time: temperature
- * Include controls
- * Collect Data: Take measurements of the crystals with a ruler on several days
- * Repeat the experiment several times

Analyze & Write Results

- * Compare the data (table, chart, graph)

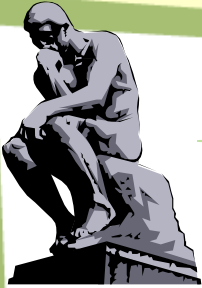


Results: crystal size was largest when they were grown in the refrigerator and smallest when grown in the freezer.

Crystals were cube shaped at all temperatures (show pictures of your crystals or display crystals safely)



Make Conclusions

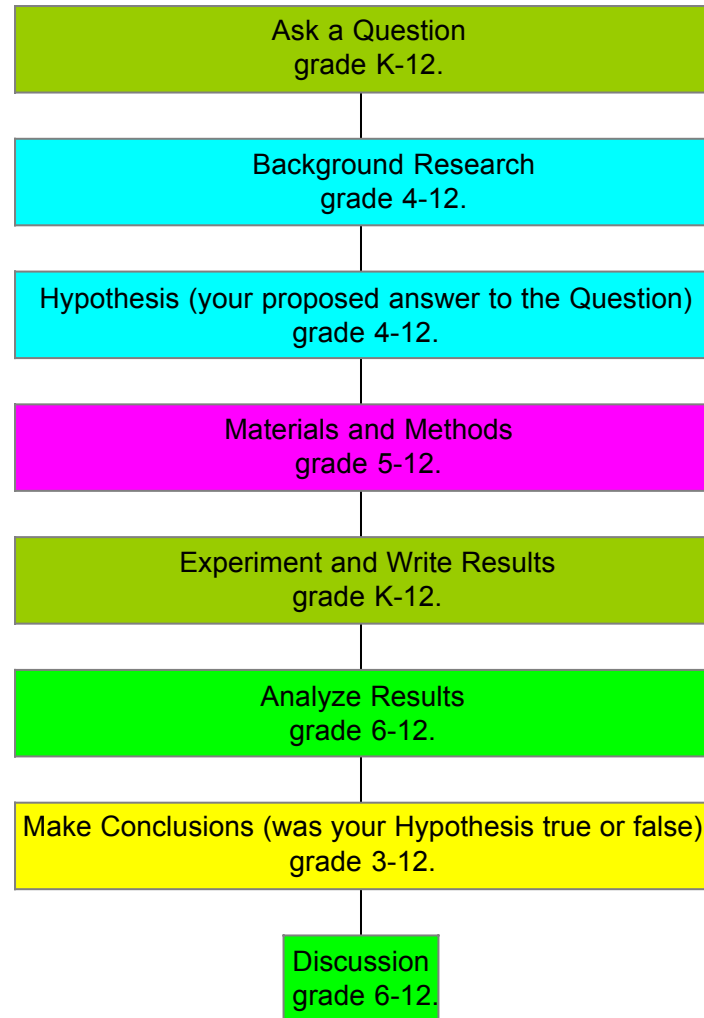


- * Write what you think the results mean. Was your hypothesis true or false?
- * Example: Temperature affects crystal size but not crystal shape. My experiments proved that my hypothesis that crystals grown at room temperature would be the largest, was false. However, my hypothesis that crystal shape would stay the same at all temperatures was proven correct.

Write Discussion

Why do you think crystals grew best in the refrigerator? There may be more than one possible explanation for your observations, what are they? Why does crystal shape not change? What would you do in your next experiment on crystals?

Scientific Method and grade level suggestions



What NOT to display

- * No mammals ie. No cat, dog, hamster, mouse etc.
- * Nothing explosive
- * Nothing dangerous or infectious
- * Nothing stinky
- * Keep messy things neatly contained
- * Do display photos of items you cannot easily display

- * Experimenting is fun!
- * No experiment is a failure!



Scientist, Thomas A. Edison on inventing the light bulb, “I have not failed. I've just found 10,000 ways that won't work.”

- * Every experiment teaches us something.



- * You can work independently
- * You can work in a group of 2-3 students of the same or different grade levels
- * Do not cause harm or pain to anything or anyone in your experiments.
- * Do not experiment on people, unless it is just asking them questions.

Parent note

- * This Science Fair is NOT a competition
- * Let your children determine project direction
- * Allow children to do the project
- * Give help and guidance when necessary
- * Modify expectations depending on your child's readiness

Register Projects by 3/1/14

- * registration link on PACE website starting 2/17/14
- * Include: Student's Name
- * E-mail address
- * Phone #
- * Grade level
- * Project name
- * Brief project description



Students in grades 6-12 Consider entering the Coriell Science Fair next year

Watching Young Scientists Explore



For more than 30 years, Coriell Institute for Medical Research has hosted its annual Science Fair, showcasing the very best of South Jersey's science programs. Bright young students from Burlington, Camden, and Gloucester counties in grades 6 through 12 demonstrate their passion for science in exceptional projects that span the sciences, including biochemistry, botany, computer science, mathematics, medicine and health, physics, and zoology.

Awards include the Lewis L. Coriell Best of Fair Award for outstanding perseverance and cleverness, several community college scholarships, and more. Coriell Science Fair winners advance to the [Delaware Valley Regional Science Fair \(DVRSF\)](#). DVRSF

winners can advance to the highly-acclaimed [Intel International Science and Engineering Fair](#).

The 2014 Coriell Science Fair will take place on **Saturday, March 22** at Camden County College, Blackwood Campus, NJ ([click here](#) for directions).



Calling all student-scientists!

The 33rd Annual Coriell Science Fair on Saturday, March 22 is now just a few short months away.

Students interested in participating must register and submit their completed ISEF forms by Saturday, February 1. Late submissions will not be considered.

Resources and Project ideas

- * Websites with science fair project ideas for K-12
- * http://www.sciencebuddies.org/science-fair-projects/project_ideas.shtml
- * <http://www.all-science-fair-projects.com/>
- * <http://www.midnightscience.com/index.html>
- * Books at Moorestown Public Library
- * **Great Science Fair Projects**, by Phyllis Katz and Janet Franko. (Gr. 1-3) Using the scientific method, collecting data, creating a science fair display, instructions for performing experiments.
- * **Science for Every Kid series**, by Janice VanCleave. (Gr.4-8) Exciting ideas, projects and activities that explore earth science, chemistry, physics, astronomy.
- * **Teen Science Fair Sourcebook**, by Tanya Vickers. (Gr. 7-12) Tips for creating a successful science fair project.
- * During experimentation period e-mail a scientist your questions: saouaf@verizon.net

Thank you Scientific & Career Mentors

- Mrs. Iliadis, pharmacy - Grade K&1
- Mr. Trauger, biology- Grade 2 & 3
- Mr. Banyai, chemistry- Grade 4
- Dr. Aplin, cell biology- Grade 5
- Mrs. McIlwraith, pharmacy – Grade 6-8
- Mr. Bjorn DeBear, engineering
- Mr. Fonder, engineering
- Dr. Dawoud, emergency medicine
- Ms. D'Angelo, registered dietitian
- Dr. Saouaf, anesthesiology
- Dr. Deibler, psychology
- Dr. Behabahani, pharmaceuticals
- Dr. Salerno, pediatrics
- Dr. Haas, pediatrics
- Dr. Saouaf, immunology / research

Thank you

* Scientific mentors

Mr. Manickam

Dr. Swanik

Ms. D'Angelo

Dr. Deibler

Mr. Chakrabarti

Dr. A. Saouaf

Mr. Fonder

Mr. Trauger

Mr. Banyai

Dr. Modena

Dr. Desai

Mr. Blanchard

Chaperones

* Mrs. Michaud

* Mrs. Weller

* Mrs. Ladik

* Mrs. Wille

* Mrs. Farmer

* Dr. Hassall admin.

* Mr. Borton certificates

Important Dates

Register Science Fair Projects by March 1, 2014
Online starting February 17.

Science Fair : Tuesday, March 25, 2014
At the WAMS Gym, 6:30-8:00 PM



NEXT

- * Meetings with Mentors by grade level at your tables
- * Career Mentor meetings in back of cafeteria