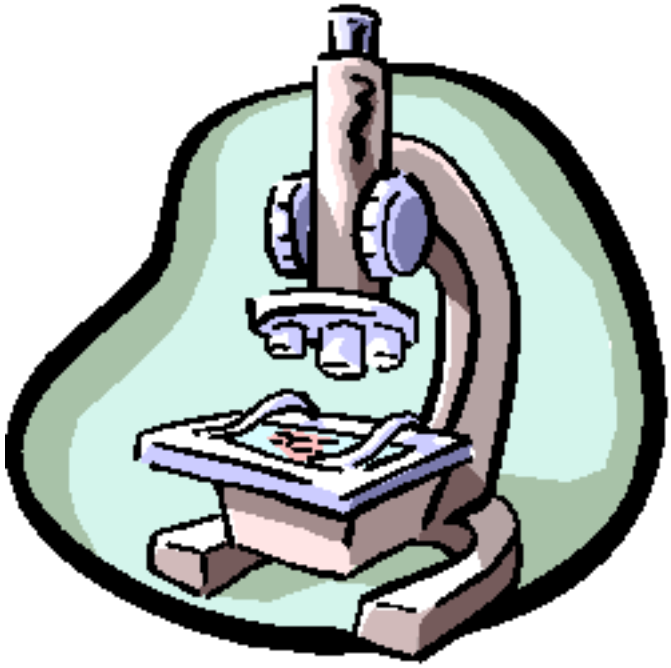
Walnut Heights 2014 Science Fair



Thursday January 23rd, Walnut Heights MUR
6:30 – 8:00 p.m.
All 4th and 5th Grade Students Will Exhibit
All Walnut Heights Families Are Invited

Walnut Heights Elementary School

Dear 4th and 5th Grade Parents:

The Walnut Heights Science Fair will be held Thursday January 23rd, 2014. If your child is in 4th or 5th grade, a project is mandatory. We are excited to help guide your student through the scientific method. The most important aspect of a great science fair project is your child's interest in the topic. The science lab and classroom teachers will encourage and support students, with an emphasis on learning the steps of the scientific method and the knowledge gained through experimentation.

Students can work on their own or with a partner. If working with a partner, work should be shared equally. Projects must be cleared with their Science Lab teacher, Ms. Sherman. Projects are to be done at home. This project does not need to be elaborate. Ideas will be presented in the classroom and both science teachers are available as helpful resources. Because the Science Fair is in January, projects must be worked on well prior to Winter Break, so students can ask Ms. Sherman for assistance if their original ideas for their projects are problematic.

An initial Project Proposal sheet and contract is due in November. A progress report is due in December, which will allow the student to identify any problems with the project, and receive help. The first Summary Sheet is due mid-January. The project should be finished at this point, and results and conclusions briefly included in the summary. These Summary Sheets will be returned with suggestions so they will become the basis of the trifold display board. A final, revised Summary Sheet is to be attached to the back of the student's trifold and handed in on the day of Science Fair. Students are required to be present at school that evening to explain their projects to parents, Guest Scientists, and fellow students. This is a great way to experience the many interesting areas of science.

Project should include the following:

1. Initial Proposal: Complete and sign the enclosed sheet and return it to Ms. Sherman ~~November 26th (5th grade) or 27th (4th grade)~~ December 3rd (5th grade) and 4th (4th grade).
2. Science Project Progress Report, complete and return it to Ms. Sherman on December 17th (5th grade) or December 18th (4th grade)
3. Summary sheet using the scientific method (2 summary sheets included, turn in the 1st on January 14th (5th Grade) or January 15th (4th Grade), and enclose the 2nd with your project).
4. Project displayed on a freestanding board displaying graphs, pictures, and data.
5. Optional hands on demonstration.

This project must be of interest to the student, to encourage his or her own creativity. Parental assistance is welcome, but please let your child create this. Have fun and explore the magical wonders of science.

Parent volunteers are needed to help coordinate this fun and educational event. If you are interested in helping out, please contact Elizabeth Murray at 788-3637.

Sincerely,
Allie Sherman and Dee Dayton
Walnut Heights Science Teachers

Welcome to the Science Fair 2014

The first step in getting started on your project is choosing a topic. You must first decide what you want to do your project about. You may work alone, or with a partner, but you must choose a topic that you're interested in. Make it something you like to do. Also, when you choose your topic, make sure it is simple enough for you and that you use the Scientific Method! Choose something you can understand and investigate using the tools available to you. There are many websites that offer science fair ideas. Just Google it. Here are a few of the many examples.

For example, if you like to investigate the garden:

1. What conditions make a marigold plant grow best?
2. Do soil and fertilizer affect radish plant growth?
3. What are the effects of artificial and natural sunlight on plants?
4. Does an earthworm react to light and darkness?
5. How does temperature affect cricket chirps?

Or if you are interested in chemistry:

6. Which yeast is the best for making bread rise?
7. Which kind of spray removes ink stains the best?
8. Do enzyme detergents clean better than normal ones?
9. How to make the brightest tie-dye
10. How water soluble are different types of sun screen?

Here are a few more:

11. Which battery lasts the longest?
12. How does the string on a musical instrument produce different sounds?
13. What materials transfer heat the fastest?
14. What design of paper airplane flies the farthest?
15. Which paper towel absorbs the fastest?
16. What sort of light bulb charges glow in the dark stars the longest?
17. How do ultra-violet rays affect yeast colony growth?
18. How accurate is the temperature knob on the oven?
19. How does color affect heating by absorption of light?
20. Does electricity flow better through thick wires or thin ones?

In your Science Lab, there will be discussion of this event and resources made available to you. If there is a problem selecting a topic, see Ms. Sherman! This should prove to be a fun project! Remember, keep it simple and follow the Scientific Method!

Science Fair Committee

Walnut Heights
Science Fair 2014
Science Project Initial Proposal – due December 3rd (5th grade) and 4th (4th grade)

Review the enclosed Scientific Method page first!
Please complete and sign this Initial Proposal to Ms. Sherman in the Science Lab by December 3rd (5th Grade) and December 4th (4th Grade) on your science day.

Student: _____ Room # _____

Please fill out as much of this form as you can, but if you are having trouble deciding on a project, we can work together on developing your project.

Problem or question:

Hypothesis (I think _____ will / will not happen):

Materials (what you will use):

Method or Procedure (what you will do):

Parents and students please read and complete.

☐ I am aware that _____ has been assigned a mandatory science project, which is due Thursday, January 23rd, 2014.

☐ My child and I have read and reviewed the enclosed Scientific Method page.

☐ My child will work alone.

-OR-

☐ My child will work on a group project (no more than three students) with_____

_____

_____

Parent signature_____

Student signature_____

Walnut Heights
Science Fair 2014
Science Project Progress Report – due December 17th and 18th

Review the enclosed Scientific Method page first!
Please complete and sign this Progress Report to Ms. Sherman in the Science Lab by December 17th (5th Grade) and December 18th (4th Grade) on your science day.

Student: _____ Room # _____

Please fill out as much of this form as you can, identifying any areas where you are having trouble.

Problem or question:

Have you altered your question? If so, why?

Hypothesis (I think _____ will / will not happen):

Materials (what you will use):

Have you changed your materials? Is so, why?

Method or Procedure (what you will do):

Have you changed your procedure? If so, why?

Are there any other problems you would like help with?

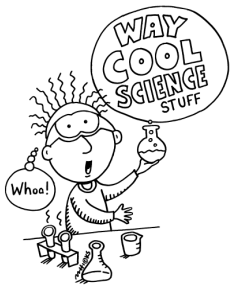
THE SCIENTIFIC METHOD

1. SELECT A QUESTION you can answer by conducting an experiment. Use the library for ideas and information. You will find commonly done experiments, but you may also get some ideas about new topics and how to set up your own experiment. Your question should be asked in such a way that it cannot be answered with a simple yes or no. For example, "How does salt affect the freezing point of water?' is a better question than "Does salt affect the freezing point of water?"

2. FORM A HYPOTHESIS. This is a prediction about what will happen as a result of your experiment Forming a hypothesis will help you design your procedure, and the experiment will prove or disprove your hypothesis.

3. PERFORM THE PROCEDURE. Plan the details of your experiment. Select the manipulated and responding variables. Decide what things you must keep the same- these are your controls.

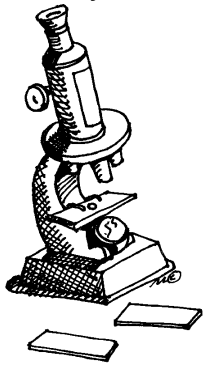
a. Determine what you will be measuring and what instrument you will use.
b. Select the materials to form the test equipment. Plan how the tests will be done:
    Which test will you do first?
    How many tests will you do?
    What will be recorded?
    How many times will each test be repeated?
c. Assemble the equipment to be used in the experiment.
d. Prepare data sheets for recording measurements and for your comments.
e. As you perform the tests, enter all measurements on your data sheets. It is important that you repeat each test several times.

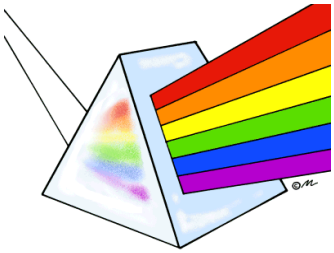


4. PREPARE AND EXPLAIN THE RESULTS. Group and organize the measurements you have made. Make charts, graphs, and tables to show what happened. It is a good idea to spend some time thinking about your results and talking to other people about them. Try to explain how and why the results came out as they did. What was the cause? Do the results agree with your hypothesis?

5. DRAW CONCLUSIONS. What can you say about your experiment in general? What can you count on happening again if someone else does a similar experiment? If possible, try to describe how your results might apply to everyday experiences.

Using these five steps of the SCIENTIFIC METHOD will make for an orderly experiment with reliable measurements and results. Follow this SCIENTIFIC METHOD, and, like any good detective, you can trust your findings.





What is An Experiment?

An experiment occurs when one variable (the independent variable) is changed. Another variable (the dependent variable) responds to the first and is watched. Other variables remain the same throughout the experiment. An experiment explores a question using the Scientific Method. Your question should involve something you are interested in: electricity, plants, insects, chemistry, or physics, for example.

Your Science Project does not have to be complicated or use expensive material. In fact, the best projects are simple. Keep it easy and just have fun.

Your parent should help as little as possible. Your work should be your own so that you really understand your project.

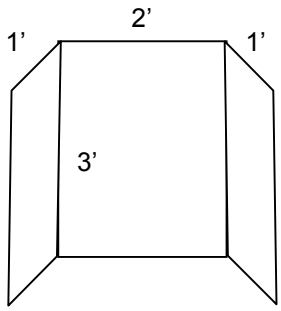
When you use the Scientific Method, it will help prepare you for future scientific studies. Remember that all projects require a display board. The project board should be bright and colorful and clearly show what you have learned. It should contain your name and room number.

Requirements For Display Board

1. The display space is limited to 3 feet wide by 3 feet tall by 2 ½ feet deep.

2. They must be free standing. No wall space is available.

(Most standard cardboard display boards at office supply stores are bifolds and measure 3 feet high by 4 feet wide with the folds at the one-foot and three-foot mark. These are inexpensive and easy to use. They are free standing and meet the display space requirement.)



Summary Sheet
Due January 14th (5th Grade) and January 15th (4th Grade)

Science Project

Name _____

To help you correctly follow the scientific method when you do a science experiment, you should organize your project as follows:

1. Question: (State your question) _____

2. Hypothesis: (What do you think will happen?) _____

3. Materials: (What materials will you need?) _____

4. Procedure - Experiments: (What experiments will you do? What are your methods?) _____

5. Results - Observations: (What are the results of your experiments? What are your observations?) _____

6. Conclusions: (What are your conclusions? Do your results support your hypothesis? Have you answered the problem? Did you find any difficulties that make it hard to reach any definite conclusions? Do your results and conclusions suggest other experiments that you might do in the future?)_____

Summary Sheet
Attach to the back of your display board

Science Project

Name _____

To help you correctly follow the scientific method when you d a science experiment, you should organize your project as follows:

1. Question: (State your question) _____

2. Hypothesis: (What do you think will happen?) _____

3. Materials: (What materials will you need?) _____

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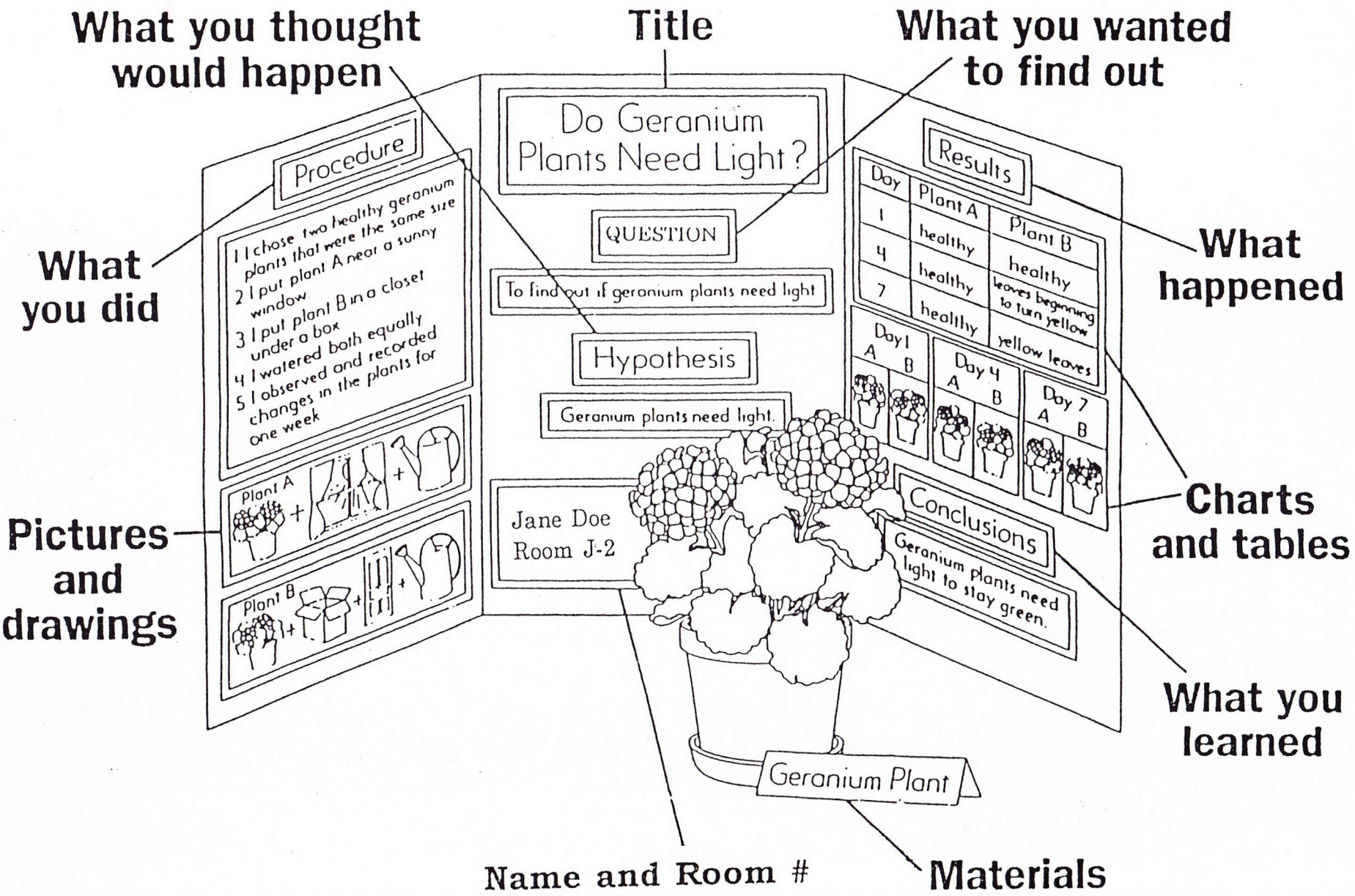
6. Conclusions: (What are your conclusions? Do your results support your hypothesis? Have you answered the problem? Did you find any difficulties that make it hard to reach any definite conclusions? Do your results and conclusions suggest other experiments that you might do in the future?)_____

Displaying a Science Fair Project



Headings to label your project board:

QUESTION

HYPOTHESIS

PROCEDURE

RESULTS

CONCLUSIONS