#_____ Name_____ Date_____

SCIENCE FAIR 2011

All fifth and sixth graders design and implement an experiment that follows the scientific method. The experiment may NOT include animals, bacteria, or plants. The experiment must have at least one variable, and it may NOT be only a demonstration. The experiment may be related to any of the branches of science (chemistry, physics, earth science, or technology). The Meigs date has set for the week of February 7, 2011.

The project will be divided as follows:
December - begin journal, select topic (question), write draft of procedure, and gather background research (from encyclopedia, library books, and internet), write research paper, set up notebook, hypothesis

January - perform experiment, write observations, results, and conclusion; revise and complete notebook; make display including the project materials and present to class

December/January Due Dates:
topic (written as a testable question) due Mon., Dec 6:

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*Parent signature after Mr. P has approved: _____

Monday, Dec. 6 : notebook (one-inch binder) with dividers labeled **Question**, **Research**, **Hypothesis**, **Procedure**, **Observations**, **Results**, **Conclusions**, and **Journal**. Notebook should include the Question (on notebook paper or typed) and journal entries for selecting topic and doing research (on notebook paper with dates).

Wednesday, Dec. 15: rough draft of research; research should be written in student's own words and should be no shorter than 4 paragraphs. Include sources (We will spend 2 class periods for research. Students may need to go to the public library.)

Tuesday, Jan. 4: rough draft of the procedure due, written as a numbered list of steps (Do not write in paragraph form.) Include variables, multiple trials, and, if appropriate, diagrams. (example page 335)

Friday, Jan. 7: rough draft of hypothesis due, written in one to two paragraphs giving reasons for prediction

Tuesday, Jan. 18: revised research paper due

(NOTE: The notebook will be returned so that in the next few weeks students will add the hypothesis, observations, results, and conclusions.)

Starting Your Project

Journal section of notebook
One of the first things you can do to get started is to set up a folder with a bunch of paper in it. This will be used as your journal notebook to track all your progress towards the completion of this project.

The first part of your journal will be your topic ideas. For now, jot down, in list format, ideas that you find interesting. The purpose here is to find out what you really like about science. After listing several things, spend some time thinking about questions that you have wondered about these topics. What have you always wondered? What have you wanted to test? What claim do you feel is not true and should be tested? Think about this for several days.

Once you have an idea or two in mind, you will start to read and do some basic research. See if this topic is really what you want. Read a short article about your first couple of ideas to help you decide which idea to select.

If you are sure about your topic choice then it is time to dig deeper into the research. What is known? What has been done already? What is possible? What if? This research is much different from the initial topic research. This is the time to read from multiple sources and learn all you can about your subject.

Take notes in your journal notebook. Keep track of all the sources you use. These notes will help you write a short paper about your topic later.

You will also use this notebook to track all of your progress on this project. There will be a dated, diary-like section where you will track the dates and times you work on the project and what exactly was accomplished each session. Your notebook is an extremely important part of your grade, so don't get behind in your entries.

Example: Journal Entries (handwritten on notebook paper)

12/01/10- looked through science books for topic, chose topic (30 min)
12/02/10- set up notebook (1 hour)
12/06/10- topic/question approved by Mr. P
12/06/10- went to Meigs library and researched batteries (1 hour)
12/07/10- went to Meigs library and researched batteries (1 hour)
12/09/10- went to public library and researched batteries (2 hours)
12/10/10- began outline and rough draft of research paper
12/13/10 - worked on research paper

January and February Due Dates:

In January we will finish test designs and implement an experiment that follows the scientific method. Students will turn in revised work, complete project, turn in their notebook containing the question, research, hypothesis, procedure, observations, results, and conclusion; turn in display including all project materials.

Parent Signature (noting reading the following): _____

Dates :

Tuesday, Jan. 4	Begin experiment. Work on revising hypothesis, procedure, and research paper.
Friday, Jan. 14	Revised procedure and hypothesis due
Tuesday, Jan. 18	Revised research paper due
Monday, Jan. 24	Observations, charts/graphs (if applicable), results, and conclusions due.

OBSERVATIONS: What did the student observe during the experiment; times, colors, measurements, etc., chart of observations, trials

RESULTS: Two to three sentences summarizing the observations; graphs summarizing data (means, modes if appropriate)

CONCLUSIONS: The student should write one to two paragraphs telling what he/she learned from the research and project, explanations of anything that went wrong or should have been changed, ideas about how to change the project based on questions that came up, and whether or not the data supported the hypothesis and why or why not. The student should tell about any patterns he/she noticed in the data (observations.)
Monday, Jan. 31 - completed, revised notebooks due

NOTEBOOK with dividers labeled Question, Research, Hypothesis, Procedure, Observations, Results, Conclusions; any necessary revisions to the research should be included (some students needed to rewrite in their own words; some did not have enough information.) Students should already have the question, hypothesis, and procedure corrected from December. Now they will add the final research paper, observations, results, and conclusions. **Notebook must contain drafts and final copies!! Journal should be filled out for every day on which they worked on their projects! No names should be on final copies!**
Monday, Feb. 7 - Display boards due.

DISPLAY BOARD (three sided) 36 inches, no headers above board
should contain the question, hypothesis, procedure, observations, results, and conclusions. Students need to decide what else to include on the display to attract the attention of those browsing through the projects (photos, observation charts, drawings, graphs; these will depend on the type of project the student is doing.)

Wednesday, Feb. 9 - **MEIGS SCIENCE FAIR!** Students may need to bring a card table for project set-up. Projects will go home Tuesday, Feb. 15.

Friday, Mar 4– METRO SCIENCE FAIR! (at Martin Luther King Magnet School) set up projects Friday 3-6 PM; public viewing and awards ceremony Saturday; take down projects Saturday.