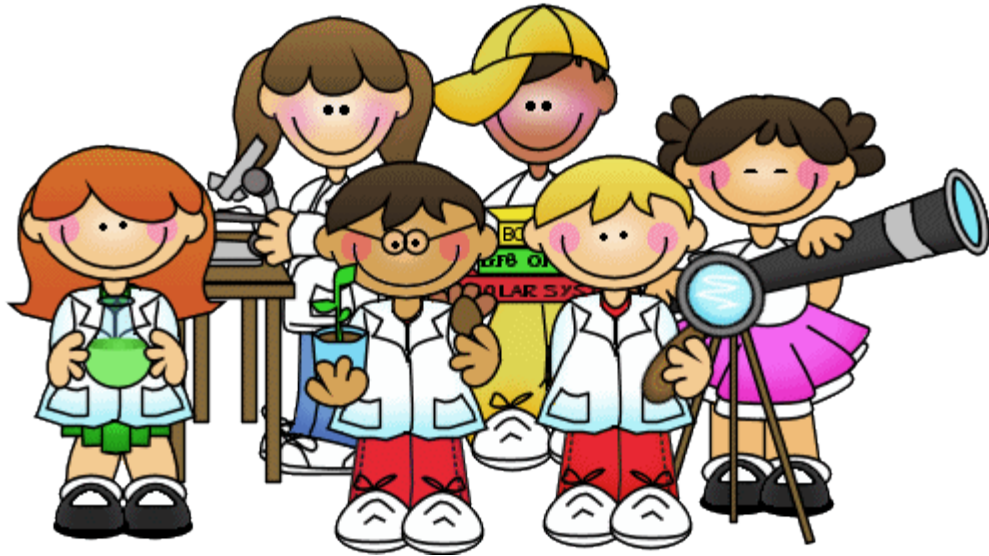


Masonic Heights Science Fair A Parent Packet



4th Grade Science Fair

2017

Dear Masonic Heights Parents and/or Guardians,

The Masonic Heights Science Fair will be held on **February 15th** in the World Cafe. The Science projects will be on display for parents to view at a given time (to be determined). The projects receiving awards will stay to be displayed for the following week. All other projects will go home at the end of the day.

During the next month and a half, your child is required to complete a science project that uses the scientific method to solve a problem, or answer a question. Science projects are primarily independent study assignments involving experimentation on a topic of individual interest. The educational benefits to the student who completes a project are numerous and include science inquiry, writing skills, communication skills, creative thinking and problem solving.

The instructions and handouts for the various steps involved in this project are included in this packet. I will also be placing a copy on my weebly. **All of the work will be completed at home under your supervision.** Also, included in this packet is a calendar of due dates. The teacher must approve of all parts of the project, including the question. The due dates help to keep the project moving over the course of time allowed. Hopefully, this close supervision will help your child to develop good time management skills and will ultimately result in a quality project.

Your child may need you to monitor his/her progress and provide encouragement. Your support is the key to a successful project, but please do not let your involvement to extend any further in order to insure the development of those educational benefits.

Please take time to read through this pamphlet and gain a better understanding of how the project is to be completed, as well as the time schedule. Also, sign and return the attached page. If you have any additional questions; please contact your student's teacher.

Thank you,

4th Grade Teacher

-----Cut and Return -----

My child and I have read the Science Fair Student Guide in its entirety. We know when each section is due along with the display board and final presentation which are to be completed and brought to school on February 15, 2017

Student Name

Parent/Guardian Signature

Scientific Method Explanation: Phase 1

Step 1: Question:

Children have many questions, as they are naturally born scientists! All scientists begin their investigations with a question or problem that needs an answer. All children have had or will have the opportunity to gain some interest in scientific topics through the science activities in the classrooms. It is best if your child chooses a topic that, he/she is truly interested in exploring. This will help your child stay interested and motivated throughout the length of the project. Helpful hints in writing a good scientific question: 1. It must be one that is answered with an experiment or observation, NOT research. 2. A simple yes or no should NOT be the answer to the question. It SHOULD include some type of measurement such as length of time, size, weight, temperature, and/or distance.

Due: Friday January 6th 2017 (*Questions that need to be fixed or changed will be sent home the same day for revision.*)

EXAMPLE: *How many drops of water will fit on a penny without pouring off the surface?*

Step 2: Facts:

After your child has decided upon a good scientific question and it has been approved, they will need to conduct research to gain information about their topic. This will enable them to make a prediction/hypothesis. Research may include knowledge of vocabulary, background information of materials or substances used in the experiment. Facts are statements that can be proven true or false. (Example: Water is a liquid with molecules that move freely. **They are not opinions!** The students will be required to write a minimum of 5 facts.

Due: Monday, January 9, 2017.

EXAMPLE: *Pennies have a ridge around the perimeter. Pennies are really not made of copper. Water is a compound which is made of hydrogen and oxygen.*

Water is a liquid that can be poured. Using an eye dropper the amount of liquid in one drop is approximately 1/10th of a ml. ETC...

Step 3: Hypothesis:

A hypothesis is a scientist's prediction to the outcome of a scientific investigation. It is based on what the scientist already knows and what he/she thinks will happen. What do you think the answer to your question will be? A hypothesis does not need

to be correct. It is just an informed guess! Never go back and change your hypothesis once your experiment is completed. The hypothesis **must** answer the question. A hypothesis is not considered right or wrong. It is a prediction.

Due: Friday, Tuesday, January 10, 2017.

EXAMPLE: *Based on the information I have an know about water and pennies, I believe 5 drops or 5/10 ml will stay on the top of the penny.*

Step 4: Materials List:

Every item that you use, including the equipment needed to complete the experiment, should be listed in the materials section. A common format is to list them in the order in which you use them.

Due: Wednesday January 11, 2017.

EXAMPLE: *ML dropper, water, penny, paper towel, pencil, paper to collect data. etc...*

Step 5: Experiment Procedure:

The procedure describes the experiment in a step-by-step sequence. It helps to think of the procedure as a recipe, in which every step is clearly explained. It is basically the directions explaining how the experiment will be conducted! Another scientist should be able to follow the procedure of the experiment and get the same or similar results.

Due: Thursday, January 12, 2017.

EXAMPLE: *1. Collect all the materials*
2. Fill a jar with tap water. (Enough to fill up the dropper several times.)
ETC...

Step 6: Perform the experiment and record data, take pictures etc...

The Final Phase:
All due on the day of Science Fair: February 15, 2017
(Will be displayed on tri-fold board.)

Step 7: Display collected data.

During the course of the experiment, your child will be collecting his/her information (**data**) that must be recorded. The data is a scientist's proof of what happened during the experiment. It is MOST important that the data be recorded in a very accurate manner, such as graphs, photos, etc. Make sure all pictures, if used are labeled with explanation. Data can be represented on the final project in more than one way. A visual display of all data collected during the experiment is due at the time of the Science Fair.

Step 8: Conclusion:

“What is the answer to my question?”, “Was my hypothesis correct?” and “What have I learned from this project?” are all part of the conclusion. Sometimes the answer is not found and the experiment might need to be repeated later, or by another scientist. If this is the case with your child's experiment, just record that information as a part of the conclusion! Remember to record whether the hypothesis was supported (correct) or not (incorrect).

EXAMPLE: *As you can see in the data table, the average number of drops of water that were able to stay on the top of the penny, after 10 trials was XXXXX. With this in mind my hypothesis of 5 drops or 5/10 ml was incorrect or correct.*

Step 9: Develop a new question:

All experiments leave scientists with more questions! After concluding the experiment record, at least one new question the scientist has because of what was learned during the project. New questions should reflect something about the **experiment**.

EXAMPLE: *Does the number of droplets change if the coin is on heads?
Is there a difference between the number of droplets if the water is warm or cold?*

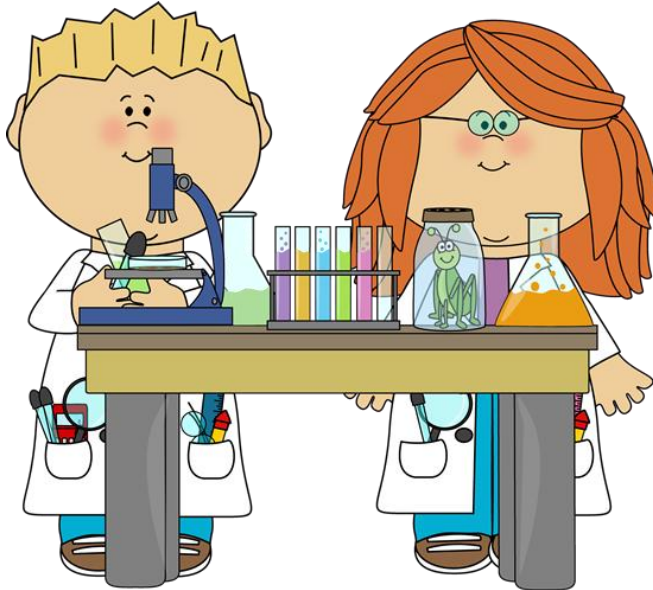
Step 10: Create a title for the project. Give the project a **creative name!**

EXAMPLE: *Drip Drop!*

Step 11: Design, Write and put together tri-fold display. (*See information on Display board pages in this packet.*)

On the day of the Science Fair all projects will be set up on tables located in the science room. Any real objects used to conduct the experiment may be set on the table next to the tri-fold during the science fair and be safe to bring to school.

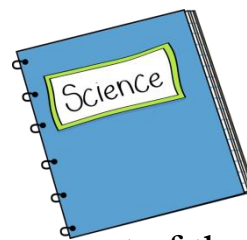
Students will present their projects to other students, adults and judges traveling through the science room. The judges will be looking for the following criteria during the oral presentation.



Science Fair Grading (200 points)

Process: 100 points

Students will earn points as they complete each component of the process and turn it in on time. (question, facts, hypothesis, materials and procedure) **Points will be deducted for late or incomplete work.** Points will NOT be deducted for incorrect work as the teacher may need to help the scientist fix something within the process. Also the data, conclusion, new question, student name and title will be given points. See the attached rubric for each process' point value.



Presentation: 100 points total

Students will be graded on how well they have presented their project physically and orally. The breakdown is as follows:

Tri-fold: (10 points)

All projects must be displayed in a tri-folded form. This will allow it to be free standing. The simpler the layout, the better: Clearly mark the different sections. Use color, pictures, etc. to make it attractive.

Additional materials may be displayed on the table in front of the tri-fold. See the samples in the classroom. (Samples will be shown in class.)

(Mounting text and pictures on construction paper is highly recommended as it will add to the appearance of the project.) Construction paper is available at school if the scientist asks.

Scientific Method Labeled: (15 points)

The displayed project must have all parts of the scientific method labeled.

This includes title, question, facts, hypothesis, materials, procedure, data, conclusion and new question. Points will be deducted for missing labels.

Information Display: (25 points)

Under each labeled part of the scientific method, information must be printed legibly (age appropriate), and in complete sentences. Data should be displayed in recorded form, as a graph if possible, and/or photos and drawings. (All Writing, drawing, gluing etc.... should demonstrate quality work.)

** (Typing of the final project is highly recommended. (Parental assistance is acceptable.) If your child does not have access to a printer, the documents may be emailed to me and I will get them printed. If your child needs the use of a computer, they will have limited access during class but may stay in for recess to type what is needed.

Oral Presentation: (20 points)

Scientists will be required to present their project and explain these parts:

1. State the title of the project.
2. Tell the question they wanted to explore.
3. State their hypothesis. What did they expect to happen?
4. Describe what they did for the experiment.
5. Tell what happened. (the results)

6. State the answer, if found.
7. What was the new question?

** Be prepared! Practice your presentation as many times as possible. Use index cards to write down the main points. However you should not be “reading” from the cards. If you practice your presentation enough times, you should know what to say without even looking at your cards.

** Point to your board when explaining graphs or pictures but DO NOT read from board.

**In case you are asked, make sure you can clearly explain how your results were measured and understand all parts of your experiment and results.

Presentation Dress: 10 points

The student needs to be appropriately dressed for a presentation (clothes are neat looking, no shorts with graphics).

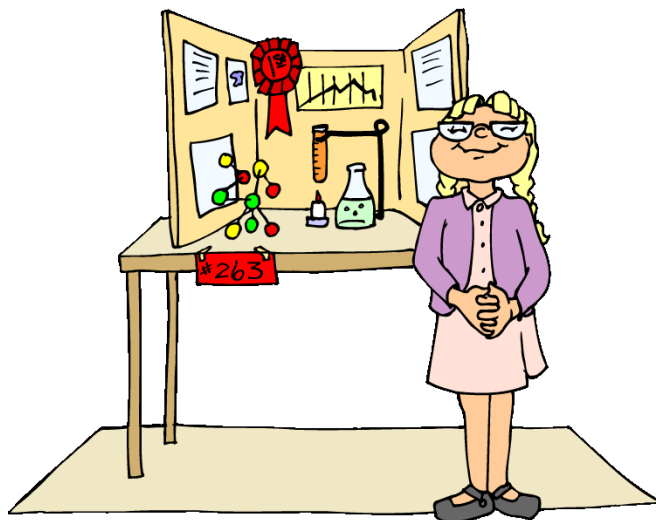
Presentation Etiquette: 10 points

The student also needs to stay with his/her experiment during the science fair ready to answer questions of the visitors and judges. Points will be deducted if the student does not stay with his/her project during the science fair.

Science Fair tri-folds and materials may be taken home at the end of the day of the science fair or will be sent home the following day. We hope you will be able to stop by and view the scientific endeavors of the Masonic Heights Scientists!

9 Tips for a Great Science Fair Display

1. Keep the display simple. Include only the required parts.
2. Let the labels attract the viewer.
3. Be accurate...NO misspelled words.
4. Use color to clarify data (graphs, drawings, photos).
5. Include photos and /or drawings to show what was done during the experiment.
6. Make sure the display will fit in the area that will be assigned. Each student will be allowed the width of the tri-fold and then room in front of the tri-fold to display any concrete materials.
7. Inform the teacher at the beginning of the project if an electrical outlet is needed for the display or for any other special arrangements that might be needed.
8. Use safe, durable materials. Make sure that all materials brought into school meet the schools safety requirements. Check with the teacher if unsure.
9. Neat and visually attractive.



Name: _____



Scientific Process (Points & Due Dates)

Component	Due date	Points	Earned
Question	1-6-2017	10pts.	
Facts	1-9-2017	5pts.	
Hypothesis	1-10-2017	10pts.	
Materials	1-11-2017	5pts.	
Procedure	1-12-2017	10pts.	
Data	2-15-1017	15pts.	
Conclusion	2-15-2017	15pts.	
New Question	2-15-2017	15pts.	
Name	2-15-2017	5pts.	
Title	2-15-2017	10pts.	
Total points		100pts.	

Science Fair Question

Due Date 1-6-17



Name: _____

Parent/Guardian Signature: _____

On time? Yes/No

Points: /10

Remember to select a question from a topic you are interested in studying. The question use be one that can be answered with an experiment. A simple yes or no should NOT be the answer. It must or should include some time of measurement. Refer to main packet for more information.

State your question:

Teacher Suggestions:

Revisions if necessary:

Science Fair Facts

Due Date 1-9-17



Name: _____

Parent/Guardian Signature: _____

On time? Yes/No

Points: /5

Facts are pieces of information that you already know or have found through research. They are statements that can be proven. They are NOT opinions. Minimum of 4 facts are required. (Refer to main packet for more information.)

State the facts:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

*** If more space is needed for facts, attach a separate sheet of paper.*

Teacher Suggestions:

Revisions if necessary:

Science Fair Hypothesis

Due Date 1-10-17



Name: _____

Parent/Guardian Signature: _____

On time? Yes/No

Points: /10

A hypothesis is a scientist's prediction to the outcome of a scientific investigation. It is based on research or information the scientist already knows. Is it what the scientist THINKS will happen. A hypothesis is not considered right or wrong and if the outcome is already known then there is not reason to perform the experiment. Refer to main packet for more information.

State your hypothesis for the experiment:

Teacher Suggestions:

Revisions if necessary:

Science Fair Materials

Due Date 1-11-17



Name: _____

Parent/Guardian Signature: _____

On time? Yes/No

Points: /5

Materials are all of those things that will be needed to perform the experiment and create the display. (Refer to main packet for more information.)

Materials for the experiment:

- | | |
|-----------|-----------|
| 1. _____ | 11. _____ |
| 2. _____ | 12. _____ |
| 3. _____ | 13. _____ |
| 4. _____ | 14. _____ |
| 5. _____ | 15. _____ |
| 6. _____ | 16. _____ |
| 7. _____ | 17. _____ |
| 8. _____ | 18. _____ |
| 9. _____ | 19. _____ |
| 10. _____ | 20. _____ |

**** If more space is needed for facts, attach a separate sheet of paper.**

Teacher Suggestions:

Revisions if necessary:

Teacher Suggestions:

Revisions if necessary:
