

# Lafayette Meadows Elementary

## 2017 Science Fair

### Information Packet & Registration Forms

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## MARK YOUR CALENDAR:

### IMPORTANT DATES TO REMEMBER:

- **January 16<sup>th</sup>:** **Send in notice to participate by this date.**
  - Helps with determining number of judges needed. Your project doesn't need to be completed by this date.
- **Wednesday, January 27<sup>th</sup>:** **Registration Form Due** (*projects don't need to be completed yet*)
- **Tuesday, Feb. 6<sup>th</sup> & 7<sup>th</sup>:** Drop off projects anytime from 8:15am - 4:15pm (LME Stage)
- **Wednesday, February 8<sup>th</sup>**
  - **Science Fair Day.**
  - Drop off projects from 8:15am - 8:45am
  - **LABEL YOUR BOARD** w/student name, class name, and phone number on back.
  - Science Fair judging begins at 9:15am
  - 2:55pm: Award Ceremony
  - **5:00 - 6:30pm: OPEN HOUSE for ALL PARENTS**
  - Winning projects to be displayed at school through end of the day Thurs., Feb. 12<sup>th</sup>
- **Monday, February 13<sup>th</sup> & 14<sup>th</sup>:** **Pick up your projects any time from 8:15-4:00pm.**
  - Projects may not be taken home on the bus.
  - **Projects not claimed by end of the day Tuesday, Feb. 14<sup>th</sup> are subject to disposal**
- **Saturday, March 18<sup>th</sup>:** Regional Science Fair (for 4<sup>th</sup> & 5<sup>th</sup> graders who qualify at LME)
- **Sunday, March 19<sup>th</sup>:** Science Central Science Fair
  - Check-In (12:30am-1:00 p.m.), Event Time (1:00 p.m.-3:00 p.m.)

**\*All projects this year must be accompanied by a student journal to record observations and data throughout the experiment.**

Dear Parents,

By reading this packet, you have taken your first step towards completing a successful Science Fair project! Students, please be sure to share this information with your parents.

Science Fairs are exhibitions of scientific work, including work in math and engineering, developed and displayed by students. The science fair gives students the opportunity to use their creativity and initiative to present their ideas through discussion using student-crafted experiments and exhibits as support. The Lafayette Meadows Science Fair further provides the opportunity for students to qualify to exhibit their project at the Regional Science Fair at Indiana University-Purdue University, Fort Wayne.

Parents can assist their children by reading through this packet, clarifying instructions, guiding, and providing the means to gather all of the necessary resources needed to complete the project.

Students should select a project within their interest, capabilities, and available time. It is important that the student feel ownership of the work. Further, it is important that the project follow the scientific method.

**Students may complete group projects. Please complete only one registration form with both student names on it neatly written.**

**Mr. Dan  
Science Fair Coordinator**

# Scientific Method

The most effective science fair projects follow the scientific method.

1. Ask a **question** or find a problem to solve.
2. Make a **hypothesis**. Write down what you think the answer might be.
3. **Research** - Find out what other people have written about your topic.
4. **Experiment** - Test your hypothesis several times. (3 or more times)
5. **Compile data** – Use a note book to write down what happened during your experiment. Use charts or graphs to show what you discovered.
6. Form a **conclusion** - Answer your question (How does it compare to your hypothesis?).

## Sample questions:

What is the effect of \_\_\_\_\_ on \_\_\_\_\_?

|                   |                                 |
|-------------------|---------------------------------|
| temperature       | the feeding habits of goldfish  |
| household powders | the cohesion of molecules       |
| age               | the germination of radish seeds |
| household liquids | the indicator of acids/bases    |
| water             | absorbency of paper towels      |

How do/does \_\_\_\_\_ affect \_\_\_\_\_?

|                        |                                |
|------------------------|--------------------------------|
| temperature            | crystal growth                 |
| the color of an object | the absorption of solar energy |
| the weight of a bob    | the period of a pendulum       |

To what extent do/does \_\_\_\_\_ affect \_\_\_\_\_?

|                         |                             |
|-------------------------|-----------------------------|
| the number of batteries | an electromagnet's strength |
| light                   | the formation of mold       |
| exercise                | the heartbeat rate          |

# Possible Topics

(More questions)

Here are some questions which may help you get started. These are only suggestions. Libraries have many books on possible projects. The LME Library has a limited supply of books, too. Remember that a good science fair project will take an area of interest and turn it into a question which is answered through experimentation. **Parents must approve the project, provide adequate supervision, and have children work safely.**

## Life Science

To what extent does the duration of light affect plant growth?  
How does the color of light affect the growth of plants?  
What is the effect of temperature on the germination of bean seeds?  
How does magnetism affect the height of bean seeds?  
What is the effect of fertilizer on corn seeds?  
How does acid rain affect leaf development?  
How does different colored light affect the activity of mealworms?  
What is the effect of gravity on the roots of plants?

## Earth Science

What is the effect of freezing temperatures on rocks?  
What is the effect of wind on different mixtures of soil?  
What is the effect of temperature on evaporation of water?  
How does slope affect stream velocity?  
What is the effect of time of day on a shadow?  
To what extent does humidity affect evaporation?  
To what extent do different soil types retain water?

## Physical Science

To what extent do different insulation materials affect heat loss/gain?  
How do solids affect the transmission of sound?  
How do colored filters affect perceptions of the color of objects  
How does the wattage affect the eradication of heat from a light bulb?  
To what extent does the length of string affect the period of a pendulum?  
How does temperature affect the bounce of a ball?

## Links for Ideas:

<http://www.education.com/science-fair/> (search by grade level)

<http://www.sciencebuddies.org> (take a survey to help determine area of interest and by grade level)

<http://www.sciencekids.co.nz/projects.html>

<http://www.all-science-fair-projects.com> (searchable site)

<http://school.discoveryeducation.com/sciencefaircentral/> (from Discovery Channel)

<http://chemistry.about.com/od/sciencefairprojectideas/a/5thgradeproject.htm> (5th Grade ideas)

# Judging of Science Fair Projects

The purpose of science fair judging is intended to provide encouragement for all students to continue learning through science. Secondly, it is intended to provide each child with additional language development opportunities. Finally, it is intended to select **two** outstanding entries for the Regional Science Fair in grades 4 and 5 and two additional outstanding entries for the Science Central Science Fair in grades K-3.

Each science fair project will be judged by at least one of our outside volunteer judges. **Lafayette Meadows staff will not be a part of the judging process.** Each child will meet with a judge or pair of judges for about 5 to 10 minutes. Our judges will be using a rubric to judge each project. One aspect judges look for is how well a student understands their project without reading directly off of their science fair display board. Students will receive their completed evaluations after the science fair through their teacher or the night of the open house.

On the reverse side of this sheet you will find the rules for the Regional Science Fair. There is also a link on the LME homepage that will take you to the Regional Science Fair website. To be considered for the Regional Science Fair, the project **must** meet the requirements laid out in these rules. While the judging staff has the task of selecting two projects to advance on to the regional event, Mr. Dan reserves the right to disqualify any project from regional consideration if it does not meet the guidelines for the Regional Science Fair. No live animals will be allowed to be kept at LME (use photos instead). However, LME will allow for plant and food matter to be a part of your exhibit. Please note, no organic matter what so ever is allowed at the regional science fair. Therefore, it is very important to photograph the steps of your experiment in case your project does advance to regionals.

# Science Fair Guidelines, Hints, and Suggestions

1. **Select your project carefully.** Choose a project that you can easily accomplish in the time that you have available. A simple, well-done project is better than one that becomes so complicated that you don't want to finish it.
2. **Exhibits may not contain live vertebrate animals.** Respect for the well-being of animals must be followed. Any project which uses live vertebrate animals, including humans, must follow strict regulations and require Protocol Forms imposed by the International Science and Engineering Fair. Due to these strict regulations, you may want to avoid live animal experiments.
3. **Keep a notebook.** Write down exactly what you do for each experiment and all of the results of the experiment. It is easy to forget information that is not recorded at the time of the experiment. Include mistakes and problems that you encounter in your notebook. This information is an important part of the process. You may use only the pages you need out of a notebook, or create your own "notebook."
4. **Parents may assist their children with** ideas, obtaining and reading through research materials, obtaining the necessary supplies, organizing materials, assuring safety standards are met, proof reading the display, and explaining how to prepare a good visual display board. It is important that the student feel ownership of the work! Your child should have the experience of completing the project, the knowledge of how it was done, and **be clear about what was learned.**
5. **A display board** may be purchased the office for a small fee while supplies last. The display board should be neat, colorful, eye-catching student work. Printing or computer lettering may be used. Boards must be free standing, fit within the display requirements and be easy to move around. Planning, research, experimenting, and compiling data come before creating the display board.
6. **Proper attention to safety is expected of all participants.** Anything which could be hazardous to others is prohibited in the display. No liquids, dangerous chemicals or pressurized gases may be brought into the school. Parents are expected to ensure safety at home. Electric power can be provided at the science fair if a request is made in advance. There is space on the entry form to indicate this need. All electric switches, cords, and devices must be UL approved insulated type. **Extension cords must be provided by the exhibitor.**
7. **All projects will be judged according to the science fair standards and should attempt to follow the scientific method.** The projects will be judged on creative ability, scientific thought, thoroughness, skill, and clarity. Judges will provide students with feedback about their project. Every participant will receive a ribbon and a certificate of participation. Further, the students will be recognized for their hard work and initiative during a special program and awards presentation on the day of the Science Fair. It would be very helpful for the students to practice being interviewed by a judge. Students need to practice making eye contact, speaking slowly, explaining their project, and answering questions about their project.
8. **Do not delay getting started.** Among the most difficult challenges of doing a project are deciding what area to investigate and formulating a question. Once you have decided on a topic, you should immediately begin to gather materials and information. Be determined to follow through on the project. The process will be much easier if you follow the planned time table proposed in this packet. Your science fair project should be a fun and exciting experience. Try not to let poor planning ruin your fun.
9. **Most of all - have fun creating and learning!**

# Lafayette Meadows Science Fair Rubric 2015/2016

**Form Due Jan. 27th**

**Print Neatly.**

First and Last Name of Student: \_\_\_\_\_ Teacher: \_\_\_\_\_ Grade Level: \_\_\_\_\_

Experiment Title:

\_\_\_\_\_

Does your project require water? \_\_\_\_\_ Does your project require an electrical outlet? \_\_\_\_\_

What is the goal of the experiment (what is being tested):

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

-----

*Do Not Write Below this Line*

Judges Initials: \_\_\_\_\_ Overall Score: \_\_\_\_\_/28

## Elementary Division

| CRITERIA  | Beginning Level (1)  | Fair (2)   | Good (3)  | Excellent (4)   |
|---|--|--|---|---|
| <b><u>Creativity of Design:</u></b> <ul style="list-style-type: none"> <li>Originality of all elements: the question(s), approach and use of equipment</li> </ul>                     | Project is not innovative and is very conventional in all elements; needs improvement in originality | Project is somewhat innovative and unconventional in some project elements                             | Project is mostly innovative and unconventional in most project elements.                                   | Project is very innovative and unconventional in almost all project elements        |
| <b><u>Creativity of Interpretation:</u></b> <ul style="list-style-type: none"> <li>Originality of data analysis</li> </ul>  | None of the data analysis is innovative or original  | Some of the data analysis is innovative and original   | Most of the data analysis is innovative and original  | Almost all data analysis is innovative and very original                            |
| <b><u>Scientific Method:</u></b> <ul style="list-style-type: none"> <li>Clarity of question(s)</li> <li>Clarity of hypothesis</li> <li>Clarity of procedures</li> </ul>               | The question(s), hypothesis, and procedure are not explicitly stated and are unclear                 | Some of the elements (question(s), hypothesis, and procedure) are explicitly stated and somewhat clear | Most, but not all, of the elements (question(s), hypothesis, and procedure) are explicitly stated and clear | The question(s), hypothesis, and procedure are all explicitly stated and very clear |
| <b><u>Interpretation of Data:</u></b> <ul style="list-style-type: none"> <li>Conclusions based on collected data</li> <li>Correlation of data to answering the question(s)</li> </ul> | Conclusions are not explicitly stated; a better connection between data and question(s) is needed    | Some of the conclusions are explicitly stated; somewhat connected to the question(s)                   | Most of the conclusions are explicitly stated and connected to the question(s)                              | All conclusions are explicitly stated and connected to answering the question(s)    |

**REGISTRATOIN FORM PAGE 1: Due Jan 27th**

## Elementary Division

| CRITERIA  | Beginning Level (1)  | Fair (2)  | Good (3)  | Excellent (4)   |
|---|--|---|---|---|
| <p><b><u>Completeness:</u></b></p> <ul style="list-style-type: none"> <li>• Question(s) answered</li> <li>• Thorough description</li> <li>• Results from related research</li> </ul>            | <p>Limitations of answer not addressed; no clear description or connection to research data</p>                              | <p>Question not fully answered; somewhat thorough description but very limited documentation</p>                            | <p>Answer is restricted to some conditions; mostly supported and connected to some collected data.</p>                    | <p>Answer covers a range of conditions that are thoroughly described, supported and connected to the collected data</p> |
| <p><b><u>Display and Oral Presentation:</u></b></p> <ul style="list-style-type: none"> <li>• Clear and concise oral interview</li> <li>• Effective visual display of project details</li> </ul> | <p>Presentation confusing or unclear<br/>Graphics ineffective in support of conclusions</p>                                  | <p>Presentation marginally clear when prompted; graphics are very general and lack details</p>                              | <p>Presentation mostly clear; student mostly answers judge questions but could improve; graphics are somewhat limited</p> | <p>Presentation very clear; student effectively answers judge questions; graphics are detailed and comprehensive</p>    |
| <p><b><u>Independence:</u></b></p> <ul style="list-style-type: none"> <li>• Balance between student's use of own skills and reliance on adult participation.</li> </ul>                         | <p>Student appears to totally rely on adult input for all aspects of project; does not fully understand project concepts</p> | <p>Student appears to rely on adult's input in conceiving ideas, answering questions; is uncertain on projects concepts</p> | <p>Student appears to rely on adult mostly to refine question and answer; student understands most project concepts</p>   | <p>Student appears to have conceived and completed project independently and fully understands projects concepts</p>    |

**Judges' Feedback:**

# Notice to Participate Form

Due: January 16th

This form assists in determining the number of judges needed for this year's science fair.

**Yes**, I wish to participate in this year's science fair!

**Print Neatly**

Student Name: \_\_\_\_\_

Grade \_\_\_\_\_ Teacher: \_\_\_\_\_