

Dear SMLS Parents and Students:

January 22nd, 2010

This year's Science Fair will be held on Friday night, March 12th from 6:30 - 8:00 p.m. **IN THE GYM**. Students are invited to set up their display on the Thursday night before the fair (March 11th) between 7:00 - 8:00 p.m. or Friday morning between 8:00 - 8:30 a.m. Judging will take place Friday **DURING THE DAY**. Students are expected to be stationed at their display on Friday night as visitors will be interacting with them. Prizes will be awarded around 7:45 p.m.

This letter explains the steps needed for your child to complete this project. Remember, a science fair project involves tests (or experiments) to find an answer to a question, not just an opportunity to show what you know about something. Topics will be finalized by this Friday, January 22nd. Students should begin working on their project as soon as possible.

If your child is in grades Kind., 2, 4, 6, 8, they will be doing a group project as a class and their classroom teacher will be working with the students.

If your child is in grades 1, 3, 5, or 7, he/she will need to prepare a tri-fold display board for the Science Fair. You may purchase a readymade board (available at Michaels, Meijer, Office Max) or you may make your own out of a cardboard box, foam core or poster board. Your display board should be eye-catching, well-organized and clearly defined. Please make it colorful and interesting to look at. Fifth and Seventh grade students will prepare a power point presentation which will take the place of their display board. This will be an extension of the technology coursework being introduced by Mrs. Sidwell at school. **All** students must also keep a notebook to document their work. In the notebook they should keep track of all key things done to complete the project, as well as note observations made during the experiment and their results.

Here are the steps or sections of a successful science fair project:

1. **Title/Research Question**: This is the question each student will answer by conducting experiments. This should be prominently shown right at the top of each student's display board. **Please note that if necessary, students can talk to Mrs. Lockwood about changing the wording on the science fair topic they receive to make it more "researchable" (or doable)**

and/or to pick a different topic. It is important to make sure your topic is one in which you can do something multiple times, collecting the data and averaging the information and/or looking for simple patterns.

2. **Background Internet/Library Work:** Students should spend some time trying to find out information about their topic. Look on the Internet and/or find some books at the library. Luckily, current "junior scientists" can learn much about a given topic from information found on the Internet. They might even find some sample science projects to help them figure out how to approach their topic. But most importantly, students need to do some reading on their topic to help understand it better. Students should also share some of what they learned from this background information on their display board.
3. **Hypothesis:** This is a statement that will explain what students THINK will happen as a result of completing some internet/library reading. It is often referred to as an "educated guess." The hypothesis needs to be written clearly on the display board explaining "why" students thought something was going to happen.
4. **Experiments:** Students should "experiment" to figure out what will happen when they do something multiple times. Record all your steps and results (data) in your notebook. If your experiment cannot be duplicated on the night of the Science Fair in the form of a demonstration, have someone take pictures of you performing all of the steps of your experiment. These pictures should be shown on your display board.
5. **Results:** Students should explain exactly what happened as a result of their experiments. If you can graph your results, that would be great. This can be displayed on your board. Some projects lend themselves more effectively to graphing than others. If you cannot provide a graph, a few simple sentences on your display board explaining the results of your experiments will be fine.
6. **Conclusion:** This is a final statement that tells everyone what you have learned from your experiments. You should relate this back to your hypothesis and determine whether your "educated guess" was correct or not. It is not necessary to be correct in your hypothesis to have a good project. The conclusion should be prominently displayed on your board.

Students should practice explaining "what they did and how they did it" in conducting their project. Allow your child to practice telling you, grandma and grandpa, a neighbor, friends, babysitter, etc., all about what they have done. This will help students feel calm and prepared on Science Fair night. Many people will be asking your student questions that night as they tour the fair. Most importantly, the judges will be asking students specific questions about their projects, and students should feel completely confident and at ease with all of their information. The judges are very interested in what our students are doing and what they have learned.

Parents, please note that I will be discussing these steps at length with your child in the classroom. Students are free to ask me questions at any time from now until the night of the Science Fair. If you have questions or concerns, please feel free to contact me. We are all looking forward to seeing everyone's exciting work and results on March 12th.

Blessings,

Mrs. Lockwood

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****PARENTS:** I have attached a "hypothetical" project situation which will give you an idea of how to proceed with the steps given above.

Sample Hypothetical Science Fair Project

Do Not Copy as Your Own!!!

1. **Title/Research Question:** Which brand of disposable diaper will hold the most liquid?
2. **Background Internet Information:** (The display board information might look something like this): I went on the Internet to find information on three different types of diapers. They all said they could hold lots of liquid. They all talked about having many different layers of material to absorb stuff. Some also talked about these things called molecules, and how there are spaces between them to hold things. So the more layers and the more spaces within those layers seems to be important.
3. **Hypothesis:** I think Pampers' brand diapers will hold the most liquid. I based this educated guess on the stuff I read, whereby Pampers are the most expensive, and therefore must be the biggest and have more layers.
4. **Experiments.** (The display board information might look something like this): I went to the grocery store with my Mom and purchased these three kinds of diapers: Luvs, Huggies, Pampers. I made sure that each type was for the same sized child. At home, I took one of each kind of diaper out of the package. Holding each of the diapers over the sink, one at a time, I poured $\frac{1}{4}$ cup of colored water into the "seat" of the diaper. None of the water leaked through. Then I poured another $\frac{1}{4}$ cup of colored water into each sample (now I have poured a total of $\frac{1}{2}$ cup of water into each diaper sample) and water leaked through the Luvs brand diaper. The other two brands were still holding all of the moisture. Next I poured another $\frac{1}{4}$ cup of colored water into the seat of each brand of diaper. Water leaked through the Luvs brand diaper and the Huggies brand diaper. The Pampers brand diaper still was not leaking. Next I poured another $\frac{1}{4}$ cup of colored water into the seat of each of the diapers brands. Water is leaking through the Luvs brand diaper and the Huggies brand diaper but the Pampers diaper is still not showing any signs of leakage. **I repeated this experiment four (or more) additional times, with a fresh diaper of each brand, and recorded what happened each time.**
5. **Results.** (In this example, results could be shown on a graph, showing how much water each brand of diaper hold for each of the five experiments. The graph should also show some average for the five different times)
6. **Conclusion.** As a result of experimenting five different times, I have determined that Pampers brand diapers hold the most liquid. My experiments showed that my hypothesis to be correct. I guess being the most expensive in this case was indeed the best, in that it most have had the most room in its layers to absorb the water.