**
SAM HUGHES SCIENCE FAIR 2020**

**GETTING STARTED**

Have you ever wondered what it must have felt like to be Albert Einstein’s mother? Or to be the dad that took young Galileo out star-gazing one night? You are that parent right now. Your son or daughter is on the brink of a new discovery: finding out just what they are capable of in the world of science.

The parents of recent science fair winners were recently interviewed and asked their advice about competing in the science fair. Here’s what they said:

*“Don’t be afraid to help them. Even the most famous of scientists need support somewhere.”*

*“Watch what your child is interested in. Help them wonder about it and dream about what might be different if they changed one thing. Let children study what fascinates them. If your child lays on the ground watching ants or something in nature, let them study that. If your child likes to spend time in the kitchen as a young chef, let them create a project there. Spend lots of time at this stage and the rest will be easy later on. Doing a project that bores your child will be deadly for both of you!”*

*“Don’t use the ideas from Science Fair Project books or ideas that you did back when you were in school. Try to avoid encouraging the testing out of products like laundry detergent, paper towels, soap and the like. They have all been done a hundred times and the judges have seen it all already.”*

*“Make sure the project tests out an idea. The project should not be something that they just build or “do”. The days of building a model of the solar system or exploding volcanoes are over.”*

*“Allow plenty of time. Start as soon as possible. The best way to do this is to plan out a section to complete each week.”*

*“The project board should be colorful and neat. Parents can help by taking the photos. Use lots of pictures and photos of the steps being completed. Just don’t focus on your child’s face when taking a photo. Get the back of their head so the project stays anonymous for judging.”*

*“Think of yourself as the assistant to the scientist. You can do the shopping for supplies like glue sticks and film and materials, but it is your child that should make the list and go with you.”*

*“When you start referring to the project as yours and saying “We did…” instead of “He did…” it is time to take a step back. The project belongs to your child, not you. Give advice, then step back and allow your child time to decide if they want to take it or not”*

*“When it stops being fun, it is time to stop. This should be positive experience even WITH the challenges. When the attention span seems to wane, then that is a good clue it is time to stop.”*

*“There will be times when your child wants to give up, but that is when parents can do their best teaching about overcoming the adversity. Take a break and then go take a fresh look together.”*

*“Winning isn’t everything. Just dong a project together is its greatest reward. Keep in mind it is all about the learning.”*

One of the Nobel Prize winners recently admitted that although he often entered his local science fair, he never won. But because he entered every year, he learned to love science and testing out his own ideas. Maybe that is the best advice for parents.

Let your child test his or her own ideas. Who knows whose parent you may turn out to be!

**SCIENCE FAIR: THE BASICS**

What are the basics to include on a Science Fair project and display board? Here is a one-page “how to” guide that summarizes everything!

 1. Title: Make this REALLY big! Make it clever and creative! Titles are usually in the form of a short question. This is probably the most important thing so make it catchy!

2. Abstract: This is a summary of the whole project (in 250 words or less). It includes the goal or why it is important, the methods, the results, and most importantly the conclusions. You may want to include a sentence at the end about what you would like to do to continue this project in the future.

3. “Statement of the Problem” or “Question” or “Hypothesis”: Either is OK. A short sentence or brief paragraph is good. How did you think of this project? What made you wonder about this? Convince us that you really wanted to know about it. Regarding a Hypothesis, keep it nice and simple. What are you trying to disprove or prove? You can have a few sub-hypotheses (littler questions that came up) if you want! Warning: Do not get this out of an idea book, they are all old ideas now and many others are looking at them too. Also, do not use animals, gross stuff or ask other students to do potentially harmful things (like strenuous exercising, icky taste testing, etc.) unless you get the official permission forms filled out (See SRC under rules).

4. Background or Introduction: This should be a short paragraph or two regarding what was learned about the subject of your project from your literature search. The literatures search (Library and internet) should be done first when starting a project.

5. Materials: List everything you needed to do this project (be specific) and put a few words about why you needed them, i.e. “A Watch: We needed this because we needed to time how long…etc.”

6. Definitions: Optional - but especially at Gr. 3-5, it is nice. How did YOU define the terms you used? What means one thing to you might mean something different to someone else.

7. Procedure: Number each step you did. You want to be painfully descriptive and detailed here. But make each step be short so they are quickly and easily read…no long paragraphs here, split them up into two instead.

8. Results: This is where your charts and graphs go. NO explanations are given here. Your raw data can either be included on this part of the board if it isn’t very much OR more often found in your notebook/binder and set in front of the display.

9. Conclusions: This is where you interpret and draw conclusions about your data, charts and graphs. May sentences will start with: “Based on my results, I can conclude that…” or “Based on my data…” Judges love that!

10. Considerations or Limitations: Optional. You can use this section to state why results might be limited to this study only and not generalized. Limitations are variables that you might not have been able to control or could not change – every research project has limitations! This is also where you can put in the extra stuff that made your project interesting, or things that made you think further, or wonder more. Ideas for future projects can go here, too!

11. Hints: Put your name on a 3x5 card or slip of paper and clip to the back. NO STUDENT OR TEACHER NAMES can go on the front of the board. Also be careful that any photos that you take should not focus on kids’ faces. Take them so that the photo shows what they are doing, not who is doing it. If the pictures are of subjects other than the student researcher, parental permission must be obtained before it can be displayed at SARSEF.