Science Fair forms & Research Plan—Due Friday, September 11 (Lab Grade)

Go to https://student.societyforscience.org/forms (you can do a google search for International Science Fair Forms). You are responsible for reviewing all rules pertaining to your experiment. You can find a link to the rules on this page.

As you complete these forms, you should save them because you may make changes or make corrections later.

When you have completed all forms, paper clip them together and turn in. DO NOT STAPLE THESE PAPERS! If you have questions, please ask your teacher before this deadline! Be sure that you save all of this work.

Scroll down to 2016 Forms

Teacher information for forms:
Name: Meagan Bradshaw
Phone: 229-225-5050.
Email address: mbradshaw@tcjackets.net

School information:
Thomas County Central High School
4686 US Hwy 84 Bypass
Thomasville, GA 31792
(229) 225-5050

Form 1: Checklist for Adult Sponsor/ Safety Assessment Type your name and project title in the blanks. If you are working with a partner, type both names on the first line. Click in the box by #1, 2, & 3. If you are working with humans, vertebrates or microorganisms (mold/bacteria) check the appropriate box in #4. In #5, click the top four boxes. Only check boxes in #6 if any of those apply. Type in your teacher's information as given above. Date of review: 9/11/15. NOTE: This date must be before your experiment start date.	Form is missing. 0	Form is incomplete. 6	Form is complete. All that is needed is the teacher signature. 10
Form 1A: Student Checklist Complete all information for 1-6, 8 & 9 on page 1. Leave ACTUAL start date & ACTUAL end date blank, unless you know what they will be. Remember the start date must be after the approval date on the first form.	Form is missing. 0	Form is incomplete. 6	Form is complete. 10
Form 1B: Approval Form Read the two statements under Student Acknowledgment. Type in your name and your parent's name. Type in dates. These dates MUST be before you begin experimentation. Sections 2 & 3 should be left blank. Sign this page and have a parent sign it before you turn it in. **If you are working with a partner, you each need to complete this form.**	Form is missing. 0	Form does not include signatures. 6	Form is complete including signatures. 10
Other forms If you are working with humans, bacteria or anything potentially dangerous, you have additional forms to complete. If you are unsure, talk to your teacher before the due date.	No forms were turned in. 0	Forms are not complete. 6	All required forms are complete. 10
Research Plan Type this in Word. Be sure to save your document, as you may need to revise it, and you will include parts of it in your final paper. This will become your Post Project Summary after you complete your experiment. The Research Plan is a succinct detailing of the rationale, research question(s), methodology, and risk assessment of your research project and should be completed before experimentation. For all projects requiring preapproval, this document must be reviewed and approved by the appropriate approval committee (e.g. IRB, IACUC, SRC) before experimentation.			
A. What is the RATIONALE for your project? Include a brief synopsis of the background that supports your research problem and explain why this research is important scientifically and if applicable, explain any societal impact of your research.	Rationale is poorly worded. 1	Rationale is stated, but its importance is unclear. 3	Rationale clearly indicates importance of project. 5
B. State your HYPOTHESIS(ES), RESEARCH QUESTION(S), [for science projects] OR ENGINEERING GOAL(S), EXPECTED OUTCOMES [for engineering projects]. How is this based on the rationale described above?	These are very unclear and unrelated. 2	There is not a clear link to rationale. 6	Hypothesis and questions (or goals and outcomes) are clear and related to rationale. 10

C. Describe the following in detail: • Procedures: Detail all procedures and experimental design including methods for data collection. Describe only your project. Do not include work done by mentor or others. • Risk and Safety: Identify any potential risks and safety precautions needed. • Data Analysis: Describe the procedures you will use to analyze the data/results that answer research questions or hypotheses. • Discussion of Results and Conclusions: Discuss the data/results and the conclusions that can be drawn.	Procedure includes all steps and experimental design including methods for data collection. 0 1 6 10 Risk and Safety: All potential risks and safety precautions are identified. 0 1 3 5 Data Analysis: Procedures used to analyze the data/results that answer research questions or hypotheses are described. 0 1 3 5 The data/results and the conclusions that can be drawn are discussed. 0 1 3 5		
d. Bibliography: List at least five (5) major references (e.g. science journal articles, books, internet sites) from your literature review. If you plan to use vertebrate animals, one of these references must be an animal care reference.	Fewer than five sources are included. 2	5 sources are included, but not in proper format. 6	At least 5 sources are included, in proper MLA or APA format. 10
Other Information If you are working with humans, bacteria or anything potentially dangerous, you have additional forms to complete. See below for what you need to include. If you are unsure, talk to your teacher before the due date.	Additional information is needed, but not included. 0	Additional information is needed, but incomplete. 6	All required information is included. 10

Items 1–4 below are subject-specific guidelines for additional items to be included in your research plan/project summary as applicable.

1. Human participants research:
• Participants. Describe who will participate in your study (age range, gender, racial/ethnic composition). Identify any vulnerable populations (minors, pregnant women, prisoners, mentally disabled or economically disadvantaged).
• Recruitment. Where will you find your participants? How will they be invited to participate?
• Methods. What will participants be asked to do? Will you use any surveys, questionnaires or tests? What is the frequency and length of time involved for each subject?
• Risk Assessment ◊ Risks. What are the risks or potential discomforts (physical, psychological, time involved, social, legal, etc.) to participants? How will you minimize the risks? ◊ Benefits. List any benefits to society or each participant.
• Protection of Privacy. Will any identifiable information (e.g., names, telephone numbers, birth dates, email addresses) be collected? Will data be confidential or anonymous? If anonymous, describe how the data will be collected anonymously. If not anonymous, what procedures are in place for safeguarding confidentiality? Where will the data be stored? Who will have access to the data? What will you do with the data at the end of the study?
• Informed Consent Process. Describe how you will inform participants about the purpose of the study, what they will be asked to do, that their participation is voluntary and they have the right to stop at any time.

2. Vertebrate animal research:
• Briefly discuss potential ALTERNATIVES to vertebrate animal use and present a detailed justification for use of vertebrate animals
• Explain potential impact or contribution this research may have
• Detail all procedures to be used ◊ Include methods used to minimize potential discomfort, distress, pain and injury to the animals during the course of experimentation ◊ Detailed chemical concentrations and drug dosages • Detail animal numbers, species, strain, sex, age, source, etc. ◊ Include justification of the numbers planned for the research
• Describe housing and oversight of daily care
• Discuss disposition of the animals at the termination of the study

3. Potentially hazardous biological agents research: • Describe Biosafety Level Assessment process and resultant BSL determination • Give source of agent, source of specific cell line, etc. • Detail safety precautions • Discuss methods of disposal

4. Hazardous chemicals, activities & devices: • Describe Risk Assessment process and results • Detail chemical concentrations and drug dosages • Describe safety precautions and procedures to minimize risk. Discuss methods of disposal.

As you begin your experiment, remember to document your work with pictures!

Log Books

Below are suggestions for your log book. This will become part of your display that is due in November, but you should begin using now.

1. **Use a durable hard-bound notebook or black and white composition book**,
2. **Label your logbook** with your name, school & grade
3. **Make logbook entries in pen not in pencil.** This is a permanent record of all of your activities associated with your project.
4. **Number the pages in your logbook before using it**, unless already numbered for you.
5. **Always date every entry**, just like a journal. Entries should be brief and concise. Full sentences are not required.
6. **Don't worry about neatness**. It's a personal record of your work. Do not re-do your logbook because it looks sloppy. Think of the logbook as your "Dear Diary" for science fair. It's not just for recording data during the experimental phase of your project and it's not just for your teacher.
7. **It should be used during all phases of your project**, jotting down ideas or thoughts for a project, phone numbers, contacts or sources and prices of supplies, book references, diagrams, graphs, figures, charts, sketches, or calculations.
8. **Log entries should include your brainstorming, calculations**, library/internet searches, phone calls, interviews, meetings with mentors or advisors, notes from tours of laboratories, research facilities and other related activities. Remember that it's documentation of your work.
9. **Use it regularly and write down everything**, even if it seems insignificant, it could later be extremely useful. Make sure that you describe things completely, so that when you read your notes weeks or months later you will be able to accurately reconstruct your thoughts and your work.
10. **Glue, staple or tape any loose papers**, photocopies of important items. Loose papers or other unsecured items are prohibited as they tend to fall out and can end up missing.
11. **Organize your logbook**. Make a table of contents, index, and create tabs for different sections within your logbook. This helps keep you organized for different activities. For example, have a data collection section, a section with contacts, sources, etc. and a section of schedule deadlines.

    Suggested Sections for Table of Contents

    Daily Notes & Reflections
    Background Research
    Experimental Setup
    Data collection –**ALL DATA MUST BE RECORDED USING METRIC UNITS!!!!!!!!**
    Results (pictures, graphs, summary tables)
    Conclusion
    Reflections
12. **Include a reflections section in your logbook.** For example, what, if anything would I do differently next time? What part of the experiment could be changed to improve the experimental procedure?
13. **Always include any changes made to procedures**, mishaps, failures, or mistakes. As human beings, all of us make mistakes!
14. **Include any and all observations made during your experiment.** In other words, record ALL data directly in your logbook. If that is not possible, then staple photocopies of data in the logbook.

Remember, keeping up a great logbook throughout the entire duration of the science project really pays off later! Not only will a nicely maintained logbook impress your teacher and the judges at the fair, it will also help you stay out of trouble later when you need to look back and provide details of what you did.

As you begin your experiment, remember to document your work with pictures!