

Step-by-Step: The Science Fair Process

Unless noted otherwise, hand write this information into a spiral, binder, or composition book with dates for each entry.

Complete by:

1. Purpose, Problem Question, Research Plan & Hypothesis 10/30 ☐

- Problem Question: What question do you want to answer?
- Purpose: Must identify why this question needs to be answered.
- Hypothesis: ***If*** (Independent variable) ***is related to*** (dependent variable), ***then*** (what you think will happen), ***because*** (why you think it will happen).
- Research Plan (TYPED): How do you plan to answer your problem question? Includes: question being addressed, hypothesis, procedures you plan to follow (including safety), how you plan to analysis your data, and bibliography

2. TYPED Research Paper and Bibliography 11/4 ☐

- Research Paper: Research the science behind your topic. Include any background information to help someone understand your topic or a summary of previous research similar to your project.
- Bibliography: Must have a bibliography with 5 sources you used for your research listed.

3. Materials & Procedure 11/8 ☐

- Materials: Detailed list of materials and amounts used (in metric units if possible)
- Procedure: Detailed steps of the procedure are written by the student and can be easily replicated. Number and list every step necessary to complete your experiment.

4. Identify these variables 11/8 ☐

- **Independent (Test) Variable**-The variable that you changed
- **Dependent (Outcome) Variable**-The variable that you measure to see if your independent variable made a difference
- **Constants** (The parts of the experiment that stayed the same. Ex: amount of soil, water, sunlight, seeds etc.)
- **Control Group**- The group that was not manipulated to compare the other experimental groups to.

5. Safety Procedures 11/8 ☐

Written procedures to ensure that this experiment was conducted in a safe manner. ex: gloves, goggles, parental supervision

6. Experimentation 11/18 ☐

- **Complete your experiment recording all data in your science journal.**

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- **Science Journal:** a hand-written journal that you keep detailed notes in. Ex: dates, materials, procedures, measurements, observations, data, conclusions etc.

7. Data and Analysis of Results

11/27 ☐

- Data tables and graphs are in metric units
- Minimum of 5 trials
- Explain your data and justify your results

8. Conclusion

11/27 ☐

- Analyze your data and use it to draw conclusions
- Defend why your results supported or failed to support your hypothesis
- Relate your project to the real world
- Did you have any problems with experimentation? Sources of error

9. Abstract

12/01 ☐

This is a summary (250 words or less) of your project and must include:

- Purpose
- Procedures
- Data (no graphs)
- Conclusion

This should be typed and saved to copy/paste into an abstract form if your project is chosen to move on to the Pasco Regional Science and Engineering Fair in February.

Finished Product Should Include:

Due to teacher by 12/11

1. **Research Paper**
2. **Science Journal**
3. **Backboard:** See Backboard Layout Handout.

Should display at least these key components: Question, Plan, Hypothesis, Experimentation, Procedures, Data, Results, Conclusion, Abstract

It should be neat, organized, spelled correctly, and grammatically correct.

*All forms and rules can be accessed at:

<http://www.floridassef.net/>