Science & Engineering Fair PowerPoint Template

- The purpose of this template is to provide teachers and students with an additional option for presenting scientific research and aid in the development of the student presentation for school level fairs.
  - Note that a backboard is required for students participating in the District, State, or International Science Fair Competitions.
  - The template is designed in such a way that should the student choose to present their findings using a backboard, these slides could be printed for placement on the board.
  - Slide animations and and transitions should not be used as they cannot be replicated on a backboard.

Blue "Judged Criteria" Sections:

We have identified areas that are found on the judging rubric for certain components. These boxes should be deleted for the student's final product.

Creative Title for Your Project

First and Last Name

Teacher

Period

Abstract

- This is a summary (250 words or less) of your project and must include:
  - Purpose
  - Procedures
  - Data (no graphs)
  - Conclusion
- For boards, the Abstract must be on the ISEF form and located on the lower left hand corner of the board. It can be typed on line at the ISEF site. https://sseffflorida.com/rules/

Purpose/Research Question

(Write out the question that you are testing.)

To write a good Scientific Question:

1. Identify your independent variable (the one thing that you will change) and dependent variable (result of what you changed).
2. Use these in writing your question. For example: What affect does (independent variable) have on (dependent variable)? or How will (independent variable) affect (dependent variable)?

Judged Criteria:

1. Clear & focused purpose
2. Identified contribution to field of study
3. Testable using scientific methods

The Background Information

- List the important facts from your research.
- It should take you two slides to complete.
- Each slide should have 4-5 important facts from your research report.

The Background Information

- Continuation of background facts.

- Remember there should be 4-5 facts on this slide, too.

Hypothesis

Directions to writing a hypothesis: replace with yours.

- A Hypothesis is written like this: "If _____[this is done] _____, then _____[this]_____ will happen." (Fill in the blanks with the appropriate information from your own experiment.)

- Again if you identify your Independent and dependent variables writing a hypothesis is easier. "If ____(Independent variable)____, then ___(Dependent Variable)____."

The Materials

- Create a detailed list of all the materials you need for your experiment.
- You can use more than one slide if you need to.
- This slide has been divided up into two columns
- You may change the layout to suit your needs.
- **Remember to include quantities.**

The Variables

- Independent Variable (The experimental variable – the one factor that you change. <u>There is only one independent variable</u>.) :

- Dependent Variable (The factor that changes *because of the independent variable, the responding variable*.) :

- Controlled Variable (All factors that cannot change that could influence the dependent variable. If these changed it could spoil the results):

Judged Criteria:

1. Variables & controls defined, appropriate & complete

The Procedures

- This part of the PowerPoint may take more than one slide.
- Detailed procedures are extremely important.
- Be sure if you choose to add columns in your layout that it is easy to follow for the viewer.

Judged Criteria:

1. Well designed plan and data collection methods

Qualitative Data

- Change the layout to meet your needs. (You may want a table, chart, or columns.)
- You should have detailed observations in this section.
- Remember: qualitative observation use the senses and descriptor words (adjectives).

Judged Criteria:

1. Systematic data collection & analysis
2. Reproducibility of results
3. Sufficient data collected to support interpretation and conclusions

Quantitative Data

- Change the layout to meet your needs. (You may want a table, chart, or columns.)
- Remember: **quantitative observation are measurements and counts.**
- Titled Charts & Tables with units

Judged Criteria:

1. Systematic data collection & analysis
2. Reproducibility of results
3. Appropriate application of mathematical & statistical methods
4. Sufficient data collected to support interpretation and conclusions

Graphed Results

Create a graph to represent the data in your data table from the previous section

Make sure to include all necessary label and parts of a graph.

Include the **units of measurement** (volts, centimeters, grams, Celcius).

Judged Criteria:

1. Clarity of graphics & legends
2. Appropriate application of mathematical & statistical methods
3. Sufficient data collected to support interpretation and conclusions

Results (Analyze Data)

Calculate measures of central tendencies for the different trials of your experiment.

- Calculate the mean – average
- Calculate the mode - data that occurs most often

Show these here and state what these say about your results. Talk about the data here. What did you find and observe?

Judged Criteria:

1. Appropriate application of mathematical & statistical methods
2. Sufficient data collected to support interpretation and conclusions

Conclusion

- Describe what you discovered by conducting this experiment.
- Did your results support or refute (not support) your hypothesis?
- Use your data to explain why your hypothesis is supported or refuted (not supported).
- What changes would you make to your experiment or design?
- How can your results be applied in every day life?

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