

DIGITAL Project Material

Beginning this year, the Greater Capital Region Science and Engineering Fair will require digital uploads of presentation materials in addition to the storyboard used the day of the science fair. The digital uploads will be used by our judges in lieu of the morning walk through. Since Covid is still an issue, we are avoiding large crowds.

Presentation Materials to upload:

1. Official 21 category Abstract (250 words)

The abstract summarizes the information contained in the rest of this document. An abstract includes: (a) the research question or engineering problem, (b) procedures used, (c) data, (d) interpretation and (d) conclusions. It also may include any possible research applications. It should be limited to these essential elements.

2. Digital Project Presentation information using the template instructions for Science, Engineering or Math

3. Your picture, preferably in front of your poster. This will be used during the virtual awards ceremony which will take place the day after the science fair.

Instructions for Digital Presentation

Format Requirements

1. The Project Presentation must be a single PDF document limited to no more than 12 pages.
2. You must use a page size no larger than either American standard 8 X 11.
3. The PDF document must open with default magnification "Fit Page" so that **the entire page is visible at the same time**. Recognizing that almost all judges will view your Project Presentation on screens that are wider than they are tall, you should create all pages in Landscape mode.
4. The page background color must be white.
5. Text color must be predominantly black, but limited color for emphasis is acceptable.
6. All text should be readable easily when viewing the entire page at once. The smallest allowable font size of body text is 14 pt. *Exception:* You may use a smaller font size, down to 10 pt., for figure captions or photo credits.

Project Presentation Templates

Choose one of the following templates to create your presentation. Do not include information not specified in this template. If you are submitting a continuation project, include only information related to this year's research unless otherwise directed in the instructions below. You may include graphical elements as they would explain or illustrate your work and can be contained within the overall page limits.

Each of the seven (7) required sections in each template must start on its own page. Each section may use as many pages as you want, as long as all formatting instructions above (such as page count) are satisfied.

TEMPLATE I: Science Projects

TEMPLATE II: Engineering Projects

TEMPLATEIII: Mathematics/Computer Science Projects (*being developed*)

Project Presentation Template: Science Project

1. Project ID and Title

The following should be included:

- Project ID. This ID will be provided by the GCRSEF Registrars upon submission of all required forms.
- Project Title
- Finalist Name (s)

2. What is your research question?

- Explain what is known or has already been done in your research area. Include a brief review of relevant literature. If this is a continuation project, a brief summary of your prior research is appropriate here. Be sure to distinguish your previous work from this year's project.
- What were you trying to find out? Include a description of your purpose, your research question, and/or your hypothesis.

3. Explain your methodology and procedures for carrying out your project in detail.

- What did you do? What data did you collect and how did you collect that data? Discuss your control group and the variables you tested.
- DO NOT include a list of materials.

4. What were the result(s) of your project?

- Include tables and figures which illustrate your data.
- Include relevant statistical analysis of the data.

5. What is your interpretation of these results?

- What do these results mean? Compare your results with theories, published data, commonly held beliefs, and expected results.
- Discuss possible errors. Did any questions or problems arise that you were not expecting? How did the data vary between repeated observations of similar events? How were results affected by uncontrolled events?

6. What conclusions did you reach?

- What do these results mean in the context of the literature review and other work being done in your research area? How do the results address your research question? Do your results support your hypothesis?
- What application(s) do you see for your work?

7. References

- This section should not exceed one page. Limit your list to the most important references.
- List the references/documentation used which were not of your own creation (i.e., books, journal articles).

Project Presentation Template: Engineering Project

1. Project ID and Title

The following should be included:

- Project ID. This ID will be provided by the GCRSEF Registrars upon submission of all required forms.
- Project Title
- Finalist Name (s)

2. What is your engineering problem and goal?

- What problem were you trying to solve? Include a description of your engineering goal.
- Explain what is known or has already been done to solve this problem, including work on which you may build. You may include a brief review of relevant literature.
- If this is a continuation project, a brief summary of your prior work is appropriate here. Be sure to distinguish your previous work from this year's project.

3. Explain your methods and procedures for building your design.

- What did you do? How did you design and produce your prototype? If there is a physical prototype, you may want to include pictures or designs of the prototype.
- If you tested the prototype, what were your testing procedures? What data did you collect and how did you collect that data?
- DO NOT include a separate list of materials.

4. What were the result(s) of your project?

- How did your prototype meet your engineering goal?
- If you tested the prototype, provide a summary of testing data tables and figures that illustrate your results.
- Include relevant statistical analysis of the data.

5. What is your interpretation of these results?

- What do these results mean? You may compare your results with theories, published data, commonly held beliefs, and/or expected results.
- Did any questions or problems arise that you were not expecting? Were these problems caused by uncontrolled events? How did you address these?
- How is your prototype an improvement or advancement over what is currently available?

6. What conclusions did you reach?

- Did your project turn out as you expected?
- What application(s) do you see for your work?

7. References

- This section should not exceed one page. Limit your list to the most important references.
- List the references/documentation used which were not of your own creation (i.e., books, journal articles).

Project Presentation Template: Mathematics/Computer Science

1. Project ID and Title

The following should be included:

- Project ID. This ID will be provided by the GCRSEF Registrars upon submission of all required forms.
- Project Title
- Finalist Name (s)

2. INTRODUCTION - What is your research question?

- Explain what is known or has already been done in your research area. Include a brief review of relevant literature.
- Explain what is known or has already been done in your research area. Include a brief review of relevant literature.
- If this is a continuation project, a brief summary of your prior work is appropriate here. Be sure to distinguish your previous work from this year's project.

3. FRAMEWORK - Notation and framework.

- Introduce the concepts and notation needed to specify your research question, methods, and results precisely.
- Define relevant terms, and explain prior/background results. (Novel concepts developed as part of your project can be presented here or in Section 4, as appropriate.)

4. FINDINGS - Present your findings and supporting arguments.

- What did you discover and/or prove? Describe your result(s) in detail. If possible, provide both formal and intuitive/verbal explanations of each major finding.
- Describe your methods in general terms. Then:
 - Present rigorous proofs of the theory results – or, if the arguments are long, give sketches of the proofs that explain the main ideas.
 - For numerical/statistical results, include tables and figures that illustrate your data. Include relevant statistical analysis. Were any of your results statistically significant? How do you know this?

5. CONCLUSIONS - What is your assessment of your findings?

- How do the results address your research question? And how have you advanced our understanding relative to what was already known?
- Discuss possible limitations. Did any questions or problems arise that you were not expecting? What challenges do you foresee in extending your results further?
- What application(s), if any, do you see for your work?

6. REFERENCES

- This section should not exceed one page. Limit your list to the most important references.
- List the references/documentation used which were not of your own creation (i.e., books, journal articles).

- This should reflect material in #5 and # 6 of the Project Presentation

Optional Additional materials to upload

1. Project Video (2-minute maximum)

- a. This video summarizes the project for the public.

What to include in Your Video:

- 1. Introduce Yourself:** State your full name and your city/state/country. Rather than reciting your project title, consider explaining your project in a single sentence.
- 2. Explain Your Project:** Summarize your research into main points:

- a. What did you do?
- b. What did you find?
- c. What conclusions did you draw?

To note:

- You can use any props or visuals you may have that are within the Display & Safety guidelines.
- Do not include anyone in your video other than the student researchers of the project.

Best Practices for Filming:

These videos will not be edited. To ensure your video is the best representation of your work, please keep these best practices in mind while filming:

- Film yourself in a well-lit and non-distracting environment so the viewer's focus stays on you and your work.
- For best results, film your video horizontally (landscape).
- Keep the camera still and in place during filming.
- Speak clearly and loudly enough that the recording is able to pick up every word you say.
- Avoid long pauses.
- Listen to your video after recording to ensure your voice is clear and audible, and that the video has not picked up too much background noise.

2. Video Demonstration/Simulation/Animation (1-minute maximum)

If a project is best explained by showing a demonstration, simulation or animation, you may include a short video.