Virtual VSSEF 2021

Project Material Guidelines

The staff of the Virginia State Science and Engineering Fair have consulted with the Society for Science & the Public to establish the project materials that will be used during judging at the Virginia State Science and Engineering Fair (VSSEF) in 2021. These guidelines have been established to address a judging process that will occur remotely and through a digital medium. The International Rules & Guidelines remain as the guide of what is eligible and allowable; all materials are to be provided in English.

REQUIRED Items:

I. VSSEF Paperwork as submitted in the Fair Packet

a. This process remains similar to prior years and will be reviewed by the Scientific Review Committee (SRC) to confirm eligibility for competition.
b. Included for the judges will be:
    i. **Official Abstract** (250 words)
    ii. **Regulated Research Institutional Setting Form 1C** (if applicable)
    iii. **Continuation Form 7** (if applicable)

II. Project Presentation

a. The project presentation replaces the project poster used during in-person fairs. Appendix II provides complete instructions of the format requirements and recommendations.
b. There are three suggested templates based on project type:
    i. Science Projects,
    ii. Engineering Projects and
    iii. Mathematics/Computer Science Projects.
c. Project presentations will be required to be submitted by a set deadline and will then be locked for Display & Safety inspection prior to competition.

III. A Quad Chart

a. The quad chart summarizes the project in a single page for a quick overview by the judges.
b. Appendix III provides complete instructions with format requirements and recommendations as well as sample templates.

IV. Project Video/Demonstration/Simulation/Animation (5-minute maximum)

a. This video summarizes the project for the public.
b. If a project is best explained by showing a demonstration, simulation or animation, you may include a short video
c. While we hope that our judges watch all of the videos start to finish, please do not include any key information here not already provided above.

Additional OPTIONAL materials:

All judges will have access to these optional materials, just as they would at a finalists' booth, but there is no guarantee that the judges will review them.

1. ### Research Paper

   VSSEF does not require any project to include a research paper. However, many finalists have completed such a paper through the research process and would include it at their booth during an in-person fair. If you have prepared such a paper, you may upload it to share with judges, though judges are not required to review it.

2. ### Lab Notebook Image/Excerpt

   VSSEF does not require any project to submit a laboratory notebook. However, many finalists have this record of their research timeline and process and typically have it available at their booth. A student may upload a PDF of up to 4 pages of a lab notebook to provide evidence of its use, but it is strongly advised NOT to share the notebook in totality to protect your intellectual property.

Appendix I. Submission and Review Process

VSSEF Paperwork

All finalists must submit a fair packet that includes all of the ISEF paperwork required for their project. Minimally, all projects must have Checklist Forms 1, Student Checklist Form 1A, Project Plan/Summary and Approval Form 1B. The forms that are to be made available for the judges to review are the Official Abstract and if applicable, the Regulated Research Setting Form 1C and/or the Continuation Form 7.

- **Official Abstract** approved by SRC (250-word format)
  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.

- **Regulated Research Institutional Setting Form 1C** (if applicable)
  In 2020-2021, when many Regulated Research Institution laboratories and facilities are closed to student researchers, the ISEF SRC has suggested that a Form 1C be used when support from mentors and those in a laboratory setting has been provided, even when the student received this support remotely. This can also include situations in which a high school teacher is supporting laboratory activities on behalf of a remote student to help clarify the student's involvement in each step of the project.

- **Continuation Form 7** (if applicable)
  Any project that is a continuation of a previous year's work must document that additional research is new and different on Continuation Form 7. Note that projects that were conducted between January 2020 and March 2020 that competed at an ISEF-affiliate fair, may not be presented in 2021 without meeting the continuation criteria.

Display & Safety

Display & Safety inspections will include a review of all submitted materials and enforcement of the display guidelines as published in the International Rules and Guidelines. This includes providing appropriate credits for photographs, graphs and other visuals and in having any permissions of individuals depicted in any project materials (on the board, slides or in the video) available.

Calendar of Processes

The final timing of the VSSEF 2021 judging process is being developed with the intention that it will be between April 3 and April 10. All projects must be received by the VSSEF Fair Director no later than 11:59 on April 2. Additional deadlines for registration and release forms will be provided at your regional fair.

Project Presentation Template: **Science Project**

- **Project ID and Title**
  - The following should be included:
    - Project Title
    - Finalist Name (s)
    - School(s)
    - City, State

- **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.

- **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.

- **What were the result(s) of your project?**
  - Include tables and figures which illustrate your data.
  - Include relevant statistical analysis of the data.

- **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?

- **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?

- **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 Title
     - Finalist Name (s)
     - School(s)
     - City, State, Province, Country

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?

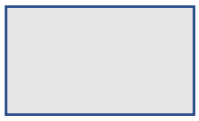
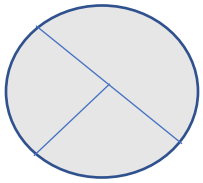
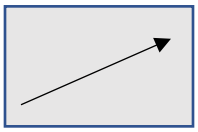
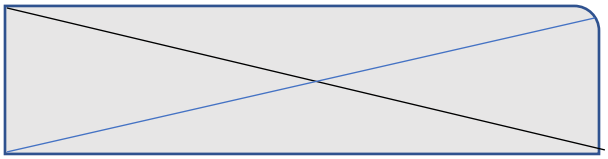
6. **What conclusions did you reach?**
   - Did your project turn out as you expected?
   - What application(s) do you see for your work?

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).

Appendix III. Quad Chart Instructions

A "quad chart" is a single page divided into four quadrants providing a high-level summary of the project. It is intended to be more visual than detailed in order to quickly introduce your judges to what is important about your project. Follow the model below that corresponds to the Project Presentation template you selected.

1. You must use a page size no larger than either American standard 8½"X11" or European standard A4.
2. The page background color must be white.
3. Text color must be predominantly black, but limited color for emphasis is acceptable.
4. The minimum allowable font size is 14 pt. *Exception*: You may use a smaller font size, down to 10 pt., for figure captions or photo credits.
5. All four quadrants of your Quad Chart should each be the same size with a single border line delimiting each, as in the examples below. The Title section should be only as tall as necessary to include your project title and other identifying information (see section on Quad Chart Title).
6. The Quad Chart should not include a bibliography, references, or acknowledgments.

Science Project Quad Chart	
Q1: Research Question • 	Q3: Data Analysis & Results  
Q2: Methodology •	Q4: Interpretation & Conclusions • 

Engineering Project Quad Chart	
Q1: Engineering Problem & Project Objectives	Q3: Data Analysis & Results
Q2: Project Design	Q4: Interpretation & Conclusions

Quad Chart Title:

- In the upper right-hand corner, list the Project ID
- Line one is the title of your project
- Line two is your name, school, city, state, country

Quadrant 1: Research Question/Engineering Goal

- This should reflect material in #2 of the Project Presentation Template.
- Please state the research question or engineering problem being addressed
- A leading core graphic or visual is encouraged, but not required.

Quadrant 2: Methodology/Project Design

- This should reflect material in #3 of the Project Presentation Template.
- Please provide a succinct, bulleted summary of the methodology/project design

Quadrant 3: Data Analysis & Results

- This should reflect material in #4 and 5 of the Project Presentation Template.
- It is advised that this quadrant should primarily be a graphic representation of relevant data and results.
- Text should be kept to a minimum.

Quadrant 4: Interpretation & Conclusions

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

Appendix IV. Project Video Instructions

Record a video (maximum duration 5 minutes) explaining your project. The target audience for this video is the judges, but remember, while judges will have access to this video, it may not be the focus of their project review.

What to include in your video:

1. Introduce Yourself: State your full name and your city/state. 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, visuals, or demos 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:

- Please speak in English.
- 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.