How to Create Award-Winning Displays

Displays will be Handmade for 2023
If conditions change, uploading a Digital Display may still be necessary, for judges to preview
Notifications will be made by Jan., 2023
Mandatory Sections (Sr)

- Abstract
- Introduction
- Materials & Methods
- Results
  - Data Tables
  - Graphs
  - Observations
- Discussion
- Conclusion (optional)
- Name/school on back

Displayed on table:
- Log Book/Journal
- Research Report w/References
- Acknowledgements (optional)
Mandatory Sections (Jr)

(Jr. Division has more latitude in section titles…)

- Abstract
- Problem & Hypothesis
- Introduction/Background
- Materials & Methods/Procedure)
- Results (Data)
  - Data Tables & Graphs
  - Observations
- Discussion
- Conclusion (optional)
- Acknowledgments (optional)
- Name & school on back

Displayed on table: Log Book/Journal Research Report w/ references
Hand-made Display Rules

• The exhibit – including the display board – must be able to be placed on the designated table space and all materials must fit within that space.

• Oversized exhibits will not be eligible to be judged for awards and may not be able to be displayed.

– Other materials and equipment may be shown during student interviews
Display Board Sizes

Width = 4 ft

Top of display to table-top = 6.5 ft

Depth = 2.5 ft

Top of display to floor = 9 ft
Have Your Log Book Present

- A "journal", detailing all activities: cross-out, don’t erase changes
- Include actual data collected, relevant materials
- Key elements will be uploaded for judging (exact details will be sent closer to the fair)

Log Books should be hand-written for 2023

Link to Log Book description/details
Include a Formal Report

- ALL reports should be typed
- Follow format and sequence (see “Writing Reports” PDF)
Log Books should follow proper format and sequence

Log Books should be **hand-written** for 2023
Display Regulations

- **Display fits** within the prescribed space
- Uses a **title descriptive of your study**
  - Subtitles may be used for clarification
- **NO** live animals or plants on display
- **NO** tissues or microorganisms on display
  *(use pictures or a model instead...)*
- **NO** photos which show procedures hurtful to animals.
Too Tall to Read

Too Small

CARTOON VIOLENCE
Floor Displays

• Must be safe and keep to height requirements (9 ft)
Display Size

• Stay within fair space requirements
  – Board size
  – Table size

You cannot spill over onto another student’s project area, even if they are “no shows.”
Construction

- Display should **stand alone**
- Pieces should **NEVER** fall off!
Common Materials

• Foam Core Board
• Colored Cardboard
• Plywood or particle board
Uncommon Materials

- PVC Piping
- Lattice Fencing
- Peg-board
- Plastic
Titling Size & Content

• **Main Title:** 3+ in
• **Subtitles:** 2+ in
• **Text:**
  – 14+ font
  – **Bold**
  – **Concise**
  – **Understandable**

**QUESTION**
How will atmospheres with carbon dioxide concentrations of 700ppm and 1400ppm affect *Mentha piperita*?

**HYPOTHESIS**
I think that due to the higher amount of carbon dioxide in the atmosphere, the plants will perform photosynthesis at a faster rate thus increasing their growth rates. This, in turn, will make them larger and more plentiful.
Formatting

• Make sure all sections are neatly & clearly displayed

• Be concise
Be Selective

• *Don’t put EVERYTHING* from your report on to the display
• The report is there to read…

Don’t overkill
Titling and Text

• TYPED & PROOFREAD!!
  – Spelling counts…
  – Neatness counts
Explanatory Title

• Make sure your title is not confusing

• If necessary, use a sub-title for a clear explanation
Titling Enhancement

• Use novel ways to make titles “pop”
Extra Foam Core Board & Computer Graphics

How fast is your baud?

Problem

Data & Result

Binary Search

14,400 Bauds
28,800 Bauds
38,000 Bauds
40,000 Bauds

Telephone

Computer

Modem

Online Service

Experiments

Download Time
Graphs and Figures

• **Keep Graphs**
  – Large — Properly labeled
  – Interesting — Readable

• **Keep data increments** comparable
Use Drawings to Explain Difficult Concepts

How viruses attack

Virus enters through receptor

Cell begins manufacturing new viruses

How the body fights back

T cells are produced

B cells are activated

B cells produce antibodies
Pick a Unifying Theme

- Fonts, background and/or graphics that go with the theme of your project
Picking a Font

• Don’t use extra fancy fonts

• You want judges to be able to read & focus on your information
Color

• Color use tied to the project

• Recommended:
  – No more than 3 colors

• Dominant
• Accent
• Background
Too MUCH Color!

• Your eye doesn’t know where to land
• No focal point
• Disturbing
Graphics

- Liven up a presentation
Background Graphics

- Make the display board represent a study site
Photos

• Can **visually** demonstrate procedures
• **Must** protect the identity of participants!
3-D Displays

• 3-D Displays are **encouraged**!

• If you can, display the **actual equipment** you used to test your hypothesis or invention.
3-D Displays

• Should be **student-designed**
• **Directly tied** to the project
• **Follow rules** on what may be displayed
When living organisms are the subject of the study, their **Scientific Name** should be displayed on the board at least once (within text); *italicized* or **underlined**.
NO Live Organisms

- NO living organisms (including plants) can be displayed: use a substitute
DON’TS

• Don’t include **living or dead bacteria, viruses or fungi** in your display
  – *Use photos or models instead*
Display “DON’T’S”

• **NO** LASERS…period

• **NO** un-insulated electrical devices *above 12 Volts*

• **NO** LIQUIDS (as part of the display)

• **NO** FOOD (as part of the display)
NO Hazardous Materials

- **NO** toxic materials
- **NO** drugs (of any kind)
- **NO** radioactive or hazardous materials
- **NO** caustic materials (acids, bases)
DON’T S

Don’t include highly expensive pieces unless you are willing to remove them immediately after the interview.
Mechanical Devices

Bolt down any devices that could injure someone if it fell or was mishandled.
Be Aware…!

We cannot be responsible for small, easily stolen items you leave at your own risk.

We cannot be responsible for easily broken items you leave at your own risk.

Photos/drawings are excellent options!!
If the LACSEF needs to go Virtual

- If conditions change, uploading a **Digital Display** may still be necessary, for judges to preview before Virtual Interviews.

- **Notifications will be made by January, 2023**

- Instructions follow
Criteria for Virtual Displays

- Create in Google Slides, PowerPoint or Keynote
- **For Virtual Fairs only**, to be uploaded during Student Registration
- Document Name for uploading must include **Student Name**
- **Maximum** slide limit - 15 slides
- “Pictures are better than words” - show clear photos of you working on your project
- **Photos** must be by student or parents; other graphics must have credits
- Explore the “**What NOT to do in PPT**” (Powerpoint) presentation before you create your presentation...

Virtual Display Template may be downloaded from Google Drive

What NOT to Do on a PowerPoint Project

These are REAL examples from previous Biome projects... Sound effects and animations are what NOT to do...
Digital Slides Formatting

- Use the **SLIDES with white backgrounds** in this template as your Virtual Science Project Display for Judging.
- **Follow the directions on each slide**: type over the directions when you are ready.
- **Don’t change the slide titles** (these will be the same for all students).
- **Title Fonts**: 35pt, *choice of style, color* (must be readable!)
- **Body Fonts**: Arial
- **Body Font size**: Minimum = 18pt
- **Slide Backgrounds** should not be busy – text *easy to read*
- **Slide animations and transitions** should not be used as they cannot be replicated on a backboard.

Remove Criteria and Formatting Slides 1 and 2 for your final presentation.
Save this ppt with a [your name]: keep the original for directions.
Science or Engineering Project
Replace text above with a Creative Title for your project

Sub-title (if necessary)
Replace “sub-title” text above with a title that really explains what your project is about

Insert cool photo of your project or use a creative background that pertains to your project

Your name
Your teacher’s name
Your school
Abstract

Write the abstract last, after all your results and analysis are finished.

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

- **Problem**
- **Procedures**
- **Data** and brief analysis (no graphs)
- **Conclusion** (State whether and WHY your hypothesis or proposed solution was or was not validated).
Problem

- This is the **Problem Statement**, *written as a question* - - *What is the problem to be solved?* You may add a graphic or photo to explain the problem.
  - According to the “Science and Engineering PRACTICES": In Science, we refer to a question to be solved and written in the form of a question that includes both the independent and dependent variables.
    - **Example:** *How does (independent) affect (dependent)??*
  
- **In Engineering**, it is usually stated AS A PROBLEM: **Examples:**
  - Problem: Controlling hillside erosion in our city; or
  - Problem: Removing flood water from orange tree orchard; or
  - Problem: Removing litter from Alameda Bay sea floor.
Introduction (Background Research)

• Brief summary of the background research needed to understand your problem.

• **For engineering**, include the *criteria/constraints* necessary to solve your problem. Example: size, reusability, safety; time, money, materials that must or may not be used.

• Include [citations](#) when referencing other scientists’ work.

• **Optional**: an explanatory graphic, species photo, map of field research location, etc.
Hypothesis

- For **Science Projects**, based on the research you have done, you will be writing an answer – your best educated guess – to your question.

  **One way** to write a hypothesis:
  "If [this is done, then [this] will happen." (Fill in the blanks with the appropriate information from your own project.)

  **Another way** to write a hypothesis:
  "I think ______________ because _______________

- For **Engineering, Computer or Math projects**; draw and label the **solution/prototype model** to the problem that you are testing. Briefly explain **WHY** you chose this solution to test.
Materials

• Type a **bulleted list** of the items you needed to complete your project.

• **Be specific** about the amounts used.
Procedure

• **List and number** all of the steps used in completing your project, including any retesting you did.

• **Draw and label** a drawing/photo of any prototype or set-up that you used to test your solution.

• **Optional:** **Add photos** (with captions) to show the steps of your procedures.

• Up to 2 slides **if absolutely necessary**
OPTIONAL: 2nd slide if absolutely necessary
Results

• Include any data you collected while testing your hypothesis or prototype.

• If your testing procedures had repeated trials, make a data table AND/or graph(s) to show your results.

• Add your written qualitative observations (color, smell, behavior, etc.) as well.

• For Engineering Projects, if you changed your solution/prototype after testing your original solution, then:
  o include any new data from the re-testing
  o also include labeled drawings of your REVISED solution/prototype and WHY you made those changes

• Up to 2 slides if absolutely necessary
Results (Contin.)

- **OPTIONAL:** 2nd slide if absolutely necessary
Discussion

- **Summarize** and **ANALYZE** your data including trends, **errors** and variables that could have influenced the results.

- **Develop arguments** for and against your hypothesis or solution/final prototype, using **statistics** (average, % error, a variety of statistical tests.)

- Relate your findings to **other studies** and cite those studies.

(Up to 2 slides if absolutely necessary – OK to add graphics)
Discussion (Contin.)

- **OPTIONAL:** 2nd slide *if absolutely necessary*
Conclusion

- Type a **brief summary** here of what you discovered based on the results of your testing. You need to indicate whether or not the data supports your hypothesis or proposed solution and the reason for your conclusion. *(no more than 250 words)*
Reflection/Application

Things you might want to reflect on:

• What did you learn from doing this project?
• What you might have done differently?
• What would be your next steps for researching this problem?
• How can your results be applied in everyday life?
• How could your results be applied to other studies?
• Teams: what were the benefits/challenges of working as a team to find a solution?
References Cited

• Be sure to include both print and electronic sources and put them in alphabetical order.

• Use APA Citation formatting

• Make sure your references match any citations in your Introduction or Discussion.
  
  o Jr Projects = Minimum 3 references
  
  o Sr Projects = Minimum 5 references
• No matter **how** fancy & eye-catching the display…

★ *It can’t take the place of **solid**, well-documented and analyzed research!*

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**Remember...**