



GENIUS Research Paper Template

General:

- All science projects **must submit** a Research Paper
- **Page Limit:** 20 pages (includes all pages and sections).
- **Main Text Font Type:** Calibri, Arial, or Helvetica
- **Main Text Font Size:** 10 or 11 (Larger font size can be used for section headings and Reference section can be 9)
- **Line spacing:** Single or 1.15 spacing
- **Margins:** Minimum 0.8 inch or 2 cm.
- **Every figure, graph, image, or diagram must include a caption that identifies** how it was created and what tool or source was used.
- **All required sections must be included**
- Make sure to use following sections with suggested headings in your research paper.

1. TITLE PAGE (required)

- Provide each as separate line and centered:
 - Project Title (in Bold and 14 Font Size)
 - Student (s) Name
 - School Name(s)
 - City, State, Country

2. ABSTRACT (required)

- Limited to 250 words
- It is a concise summary of the entire research project.
- Should focus on completed results and the work done by students.
- Should contain these information:
 - 1 broad sentence about your topic.
 - 2 or 3 sentences summarizing your introduction.
 - 1 or 2 sentences describing your purpose of the study.
 - 3 or 4 sentences describing the major methodology used.
 - 3 or 4 sentences describing the most important results.
 - 3 or 4 sentences summarizing your major conclusions or significant findings

3. INTRODUCTION (required)

- The Introduction establishes the context and importance of the research.
- Students should explain:
 - The problem being investigated
 - Why the problem is important
 - Relevant background information
 - Previous research related to the topic
 - What is currently known about the subject
 - What problem, limitation, or knowledge gap the project attempts to address.

4. Goal/Research Question (required)

- This section should clearly identify what the student intended to investigate, develop, test, compare, or determine.
- This section should short and concise and should be limited to few sentences
- It can be structured with bullet points
- Depending on the type of project, students may include:
 - Research question, objective, or hypothesis, or
 - Engineering or design goal

5. METHODS and RESULTS (required)

- This section explains **what was done and what was discovered**.
- Students may present Methods and Results as one combined section or divide them into separate **Methods** and **Results** sections when appropriate.
- Students should clearly distinguish procedures developed or performed by the student from established methods obtained from another source.
- If external datasets, laboratory equipment, software, specialized facilities, mentor assistance, or previously collected information were used, they should be identified.
- The Results portion should objectively present what was discovered during the research. Students should include, when appropriate:
 - Experimental design and results
 - Materials and equipment
 - Variable, controls, and measurements
 - Results summarized as Graphs, Tables, Figures
 - Images (include actual pictures of experiment setups)
 - Testing procedures
 - Data sources
 - Number of trials or repetitions
 - Methods used to analyze the results
- **Required** - Graphs and figures should be used when they make the results easier to understand, but they should supplement rather than replace explanation in the text.
- **Required** - Every graph, figure, diagram, or image must state how it was created and identify the software, AI tool, equipment, or external source used.

6. CONCLUSIONS (required)

- Students should discuss:
 - The major findings of the project
 - How the findings answer the research question
 - The importance or potential application of the findings
 - Limitations of the research
 - Possible sources of error or uncertainty
 - Improvements that could be made
 - Potential directions for future research
- The conclusion should be based on the actual results of the project and should avoid claims that are not supported by the research.

7. AI STATEMENT (required)

- Every research paper must include an **AI Use Statement**, whether or not artificial intelligence tools were used.
- Students must clearly identify any use of generative AI or other AI-assisted tools during the project or preparation of the research paper.
- Use of AI must be disclosed transparently. AI assistance should not be represented as original student work.
- If AI was used, explain:
 - Name of the AI tool
 - How the tool was used
 - Which portions of the work involved AI assistance
 - What the student contributed or changed after using the tool



- Whether AI was used for writing, editing, coding, data analysis, image generation, literature searching, brainstorming, translation, visualization, or another purpose

Examples:

AI Use Statement: ChatGPT was used to help review grammar and improve clarity in portions of the manuscript. All research questions, experimental procedures, data collection, data analysis, interpretation, and conclusions were completed by the students. The students reviewed and approved all AI-assisted revisions. For AI-generated images or diagrams, the figure caption must also identify the AI tool used.

AI Use Statement: No generative artificial intelligence tools were used in conducting this research or preparing this manuscript.

8. ACKNOWLEDGMENTS (Optional)

- Students may acknowledge individuals or organizations that provided assistance but were not student researchers on the project.
- Acknowledgements should describe the nature of significant assistance when appropriate.
- Examples include:
 - Teachers
 - Research mentors
 - Professors
 - Laboratory personnel
 - Universities or companies providing labs, equipment
 - Funding sources
 - Individuals providing technical advice, access to equipment, or facilities

9. STUDENT ROLES (required)

- This section is required for **both individual and team projects**.
- The purpose of this section is to clearly identify what work was completed by each student and what assistance, information, data, equipment, or expertise came from outside the student team.
- For projects involving two or more students, describe the specific contributions of each student.
- Students should avoid statements such as "both students worked equally" without explaining the actual responsibilities of each student.
- Students completing an individual project should briefly describe the portions of the research they personally completed.
- Students must include "external resources and contribution" section whether it is an individual project or team project, describing any help they received. In the case there are none, they should state that.
- Multiple Student Examples:

Student 1 – Maria Lopez: Developed the research question, designed the experimental procedure, conducted Trials 1–15, performed statistical analysis, and prepared Figures 1–3.



Student 2 – David Chen: Conducted the literature review, collected Trials 16–30, developed the Python data-processing program, prepared Figures 4–6, and contributed to interpretation of the results.

Both Students: Participated in experimental design, interpretation of results, preparation of the manuscript, and development of the final conclusions.

External Assistance and Resources: Specialized laboratory equipment was provided by XYZ University, and laboratory staff trained the students in its safe operation. Publicly available data from NOAA were used as a secondary data source.

- Individual Project Example:

Student Contribution: I developed the research question, designed and conducted the experiment, collected and analyzed the data, prepared all graphs, interpreted the results, and wrote the research paper.

External Assistance and Resources: Sample characterization using scanning electron microscopy was performed by laboratory staff at XYZ University because students were not authorized to operate the instrument. The student's science teacher provided general guidance on refining the research question, reviewed the experimental plan for safety and feasibility, and provided feedback on the organization of the research paper..

10. REFERENCES (required)

- List the references/documentation used which were not of your own creation (i.e., books, journal articles).
- You may use a font size of 9 in this section
- References section should list all sources used in developing the research project and preparing the research paper.
- Every source listed in the References section should be cited where appropriate within the paper, and sources cited in the paper should appear in the References section.
- Students should use a consistent citation style throughout the paper.
- Students are responsible for ensuring that references are accurate and that cited sources can be located and verified.
- Students must check that references are real and do exist (note that AI generated references can be misleading and fake)