MESA USA National Engineering Design Competition

Designing for Your Neighborhood

MESA USA understands that our young engineering students think deeply about the world and are genuinely interested in helping their communities. The National Engineering Design Competition asks students to **identify areas of need in their neighborhood and engineer a solution that will positively affect members of the neighborhood most affected**.

Your neighborhood is the space where you live and interact with on a daily basis. It does not live in a vacuum, and these changes can affect a wider area. A starting point is looking at the needs of those around you.

Each competing team must consist of 2-4 students who are active members of a MESA program affiliated with the MESA USA national organization. The first-place middle and high school teams from State events will participate in the National Competition. This National Competition event will occur in June 2027 in Maryland. The theme for the 26-27 MESA USA NEDC: *Designing for your Neighborhood*.

NOTICE:	**CODE OF SPORTSMANSHIP:**
In order to maximize each team's experience during this event, proper execution of all aspects of the judging process and event administration is very important. Although each MESA state may elect to present this event in a different format(s), the MESA USA host site and the corresponding National Event Planning Committee will adhere to the information outlined in this document.	At all times during the course of this event, MESA students, staff, advisors, and supporting family members should act in a professional and courteous manner. All judges' decisions are final. Staff, advisors, and parents shall not engage judges during the event. Students are responsible for ensuring they are present at required events/times.
CONTINUING PROJECTS: MESA USA recognizes that there is both an interest in and benefit for student teams to continue to work on a project started in previous years. **However, all projects must be new and original.** Teams cannot continue working on a project started in previous years.	

PLAGIARISM POLICY

Academic honesty and personal integrity are essential to ensure future success as college students and STEM professionals. MESA USA expects that the work presented as a part of the NEDC will be solely the work of the students. If the work or ideas of another are used to further

Students' work, proper credit must be given to the owner. Failure to do so will result in an act of plagiarism. If it is determined that a student commits plagiarism, they will be disqualified and ineligible to receive any awards. They may also risk further sanctions from MESA USA and/or their MESA state organization.

AI USAGE

AI is a tool that can be useful. MESA USA recognizes that students may choose to use AI for a variety of purposes throughout the NEDC. Any AI usage should be documented and, if there are questions about the ownership of the materials created, MESA reserves the right to ask for proof of the work. Teams are required to be critical and extend their projects beyond any assistance from artificial intelligence. AI is a tool but, given the personal nature of the work, does not create a full project.

AWARD COMPONENTS

MESA USA strongly encourages teams to participate in all components at state-level competitions. However, states may opt not to do all components or alter some requirements for their local and state events as needed. Individual states will determine the dates and locations of their respective events. Teams participating in the National Competition must compete in all four components described above.

High school and middle school teams who qualify to participate in the National Competition in June 2027 in Maryland will compete in the components listed below:

Award Components	
Design Proposal (34 Points)	It demonstrates your team's written communication and human centered engineering skills by outlining a specific user, their problem, and your proposed solution, demonstrating your skills in **Written Communication and Human Centered Engineering.** Students must use the provided Design Proposal Template.
Academic Poster (60 points)	Serves as a concise, visually appealing summary of your project's story, designed for presentation at the National Competition's poster symposium. It highlights your design process, testing, prototype, and future recommendations while demonstrating your skills in **Written Communication, Technical Knowledge, and Human Centered Engineering.**
Symposium (76 points)	The Symposium is a conference-style event where your team will engage an audience and judges in a conversation about your design process. You will deliver a brief verbal abstract followed by a Q&A session. A core component of this event is using the **STAR method** to answer discussion prompts, demonstrating your skills in **Oral Communication, Technical Knowledge, and Human Centered Engineering.**
Technical Pitch (100 points)	Evaluates your team's **Oral Communication, Human Centered Engineering and Technical Knowledge.** You will deliver a coherent presentation explaining your prototype's development, mechanical operations, coding and hardware/software integration.

PLEASE NOTE: Coding (18 points) will **NOT** be awarded a medal, but will be counted in NEDC Overall Award.

For the **NEDC Overall Award (Maximum points allowed 288)**, teams will be **evaluated** across five competition components: Academic Poster, Design Proposal, Poster Symposium, Technical Pitch and Coding. Each component is assessed using its respective rubric based on the **identified skills – Written Communication, Oral Communication, Human-Centered Engineering and Technical Knowledge** – as represented in the table below.

IDENTIFIED SKILLS	DESCRIPTION
Written Communication (W)	Teams will be judged on how they write about their user, their needs, their project, and other parts of their project
Oral Communication (O)	Teams will be judged on how they speak and present about their neighborhood challenge, their user, and other parts of their project
Human Centered Engineering (HE)	Teams will be judged on how they incorporated their user into all aspects of the design process and how their user informed the team's decision process.
Technical Knowledge (TK)	Teams will be judged on all technical aspects of their project, which can include coding, functionality, and processes that make the prototype function

DESIGN PROPOSAL

The Design Proposal is a prerequisite document used to secure project approval and buy-in before any building begins. It demonstrates your team's written communication and human centered engineering skills by outlining a specific user, their problem, and your proposed solution, demonstrating your skills in **Written Communication and Human Centered Engineering.**

Formatting Requirement: You must use the official Design Proposal Template.

The final document **must be submitted as a PDF** to avoid a 5-point penalty.

Elements For Project Theme

- **Design for Neighborhood Change:** An explanation of how the project is relevant and will positively impact the neighborhood
- **Neighborhood Involvement:** Evidence that community members were actively integrated into the process to help you understand their needs.
- **Greenlight Justification:** A concluding case proving the project meets the design brief and should be approved to move forward.

Required Elements

1. **Project Title:** A creative, descriptive title that gives a general sense of the project (**20-word maximum**).
2. **Neighborhood Challenge:** A clear description of the specific issue your solution attempts to solve. **(75 word maximum)**
3. **Research & User Identification:** An explanation of the research process used to discover the neighborhood issue and identify the specific groups affected by it. Research can include areas outside the neighborhood that experience similar challenges. **(150 word maximum)**
4. **User Profile:** A detailed description of your target user, the challenges they face, the impact on their lives, and their specific needs based on direct feedback. **(150 word maximum)**
5. **Project Goals:** A list of the desired outcomes (focusing on the *results*, not specific features) and how they address the neighborhood challenge. **(150 word maximum)**
6. **Proposed Solution:** A detailed description of your design, including its unique features and exactly how it resolves the user's needs and challenges. **(150 word maximum)**
7. **Initial Design:** A clear, easy-to-understand graphic representation of your design. **(Maximum size: 8.5” x 11”)**

ACADEMIC POSTER

The Academic Poster serves as a concise, visually appealing summary of your project's story, designed for presentation at the National Competition's poster symposium. It highlights your design process, testing, prototype, and future recommendations while demonstrating your skills in **Written Communication, Technical Knowledge, and Human Centered Engineering.**

Core Formatting Rules:

- Keep written explanations as briefly as possible.
- Use bulleted lists instead of paragraphs.

Required Elements

1. **Size and Logistics**
   - Dimensions: Maximum 36" x 48"; Minimum 24" x36" Boards up to 36" x 48"
2. **Title**
   - Placed at the top; should include a project identifier or a key takeaway.
3. **Team Section**
   - Must include:
     - School Name
     - Grade
     - Advisor's Name
     - Level (Middle or High School)
     - Team Members' Names
4. **Official Logo**
   - Must include the official MESA USA logo per the Logo Guidelines.
5. **Problem Statement**
   - Describe the neighborhood challenge being addressed, the specific problems the prototype solves, and the project scope/priorities. **(30 word maximum)**
6. **Objective**
   - Define how the problem is being addressed by listing primary and secondary objectives.
7. **User Requirements**
   - Use a graphic or bulleted list to explain the user's needs and how the prototype meets them.
   - **High School Teams Only:** You must also address implicit requirements (e.g., if the user is in Alaska, an implicit requirement is that the device works in freezing weather).
8. **Prototype**
   - A picture or schematic of the prototype utilizing callouts to highlight important pieces, main parts, and unique elements.
9. **Flowchart of Code**
   - A start-to-finish graphic demonstrating how the code functions, detailing every decision the code makes and the subsequent steps.

10. **Testing Process**
    - A list or graphic outlining the specific tests used, tests conducted with users, and the resulting user feedback.

11. **Data (User & Testing)**
    - **User Data:** A chart or table detailing user requirements, wants/needs, and the specific needs the team chose to address (and why).
    - **Testing Data:** Charts, tables, or graphs showing the tests performed, the results, and how that data drove prototype development.

12. **Visual Element**
    - An additional graphic (like a decision tree or design matrix) describing important factors not addressed in other sections.

13. **Results**
    - A summary of the final prototype and exactly how it improves the user's capabilities and world experience.

14. **Conclusions**
    - Final takeaways for the user, detailing the success or failure of meeting objectives and the next steps for the project.

15. **Citations**
    - Cite a maximum of 3 highly impactful sources used in research (including author, date published/interviewed, and title).
    - **Mandatory:** At least one citation must be an interview/work session with the client.

TECHNICAL PITCH

The Technical Pitch evaluates your team's **Oral Communication, Human Centered Engineering and Technical Knowledge.** You will deliver a coherent presentation explaining your prototype's development, mechanical operations, coding, and hardware/software integration.

Logistics & Rules:

- **Time Limit:** 10 minutes maximum. Judges will give a 1-minute warning at the 9-minute mark and stop you exactly at 10 minutes. You may allow judges to interact with the prototype, but it must fit within this 10-minute window.
- **No Q&A:** Judges are strictly prohibited from asking questions or conversing with the team during the pitch.
- **Support Materials:** You are strongly encouraged to use visual aids (e.g., slide decks, engineering notebooks, posters). All speeches and displays must be your original work.

Required Elements

Your presentation must be a comprehensive summary covering the following core areas:

1. **Background Information:**
   - Identify your specific user.
   - Define the neighborhood challenge being addressed.
   - Explain how the prototype fulfills the user's needs to overcome this challenge.
2. **Description of Design:**
   - Detail exactly how the prototype functions and how it is used.
   - Explain why your prototype is superior to anything currently on the market.
   - What is the user's experience using your prototype?
3. **Prototype Demonstration:**
   - You must feature a working prototype (missing this will result in lost points).
   - Demonstrate its functionality and usability, ideally involving the interviewed user.
   - Highlight the originality and unique features of your design.
4. **Code Integration:**
   - You are expected to integrate examples and discussions of your code directly into the presentation.
     - **Efficiency:** Demonstrates that the prototype responds promptly and operates smoothly and consistently, without noticeable delays, errors, or repeated attempts to make it work.
     - **Workability:** Clearly demonstrates that the code enables the prototype to perform its intended functions, with observable actions and results that match the team's explanation of how the prototype should work.
5. **Conclusion & Recommendations:**
   - Provide your final assessment and evaluation of the prototype.
   - Outline the next steps for implementing the design.
   - Share any suggestions for future improvements or redesigns

SYMPOSIUM

The Symposium is a conference-style event where your team will engage an audience and judges in a conversation about your design process. You will deliver a brief verbal abstract followed by a Q&A session. A core component of this event is using the **STAR method** to answer discussion prompts, demonstrating your skills in **Oral Communication, Technical Knowledge, and Human Centered Engineering.**

Logistics & Rules:

- **Time Limit:** Interactions should take up to 10 minutes total (maximum 3 minutes for the verbal abstract, with the remaining time dedicated to discussion prompts).
- **Attendance:** All team members must be present at their poster during the judging window.

Required Elements

1. **Team Introduction**
   - State the first names of all team members, your school, and your MESA Center/State.
2. **Verbal Abstract** (3 Minutes Maximum)
   - **Research & Development** (~1 min)**:**
     - Identify the neighborhood challenge and detail the user profile.
   - **Proposed Solution** (~30 sec)**:**
     - Give an overview of the current prototype's features and functional elements.
   - **Design, Innovation, & Conclusions** (~1.5 mins)**:**
     - Discuss project goals, user impact, user feedback, and supporting data.
3. **STAR Method Responses**
   - Judges will ask at least three discussion prompts starting with “Describe” or “Explain.” You **MUST** structure your answers using the STAR interview technique:
     - **Situation:** Set the scene (When and why was the challenge significant?).
     - **Task:** Explain the specific problem the team or individual had to address.
     - **Action:** Detail the exact steps taken to approach the challenge.
     - **Result:** Explain the outcome, what was modified, or what was learned.
4. **Discussion Prompt Categories** Be prepared to answer prompts from the following three categories:
   - **Neighborhood Insight & Brainstorming:** Discuss initial research, interviews, and early prototype sketches.
   - **Design Evolution & User Interface:** Discuss prototype iterations, what inspired changes, and how feedback was incorporated.
   - **Impact, Improvements, & Reflections:** Discuss the real-world impact on the user, lessons learned, and what you would do differently.

Scorable Elements Based On Judge’s Decision (For Symposium)

Extemporaneous Elements

- **User Enhancement:** The answers to the questions are focused on how the prototype enhances the user’s quality of life.
- **Thinking on Your Feet:** Be prepared to help teammates or entertain questions you don't immediately know the answer to.
- **Note Usage:** Do not read from a script; notes should only be used as a quick reference.
- **Supporting Materials:** Actively integrate your Academic Poster, Design Proposal, Prototype, and Design Notebooks into the conversation.

Quality of Presentation

- **Delivery:** Speak clearly, use appropriate tone, and apply technical terms correctly.
- **Body Language:** Remain relaxed, confident, and free of nervous fidgeting.
- **Flow & Participation:** Ensure natural transitions between speakers. Every team member must participate equally without interrupting one another.

CODING

Your team's prototype must feature a functional coding element that is appropriate for the device and enhances the overall user experience. You may use either block coding or written/text-based coding. This component evaluates your team's **Technical Knowledge** and **Human Centered Engineering** skills.

PLEASE NOTE: Coding will not be awarded a medal, but will be counted in NEDC Overall Award.

Logistics & Rules:

- **Documentation:** Teams must submit the full code in PDF format with in-line comments.
- **Flowchart:** Teams must submit PDF of flow chart of code.

Required Elements

Your code will be judged based on the following five criteria:

1. **Appropriateness:** At the beginning of the code, the team provides a comment describing how the code fulfills the prototype's purpose and functionality.
2. **Documentation:** You must clearly explain the code's functionality, variables, and logic. This can be done through direct in-line comments within the code itself.
3. **Attribution:** You must provide proper credit for any code that was generated by AI or by any individual who is not on your team.
4. **Flowchart of Code**
   - A start-to-finish graphic demonstrating how the code functions, detailing every decision the code makes and the subsequent steps

DESIGN PROPOSAL RUBRIC

SCHOOL NAME:	TEAM NAME:	TEAM IDENTIFIER:	
		☐ MS	☐ HS

IDENTIFIED SKILLS KEY			
W - Written Communication	TK - Technical Knowledge	O - Oral Communication	HE - Human Centered Engineering

DESIGN PROPOSAL	4	3	2	1	0
Project Title (W): The team creates at title for their project that is concise and descriptive			2	1	0
Neighborhood Challenge Being Addressed (HE): The team describes, in depth, the challenge to their neighborhood that their project addresses.	4	3	2	1	0
Research and User Identification (HE): The team describes, in depth, how they researched the challenge in their neighborhood and how they selected the person(s) they are working with	4	3	2	1	0
User Profile (HE): The team describes, in detail, their user, how the identified neighborhood challenge affects their life, and what their specific needs are to address the challenge	4	3	2	1	0
Project Goals (W): The team explains how their project will address the identified needs of the user within the neighborhood challenge, and what the desired outcomes will be.	4	3	2	1	0
Proposed Solution (W): The team describes their solution, with user input, to meet the neighborhood needs. The team includes any innovative or unique features	4	3	2	1	0
Initial Design (HE): One graphic that shows the proposed solution that meets the user's needs. The graphic can be no more than 8.5" x 11"			2	1	0
Design for Neighborhood Change (W): The team describes how their proposed solution meets the neighborhood's needs to address the challenge, not the user's.	4	3	2	1	0
Neighborhood Involvement (W): The team describes how they integrated multiple members of the neighborhood before choosing a specific user to focus on	4	3	2	1	0
Greenlight (HE): The team met the brief and the project is ready to move forward			2	1	0
COLUMN TOTALS					
(Maximum points Allowed 34 points) **GRAND TOTAL**					

Judges Name:	

ACADEMIC POSTER RUBRIC

SCHOOL NAME:	TEAM NAME:	TEAM IDENTIFIER:	
		☐ MS	☐ HS

IDENTIFIED SKILLS KEY			
W - Written Communication	TK - Technical Knowledge	O - Oral Communication	HE - Human Centered Engineering

ACADEMIC POSTER RUBRIC	4	3	2	1	0
Problem Statement (W): The team identifies the problem of the user in their neighborhood in 30 words or less	4	3	2	1	0
Objective (W): The team creates a bullet pointed list of all primary and secondary objectives of their project.	4	3	2	1	0
User Requirement (W): A bullet pointed list or graphic that describes the user's explicit requirements. **High School:** The team includes any implicit requirements	4	3	2	1	0
Prototype (TK): A graphic of the prototype is present and adequately highlights innovations and/or important components of the design	4	3	2	1	0
Prototype Detail (TK): The main components are labeled and functionality is clear. If needed, a scale is provided	4	3	2	1	0
Coding Flowchart (TK): A graphic that demonstrates how the code functions from beginning to end and includes any decisions that are within the code.	4	3	2	1	0
Testing Process (HE): A visual or table that describes the process in how the testing and data collection was done	4	3	2	1	0
User Data (TK): A graphical display of user test data that adequately demonstrates design choices based on user data	4	3	2	1	0
Testing Data (TK): A graphical display that shows testing data without the user that adequately demonstrates how testing informed iterations of the project.	4	3	2	1	0
Visual Elements (W): The visual elements overall enhance the reader's understanding of the project.	4	3	2	1	0
Results (W): The team adequately describes how the project has affected their user's life.	4	3	2	1	0
Conclusions (W): The team includes an assessment of how well the project met their user's requirements and what the next step in the project is.	4	3	2	1	0
Citations (W): The team includes, at most, 3 citations that are relevant to their project. One citation MUST be an interview with their user	4	3	2	1	0
Readability (W): The poster is easy to read with a balanced number of words and graphic with no paragraphs		3	2	1	0
Title (W): Team has a memorable title that is creative		3	2	1	0
School Name (W)				1	0
Team Members (W)				1	0
COLUMN TOTALS					
(Maximum points allowed 60 points) **GRAND TOTAL**					

Judges Name:	

TECHNICAL PITCH RUBRIC

SCHOOL NAME:	TEAM NAME:	TEAM IDENTIFIER:	
		☐ MS	☐ HS

IDENTIFIED SKILLS KEY			
W - Written Communication	TK - Technical Knowledge	O - Oral Communication	HE - Human Centered Engineering

TECHNICAL PITCH RUBRIC	4	3	2	1	0
User Overview (HE): The team describes their user, their needs, and how the project address those needs	4	3	2	1	0
Design Knowledge (TK): The team demonstrates their knowledge of the prototype, how it functions, and the reasons for the design choices	4	3	2	1	0
Usability (O): The team explains how the prototype works and how it improves the life of the user in a manner that the judges understand.	4	3	2	1	0
Prototype Demonstration (HE): The team has a working prototype to demonstrate the functionality and usages to the judges	8	6	4	2	0
Materials (TK): All the materials are appropriate for the prototype and user. The team can explain the design choices through data or user interaction.	4	3	2	1	0
Technology Usage (TK): All technology is appropriate for the prototype and user. Teams convey the reason for technology choices clearly.	8	6	4	2	0
Real World Application (HE): Team has a demonstration with the user using their prototype. It can be a video of the user.	8	6	4	2	0
User Experience (HE): The demonstration with the user shows exactly how the user's life is improved by using the prototype.	4	3	2	1	0
Visual Aids (W): The team has graphics to illustrate concepts to enhance the presentation that are appropriate. (graphics can include: images, video, animation, poster with in presentation)	8	6	4	2	0
Prototype Functionality (TK): The team can describe how the prototype functions (gears, motors, coding decisions, etc.)	8	6	4	2	0
Engineering Design Process (TK): The team explains how the testing and interactions with the user informed the design process.	4	3	2	1	0
Value Proposition (HE): The team explains the originality of their prototype and why it is superior to anything currently available	4	3	2	1	0
Challenges and Solution (HE): The teams explain the challenges they encountered in their project and how	4	3	2	1	0
Efficiency of Code (TK): Demonstrates that the prototype responds promptly and operates smoothly and consistently, without noticeable delays, errors, or repeated attempts to make it work.	4	3	2	1	0
Workability of Code (TK): Clearly demonstrates that the code enables the prototype to perform its intended functions, with observable actions and results that match the team's explanation of how the prototype should work.	4	3	2	1	0
Prototype Iterations (TK): The team discusses their iterative process and how testing and user interactions informed the changes	4	3	2	1	0
Conclusions & Recommendations (HE): Team effectively closes their pitch, discussing the user, how the user's life is improved, and what the team recommends for next steps.	4	3	2	1	0
Delivery and Organization(O): The team delivers an engaging and informative presentation in an effective manner.	4	3	2	1	0
Presentation Skills (O): The team uses clear voices and commands the room with their presentation.	4	3	2	1	0
Team Contribution (O): All members of the team contribute equally to the presentation	4	3	2	1	0
COLUMN TOTALS					
(Maximum points allowed 100 points) **GRAND TOTAL**					

Judges Name:	

SYMPOSIUM RUBRIC

SCHOOL NAME:	TEAM NAME:	TEAM IDENTIFIER:	
		☐ MS	☐ HS

IDENTIFIED SKILLS KEY			
W - Written Communication	TK - Technical Knowledge	O - Oral Communication	HE - Human Centered Engineering

SYMPOSIUM RUBRIC	4	3	2	1	0
Research & Development (HE): The team thoroughly describes their neighborhood challenge and how it affects the community	4	3	2	1	0
Description of Prototype (TK): The team is able to give an overview of their prototype, its features, and the functional elements.	4	3	2	1	0
Design, Innovation, & Conclusions (HE): The teams describe how the prototype meets the initial goals identified and how design iterations led to the current prototype.	4	3	2	1	0
Prompt Structure (O): The team structures all responses in the STAR method to answer questions.	8	6	4	2	0
Prompt Context (O): The team answers every question by providing the Situation, explains the Task, describes the Action(s) taken, and the Result of the actions.	8	6	4	2	0
Prompt Overall (O): The team demonstrates adequate knowledge of the concepts and processes used to answer all questions.	8	6	4	2	0
Thinking on Your Feet (O): Team members are prepared to answer follow-up questions, help team members answer questions, or can professionally decline to know	8	6	4	2	0
Spontaneity (O): Teams are prepared to answer unexpected questions appropriately either with an answer based on the team's goals/workflow or saying they didn't know or declined to address it.	4	3	2	1	0
User Enhancement (HE): The team's answers focus on the improvement of the user's quality of life.	4	3	2	1	0
Preparedness (HE): The team is knowledgeable of their prototype and user needs and rarely needs to rely on their notes	4	3	2	1	0
Integration of Supporting Material (TK): The team effectively uses their prototype, poster, and notebook to answer questions.	4	3	2	1	0
Coding Knowledge (TK): The team is able to explain how the code works in relation to their prototype	4	3	2	1	0
Communication (O): The team speaks clearly and uses appropriate technical terms.		3	2	1	0
Body Language (O): The team member's posture is relaxed and demonstrates self-confidence and is not distracting.		3	2	1	0
Conversational Flow (O): The flow is natural and smooth, with team members working together and not interrupting teammates.		3	2	1	0
Participation (O): All team members contribute to the discussion and question/answer portions.		3	2	1	0
COLUMN TOTALS					
(Maximum points allowed 76 points) **GRAND TOTAL**					

Judges Name:	

CODING RUBRIC

PLEASE NOTE: Coding will **NOT** be awarded a medal, but will be counted in NEDC Overall Award.

SCHOOL NAME:	TEAM NAME:	TEAM IDENTIFIER:	
		☐ MS	☐ HS

IDENTIFIED SKILLS KEY			
W - Written Communication	TK - Technical Knowledge	O - Oral Communication	HE - Human Centered Engineering

CODING RUBRIC	4	3	2	1	0
Appropriateness of Code (TK): At the beginning of the code, the team provides a comment describing how the code fulfills the prototype's purpose and functionality.	4	3	2	1	0
Documentation (W): The team clearly explains the code's functionality, variables and logic using in-line comments within the code.	4	3	2	1	0
Attribution (W): The team gives credit if they used AI, rebuilt older code, and/or sought help from outside the team members.	4	3	2	1	0
Coding Flowchart (TK): A graphic that demonstrates how the code functions from beginning to end and includes any decisions that are within the code is included with the submitted code.	4	3	2	1	0
School Name (W)				1	0
Team Members (W)				1	0
COLUMN TOTALS					
(Maximum points allowed 18 points) **GRAND TOTAL**					

Judges Name:	

DEADLINES & SUBMISSION INSTRUCTIONS

Below is a breakdown of deadlines and instructions meant to assist the team's submission efforts. ***Please note for local/state competitions, check with your local MESA Office about the procedure for submissions*.**

For teams advancing to the **National Competition**, carefully review due dates and instructions below:

- General Event Logistics: Teams will be required to complete their team profile by **June 1, 2027**. Qualifying teams will receive a Deliverables Checklist listing requested items like Team and Advisor Pictures, School Logo, and Team Video. Note: Requests are subject to change.
- Competition Components: The Design Proposal, Academic Poster, Coding and, if applicable, Additional Citations Template must be emailed to MESA USA at *aplstem@jhuapl.edu* before 4:00 pm in your local time zone on **June 8, 2027** (subject to change)**.** Additionally, team members must submit components in the correct file format (using file naming template provided below) and should copy their teacher and NEDC Rules Committee state representative. The submitted NEDC Components will be judged and scored prior to the National Competition. Late submissions will be assessed a 10-point deduction. NO EXCEPTIONS. No submissions will be accepted after **June 10, 2027 at 12 pm** (subject to change)**.**
- The completed Design Proposal, Academic Poster, and Coding documents **MUST** be submitted in Portable Document Format (PDF). Teams shall ensure the submissions can be opened using Adobe Reader (10.0 or newer) on a laptop/desktop/mobile device and that it matches your original document. NEDC Component Files submitted in a format other than PDF will be assessed at a 5-point penalty.
- Any slides used during the Technical Pitch presentation at the National competition **MUST** be in PowerPoint format to be projected during your presentation.
- If using the Additional Citations Template, the team must submit the file along with their Academic Poster submission (same deadline: date and time).
- The MESA USA National event host will print the Academic Poster from the submission, no exceptions. Teams must verify the Academic Poster meets the size dimensions
- All submitted files must use the following file naming template:

Naming Template: **STATE_DIVISION (MS or HS)_SUBMISSION TYPE_SCHOOL NAME**
Name Examples:1) **CA_HS_DesignProposal_SantaTeresa** and 2) **WA_MS_Poster_WestwoodMiddle**
ate=California, Division=High School, Submission Type=Design Proposal, School= Santa Teresa High
ate=Washington, Division=Middle School, Submission Type=Poster, School: Westwood Middle

Check the MESA USA national website at https://nedc.mesausa.org/ for further information

Please note that MESA USA, the National host, and the Head Judges are not responsible for any internet service delays, misdirected submissions, or other technical difficulties. It is the responsibility of the student team members to ensure that the NEDC Components are delivered successfully in the proper format and size by the indicated deadline. Therefore, submission of materials well in advance of the above-listed deadline is strongly recommended

DIRECTIONS FOR NATIONAL COMPETITION

POSTER

- **Printing:** The National host will print the single poster for the National Competition. Posters will need to be submitted as a PDF. The National host will print the submit without any adjustments.
- **State:** At Nationals, teams will need to include their state.

PITCH

- **Order & Audience:** Teams present in a randomly drawn order (no late arrivals or exceptions). The pitch is open to the public.
- **Materials Provided:** A display table and electricity are provided. Wi-Fi might be available, but it is **not guaranteed**.

POSTER SYMPOSIUM

- **Provided Materials:** State/local events provide an easel, wall space, or table (teams provide their own poster stand if using a table). For Nationals, the host prints the poster and provides the display setup. Electronics are allowed, but Wi-Fi and electricity are **not guaranteed**.

HELPFUL HABITS

The following are proven habits of effective teams. These are hints from professionals and teams that have won the NEDC.

ASSIGN ROLES

An individual does not need to be an expert in every portion of the design process. Assign roles for who is the expert in:

- Sections of the Competition (Design Proposal, Poster, Pitch, etc.)
- Jobs that need to be done (Interviewer, Coder, etc.)

MAKE A CALENDAR

A calendar, Gantt chart, or other time keeping device keeps you on track. Managing your project's timeline is key to finishing it.

TAKE NOTES

Write notes, do a voice recording explaining something, record a video. Everything matters and, having notes, you will not forget any information. Here are some things to always record:

- Data - what the data represents, when you recorded it, what did it show you
- Ideas - what is it, why is it a valid idea, would it work
- Design decision - why did you make that decision, what led you to that decision
- Research - what website did you use, who did you talk to, what book did you read
- Next steps - after every meeting, write down what you are going to do the next meeting
- Drawings - what will your prototype look like, how will it fit with the user
    - These don't have to be perfect drawings as long as they make sense

CITATIONS

It is better to cite everything rather than cite nothing. Interviews (user, professionals, etc.), websites (IEEE, Code.org, etc.), AI (ChatGPT, Gemini, CoPilot, etc.), anything that you do to advance your project.

MLA and APA have guidelines to cite generative AI and one of the requirements (Page 1) is that AI is cited.

INVOLVE YOUR USER ACTIVELY

This project is focused on people and the user needs to be actively involved. Projects that score higher have a high degree of user involvement.

BE REASONABLE

Your prototype does not have to solve every problem. Stay focused on your goal and have a prototype that solves your identified problem, not every problem. You are setting the scope of the project with your user. It is 100% acceptable to say you didn't do something because you didn't have the time, capacity, or capability to address it.

COMMUNICATE

Issues will occur. That is life. Most issues can be solved through communication. Successful teams work to solve internal problems by talking, and listening, with their teammates.

RESOURCES:

MESA USA has developed resources to support all teams through the development process, from inception to design to implementation. The following links will direct you to these resources.

MESA USA NEDC Website	https://nedc.mesausa.org/nedc-overview/
	For Rules Handbook, Design Proposal Template & Sample, Academic Poster Template
MESA USA NEDC Curriculum	https://cole2.instructure.com/courses/2040326
	***Module 1**: Setting the Stage,* ***Module 2**: Intro to NEDC & UN Goals,* ***Module 3**: Refining the goal and direction* ***Module 4**: Develop a Plan,* ***Module 5**: Experiment and Build Prototype,* ***Module 6**: Revising/Finalizing Prototype* ***Module 7**: Project Deliverable*
Commenting your Code	**https://www.altexsoft.com/blog/how-to-write-code-documentation/**
	The website gives examples, types, best practices and tools on how to comment your code.