



New Mexico Mathematics, Engineering, Science Achievement, Inc.

37th Annual NM MESA Competition Day

Health & Well Being In Our Communities



**April 30, 2025
Expo New Mexico
Albuquerque, New Mexico
OFFICIAL HANDBOOK**



37th Annual MESA Day Handbook

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MESA COMPETITION GENERAL INFORMATION

The NM MESA, Inc., Annual Statewide Math and Science competitions are designed to encourage the concept of problem solving through teamwork. It salutes NM MESA students for their commitment to academic excellence and reinforces the NM MESA mission of preparing students from historically underrepresented ethnic groups for college majors and careers in math, engineering, and science. In keeping with our mission, advisors are encouraged to assemble teams that are representative of the ethnic and gender diversity of their school and NM MESA enrollment.

COMPETITION OVERVIEW: This year our MESA Competition Day will host (2) Competition Tracks, MESA Day and MESA USA. Both tracks will run concurrently during the same event. Please note some guidelines are different for each track.

All of our MESA Day events will address the topic of “Health & Well Being in Our Communities” as Goal #3 of the United Nations Sustainable Development Goals (UN-SDGs). NM MESA schools are invited to participate in our MESA Day Track as follows:

- On Site Team Competition-MESA Mayhem
- On Site Mini Competition-MESA Fit
- On Site Mini Competition-Visualize Your STEM Identity
- Prepared Design-Building a Healthy and Sustainable Community Center

All of our MESA USA events will address the topic of “Designing for Equity Locally to Affect Sustainability Globally” and teams are required to incorporate a coding element in their prototype and use a chosen UN-SDG to inspire their prototype. NM MESA schools are invited to participate in our MESA USA Track as follows: Academic Poster, Design Proposal, Technical Pitch, and Symposium

ALL TEAMS: All NM MESA Programs are encouraged to participate in both event tracks. Although scoring is done independently, participation is required as follows: Participation in the MESA USA Track

is optional, BUT at minimum, (1) MESA USA Team is required if the program wants to have more than (1) MESA Day Team participate. Team names MUST be declared as follows: (Track)-(School) (Level) – (Team #). *Example: MESA USA-Mesaville High School – Team #1*

Each school is allowed to have (6) named alternates that can be used on any team, any track. In addition, the day of competition, teams may be condensed if needed to complete teams. Example: Students can be moved from Team 4 to Team 2 in the event of no shows. It is HIGHLY suggested to register full teams, identify alternates, and cross train students in the event a student(s) cannot attend the event. Any team that requires any accommodations must make a request to NM MESA when submitting their registration.

MESA Day Track: The MESA Day competition will run like a MESA Medley. Each team will be composed of 3-6 students. If schools have multiple teams, all events must be filled before building an additional team. *All MESA Day teams are required to participate in all events, including the Prepared Design.*

All team members will work together on the Prepared Design event and the On Site Team Competition. However, the team will break, and students will compete in individual groups of 1-3 team members for each On Site Mini Competition. If a team has less than (6) members, they can only compete in the number of events they have team members for.

MESA USA Track: Each team will be composed of 2-4 students. *Because some items are due prior to competition, teams are HIGHLY suggested to be determined by the inspection deadline.*

The 1st Place overall winning teams in both the middle school and high school level will be chosen to represent New Mexico in the 2025 MESA USA National Engineering Design Competition in June, 2025 hosted by California MESA in San Diego, CA. Only members that attend and participate in the State Competition will be allowed to participate in the National Competition. No changes or additions are allowed.

ELIGIBILITY: All participating teams must come from official New Mexico MESA School Programs. Schools must be considered official, and advisors must enter/submit all A-0 forms by **5 PM MST, April 1, 2025**. Only the students listed on the school roster (have their A-0 submitted) will be eligible to participate. **NO EXCEPTIONS!**

Of Special Note to Middle/Junior High Schools serving 9th grade students – Each middle/junior high school that includes a 9th grade class is allowed to have an event team with a maximum of 50% 9th grade students. These teams will compete in the Middle School division **only**. **No** 100% 9th grade teams will be allowed in middle school competition.

ATTENDANCE AND QUALIFICATION: All schools will be allowed to participate in MESA Day as follows. Please use the table to determine the number of teams your school can bring.

MESA Day Track	
Extra Small School: <=15 profiles	Max number of teams=1
Small School: >=16 and <=25 profiles	Max number of teams=2
Medium School: >=26 and <=45 profiles	Max number of teams=3
Large School: >=46 and <=69 profiles	Max number of teams=5
Extra Large School: >=70 profiles	Max number of teams=7
MESA USA Track	
Small School: <= 30 profiles	Max number of teams=1
Large School: >=31 profiles	Max number of teams=2

PLAGIARISM AND ADVISOR POLICY:

Academic honesty and personal integrity are essential to ensure future success as college students and STEM Professionals. As such, NM MESA expects that the work will be solely the work of the students. If the work or ideas of another are used to further students’ work, then 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 committed plagiarism, they will be disqualified from the competition and will be ineligible to receive any awards. They may also risk further sanctions from NM MESA and/or MESA USA.

Due to the nature of some events, the event will be done with the trust that all students will abide by this policy. The prepared design event and other advance materials should be completed by the entire student team and be the original work of the students.

Advisors (or non-competitors) are NOT allowed in any competition unless there is a designated viewing space. All advisors are expected to assist their teams with meeting deadlines, register their teams, assist their students to ensure they are where they need to be, etc. Any complaints and/or appeals need to be addressed by the students to the Event Coordinator during the event.

COVID POLICY: All events are expected to be completed in person besides the materials submitted in advance as part of registration. If an individual student cannot attend due to a quarantine requirement, a named alternate may take their place. If an entire team is unable to attend due to school closure or quarantine, then the program will not be able to compete in the on-site events and a makeup will not be arranged.

This event will follow current CDC guidelines which could include wearing masks indoors, recommended distancing, required sanitation, etc. More information will come on the exact requirements closer to the event. NM MESA also reserves the right to modify this event as needed to meet current requirements.

SCORING SUMMARY: Final team rankings will be based on the total score, which is derived by adding all of the component scores. *NOTE: Results are not final until overall results are reported.*

MESA Day Track:

On Site Team Competition	150 points
On Site Mini Competition 1	100 points
On Site Mini Competition 2	100 points
<u>Prepared Design</u>	<u>150 points</u>
TOTAL	500 points

MESA USA Track: TBD

AWARDS: (Middle and High School – Each Track)

Overall Teams: Placing 1st-3rd Overall

- Trophies will be awarded to the top 3 overall teams (1st-3th Place).
- Awards will be presented to individual team members placing 1st – 3rd Place overall.
 - 1st Place-\$100 Gift Card
 - 2nd Place-\$75 Gift Card
 - 3rd Place-\$50 Gift Card
- Awards will be presented to the top team in each individual event (1st Place).

MESA USA Track Only:

- 1st Place-Will also represent Team New Mexico at the Nationals Competition.
- NOTE: A team must accept representing New Mexico at our National Competition to receive the 1st place package. Otherwise, they will forfeit to the next level winner and will receive a different prize package.

At the conclusion of the event, an awards form will be collected from each student electronically that has won an award. It is **HIGHLY** suggested that students use a non-school email for gift card receipt as many school domains reject outside emails. *Awards will not be issued to any student that does not submit the required award form by the given deadline and awards will not be re-issued due to failure to receive them (by using an email that is incorrect or that does not accept the award).*

IMPORTANT: Awards will not be presented at the live MESA Day Competition. To ensure accuracy and to accommodate all traveling schools, final scoring will occur upon the conclusion of the event and a live virtual announcement will be done at **4:00 PM on May 1, 2025.**

DISQUALIFICATION: Individual event teams can be disqualified for the following:

- Any team member not having an A0 on record
- Anyone else completing or helping with task that is not the registered student
- Prohibited advisor, parent, or other “outside” assistance in events
- Lead judge disqualifies an event team for not following event guidelines
- Unauthorized use of cell phones during event(s) to include phone calls, internet, and/or texts
- An event team is found to have violated event guidelines after competition has concluded
- General inappropriate behavior at any time during the competition
- If after the competition is concluded, it is found that any team violated rules or requirements for any event, they may be disqualified from competition and will forfeit any qualification or placement spots they may have earned.

ADDENDUMS AND EVENT RESOURCES: There are several addendums and resources which will be useful in preparing for Competition. All addendums will be available on the NM MESA-MESA Competition Event Website. These include:

- Any Final Logistical Information
- Event Resources and Helpful Preparation Information
- Final MESA USA National Handbook
- MESA Day and USA Frequently Asked Questions (FAQ)
 - Will be changed throughout year as questions arise

It is the responsibility of the school program to periodically check for resources and updates. Before competition date, it is **STRONGLY encouraged as the FAQ section will contain any clarifications and/or addendums to the event handbook and these will be followed at competition. The FAQ document is an official MESA Day Document and is the official addendum to this handbook.**

TRAVEL LOGISTICS:

Food: Lunch will be provided to competing students and official school advisor(s). Students are NOT to leave the Expo New Mexico (NM) Campus. Expo NM will have adequate vendor set ups that will have general breakfast, snack, and lunch concession items. In addition, outside food is allowed to be brought to the event. There is sizable outdoor and open space to gather.

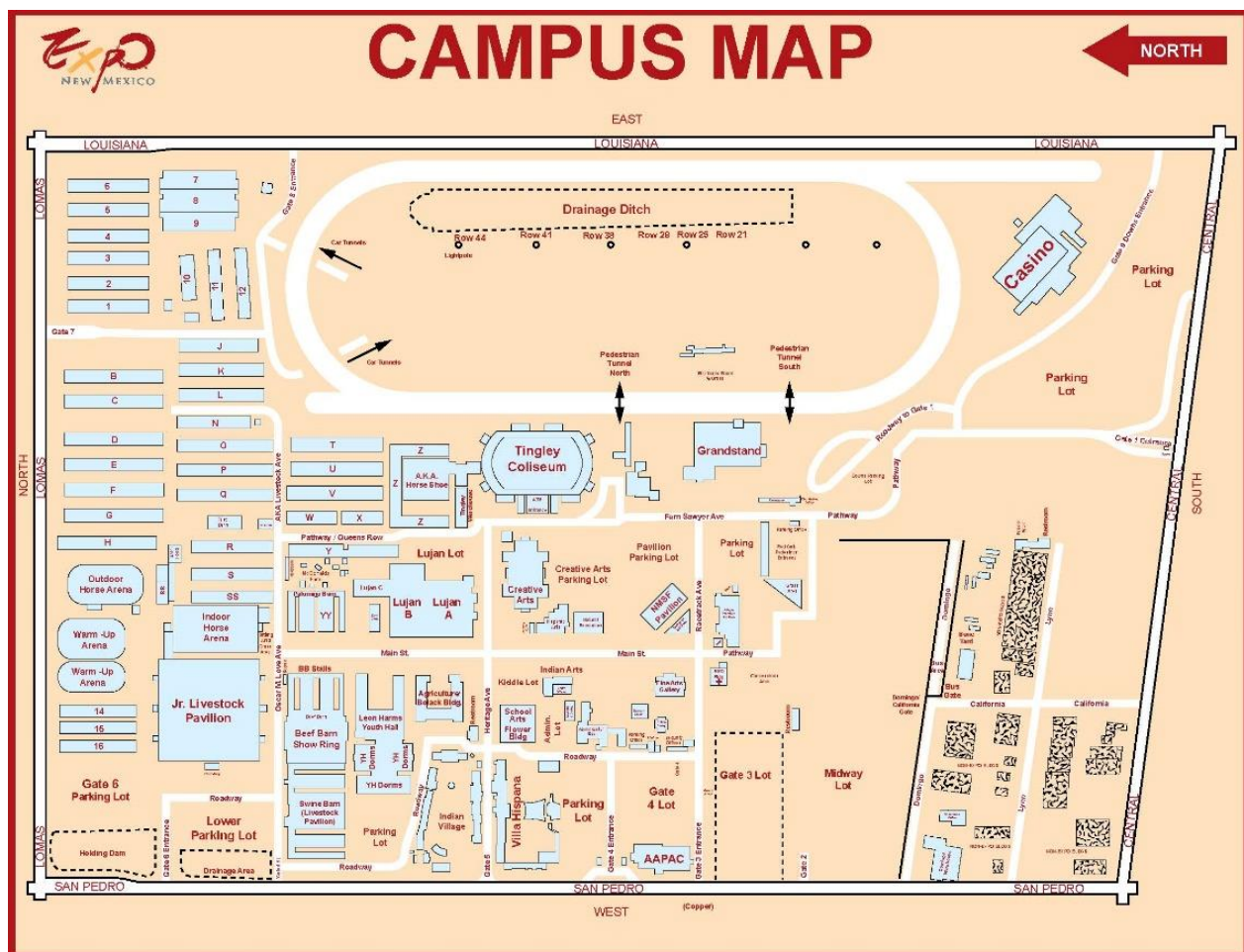
Because of the large campus, there are to be no unattended students. Students are not to be left alone to wander if your group splits and this may require additional supervision.

Lodging: Lodging will not be provided for participants in the MESA Competition Event.

Transportation: Transportation will be provided according to the current NM MESA Transportation Policy and reasonable bus-pooling will be expected with other schools from their district and/or area schools. If a school district has specific requirements that NM MESA is unable to accommodate, they will be responsible for financial assistance with transportation. Smaller vehicles and/or suburban use is recommended for smaller teams.

Parking: Expo NM will have open and available parking for busses and vehicles to accommodate all staff, volunteers, spectators, and school travel.

Closer to the event, final instructions will be provided for bus loading/unloading and vehicle parking. There will be requirements and specific gates used for entry.



GENERAL NOTES: Students should be instructed to demonstrate good sportsmanship and will be held accountable for any misbehavior.

Cell Phone usage –Advisors are asked to follow and remind their students about appropriate cell phone protocol. Judges will repeat this cell phone usage reminder at the beginning of each competition and will relay what is allowed and not allowed. Failure to comply may lead to disqualification.

MESA COMPETITION REGISTRATION: This is required for any team wanting to participate. All registration and submittal of materials will be done via the Cvent System with a direct link on the MESA Day Event Page on the NM MESA Website. **ALL REGISTRATION WILL NEED TO BE SUBMITTED ELECTRONICALLY BY APRIL 1, 2025 at 5PM.**

Closer to the event, advisors will be sent a final spreadsheet of registered attendees. The morning of the event, advisors will be asked to submit any modifications during event check in. NM MESA STAFF has the authority to cancel attendance for any team if they do not have completed projects and/or are not prepared to attend the competition up to the date of the event. All projects must be new and original. Teams cannot continue working on a project started in previous years.

There is not a registration form collected in hard copy, but the following information will be needed to complete on-line registration. (1) Registration will be done per school and will collect all needed information.

Information You Will Need Per School Registration:

- How many teams you are bringing (and eligible for)
- Unique Email Address
- School Name, Level (HS or MS), Region
- Advisor Information and Contact information (phone, email, mailing address)
- Student Names and Assigned Event
- Up to (6) Alternates Per School
- Transportation Information (In Lieu of a B4)
 - Vendor Name, Email, Address
 - Amount of Transportation
- Any specific team requests and/or information

MESA USA Track Only:

Team Submittals You Will Need to Upload Per Team in School Registration:

- Design Proposal Completed Template:
 - MUST be submitted in Portable Document Format (.PDF) as (1) Document.
- Academic Poster
 - MUST be submitted in Portable Document Format (.PDF) as (1) Document.

Regional Coordinator Inspection:

- By the Registration Deadline, schools will register for an inspection appointment with the Prepared Design Committee (for MESA Day Track) and the MESA USA Committee (MESA USA Track). Projects will be evaluated by the same committee to ensure requirements are met and assess team readiness.
- Regional Coordinators will work with school teams to determine transportation once they are approved to attend. Final transportation request will be submitted at registration. Minimum requirement will need to be met for each team and will determine eligible teams.

MESA COMPETITION SERIES GENERAL AGENDA
Wednesday, April 30, 2025 – Middle and High School
Expo New Mexico – Albuquerque, New Mexico

TIME	Description	Location
7:00 AM	MESA Staff Report	<i>Sponsor Building</i>
7:30 AM-8:45 AM	School Check in and Arrival Prepared Design Drop Off	<i>Lujan Exhibit Hall B Hall 3</i>
8:00 AM	Prepared Design, MESA Mayhem, Poster Symposium, and Technical Interview Judges Report for Event Orientation	<i>Sponsor Building</i>
9:00 AM	Welcome Instructions and Opening Ceremony	<i>Lujan Exhibit Hall B</i>
9:30 AM-11:30 PM	MESA Day High School: Prepared Design Inspection and Performance Judging	<i>Lujan Exhibit Hall C</i>
	Health and Wellness Fair Part 1	<i>Lujan Exhibit Hall B</i>
9:30 AM-11:20 AM	MESA Day Middle School: On Site Team Competition-MESA Mayhem	<i>Lujan Exhibit Hall A</i>
9:30 AM-10:30 AM	MESA USA Technical Interview and Poster – Group 1	<i>See Locations</i>
10:00 AM	On Site Mini Competition Judges Arrive (AM and Full Day)	<i>Sponsor Building</i>
10:30 AM-11:30 AM	MESA USA Technical Interview and Poster – Group 2	<i>See Locations</i>
11:30 AM-12:30 PM	MESA USA Exhibition	<i>See Locations</i>
	MESA Day High School: Prepared Design Symposium	<i>Lujan Exhibit Hall C</i>
	MESA Day Middle School: On Site Mini Competitions	<i>See Locations</i>
11:30 AM-2:30 PM	Lunch and Activities	<i>Students-Hall B Judges-Sponsor</i>
12:30 PM-1:30 PM	MESA USA Technical Interview and Poster – Group 3	<i>See Locations</i>
12:30 PM -1:30 PM	Discovery Fair	<i>Creative Arts</i>
1:30 PM-4:30 PM	MESA Day Middle School: Prepared Design Inspection and Performance Judging	<i>Lujan Exhibit Hall C</i>
1:30 PM-3:30 PM	MESA Day High School: On Site Team Competition-MESA Mayhem	<i>Lujan Exhibit Hall A</i>
	Health and Wellness Fair Part 2	<i>Lujan Exhibit Hall B</i>
1:30 PM-2:30 PM	MESA USA Technical Interview and Poster – Group 4	<i>See Locations</i>
2:00 PM	On Site Mini Competition Judges Arrive (PM)	<i>Sponsor Building</i>
2:30 PM-3:30 PM	MESA USA Technical Interview and Poster – Group 5	<i>See Locations</i>
3:30 PM-4:30 PM	MESA Day High School: On Site Mini Competitions	<i>See Locations</i>
	MESA Day Middle School: Prepared Design Symposium	<i>Lujan Exhibit Hall C</i>
	MESA USA Technical Interview and Poster – Group 6	<i>See Locations</i>
4:30 PM	Event Dismissal (or when done with events)	
	Event Locations	
	MESA Day Prepared Design	<i>Lujan Exhibit Hall B/C</i>
	MESA Day On Site Team Competition-MESA Mayhem	<i>Lujan Exhibit Hall A</i>
	MESA Day On Site Mini Competition 1	<i>Creative Arts - 1</i>
	MESA Day On Site Mini Competition 2	<i>Creative Arts - 2</i>
	MESA USA Middle School	<i>AA Pavilion</i>
	MESA USA High School	<i>Fine Arts Gallery</i>

MESA Day Track Information:

For On Site Events: Additional information for all on-site challenges will NOT be provided in advance, beyond what is below. Also note, Mini Competitions are allowed for 1-3 students, but are optimal with 2-3 students.

For Prepared Design: Teams will be inspected at the registration deadline and will need to bring their device the day of competition.

On Site Team Competition (All Team)

MESA Mayhem

This full team challenge course will involve a variety of skill sets and cooperation; a good attitude is required. Teams will experience a timed challenge, a language learning experience, a communication course and other engaging activities to work towards completion and points. Multiple spirited STEAM challenges will be highlighted throughout this event!

On Site Mini Competition (1-3 Team Members)

MESA Fit

Physical fitness is the body's ability to complete physical work. This can include muscular strength, muscular endurance, cardiovascular endurance, flexibility, and body fat composition. Student teams will use a variety of STEM skills to explore how they relate to physical fitness.

On Site Mini Competition (1-3 Team Members)

Visualize Your STEM Identity

Students will utilize the materials given to show us their STEM Vision. Students will work together in a creative way guided by prompts that they will select the day of the competition. All team members will create something individually, but they will be judged on specific elements for a combined score.

Prepared Design

Building a Healthy & Sustainable Community Center

Competition Overview:

Your group is the project team for a company named, "Healthy Communities", that designs new community centers for comfortable and healthy gathering using modern sustainable technologies. Your team is tasked with designing and modeling a self-sustaining and energy efficient community center for an imaginary town (client) that would like to have an inspiring and beautiful place for their community to gather. The town has a five (5) acre parcel of land on which to build the center. As part of the engineering process, you will need to design a community center building, create a model of the facility and property, and determine what makes it self-sufficient and sustainable. Accompanied with the model, all teams should have a floor plan (blueprint), and flyer that advertises their creation.

Safety:

- 1.) Standard safety practices including the use of protective eyewear if needed must be observed during construction.
- 2.) The model must not contain any material that can pose a danger to students, officials, spectators or cause damage to the host facility, as determined by the judges.

Inspection and Impound:

- 1.) Model community center inspection will take place prior to MESA Day by the Prepared Design Committee. Inspection will include ensuring that the model meets general specifications. The flyer must be complete and submitted for scoring at the time of the Committee Inspection.
- 2.) Committee Inspection must be scheduled as indicated by the Registration Deadline. Inspections will occur at designated times between March 24-April 11. Inspection occurring outside of this window is up to the discretion of the Inspection Committee.
- 3.) Each team must submit a completed flyer at the time of the Committee Inspection to pass inspection. The flyer will be scored before MESA Day and combined with team scores from the day.
- 4.) Model community center and materials must be in final form prior to model impound. If materials do not meet specifications or are not submitted, teams will not receive a score within some/all rubric sections.
- 5.) Teams will drop off their model community center and materials at a specifically assigned table space. No additional parts or materials are to be submitted besides the model, blueprint, and flyer.
- 6.) Judging will take place throughout the day, and teams will interact with judges during assigned times.

General Rules:

- 1.) See the rubrics and sections for model Community Center, blueprint, and flyer to find detailed specifications.
- 2.) Teams must label all materials (model, blueprint, flyer) with school name and team number. Anything not labeled correctly will not be evaluated.
- 3.) The scale used for everything will be:
 - a. Middle School scale: $\frac{1}{2}$ inch = 1 foot / High School scale: $\frac{1}{4}$ inch = 1 foot
- 4.) All teams will participate and receive scores in the model community center, blueprint, and flyer sections.
- 5.) Only the team members will be allowed in the judging area for impoundment of their materials.
- 6.) Software platforms to create the blueprint are allowed, but not required. A hand drawn blueprint will be worth the same points as a software created blueprint.

Event Procedure:

- 1.) Upon impound, judges will evaluate all submitted models, blueprints, and flyers.
- 2.) Each team will be called during an individual scheduled time to talk with the judges and answer questions for a two (2) minute period.

Model community centers will be open to the public during a one-hour period referred to below as the *Symposium*, and all competitors will have the opportunity to vote for a People's Choice award winner.

For the People's Choice awards competitors will be asked to vote for their favorite project. Competitors will not be allowed to vote for projects from their own school.

Scoring Summary: Final team rankings will be based on the total score, which is derived by adding all of the component scores.

1. Model Community Center: *80 Points Maximum Total*
2. Blueprint: *40 Points Maximum Total*
3. Flyer: *10 Points Maximum Total*
4. Symposium Participation: *20 Points*
5. In the event of a tie (identical scores between teams), results of the People's Choice awards will be used to break the tie and determine ranking. Their numerical score will remain the same.

Total Points: 150 points

Scale Model: The objective of the scale model is to give a visual representation of the floor plan of a "healthy community center". To increase the overall presentation, the model is allowed to have "real life" details but is not required. The scale model should also show how the structure and other components will be organized on the available land. The *model* should have the following components:

- 1.) Build a scale model community center with the following scale: *Middle School Scale: 1/2 inch= 1 foot. High School Scale: 1/4 inch=1 foot*
- 2.) The model should be mounted and secured on a foam board platform. Maximum Foam board size is 20" x 30" x 3/16". Nothing may extend beyond the edges of the board, including any outside design space; but may be as tall as needed.
- 3.) The model community center must demonstrate that it is equipped with at least three (3) basic systems such as plumbing, lighting, power, heating/cooling and wastewater.
- 4.) The model community center must include at least one (1) *Green Building* concept as identified by LEED Certification criteria, listed in Addendum 1.
- 5.) The model community center must include at least three (3) *Community Options*, defined as features of the center which provide extra value to the overall health of the community. Examples include but are not limited to access to mental health resources, collaborative food sharing or distribution, fitness and physical health space, library/learning center, entertainment space, etc.
- 6.) The model community center does not have to be a working model.

The *model* can use the following materials:

- 1.) NM MESA will provide table space to display the model community center.
- 2.) Model community center can be built from, but not limited to various structural materials such as foam board, balsa wood, cardboard, paper, cardstock or craft sticks.
- 3.) Recycled materials including boxes, bottles, cans and containers can be cut or modified to make the model.
- 4.) Any natural materials like dirt, twigs, and stones can be used in the model if they do not create a mess by coming off the model.
- 5.) No pre-made model kits or parts/pieces of kits may be used. "Model sized" items and/or landscaping can be used but must be kept to scale (but model items are not required). Pictures and drawings can be used instead of models but must also be kept to scale.
- 6.) Different adhesives can be used such as contact cement, rubber cement, hot glue, white glue, wood glue, super glue, tape, etc.
- 7.) No temporary adhesives may be used. This includes rubber bands, clamps, tape, paper clips, etc. These adhesives can be used during construction but not on the final iteration. Anything not permanently attached will not be judged.

- 8.) Use of 3D printers to print the structure (walls, doors, roof) of the model community center *cannot be used*.
- 9.) Use of 3D printers to print accessories/other components to add to the model *can be used* (e.g. appliances, furniture, and landscaping, etc.)

Blueprint Objective:

The blueprint is a scale drawing to be used as a tool for planning, guiding and developing the scale model Community Center. With the blueprint you can show the floor plan of the target architecture, Community Center and showcase the strategic plan to meet the needs of the client.

Common architecture symbols should be used in the blueprint and teams should adequately show the dimensions of the model and have calculated square footage. Visit the MESA Day Resource Page if teams need assistance with this.

Flyer Objective:

The objective of the flyer is to inform the client and other prospective buyers about the model community center components that are not obvious or cannot be demonstrated on the model. The following are guiding questions that you may answer in your flyer.

- 1.) What are the dimensions of the model Community center and how do they meet the needs of the client?
- 2.) What makes your Community center design a sustainable and/or “green building”?
- 3.) What renewable energy sources power the various systems of your Community Center Design?
- 4.) How does your model demonstrate the ways lighting, water/wastewater, heating /cooling will be powered?
- 5.) Did you research and compute energy generation and consumption for your potential Community Center based on the sources you selected?
- 6.) What types of materials or products did your team select to encourage energy efficiency, recycling, sustainability, durability and “green building” concepts in the Community Center? Provide details.
- 7.) What makes your Community Center design unique?

Symposium:

- 1) During each three (3) hour Prepared Design event (one for middle schools and one for high schools), each team will be scheduled during the first two (2) hours to meet with judges to talk about their model. During the final hour of each Prepared Design event, each team will participate in the Symposium.
- 2) Teams will staff their table/model and “pitch” their design to interested viewers. Teams are encouraged to highlight special features of their community center, and explain what makes it a unique and valuable creation for the community.
- 3) The Symposium pitch provides an opportunity for students to share their work with peers and public spectators, and each participating team will be awarded an additional 20 points to their Prepared Design score.

SCALE MODEL
2020 MESA Day Prepared Design-Team Evaluation Rubric

School Name: _____ Team # _____ Level: HS or MS

Team Members: _____

Scale Model Rubric:	Exceptional (5 points)	Excellent (4 points)	Good- Met Skill (3 points)	Fair (2 points)	Poor (1 points)	Not Present (0 points)	JUDGE INITIALS
Structure							
Scale Everything is drawn to the correct scale and a scale is provided. <i>MS: ½ inch=1 foot HS: ¼ inch=1 foot</i>				All meets criteria	Part meets criteria	No Attempt	
Materials The structure of the model is made from allowable materials. It is evident no modeling building kits were used.				All meets criteria	Part meets criteria	No Attempt	
Mounted Model is mounted on a (Maximum Size) 20" x 30" x 3/16" in. foam board.				All meets criteria	Part meets criteria	No Attempt	
Name Model is clearly labeled with school, team #, and team members.				All meets criteria	Part meets criteria	No Attempt	
Attachment All parts of the model are permanently attached. No loose parts.				All meets criteria	Part meets criteria	No Attempt	
Labels All Major parts are clearly and appropriately labeled.							
Materials Legend A legend is provided that clearly illustrates the material used in the model and what it represents.							
Dimensions Dimensions are provided where appropriate including distance between objects. The model clearly includes square foot building area.							
Addresses Client Needs The model is appropriate for a community to gather and hold events.							
Overall Aesthetics Model was made with quality work, precision and attention to detail.							
PAGE 1 TOTAL:							

Scale Model Rubric Continued:									JUDGE INITIALS
School _____	Team _____	Exceptional (5 points)	Excellent (4 points)	Good- Met Skill (3 points)	Fair (2 points)	Poor (1 points)	Not Present (0 points)		
Renewable Energy and Clean Living									
LEED Certified Features The model demonstrates the use of at least one LEED Certified Feature									
Community Center System: Must include at least 3 systems. For example: plumbing, lighting, power, heating/cooling, waste water, etc.									
Community Option 1: This feature is included and clearly found.									
Community Option 2: This feature is included and clearly found.									
Community Option 3: This feature is included and clearly found.									
Creativity & Realism									
Originality Model is unique from other models.									
Overall Model Building Materials Materials are appropriate and realistic.									
Community Center Systems Design Choices are appropriate and realistic.									
Community Center Accessories Items inside of the Community Center are appropriate and realistic.									
Landscape Design Items outside of the Community Center are appropriate and realistic.									
Overall Aesthetics Overall, the model is creative and aesthetically pleasing.									
Effort Model shows effort and that the team conducted research prior to building.									
PAGE 2 TOTAL:									
SCALE MODEL TOTAL:									
JUDGE COMMENTS:									

BLUEPRINT
2020 MESA Day Prepared Design-Team Evaluation Rubric

School Name: _____ Team # _____ Level: HS or MS

Team Members: _____

Blueprint Rubric:	Level of Skill			
	Good-Met Skill (4 points)	Partially Met Skill (2 points)	Not Present (0 points)	JUDGE INITIALS
Scale Everything is drawn to the correct scale and the scale is included. MS: ½ inch=1ft HS: ¼ inch=1ft				
Dimensions The dimensions of the model are indicated on the blueprint and square footage is calculated and displayed.				
Margin Max ½ inch margin is present around the drawing.				
Lines Drawing is carefully rendered with significant effort in accuracy and clean lines.				
Labels All components are clearly labeled.				
Neatness Drawing is legible, neat and clean.				
Architecture symbols All appropriate architecture symbols are clearly drawn and labeled.				
Match to Model Blueprint and model match in scale and layout.				
Overall Aesthetics Overall, the blueprint is creative and aesthetically pleasing.				
Effort Blueprint shows effort and that the team conducted research prior to creating.				
BLUEPRINT TOTAL:				
JUDGE COMMENTS:				

2020 MESA Day Prepared Design-Team Evaluation Rubric

School Name: _____ Team # _____ Level: HS or MS

Team Members: _____

Flyer Rubric:	Level of Skill			JUDGE INITIALS
	Good-Met Skill (1 points)	Partially Met Skill- (.5 point)	Not Present (0 points)	
Headline The headline is captivating and addresses the interest and needs of the client.				
Client Includes essential information about the components of the model Community Center that meets the needs of client.				
Renewable Energy Sources Explains the renewable energy sources demonstrated on the model Community Center Design, which would potentially make the Community Center sustainable and/or a “green building.”				
Community Center System 1: Includes details on how this Community Center system meets criteria for system #1.				
Community Center System 2: Includes how this Community Center system meets criteria for system #2.				
Community Center System 3: Includes details on how this Community Center Community Center meets criteria for system #3.				
Organization/Flow: The information, graphics, photos, charts are well organized on the flyer; information is clear, concise, and appropriate.				
Materials: Includes information on materials used and how your model Community Center is unique.				
Overall Aesthetics Overall, flyer is creative and aesthetically pleasing.				
Effort Flyer shows effort and that the team conducted research prior to creating.				
FLYER TOTAL:				
JUDGE COMMENTS:				

MESA USA Track Information:

Once available, the full and official MESA USA Handbook will be added to this document and provided as a standalone document. Below is a summary of the competition. Once provided, please follow the official handbook for specific rules and instructions.

INTRODUCTION

According to the World Health Organization, equity is the absence of avoidable or remediable differences. Those differences can be defined socially, physically, physiologically, geographically, economically, or demographically. Given the current state, we all should strive to live in a world where all people have access to the same opportunities and resources. However, in the race of life, not everyone starts at the same starting line. While we all face inequalities (differences in populations that lead to disparities), there are groups who face unfair inequities (disadvantages and barriers that are unjust, unnecessary, and avoidable) that keep them from joining the race fairly. An equitable race would be one that gives every group the same opportunities to succeed

You can begin to make an impact by looking in your community using innovation and creativity to make a change, otherwise known as *Designing for Equity*. Your community does not exist in a vacuum, and positive changes can inspire others to address the inequities around them. Keep in mind the competition theme of *Designing for Equity Locally to Affect Sustainability Globally* (which means designing to minimize or eliminate barriers to opportunities for success in your local community while thinking about the larger impact of global equity) when you research and define your inequity.

COMPETITION COMPONENTS

The components listed below will be used to assess the effective implementation of a human-centered design approach in the context of designing for equity, effective implementation of the engineering design process, and the functionality of the prototype.

1. Design Proposal—The objective of the Design Proposal is to provide a brief, non-technical overview of the inspiration for the project and proposed solution. It should only include information from the start of the project until the first design idea. Students must use the provided Design Proposal Template (see Appendix).
2. Academic Poster - The objective of the Poster is to provide an overview of the project, highlight key points of the design process, discuss relevant testing and data collection, present the resulting prototype, and share recommendations for further development. Students will prepare a printed academic poster, which will be used during a public poster symposium to provide an overview of the project and the prototype.
3. Technical Pitch—The objective of the Technical Pitch is to allow students to establish their technical knowledge while providing an overview of their design process and demonstrating their prototype functionality.
4. Symposium - The objective of the symposium is to engage an audience in a conversation about the team’s design and decision-making process. Students will share a verbal abstract of their project and be available to answer judges’ questions and discuss their project with them using supporting material to emphasize their points in a conference-like setting.

ADDENDUM 1

LEED Certification Criteria

Leadership in Energy and Environmental Design (LEED) certification is a globally recognized rating system for green buildings. It's a framework for designing buildings that are more sustainable, comfortable, and have less impact on the environment. LEED certification is based on a point system that evaluates a building's performance in areas such as:

- Energy use
- Indoor environmental quality
- Materials and resources
- Sustainable site selection
- Water efficiency

Additional LEED Teacher Resources:

<https://www.usgbc.org/articles/leed-high-school-classes-could-be-green-building-game-changer>

<https://www.usgbc.org/resources/summer-high-school-program-toolkit>

<https://www.ecorise.org/portfolio/green-building-lessons/>

<https://learn.ecorise.org/s/>

<https://www.usgbc.org/learning-lab-catalog>

<https://leeduser.buildinggreen.com/tipsheet/school-teaching-tool-curriculum-ideas>

<https://www.usgbc.org/resources/green-building-design-and-construction-curriculum-toolkit>

<https://www.gbrionline.org/leed-schools/>

<https://www.usgbc.org/articles/k-12-curriculum-leed-prep-fosters-systems-thinking-and-career-exploration>

https://www.youtube.com/watch?v=be3_uvcR_kI

Other Resources:

<https://greenly.earth/en-us/blog/company-guide/leed-certification-meaning-and-requirements>

<https://www.rts.com/blog/leed-certification-checklist/>