

The background features a blue-tinted photograph of students in a workshop or classroom setting. One student in the foreground is wearing a lanyard with a badge and holding a small object. To the left, a Coca-Cola bottle is visible. Overlaid on the right side of the image are white technical diagrams, including a circuit board pattern and a network graph with nodes and connecting lines.

2020 National Engineering Design Challenge Pitch Judges Training

Thank You!

Thank you for volunteering to score pitch presentations!

We created this slide deck to provide some information about scoring. Thanks for taking the time to review it!



Agenda

- What is MESA?
- Things to keep in mind
- About the competition
- Rubric scale
- Rubric parts
- Logistics of scoring

Pro Tip:

Have a copy of the rubric in front of you while we go over it

[Pitch Rubric](#)

[Pitch Overview](#)

[Entire Competition Rules](#)

What is MESA USA?

- Mathematics Engineering Science Achievement
- Classroom and After School programs
- Human Centered Design & STEM
- 10 States
- Focuses on students underrepresented in STEM
- Over 49,000 K-12 and college students are served annually

Why Training?

1. Inter-rater reliability
 - The degree of agreement among raters.
 - Common understanding of expectation for each part of rubric
2. Consistency among states
3. Context of the Pitch within the scope of the entire National Competition
4. Familiarity with specifications and the rubric
5. Provide information about MESA students. Set expectations

About the Competition

- Teams of 3-4 students
- Must be designed around the needs of a client.
- An Arduino microcontroller must be part of the solution
- Students will
 - Write a Product Report
 - Give a Product Pitch
 - Give a Technical Presentation and have an Interview
 - Create a Poster

About the Competition (2)

- Teams will
 - Write a Product Report - focus on process
 - Give a Product Pitch - focus on client and business aspect
 - Give a Technical Presentation and Interview - focus on technical knowledge
 - Create a Poster - focus on key points of design process and data

Competition

- Project Report - 100 points
- Prototype Pitch - 100 points
- Technical Presentation & Interview - 100 points
- Poster Symposium - 50 points

Total: 350 points

The Pitch Presentation

Objective:

The objective of the Prototype Pitch is to convince investors or management that the design meets the client's needs, is superior to other options available, and has business value as a product.

Pitch Components

Client Focus and Problem Definition	<i>25 points</i>
Product	<i>15 points</i>
Prototype Demo	<i>15 points</i>
Business Value	<i>30 points</i>
Presentation	<i>15 points</i>

Scale for all items

No half points!

- (5)-Exceptional - Exceeds all aspects of the standard when possible.
- (4)-Excellent - Meets all aspects of the standard very effectively.
- (3)-Met Criteria - Meets all aspects of the standard but no more.**
- (2)-Fair - Almost meets the standard. May be inaccurate or unclear.
- (1)-Poor/Lacking - Attempts to meet the standard but provides information which is irrelevant or unnecessary.
- (0)-Not Present - No attempt appears to have been made to meet this standard.

Pro Tip: Judges may not award half points. Whole points only!

Client Focus and Problem Definition

Client Focus and Problem Definition (Total 25 Points)

Client description - Client base is identified and an adequate profile, including information on population size and location is provided so that observers have few questions about the client base.

Problem Description and Impact - A clear and suitable description of the problem and its impact to the client is provided and some crucial aspects that need to be addressed have been explained.

Human Centered Design - While keeping the target user(s) in mind – teams adequately explain the design requirements needed for the solution to succeed.

Client Input - The team adequately describes how client input supported initial design choices

Client Feedback - Team describes how client input in follow up interviews supported prototype changes.

Product

Product (Total: 15 points)

Define Proposed Solution - Team adequately defines their proposed solution through their prototype and is able to sufficiently articulate how their research, design, and testing led to the prototype.

Originality and Creative Ability - Team adequately explains how their design and approach to solving the problem is mostly original and/or somewhat innovative and are able to sufficiently explain how their research helped to design a solution in a creative way.

Advantages of solutions - Team suitably describes advantages of prototype over other solutions for client - citing a few reasons for being the best solution for client.

Prototype Demo

Prototype Demo (Total: 15 points)

Demonstration - The team sufficiently explains key features and functions of the prototype. Team provided adequate evidence that the client(s) was able to use it with no assistance from team. It was functional, mostly smooth, with few pauses or bugs.

Product look, feel and functionality - The team adequately explain how their design met the client(s) criteria for functionality, elegance, aesthetics, and cost effectiveness. The product is suitably safe to build, use, store and dispose of.

Arduino Integration - The team adequately demonstrates how Arduino is integrated using non-technical terms.

Business Value

Business Value (Total: 30 points)

Market Analysis - Provides assessment of the potential market for their product. Considering market size, buying patterns, competition and possible barriers.

Current Market Solutions – Team describes current solutions explains how their product is an improvement over existing products.

Price Point Considerations - Team identifies a retail price for their product and explain their pricing strategy.

Marketing and Communications Plan - Teams adequately identify their target markets and the value and benefit to potential customers. Teams are able to articulate their strategy for reaching each of their target markets. This includes their message and delivery method for each.

Marketing materials - Team provides example(s) of marketing material(s). They explain why they chose the example they did and why they think it will be meaningful to the customer. Examples could be a print ad, packing materials, flyer, online ad etc.

Potential of Design - Team sufficiently describes the next steps they need to undertake to bring prototype to the client and/or the market –Explaining their forward thinking of product scalability and design improvements.

Presentation

Presentation (Total: 15 points)
Speech Organization & Delivery (3pts) - Presents ideas and information effectively and includes an Intro, Body and Conclusion. Introduction is suitable and inviting, body is mostly focused and suitably arranged, and closing is adequate in unifying entire presentation. Overall presentation shows sufficient evidence of creativity, enthusiasm, value and believability.
Visual Aids/Creativity (3pts) - Adequately demonstrated the use of relevant and appropriate equipment, materials, and props to provide a solid, convincing and interesting presentation.
Audience Interaction (3pts) - The team can adequately hold the audience's attention throughout most of the presentation. Audience is sufficiently interested, engaged, entertained and impressed with the teams approach to the problem.

Presentation pt. 2

Communication (2 pts) - Presentation flows well with minimal distracting pauses, speakers are mostly clear and loud and not going too quickly or too slowly.

Eye Contact and Body Language (2pts) - Most team members used natural movements and gestures, looks poised and confident. Keeps eye contact with audience most of the time & rarely uses notes or slides.

Intro of team members (1 pt) - All team members introduced: YES or NO

Participation (1 pt) - All team members should speak and present equally.

- All team members participated and spoke equally
- All team members participated and spoke but not equally
- Not all team members presented and spoke

Time 5 point deduction for every minute over the allotted 10 minutes.

Watch a sample pitch (on video) and practice scoring

Video:

<https://youtu.be/FGIFRZzOuYE?t=11353>

(Links to sample presentation at start time: 3:09:30)

See our official scores on the next slides.

Client Focus and Problem Definition

Pitch Presentation	Exceptional (5 points)	Excellent (4 points)	Good (3 points)	Fair (2 points)	Poor (1 point)	Not present (0 points)	Observation Notes
Client Focus and Problem Definition (Total 25 Points)							
Client description - Client base is identified and an adequate profile, including information on population size and location is provided so that observers have few questions about the client base.				x			Discusses the client, but does not provide an entire profile
Problem Description and Impact - Team describes the problem, who it affects, how it impacts their life, what their life would be like if this problem did not exist.			x				Summarizes the problem
Human Centered Design - While keeping the target user(s) in mind – teams adequately explain the design requirements needed for the solution to succeed.		x					The requirements were discussed, along with designs implemented for the clients needs
Client Input - The team adequately describes how client input supported initial design choices					x		Mentions but doesn't discuss in detail
Client Feedback - Team describes how client input in follow up interviews supported prototype changes.					x		Mentioned using feedback but not specifics

Product

Pitch Presentation	Exceptional (5 points)	Excellent (4 points)	Good (3 points)	Fair (2 points)	Poor (1 point)	Not present (0 points)	Observation Notes
Product (Total: 15 points)							
Define Proposed Solution - The team adequately defines their proposed solution through use of their prototype and is able to sufficiently articulate how their research, design, and testing led to the prototype.		X					Discussed all options available to prototype; discussed constraints and requirements that helped develop their prototype
Originality and Creative Ability - The team adequately explains how their design and approach to solving the problem is mostly original and/or somewhat innovative and are able to sufficiently explain how their research helped to design a solution in a creative way.			X				Describes how there are no items on the market. Does not discuss research in depth
Advantages of solutions - The team suitably describes advantages of prototype over other solutions for client - citing a few reasons for being the best solution for client.		X					Advantages were well presented with facts to back up why the product should be used

Prototype Demo

Pitch Presentation	Exceptional (5 points)	Excellent (4 points)	Good (3 pts)	Fair (2 pts)	Poor (1 pt)	Not present (0 pts)	Observation Notes
Prototype Demo (Total: 15 points)							
Demonstration - The team sufficiently explains key features and functions of the prototype. Team provided adequate evidence that the client(s) was able to use it with no assistance from team. It was functional, mostly smooth, with few pauses or bugs.			x				Covers components with visual aids on the screen. Demonstration was not able to be seen by entire audience
Product look, feel and functionality - Teams explain how their design met the client(s) criteria for functionality, elegance, aesthetics and cost effectiveness. The product is safe to build, use, store and dispose of.		x					Does explain how the product can be stored and used. Explained the clients requirements and how they were met
Arduino Integration - The team adequately demonstrates how Arduino is integrated using non-technical terms.						x	Does not discuss how Arduino is integrated.

Business Value

Pitch Presentation	Exceptional (5 points)	Excellent (4 points)	Good (3 pts)	Fair (2 pts)	Poor (1 pt)	Not present (0 points)	Observation Notes
Business Value (Total: 30 points)							
Market Analysis - Team assesses the potential market for their product. Assessment Considers market size, buying patterns, competition and possible barriers.			X				Discussed some of these elements, but does not go into detail in the buying patterns or market size.
Current Market Solutions – Team describes current solutions explains how their product is an improvement over existing products.				X			Mentions that there are no solutions that are similar
Price Point Considerations - Teams identify a retail price for their product and explain their pricing strategy.					X		Discusses how cheap the product is, but does not provide a price point
Marketing and Communications Plan - Teams adequately identify their target markets and the value and benefit to potential customers. Teams are able to articulate their strategy for reaching each of their target markets. This includes their message and delivery method for each.						X	Does not discuss a marketing plan
Marketing materials - Team provides example(s) of marketing material(s). They explain why they chose the example they did and why they think it will be meaningful to the customer. Examples could be a print ad, packing materials, flyer, online ad etc.						X	Team did not provide marketing materials
Potential of Design - Team sufficiently describes the next steps they need to undertake to bring prototype to the client and/or the market –Explaining their forward thinking of product scalability and design improvements.				x			Describes next steps to improve design but not how to bring it to market.

Presentation

Pitch Presentation	Good (3 points)	Fair (2 points)	Poor (1 point)	Not present (0 points)	Observation Notes
Presentation (Total: 15 points)					
Speech Organization & Delivery (3pts) - Presents ideas and information effectively and includes an Intro, Body and Conclusion. Introduction is suitable and inviting, body is mostly focused and suitably arranged, and closing is adequate in unifying entire presentation. Overall presentation shows sufficient evidence of creativity, enthusiasm, value and believability.		X			Has an opening question with facts. Presentation follows the rubric well, but no conclusion
Visual Aids/Creativity (3pts) - Adequately demonstrated the use of relevant and appropriate equipment, materials, and props to provide a solid, convincing and interesting presentation.			X		Powerpoint slides had useful information. The slides were helpful to their pitch, but does not provide creative imaging.
Audience Interaction (3pts) - The team can adequately hold the audience's attention throughout most of the presentation. Audience is sufficiently interested, engaged, entertained and impressed with the teams approach to the problem.		X			Two used the slides as an aide, all had eyes on the audience
Communication (2 pts) - Presentation flows well with minimal distracting pauses, speakers are mostly clear and loud and not going too quickly or too slowly.			X		

Presentation

Pitch Presentation	Good (3 points)	Fair (2 points)	Poor (1 point)	Not present (0 points)	Observation Notes
Eye Contact and Body Language (2pts) - Most team members used natural movements and gestures, looks poised and confident. Keeps eye contact with audience most of the time & rarely uses notes or slides.			X		Two used the slides as an aide, all had eyes on the audience. Students were well posed, but rigid with the microphone
Intro of team members All team members introduced: YES or NO			YES	NO	
Participation (1 pt) - All team members should speak and present equally.			YES	NO	
Time 5 point deduction for every minute over the allotted 10 minutes.	-5 points - Went over by 1 minute				

You do not need to add up the scores!

Questions?

If you have any questions while scoring, please look back at these slides or reach out to your point of contact.

Thank you for serving as a judge for the National Engineering Design Competition.
We will see you at MESA Day!

Thank you!