Student Designed Challenge
Event Specifications
MESA Day 2016

LEVEL: Middle/High School

NUMBER OF TEAMS: One (1) entry per school.

TEAM MEMBERS unlimited

OBJECTIVE: Teams will develop a fun, rigorous student-designed competition by November 6th. The winning high school and middle school entries will be formally published in the spring semester as official Arizona MESA competitions for the 2015-2016 school-year

BACKGROUND: We are looking for fresh, fun, challenging ideas. What would you love to design or build for MESA Day? What important STEM careers might you be able to highlight

CAREER PORTRAIT: Michelle Jordan. ASU Professor. After teaching elementary school music for 11 years, Michelle earned a PhD in Educational Psychology at the University of Texas at Austin, focusing her studies on learning, cognition, and motivation. In 2010, Michelle joined the Division of Teacher Preparation at Mary Lou Fulton Teachers College, Arizona State University, as an assistant professor of Educational Psychology. Michelle’s research draws on qualitative inquiry, sociolinguistics, complexity theories, and the learning science to investigate individual, partner and group learning. Some of her current research focuses on collaborative learning in K-12 engineering design groups. Full biography: https://webapp4.asu.edu/directory/person/1623910.

MATERIALS: The only material you need for this competition is the design template.

DESIGN PARAMETERS:

1. Requirements
   a. Entries must be designed for teams of 2 to 4 students.
   b. Ideas should not require specialized equipment that is not easily accessible to everyone. Including but not limited to machinery, tools and/or technology.
   c. Ideas should not require specialized materials that are not easily accessible.
   d. Designs should not be expensive to build.

2. Things to consider
   a. What kind of space will be needed to run the event?
   b. What kind of measurement tools will be need to measure results?
   c. What is the goal of the challenge?
   d. What kinds of design constraints will make it more challenging?
   e. Do you want to increase the challenge level for high school students?
   f. How will you determine a winner? Is it likely that teams will tie? How will ties be broken?
   g. How much time will take judges to review all designs at or before MESA Day?
TESTING PARAMETERS:

1. **PHASE 1: SUBMIT A ONE-PAGE DESIGN BRIEF (by November 6, 2015)**
   a. Teams must submit the attached Design Brief Template.
   b. Required elements:
      i. Clear and concise objective
      ii. Design restrictions or limitations
      iii. Scoring Criteria
   c. Design briefs must be emailed as a word document or PDF by **5:00 pm** on **November 6, 2015** to azmesa@email.arizona.edu. Late submissions will not be accepted.

2. **PHASE 2: FIRST CUT AND PUBLIC VOTE**
   a. All entries will reviewed by MESA staff for completeness and feasibility.
   b. Entries that are deemed suitable for MESA Day will be posted on the Arizona MESA website for public voting.
   c. Voting will end **December 7, 2015**.
   d. The high school and middle school entries with the most votes will be revised and prepared for use during MESA Day. MESA Staff will communicate with winning teams to finalize the specifications for release.

3. **PHASE 3: ARIZONA MESA WILL PUBLISH WINNING DESIGN SPECS (January 2016)**

4. **PHASE 4: Competitions are conducted at MESA Day 2016.**

5. Competition Proposals will be judged, quite simply, on which ones are the most fun, rigorous, and feasible.

6. The winning team will be recognized at MESA Day.

**ATTACHMENTS:**

- Design Brief Template
Design Brief Template

School: ________________________________

Students: ______________________________

Title: ________________________________

**Objective** (Share a compelling challenge that needs a solution? What is the expected outcome for a high-quality design?):

**Design Criteria and Constraints** (What is required? What is disallowed?):

**Materials** (What can be used? What can’t be used?):

**Testing/Scoring** (What specific steps should judges take to effectively test and compare designs? How might points be awarded?):