**NM MESA Day 2014 Frequently Asked Questions**
**Last Updated: February 19, 2014**

*This document is intended to clarify any information pertaining to the upcoming MESA Day/Region Design events. This document also acts as an addendum to the MESA Day Handbook and will be followed at each competition.*

## GENERAL QUESTIONS:

Q: Are all schools invited to MESA Day?
A: Yes, per the attendance guidelines in the Handbook. But, NM MESA reserves the right to not allow a school/team to attend based on readiness and preparation for MESA Day. (11/5/13)

Q: Are Rallies the same as MESA Day? If my device passes inspection at Rally will I be OK for MESA Day?
A: You and your team (*not your Advisor*) are responsible for making sure your device meets all of the requirements in order to be allowed to compete at MESA Day. Each year there are teams that show up at competition and don't get to compete because their device doesn't pass inspection and they tell us that it 'was okay at the Rally' or their 'advisor said it was fine'. We have no way of knowing what your device was like at the Rally, or if someone did or did not approve it correctly, or what changes have been made to your device between now and MESA Day and the bottom line is; if it doesn't meet requirements at MESA Day it is not going to compete. You are strongly encouraged to contact your Regional Coordinator or Statewide Coordinator if you have any questions or doubts whatsoever or just want to be on the safe side because you *do not* want to be that team that goes all the way to Albuquerque and doesn't even get to compete. (11/5/13)

## ON SITE (WATER HARVESTING):

Q: How will kids be asked the math calculations and vocabulary? Will the questions be asked about the on-site challenge project or about a hypothetical water harvesting system?
A: It could be either scenario. (11/6/13)

Q: For the math section will calculators be provided?
A: Yes, they will be provided. (11/6/13)

## ACADEMIC DISPLAY:

Q: Are there any clarifications to the rubric?
A: Yes, on the "multiply by" line it should read-x10, x7, x5, and x0 (11/5/13)

Q: Can posters be computer generated/printed as long as kids do all the design etc.
A: Yes, as long as display meets the content and size requirements. (11/5/13)

## PREPARED DESIGN CHALLENGE:

Q: Can a CO2 canister be used?
A: If there is any kind of chemical reaction to create the power to make it work then no. CO2 cartridges work because the compressed gas expands and includes a phase change. A compressed air canister was used in previous years but no reaction/expansion was taking place. They used the expulsion of the air to create the movement of the carCO2

cartridges are ruled out as dangerous. They can explode with heat and have to be handled carefully. On that note, any canister deemed unsafe will not be allowed for use. (11/5/13)

Q: Can we use more than 1 trigger?
A: No, each team was provided 1 trigger and you are only allowed to use the standard trigger. If you lose the one provided you can replace it, but it must be the same product and only one is allowed to be used. (11/1/13)

Q: Can we use a tower with a swivel or something similar that is adjusted between each run?
A: Yes, per rules, infrastructure elements cannot be moved (transfer of tower), but they can be adjusted. (11/1/13). To better clarify, towers can be adjusted but roadways/ramps cannot be moved with them. Examples presented have been a tower with notches at different heights or a tower that turned (but did not move from its starting position) and then attached to the different ramps going to each city. Real life relation: Compare to a railroad track with a switch or a roadway with different on/off ramps where transfer points are adjusted, but not moved. (11/20/13)

Q: Does the individual cube have to pass the mark or does it count if the "container" passes?
A: The cube(s) have to pass, not the container. If cubes are touching each other (stacked or clustered) with no gaps, the load will count once part of the load touches. (11/5/13)

Q: Do the cubes count if the load spills?
A: If the load spills after it passes the mark it counts. If it spills before the mark, it does not count. (11/5/13)

Q: Can 1 trigger release food to all cities at one time (like with several chutes released at the same time)?
A: No, per rules, another run cannot start until the previous run has been called successful or unsuccessful. (11/5/13)

Q: Can a zip line or other piece of their device be secured to the floor or the map?
A: No, the distribution system must be self-standing and not secured to anything. (11/5/13)

Q: Can teams use a system that carries the entire required load and does drop offs?
A: No, all food needs to start in Albuquerque. (11/5/13)

Q: Can you better define "launching"? Can the infrastructure be used to power the load with springs or elastic cords?
A: Nothing can be airborne and must not be ruled as dangerous. The only allowable way to transfer items is through the distribution system. Per definition, launching is:

- To throw or propel with force; hurl: launch a spear.
- To set or thrust (a self-propelled craft or projectile) in motion: launch a rocket; launch a torpedo.

Therefore, the infrastructure is not allowed to throw or thrust the load in motion. (11/6/13)

Q: Can we use the measurement containers in our system?
A: No, There will be a container at each location to manually place successfully delivered cubes. There will be a "fill line" marking on the container, but the actual measurement is what will be used. Teams will be allowed to check progress as needed during course time (place on scale) to ensure minimum measurements are met. In addition there will be a container that the team can use in preparation (during the set up time) to measure as desired, but it cannot be used by team during run. (11/6/13)

Q: Does it matter if we practice with the stackable cubes or not?
A: Not really, unless you are planning to stack (up to 10). They have a variation in shape as the stackable cubes have a tiny notch on the top and a small hole on the bottom to allow stacking. They are both 1g cubes. (11/6/13).

Q: What happens if there is a variation in cubes and they are not exactly 1g?
A: We will round up from any measurement .5 and above and we will round down .4 and below. The final weight measurement is what will be counted. (11/6/13).
Q: Can you clarify the scoring?
A: An excel scoring tool will be placed in the MESA Day Resources that teams can download to play with scoring and determine possible scores. (11/6/13). A second tab was added so raw data can be entered. (11/18/13)

Q: Can animals be used in system?
A: No, they are considered messy and hazardous. System must operate without assistance with any live thing-human or animal. (11/18/13)

Q: Can teams continue to use their trial time to continue to count out/measure cubes?
A: Yes, anything after the initial 2 minutes is considered the team's trial time and they can use that time as desired. This can include team members continuing to ready cubes. (11/18/13)

Q: Any suggestions for time use?
A: It is CRITICAL that teams practice set up. With a more complicated system, comes more time to set up. Teams are allowed to bring and use pre-marked containers (will get added into system weight) and it is highly suggested that teams decide on roles prior to competition (start, finish, counter, etc.). (11/18/13)

Q: It is hard to determine the start area, how will judges do this?
A: Because of this systems must be constructed in a way that judges can determine and make ruling on start area. Examples, if using a tower that covers the start circle, markings must be made on tower that judges can visually see cover the start circle (a circle on bottom, etc). In addition, cubes must be placed in a holding area that allows for visibility (clear or open container) to determine when crossing/starting. (11/18/13)

Q: Can you clarify judging procedure for run?
A: Steps will be as follows, more details in handbook: (11/18/13)

1.) Team will be called "on deck". Here teams will bring system to be weighed. Judges will verify total mass of system (one crate full allowed), that it is a unique creation, and that it is labeled. Judges will ensure all repair materials are in clear bag(s) and are included in the one mass measurement of entire system.
2.) Team will then be called "in the hole" where they will wait for their assigned course to become available.
3.) Team will be called to course and given go ahead for 2 minute set up time. After 2 minutes judges will verify trigger, energy source, the start area of the food cubes, and that objects are not secured with adhesive material. They will also verify with team general plan of run so they are prepared and can better call successful runs. They will then give the call for the start of trial. During inspection, students are not allowed to make changes, continue to count cubes, etc. If during the inspection, a system does not meet specifications it will be disqualified. Students are able to ask questions of the judges during the 2 minute set up, but it is the student's responsibility to ensure system meets qualifications before the end of their set up time. Teams may use scale and the unmarked container during set up and during trial run, but they are not allowed to be part of their system.
4.) Trial will start and teams can do whatever they need to during run (continue setup, verify cube weight, etc). Trial will continue to run until end of 4 minutes or team calls time. Teams are to place cubes in the marked containers at each location.
5.) At the end of the trial. The judge will weigh each container and mark final weight. If food cubes are clearly not near the target marking, a weight score will not be given for that location to expedite scoring.

Q: Can metal rods or anything (straws) be attached to the trigger?

A: No, the only allowed modification to the trigger is to add a string to allow the system to be activated from a further distance. The string cannot aid in the start of the system. If set up, the pull of the trigger can release a straw or longer rod, but the trigger must detach and not be modified or attached to anything. (11/20/13)

Q: If we are putting cubes in bags do they need to be unloaded before another run can start?
A: No, If they are contained in something they can just be unloaded. At the end of the run they will be dumped into official measurement container to be weighed. (2/19/14)

Q: Can we have 6 (or 4) different ramps that we just move in and out?
A: No, once infrastructure is set it cannot be moved so ramps cannot be replaced. However, if you were to add a central hub that the ramps can be adjusted to (that did not move) and attached to that would work. (2/19/14)

Q: If we only have one ramp will our system be disqualified?
A: No, it will not be disqualified, but you will only be given credit to the 1 location you can deliver food to without moving the ramp (infrastructure). (2/19/14).

Q: Do we need to bring our own trigger?
A: Yes, there will not be any available for use. Each team was provided one to use and they need to use during competition. (2/19/14).

**PREPARED DESIGN CHALLENGE SPECIFICATIONS:**

Measurements from Albuquerque to Location:

- Tucumcari-47.5", 119cm
- Carlsbad-62.5", 159cm
- Alamogordo-42", 106cm
- Las Cruces-55.5", 141cm
- Grants-26.5", 67cm
- Los Alamos-30.5", 77cm

Purchase Information:

- Cubes-Amazon.com or educational supply; Learning Resources Gram Unit Cubes, Set of 1000 (LER0305): http://www.amazon.com/gp/product/B000URSFMI/ref=oh_details_o00_s00_i00?ie=UTF8&psc=1
- Pin-Aerofast or Amazon.com; Aerofast C3-20R: http://www.aerofastinc.com/ or http://www.amazon.com/Aerofast-Inc-FPSC3-20R-Ring-Handle-Diameter/dp/B002GPLCLS/ref=sr_1_1?ie=UTF8&qid=1383763097&sr=8-1&keywords=aerofast+pin+FPSC3-20R
- Containers- Amazon.com; Reditainer Deli Food Container 32 oz.:: http://www.amazon.com/Reditainer-Deli-Food-Containers-Lids/dp/B007V2HBJS/ref=pd_sim_k_1