

Recommendations for MESA Advisors Across the School-year (Draft)

by Peoria MESA Advisor David Hill at 2013-14 MATI Regional Make-up Training.

Aug Sept:

1. Plan Schedule for year. Recruitment & Registration Time.
2. Mission Vision – standing vision.
3. First MESA Meeting: 1) returning students will say what MESA is; 2) fun activities to start – not just paperwork – to get students to do teambuilding, see their skills, see how they communicate, see what kind of leadership emerges, let students see how we approach problem solving using their own creativity)
 - a. Aside: Peoria feeder school model = Peoria Junior MESA. That starts in October.
4. Second/Third Meetings – and throughout first semester – focus on smaller projects (Peoria doesn't focus on larger competitions until after Christmas break). Examples: 1) Radioactive golf balls – prepare something like prosthetic arm – to pick golf ball from bag and move to something 10 feet away; 2) foam tubing – use walls in hallway – roller coasters taped to wall. Christmas themed – so it has to go down chimney; 3) they'll design a handheld water wheel to get ready for the big water wheel competition; 4) tomorrow, they will have peg board mazes – rubber bands and craft sticks and ping pong balls – go through maze in longest time possible (wheelchair access ramp) which they can do over and over again during time; they must collect data in trials (so they are learning about data tables, recording pieces b/c in any competition, here's a problem, a pile of materials and you need to get a plan, we'll stamp it, then you can come get materials after you have a plan. Keep a cube and pizza box solar oven – good for retaining heat (the opposite being to block heat). David likes PBS design squad too – and EGFI (engineering go for it) that range from several weeks to one day activity. They'll do a two week project after thanksgiving using Google Sketchup. They'll use to design the ideal MESA room. Then use 3D plan and junk materials to actually build a model. Judy Hughes put together brown bag innovations activities – put a bunch of stuff in a bag – not random but same sets – and they must build whatever. David and Judy are resurrecting.
ASIDE: Arizona Science Center will do activities as well but for a cost.
5. Another fun piece during first meetings: what do you like/aspire to – write letter to yourself. Every year you're in mesa you write a letter to yourself – you get the letter back when you graduate from high school. They can't wait to get them. David never reads them/locked/sealed til they are returned.
6. Team composition- they build based on personalities, grade levels, etc. Multi grade usually. Usually both genders. Main focus: teams work together. Sometimes trading kids out. Once teams developed, they give teams specific roles for preliminary activities. Sometimes we let kids pick their own teams as well, switch it up regularly to see how things work.

October

1. Learn Competitions & establish a budget to anticipate materials needed (Duct tape, hammers, saws)
2. High School students will work with younger middle school students (around measuring, judging – not the build – they will help measure the height of the tower, or help ask guiding questions about the base they use, etc.)
3. Families begin to ask questions; some parents actually were in MESA 20 years ago.
4. Initial Meeting – parents come in during first pickup. They've also tried STEM nights where they take HSs to Feeder schools to talk about MESA, etc. Feeder schools also visit HS campus. MESA students share projects from previous year.
 - a. JS: if you can encourage this kind of connection, you'll have a much more long-lasting effect. You see it in their success/excitement/ cheering. Peoria is often very loud.
 - b. ML: Oregon's college night (Oregon does one activity in fall, one in spring – focused only on national competition). They have all students present projects to parents – they can show off their success. They also do an on-site where parents and families do it with the students.

November

1. Trip to challenger space station (leadership opp)

January

1. Junior High – they sign up for 3 projects of 8 they'd like to do – top 3.
2. Juniors and seniors must be team leaders on competition design. They supervise the running, materials, etc. this is a 2nd semester mesa class.

Feb

1. At regionals, we'll have several teams sometimes doing the same competition (e.g. rockets). After regionals, the advisors select who goes forward.

April.

1. MESA Day. Sometimes students can't make it (track, band, prom), but we try to find a spot for everyone.
2. Other students will be helpers photographers etc as leaders (they have a team but not specific officers like other MESA schools). We have chief engineers that look at what's going on – we have students supervise equipment that are good at setup, teardown. Others that are good at treasury. They've tried giving roles (treasurer etc) but b/c of busy schedules, the leadership team was ideal b/c of leadership team – and kids also sometimes rise above there to help bridge field trips, count money from fundraisers, etc.). Middle school doesn't do that though b/c they don't do as much fundraising.

GENERAL COMMENTS FROM DAVID

1. Knowledgeable Advisors Myth – beware. Many great advisors are afraid of not being knowledgeable enough; what matters is the ability to scaffold independent inquiry.

The First Three Weeks with MESA (Draft)

Recommendations from 2014-2015 MESA Southern Region Lead Advisors

Recruitment.

1. **Advertise MESA**
 - a. **Post Flyers/Posters In Perfect Places.** By cafeteria line, on HS news show, bulletin boards, in daily announcements (Sheila)
 - b. Offer MESA student work for School Display cabinet. Students could design layout. (Sheila)
2. **Ask Returning MESA Students to Recruit.** If you are getting the same students year after year, encourages students to bring a friend and/or offer an incentive (ASU/UA pencils). (Sheila)
3. **Host a Recruitment Night or MESA Parent Orientation Potluck** with families of students.
 - a. Feature past projects kids have build out.
 - b. imagAsk parents to bring casserole/dish.
 - c. Distribute Bilingual welcome Letter to Families.
 - d. Distribute "AIF" and get them signed by parents (application information form?)
 - e. Overview expectations/rules contract or commitment form.
 - f. Distribute 1-pager for fridge (with contact info, mission, rules, calendar, whole family blocks day – no vacations then. (Sheila)
4. **Host Parent/Admin Workshop.** Offer short brownbag activity where students build something. Invite school admin. In Oregon's program, students actually lead these activities. Also has been done locally – using the strongest link activity (MS-E-C4) - to let kids be the expert (Ron).

First Meeting(s)

1. Start Year with short, fun design challenges for all students. Use these to reinforce design process skills while informally assessing student dynamics, skills, needs, interests.
 - a. Provide numerous opportunities to create and fail – and learn to trust and grow from the experience of failure (Manny).
 - b. Get teams excited about simply coming to class for mini-competitions in class.
2. Get to Know Your students (their interests, cultural funds of knowledge, etc)
 - a. Do Fun Ice-breakers or Design Activities.
 - b. 'Gregorc Mind Style Delineator' (Ron) to learn students' learning styles
3. Establish Culture of Design/Invention
 - a. Resident Experts. Ask Returning MESA students to be 'resident experts' and present on their design process last year – using their designs. Give every student the opportunity to be an expert whenever possible. (Ron & Sheila)
 - b. Returning Teams. Let teams staying in the same competition dive back into their process – perhaps in the back of the room – and help set the tone for new teams through sharing their process (Sheila).
4. Create Leadership Opportunities. Nominate or Elect Officers / Student Leaders if desired (get necessary signatures for school procedures).