MESA Day 2008
Solar Still – Procedural Recommendations

Possible roles: (3 min)
- Lead Judge
- Still check-in (forms)
- Still spec check (size and dryness)
- Still set-up (level and charge)
- Oral Exam judges (3)
Handouts:
- Oral rubric (100), Spec sheet (36), Maps, Ranking

Materials:
- meter stick, 100 mL grad. Cylinder, paper towel
- clipboard, marker, pens
- Bucket, funnel, syringe, sponge
- TDS pens, 100/250 mL beaker, wash bottle
- Cement blocks, level
- Hat, Sunscreen, Sunglasses, camera
- paper, pencils, calculator, stopwatch

Handouts:
- Oral rubric (100), Spec sheet (36), Maps, Ranking

Materials:
- meter stick, 100 mL grad. Cylinder, paper towel
- clipboard, marker, pens
- Bucket, funnel, syringe, sponge
- TDS pens, 100/250 mL beaker, wash bottle
- Cement blocks, level
- Hat, Sunscreen, Sunglasses, camera
- paper, pencils, calculator, stopwatch

Approximate timeline
- Arrive around 7am
- Organize volunteers/judges – find out what each feels comfortable doing
- Define check-in, model staging area (students only 7:30-9:00), visitor’s gallery (need barricades)
- 7:30 Begin Specification check (you can check models in if only one team member is present but at least two team members must be present for demonstration; Note – everyone shows up at last minute)
  o Prepare grade sheet that will accompany project
  o Provide teams a map to where oral presentation will be
  o Max Size: 50 cm x 50 cm x 50 cm (from base of model (not blocks)) when completely set up. Solar reflectors must fit within the 50 cm cube. Mirror edges must be beveled.
  o Glass must be beveled and not extend beyond the edge of any side; if non-rectangular, must have diagram which shows how area can be calculated from simple geometric shapes with a total area
  o Model must be reasonably dry to start – they do not fill/charge still until 8:30
  o Models should be labeled: School name, team #, student names
  o Sign-up for oral presentation/feedback time – encourage students to arrive early – there will not be extra time given if they arrive late!
  o Ask students to explain how they will fill the still and how we will detach collection bottle at 12:30; Help students level their models.
  o After students drop off and set-up model, they must leave the staging area
  o Disqualifications: If a project does not pass spec check, notify students but encourage them to complete demonstration part of competition anyway.
  o Leakage: I’m not too worried about this but we can award a penalty (demotion of one in final ranking if leakage is excessive).
- 8:00 Make sure presentation room is open and electronics work
- 8:30 Charging the stills
  o 1-2 students will have 10 minutes to charge their still. They must use our water but have their own transfer container. Place a towel/napkin over the glass area to limit pre-heating
  o Charging to be complete by 9:00 and all contestants must leave the area until the models are released from the event at 1:30
- 9:00 Oral presentation
  o Only judges (~3) and presenters (2-4) are allowed in the room (lead judge can allow other team members to watch from back of room).
  o Maximum of 5 powerpoints or overheads can be used
  o Both students must share in giving the presentation
  o Students have 5 min +/- 60 sec to present the following information
    • Who they are
    • Summary of project
    • What they expected
    • What they found experimentally
    • Analysis of how varying one design parameter effects still efficiency
- 12:30 Judges only – convene at solar still area and collect collection jars for measuring. Mark time
  o Measure volume, TDS
  o Calculate scores and ranks
  o Leave feedback with projects on how well they did but not final award level
- 1:30 Allow student to pick up projects