**FFA Agricultural Technology and Mechanical Systems Career Development Event**

**Event Theme for 2017:**

**MATERIAL HANDLING SYSTEMS**

**This is the emphasis area for the 2017 WA STATE FFA Agricultural Mechanics Career Development Event.**

**EVENT FORMAT**

**Team Make-up:**

Teams can have up to five members. Team ranking is determined by combining the scores of the top four students from each team. Teams having fewer than four members, for whatever reason(s), are not eligible for team awards, but students may receive individual awards. **NO alternates** are allowed to compete at State due to limited resources and schedule availability. The State contest allows no more than **ONE TEAM per school**.

**Equipment:**

Each event participant must adhere to the safe practices and work habits appropriate when performing required activities.

**Needed- Safety Materials Students Must Provide**

**Participants are responsible and must provide all personal safety equipment** including:

**Industrial- quality eye protection:**

**INDIVIDUALS MUST WEAR STYLE B (SEE BELOW) INDUSTRIAL-QUALITY EYE**

**PROTECTION** during the skill/problem solving activities. Those with prescription eyewear that is not Style B must also wear safety glasses or goggles while participating in this event. Safety glasses may not have to be worn while doing the team activity. They do not have to be worn while completing written exam. Acceptable spectacles or goggles must adhere to the American National Standard Practice for Occupational and Education Eye and Face Protection.

**Clothing:**

Each individual shall furnish and wear appropriate clothing such as long pants and long sleeved button shirt, coveralls, etc. for this event. Clothing must be in good repair (clothing with holes by design or otherwise will be considered a safety hazard) and fit properly. Oversized or loose fitting clothing is dangerous around agricultural equipment and is not allowed. Long-sleeves must be worn when welding or oxy-fuel cutting. ***NO FLIP FLOPS OR SANDALS OF ANY KIND!!!***

***\*Coveralls must be zipped up and properly worn or deduction of points may affect participants score for safety.***

**Official dress is not required*. ANY INDIVIDUAL DEEMED INAPPROPRIATELY DRESSED MAY BE DISQUALIFIED FROM EVENT.***

**Other Materials:**

Each participant must have a clipboard, two sharpened pencils and an electronic calculator. Calculators used in this event should be battery operated and silent. **CELL PHONE CALCULATORS CAN NOT BE USED.**

**Use of Hand Calculators:** Each team member will need a calculator to complete the multiple-choice examination and possibly the skill activities. **Cell phones cannot be used as a calculator.** Students will **not** be allowed to share a calculator during the examination. The team activity may also require calculators, but team members may share them during this activity.

**Use of Cell Phone:** No team member is allowed to use a cell phone or any other communication device at any time during the event. Doing so will result in disqualification.

**Computers:** Each team **will not** be required to provide a laptop computer and printer for the team activity.

**Specialized safety equipment:**

Necessary equipment such as helmets, shields, pliers and gloves are to be provided by each registered participating school team. ***(BRING YOUR WELDING GEAR WITH YOU).***  Hearing protection devices will be provided by the Central Welding of Burlington as needed. All tools and equipment will be furnished for the event unless otherwise stated. Individuals are allowed to use only the tools and equipment furnished by the event committee unless otherwise noted in the event description. ***Participants may be docked points for not being prepared with safety equipment***.

If a team member needs modified equipment due to physical size and stature, the student must supply this equipment. The team member or coach must present the student supplied modified equipment to the event superintendent prior to the start of the event for approval.

**Scoring:**

Event participants are evaluated as follows:

**Individual Scoring**

Written examination 50

Individual activities (5 at 30 points each) 150

***Total Possible Individual Score 200***

**Team Scoring**

Top four written examinations 200

All individual activities for top four 600

Team activity 100

***Total Possible Team Score (top four) 900***

**Tiebreakers:**

**The team activity scores will be used to break a score tie associated with the team rankings. If a tie still exists, the combined written exam scores of the top four team members will be used to break the tie.** **If a tie exists between individuals, the combined highest problem solving/skill scores will break the tie(s). If still tied, the highest written examination score will be used to break the tie.**

**Awards:**

Awards will be presented at an awards ceremony. Awards are presented to teams as well as individuals based upon their rankings.

**2017 Written Examination:** Each student completes an examination that consists of 25 multiple-choice questions. There are 5 questions from each of the five agricultural technology and mechanical system areas. If you look at a National Contest Written Exam, you will see that at the end of each area there are 5 problem solving questions. This is where the 25 questions will be developed. They will be similar problems, but the data will be changed. Students will have 50 minutes to complete this portion of the career development event. Team members will not be allowed to sit together. (Note): The Written Exam will be worth 50 points instead of 100 points as in years past. This was one of the decisions made at the State Conference last summer.

Test questions are pulled from National tests from 2010 - 2015.

**Individual Activities:**

**Individual problem solving and skill development activities**

Each student is individually evaluated in each of the five system areas. Each student is allowed 25 minutes to complete each of the five activities.

**2017 Structural Systems Activities**

All students must wear safety glasses during the skill activities. To enter the CDE area, students must have safety glasses, welding helmets, shields, and gloves in their possession. Students must wear clothing and footwear appropriate for metal working. Any hearing protective equipment required will be provided.

**The Structural Systems Skill activity: This year contestants will be required to read and interpret a working drawing, weld a joint using 6010 & 7018 electrodes in the flat, horizontal or vertical position.**

**2017 Machine & Equipment Systems Activities**

All students must wear safety glasses during the skill activities. To enter the CDE area, students must have safety glasses in their possession.

**The Machine & Equipment Systems Skill activity: The machinery used in the contest this year will be Forklifts and students will need to perform skill associated with forklifts. These could include operation, diagnostic testing, hydraulics, operating manual interpretation. Identification of parts of forklift may also be on the contest.**

**2017 Construction Systems Skills**

**The Construction Systems Skill activity: This year’s contest will center on building construction. It could include wood building construction, concrete, building materials, bill of materials, etc.**

**2017 Electrical Systems Skill Activity**

No palm pilot (PDA) or cell phone devices will be allowed in the contest area. Electric motors and their controlling components are a commonly used in the material handling process. Understanding how they work is important especially when incorporating them in a processing plant environment.

**The Electrical Systems Skill activity: This year contestants will be required to show understanding of electrical motor control circuits and using a wiring diagram to wire a circuit. A knowledge of motor controls such as, thermostats, limit/pressure switches, relays, photo-electric cells, timers, etc., and their uses would be helpful.**

**2017 Energy Systems Activities**

All students must wear safety glasses during the skill activities. To enter the CDE area, students must have safety glasses in their possession.

**The Energy Systems Skill activity: This year the contest will center around small gas engine power. Students should be familiar with small engine small block skills. Skills could be diagnostics, manual reading and interpretation, measurements of small engine components, selection of parts for best performance. Students may need to use tools used to assemble a small gas engine.**

**2017 Team Activity**

The team activity will require calculators, but team members may share them during this activity.

**Team members will work together to complete the activity in 25 minutes.** This team event is worth 100 points. If a team member exhibits or performs any unsafe practice, points will be deducted from the total team score.

**Description of Team Activity: To be determined. I will send you out another email, when I know what area will be covered.**

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| **Additional Reference Material for Future Events YEAR** | **EVENT THEME** |
| 2017 | Material Handling Systems |
| **2018** |  |
| 2019 |  |
| 2020 |  |