The District Science and Engineering Fair Tuesday, May 5, 2020

This year our science Fair is being expanded to include an engineering component. Because of this change, there are a few things you should be aware of before the final packets are sent out in late October:

- The original experiment portion of the science Fair will remain basically the same.
- Your students will get to CHOOSE if they want to do an experiment (the traditional way) or an engineering design. They may only do one project or the other, not both.
- The experiment portion should not include a demonstration (same rule as the past), but the engineering design will require one as the judges need to see what the object does and how it solves the problem.
- Students will need to have the scientific method displayed on boards for experimental design, and the engineering design process displayed on the board for Engineering design. I will provide detailed information of what this can look like in your coordinator packet.
- The engineering designs must solve a real-world problem of the student’s choosing, and must be fully functional, but not necessarily fully realized. Meaning, it needs to work, but points will not be deducted if the student figured out a better way to create it but did not have time to employ all the fixes. It is actually part of the Engineering Design process to evaluate and make it better, and the judges will be instructed to look for that during demonstrations.
- Okay... So this part is really hard to word properly, so I hope I can fumble through this coherently... We will now have three grade level bands for competition: K-1, 2-3, and 4-5. There will be one winner from each category in each grade band. (1 experiment winner and one engineering winner from K-1, and so on...) Each school must send one of EACH category. For example you cannot send two experiment winners for the 4-5 band. Instead, one winner from 4-5 must be an experiment, and one winner from 4-5 must be a engineering project and so on for all three grade level bands.
- We will still send a total of six winners from each school to compete-- reminder 3 experimental design winners, and 3 engineering winners.
- We will have maker kits available again at the Fair this year to help entertain the students during judging.
- I really need feedback as to the wording of the engineering design. I have called the design a prototype in the rules, but I feel there might be a better name for it, such as model, design, project, etc. Please send me feedback to know what you prefer or if you have a much more suitable name.

Please feel free to send me questions and feedback during this time, so that the committee can use your comments to make this Fair the best ever. I truly welcome any and all feedback regarding the Fair as each of you has an expertise that will be invaluable to our success. The detailed information and ideas on how to coordinate the new fair will be sent out in Late October, after we have finalized the rules.
District Science Fair Rules: Experimental Design

The rules outlined below must be adhered to without exception. Please follow all rules listed so you will not experience disappointment or surprise on the day of the fair. The use of the steps in the Scientific Method are required and must be demonstrated, and visible on your display.

**NOTE:** Photographs and illustrations are considered equal to or better than actual project or demonstration materials as long as the exhibit is accompanied by identification labels.

1. Plants, (except [c] below), molds, vertebrates, environmental pollutants and items listed below which are used in an experiment cannot be exhibited, but the project may be demonstrated through photography, illustrations, and/or diagrams.
2. Exhibit size is limited to 30 inches deep, front to back; 48 inches wide, side to side, and 96 inches high, floor to top. (Tables are 30 inches high.) There can be NO exceptions.
3. Only ONE student per project will be permitted. NO team projects are allowed.
4. Proper attention to safety is required of all science fair participants. Anything which could be hazardous to the public is PROHIBITED FROM BEING DISPLAYED. Specifics are outlined below:
   a. **NO OPEN CONTAINERS WHATSOEVER!!!**
   b. Live organisms pathogenic to man or live vertebrates (i.e. cultures of bacteria or fungi are prohibited; invertebrates can be displayed only in safe, enclosed containers)
   c. Plants will be allowed if they fit within the project dimensions. Plants must be pre-watered. Poisonous or toxic plants are prohibited.
   d. Vertebrate animals, living or dead, and their parts are prohibited.
   e. Food, either human or animal, may only be displayed in sealed containers.
      *Note:* The public must NOT sample food.
   f. DO NOT display syringes or any similar devices.
   g. Any flames, open or concealed, are prohibited.
   h. Hot plates are prohibited. Do not use any highly flammable display material.
   i. Dangerous chemicals, including caustics and acids, are not allowed. **Safe chemicals** such as table salt, sugar, or bicarbonate of soda may be displayed in quantities of less than 1 tablespoon.
   j. Highly combustible solids, liquids, or gases are prohibited.
   k. Do not use tanks which contain combustible gases, including butane and propane, both of which are prohibited.
   l. Bare electrical wires/exposed knife switches may be used only with circuits of 12 volts or less.
   m. NO electrical outlets of any kind will be provided, nor will they be available.
5. The student may not display his/her name or school on the project. All projects will be identified only by an assigned number.
6. A contestant may enter only ONE exhibit. The exhibitor must do all work on exhibits. Teachers, sponsors, parents, etc. may participate only in an advisory capacity. Judges will give special attention to displays using children’s language and drawings. Avoid using technical terms that are not understood by the student.
7. Scoring will be based on understanding and work done by students, NOT on the value of accessory equipment, either borrowed or purchased.

Criteria for judging will be based on creative ability, scientific thought, understanding, dramatic value and technical skill, and clarity. Decisions of the judges will be final.

*updated October 2018 – Jessica Jones*
District Science Fair Rules: Engineering Design

The rules outlined below must be adhered to without exception. Please follow all rules listed so you will not experience disappointment or surprise on the day of the fair. The use of the steps in the Engineering design cycle are required and must be demonstrated, and visible on your display.

All engineering design prototypes should follow the same basic rules as the experimental design in regards to exhibit size and safety. All engineering design prototypes should be working creations, made by the student, that solve a specific problem listed on the exhibit. Demonstrations of the prototype are acceptable so long as the student is the sole demonstrator. In the event that the prototype is unable to be demonstrated, the prototype must still be displayed and may be demonstrated through video, photography, illustrations, and/or diagrams. If a student chooses to use video footage to demonstrate the prototype, the student will be solely responsible for providing the viewing device and associated power source.

1. Exhibit size is limited to 30 inches deep, front to back; 48 inches wide, side to side, and 96 inches high, floor to top. (Tables are 30 inches high.) There can be NO exceptions.
2. Only ONE student per project will be permitted. NO team projects are allowed.
3. Proper attention to safety is required of all science fair participants. Anything which could be hazardous to the public is PROHIBITED FROM BEING DISPLAYED. Specifics are outlined below:
   a. NO OPEN OR CONCEALED FLAME WHATSOEVER!!!
   b. Prototypes that require the the student to ride, balance, or perform movements that would cause a falls risk will be prohibited from being demonstrated.
   c. Prototypes must be free of exposed sharp edges, points, and/or corners that may inadvertently cause harm or damage.
   d. Demonstrations must not use organic materials (food or plants) that may decompose as part of the prototype.
   e. Engineering prototypes must be free from leaks and cannot use any caustic or flammable materials in order to operate.
   f. Prototypes that include motors must be powered by 12v electricity or less. ABSOLUTELY NO GAS POWERED MOTORS OF ANY SORT.
      i. Highly combustible solids, liquids, or gases are prohibited.
      ii. Do not use tanks which contain combustible gases, including butane and propane, both of which are prohibited.
      iii. Bare electrical wires/exposed knife switches may be used only with circuits of 12 volts or less.
   g. If a prototype includes any sort of projectile or throwing motion (read: something must become airborne in any way), demonstration of the actual launch of projectile or object will be prohibited. Video footage of a safe launch will be permitted.
   h. Prototypes that hover, fly, or otherwise become airborne may not be demonstrated at the Fair. Video footage of a previous safe demonstration off site will be permitted.
   i. To avoid a tripping hazard prototypes that move or roll may not be operated or demonstrated during the Fair. Video footage of a safe demonstration will be permitted.
   j. NO electrical outlets of any kind will be provided, nor will they be available.
   k. Without notice, the committee reserves the right to disqualify any prototype if there is a question to its safe demonstration.
   l. Dangerous chemicals, including caustics and acids, are not allowed. Safe chemicals such as table salt, sugar, or bicarbonate of soda may be displayed in quantities of less than 1 tablespoon.
4. The student may not display his/her name or school on the project. All projects will be identified only by an assigned number.
5. A contestant may enter only ONE exhibit. The exhibitor must do all work on exhibits. Teachers, sponsors, parents, etc. may participate only in an advisory capacity. Judges will give special attention to displays using children’s language and drawings. Avoid using technical terms that are not understood by the student.
6. Scoring will be based on understanding and work done by students, NOT on the value of accessory equipment, either borrowed or purchased.

Criteria for judging will be based on creative ability, engineering design, understanding, dramatic value and technical skill, and clarity. Decisions of the judges will be final.  

*updated October 2018 – Jessica Jones*