# 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