RULES AND GUIDELINES

How to Enter for the Tots to Teens Expo 2014 Science Fair:

The Better Family, Inc. will host the Tots to Teens Expo 2014 Science Fair on Saturday, April 19, 2014 at the Walter E. Washington Convention Center. The Better Family encourages scientifically talented middle school students (grade 6-8) from the Washington Metropolitan Area to enter. Students involved in research or independent projects may enter the Science Fair directly.

Up to twenty (20) projects will be selected for competition on April 19th. Team projects will not be accepted. All students must be registered by a parent or guardian to be considered for competition and to be entered for the grand prize. The Registration and Consent Form and all other required forms must be submitted by the deadline of April 12, 2014.

The Registration and Consent Form must be completed by all students, parents and or guardians and submitted to The Better Family on or before the deadline. The Informed Consent Form B must be present and available for review on the day of the Science Fair. Students should review the Tots to Teens Science Fair Rules and Guidelines before submitting the required forms.

Projects chosen to enter the Tots to Teens Expo 2014 Science Fair will be rated by at least 3 judges and the average of the scores will determine the winner. Awards for First, Second, and Third place and an honorable mention will be given. Southwest Airlines will provide a grand prize to the First Place winner and their immediate family.* The Southwest grand prize consists of complimentary roundtrip airline tickets to travel to any of the 78 airports in their network of domestic destinations. The tickets have no blackout dates or restrictions and are valid for one year. They are also transferrable. Parents and or guardians must be a legal U.S. resident 18 years and older to enter to win. Other rules and restrictions apply.*

Tots to Teens Expo 2014 Science Fair Rules and Guidelines:

The following Rules and Guidelines apply to the Tots to Teens Expo 2014 Science Fair. These rules can also be downloaded from The Better Family website.

Only projects that fall into the following categories will be accepted:

Earth and Planetary Science

Climatology, geography, geology, geophysics, meteorology, mineralogy, oceanography, paleontology, physiography, seismology, speleology, tectonics, etc.

Medicine and Health Sciences

Study of diseases and health of humans; allergies, cellular & molecular biology, dermatology, dentistry, epidemiology, genetics, immunology, nutrition, ophthalmology, pathology, pediatrics, pharmacology, physiology, sanitation, speech and hearing, etc.

Plant Sciences

Study of plant life; agriculture/agronomy, algae, circadian rhythms, ecology, forestry, horticulture, hydroponics, plant evolution, plant genetics, plant pathology, plant physiology, plant taxonomy, etc.

The Science Fair projects may not involve at any stage of the project the following:

1. Blood products, fresh tissue, teeth or bodily fluids
2. Nonhuman vertebrate animals and their parts, exception eggs
3. Ingestion or inhalation of any substance into the nose or mouth by human subjects
4. Pathogenic agents*
5. Recombinant DNA
6. Carcinogenic or mutagenic chemicals
7. Compressed gas (including, but not limited to CO2)
8. Controlled substances*
9. Explosive chemicals
10. Hazardous substances or devices (including, but not limited to BB guns, paint ball guns, potato cannons, air cannons)
11. High voltage equipment
12. Highly toxic chemicals
13. Lasers (any strength), exception: infrared thermometers
14. Ionizing radiation X-rays or nuclear energy
15. Radioactive materials (except non-ionizing, naturally occurring materials)

***FURTHER EXPLANATIONS:**

Controlled Substances

1. Controlled substances, including DEA-classed substances, prescription drugs, alcohol and tobacco are not allowed.

Pathogenic Agents

1. Pathogenic agents are disease causing, or potential disease-causing organisms such as bacteria, viruses, viroids, prions, rickettsia, fungi, mold and others.

2. Organisms collected, isolated and/or cultured from any environment (e.g., air, soil) are considered potentially pathogenic and experiments using these procedures will not be allowed.

3. Raw or partially processed human/animal waste is considered to contain potentially pathogenic agents.

All Human Research projects must have an Informed Consent Form (B)

1. All human research projects including surveys, professional tests, questionnaires, and studies in which the human subject used is also the researcher, the researcher and their parent or guardian must give informed consent by completing the Form B.

2. Informed Consent Form (B) must be signed by all subjects involved in human research projects prior to their participation. The Informed Consent Form B must be present and available for review on the day of the Science Fair. If Informed Consent Forms B are not present and available for review on the day of the fair, the project may not be judged. If a participant is under 18 years old, the parent/guardian signature is required.

Experiments with non-pathogenic microorganisms

Experiments with any non-pathogenic organisms may only be conducted in a laboratory setting (not in the home) with the following capabilities:

1. Laboratory work is to be supervised by an individual with general training in microbiology.
2. Standard practices for sterile technique must be observed.
3. Work is to be done on an open bench or fume hood.
4. Purchased microorganisms must be identified and certified as non-pathogenic from the supply house with full name of microorganism, source of purchase and catalog number.
5. Lab coats must be worn.
6. Culture plates/tubes of bacteria must be sealed and not opened in the laboratory after culturing and growth.
7. Sub-culturing is not allowed.
8. Decontamination must be achieved by either chemical disinfectants or steam autoclaving.

*Two exceptions: Baker's and Brewer's yeast

Special safety concerns and other situations such as use of power tools, chemicals, etc. will not be permitted in the Walter E. Washington Convention Center.

General Requirements

1. Only new research projects done in the current school year will be eligible for participation.
2. Individual projects must be entirely the work of the individual student.
3. Students are expected to keep a bound logbook with original, hand-written, and dated entries that record each step taken in the development of the project.
4. Students must remain with their projects during judging and exhibition times.
5. Cell phone use is not allowed during the judging period.

PROJECT DISPLAY GUIDELINES

Students must adhere to all display guidelines. If safety concerns considering the presence or operation of any equipment or material that is deemed to be dangerous or unsafe by The Walter E. Washington Convention Center or The Better Family, Inc., they reserve right to prohibit the presence or operation of such equipment or material. Exhibitors are encouraged to demonstrate the safe use of materials through photographs, videotapes, charts, diagrams and other simulations.

All Science Fair participants must attend to the safety aspects of their projects as follows:

1. Projects must fit into a 40" x 26" table space, no aisle space available. Wall space for posters is not available. Design your exhibit so that all posters, charts and displays are free standing.

2. All projects must be able to be hand carried into the Washington Convention Center by the student and their parents/guardians.

2. No laser pointers allowed.

3. Glass is prohibited from display area but may be encased in a break-resistant container or replaced by a break-resistant container, exception is light bulbs.

4. Mercury thermometers are prohibited.

5. Approved liquids in sealed break resistant containers may be displayed. We reserve the right to limit the amount of liquid displayed.

6. Knives and other sharp objects may not be displayed.

7. Microorganisms may not be displayed.

8. Drugs, aerosols, over-the-counter medications, antibiotics, vitamins and latex products (including balloons) may not be displayed.

9. All power driven parts must be suitably guarded to prevent unauthorized or accidental access.

10. Access to electrical outlets is limited and the costs for set up is $85. Please bring a heavy-duty/three-pronged extension cord. Please check the appropriate space on the registration form if electricity is needed. Costs for electrical outlets will need to be paid in full prior the Science Fair.

11. All exhibits that require an external source of electricity for operation must be designed for a standard 110-125 volt AC supply.

12. All wiring, switches, power cords and metal parts carrying current in an AC circuit must be properly selected for load requirements and soldered or fixed under approved connectors with insulated connecting wires. No exposed wires, switches, joints, or un-insulated fasteners will be permitted.

13. The power supply cord for the electrical apparatus must terminate in a three-prong grounded outlet. All power supplies and electrical equipment must be grounded.

14. Bare wire and exposed knife-type switches are permitted on 12-volt DC circuits or less. Approved standard enclosed switches are required for all other electrical installations.

15. Wet-cell batteries with open tops are not permitted. Closed-cell or dry-cell batteries are permissible.

16. The operation of high-pressure vessels and pressurized systems is not permitted.

17. There must be no open flame, torch or burner in the display area.

18. All microwave and radio frequency sources must be designed and operated in compliance with state and federal regulations as well as applicable standards of the American National Standards Institute.

19. Robotics projects should have interlocks or other controls.

Dates, Times and Deadlines:

The following dates and deadlines are for the Tots to Teens Expo 2014 Science Fair. These dates are firm and must be adhered to.

Science Fair Registration Deadlines:

Friday, April 12 2014, Registration (Forms 1A, B (required) and C, D (if needed) are due to The better Family. These forms can be submitted any time before the deadline.

Saturday, April 19, 2014, Science Fair Timelines:

8:00AM to 9:30AM Registration
9:30AM to 10:00AM- Science Project Set Up
10:00AM to 10:45AM Exhibition Times
11:30AM to 1:30PM Judging
2:30PM Southwest Science Fair Awards

Sample Score Card:

Scientific Approach

• Did the student start with a clearly stated hypothesis, purpose, or statement of an engineering goal?

• Was the student orderly and logical with the setup and follow-through of the project?

• Are the student's conclusions consistent with the data he or she collected?

Up to 25 points Score: _____

Knowledge of Project Areas

• How effectively did the student conduct preliminary research?

• Is the explanation of the project clear and precise?

• What is the extent of the student's knowledge of materials related to the project?

• Is the student aware of both the scope and limitations of the project?

Up to 20 points Score: _____

Thoroughness

• Is there evidence that the student used multiple sources in the literature search?

• Has thorough use been made of data and observations?

• How successfully has the original plan been followed through to completion?

• Was there complexity to any aspect of the project?

Up to 20 points Score: _____

Written Records and Report

• Has the student kept an original day-by-day notebook with all plans, procedures, observations, and conclusions for failures as well as successes?

• Has the student put together an accurate written report, complete with a bibliography?

Up to 15 points Score: _____

Ingenuity and Creativity

• Did the student show originality of thought, design or implementation of the experiment?

• How well has the student used his or her materials in the solution of problems?

• Does the student present any new or unique ideas or interpretation of the data?

Up to 15 points Score: _____

Visual Presentation

• Is the project displayed in a logical and organized manner?

• Have charts and graphs been used where needed?

• Does the display poster effectively convey the message in an understandable manner?

Up to 5 points