



AMERICAN SOCIETY OF
SAFETY PROFESSIONALS

2 Central New Mexico
0 STEM Research Challenge
2 4      

UNM STEM Research Challenge Volunteer Safety Inspector Training

New Mexico Chapter of the
American Society of Safety
Professionals(ASSP)

Updated 3-12-24



Overview

The [Central NM STEM Research Challenge](#) is hosted by the University of New Mexico [STEM-H Center](#), and is held annually at EXPO New Mexico.

The Challenge is a science fair, comprised of a three division (elementary, middle and high school students), multiple category regional student competition of science and engineering projects.

This year's event will be held on March 20-22 & 24, 2024.

The New Mexico Chapter of the ASSP has supported the Challenge for many years by providing volunteer safety inspectors during the first (student science project display setup) day

Safety Inspector General Information

ASSP volunteers use the Central New Mexico STEM Research Challenge Display & Safety Regulations and Project Set-Up Approval Form ([Safety & Display Checklist](#)) to guide and document safety inspections of the student displays.

A member of the NM ASSP Executive Committee acts as a liaison for the event and coordinates with ASSP volunteers and UNM STEM staff prior to the event and on the first day for safety inspections.

UNM staff provide all materials necessary to conduct inspections (i.e. clipboards, markers, measuring tapes, etc.).

ASSP volunteers report to a centrally located table (the HUB) within Hall B of the Manual Lujan Exhibit Complex inside EXPO New Mexico

Site Information



- ★ Enter Fairgrounds through **GATE 3** on San Pedro
 - ★ Enter Lujan Building through **Hall B** on far west side
 - ★ **General Parking for Exhibitors/Families, Teachers, Volunteers, other attendees is located in the Creative Arts & Main Stage lots (see map)**
 - ♿ **Handicap Parking** is available along the WEST side of Main St directly across from Lujan and in the two lots just SW of Lujan
- **Parking is FREE for all attendees. Be sure to tell parking attendants at the Gate you are attending "Research Challenge" or "Science Fair"****

Display & Safety Inspectors (ASSP volunteers) will be provided with information prior to the Challenge providing entry, parking, and exhibit hall instructions and maps

Volunteers will also be provided with a parking permit to gain entry into EXPO New Mexico

Preliminaries

1. Check in at the HUB and sign-in.
2. Make certain you have a clipboard, an inspection packet, and a pen. The tabletop (where marked) is the permitted width and depth of the project. Display & Safety inspectors must verify these measurements.
3. Pick up a Safety Checklist Form from the HUB, check layout map for location of project, and proceed to project. Verify the display meets dimension requirements. Check project.

Note: Inspect the project promptly after receiving the form. If you cannot, return the form to the HUB for re-distribution.

Central New Mexico STEM Research Challenge	
DISPLAY & SAFETY REGULATIONS AND PROJECT SET-UP APPROVAL FORM	
<small>The following regulations must be adhered to by ALL Exhibitors. Knowledge of Display & Safety requirements is the responsibility of the Student Exhibitor and Adult Sponsor(s). The Display & Safety Committee may require students to make revisions to conform to the regulations. Any questionable items or safety concerns identified during inspection require review by the Display & Safety Committee Chair(s) and/or Research Challenge staff.</small>	
<i>Inspectors: Check each box on BOTH sides of this form after inspected and confirmed.</i>	
<input type="checkbox"/>	The project display DOES NOT have any of the PROHIBITED ITEMS as described below and on the other side of this form. <i>Inspectors: be sure to complete BOTH sides of this form!</i>
<input type="checkbox"/>	Exhibitor name CANNOT appear on front of display board but can be displayed on back of board, notebooks, etc. Exhibitor's school, grade, or any personal information SHALL NOT be displayed on the front of display board, notebooks, or other display items.
<input type="checkbox"/>	Display Dimensions and Construction: <ul style="list-style-type: none">The exhibit is within 30" deep; 48" wide; 108" from the floor to the top of project (or 78" from top of table). ALL project materials fit within the given dimensions.The exhibit items and backboard are self-standing and stable, or secured to table.All items on display board are attached securely.All sharp edges on project are removed or protected. No tripping hazards are present.
<input type="checkbox"/>	ALL images are credited. This includes all graphs, photos, and other images on the project display. IF the student took/created all the images, one statement in a visible location on the board that states "all images taken/created by Exhibitor" will suffice.
<input type="checkbox"/>	Display of photographs other than that of the student must have a photo release signed by the subject, and if under 18 years of age, also by the guardian of the subject (these forms must be available upon request, but shall not be displayed) OR all faces are blacked out, covered, or otherwise obscured.
<input type="checkbox"/>	LAPTOP COMPUTERS – if a laptop is a part of the display, student must provide a laptop lock and demonstrate that it can be securely locked to the table. Laptops with no lock will not be allowed to remain on display.
I certify that this project has been inspected and complies with all Display & Safety Requirements.	
Display & Safety Inspector Name _____ Display & Safety Inspector Signature _____	
Please note any changes made to and/or items removed from the display: _____ _____ _____	
Student Acknowledgement: I hereby acknowledge that 1) I have been made aware of the display and safety requirements 2) I have been given a copy of the Exhibit Hall Map and know the Emergency Exit Plan. 3) I understand the initial inspection is complete, but a final inspection will be done before judging and regular checks are conducted throughout the Challenge to ensure continued compliance. I further understand that items may be removed from my display by Research Challenge staff at any time and without my consent if they pose a safety risk. (Removed items will be photographed and held for student to pick up during project removal).	
Student Signature (or representative if student not present) _____	
PLEASE LEAVE THE SIGNED FORM SO IT IS VISIBLE ON YOUR DISPLAY TABLE.	



Beginning the Inspection

If Exhibitor is not at the booth when you arrive, put time of your attempted inspection on the Form (top) and return it to the Hub.

Ensure the exhibitor that you are there to assist him/her in meeting the rules of the event and not to critique the project.

The Exhibitor should answer any questions or explain any problems identified but the parent may assist.



Beginning the Inspection

Central New Mexico STEM Research Challenge

DISPLAY & SAFETY REGULATIONS AND PROJECT SET-UP APPROVAL FORM

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I certify that this project has been inspected and complies with all Display & Safety Requirements.

Display & Safety Inspector Name _____ Display & Safety Inspector Signature _____

Please note any changes made to and/or items removed from the display:

Student Acknowledgement: I hereby acknowledge that

1) I have been made aware of the display and safety requirements

2) I have been given a copy of the Exhibit Hall Map and know the Emergency Exit Plan.

3) I understand the initial inspection is complete, but a final inspection will be done before judging and regular checks are conducted throughout the Challenge to ensure continued compliance. I further understand that items may be removed from my display by Research Challenge staff at any time and without my consent if they pose a safety risk. (Removed items will be photographed and held for student to pick up during project removal).

Student Signature (or representative if student not present) _____

PLEASE LEAVE THE SIGNED FORM SO IT IS VISIBLE ON YOUR DISPLAY TABLE.

The Display Form includes the Display criteria on the front page and the Safety criteria on the back.

Use the front side as a display guide.

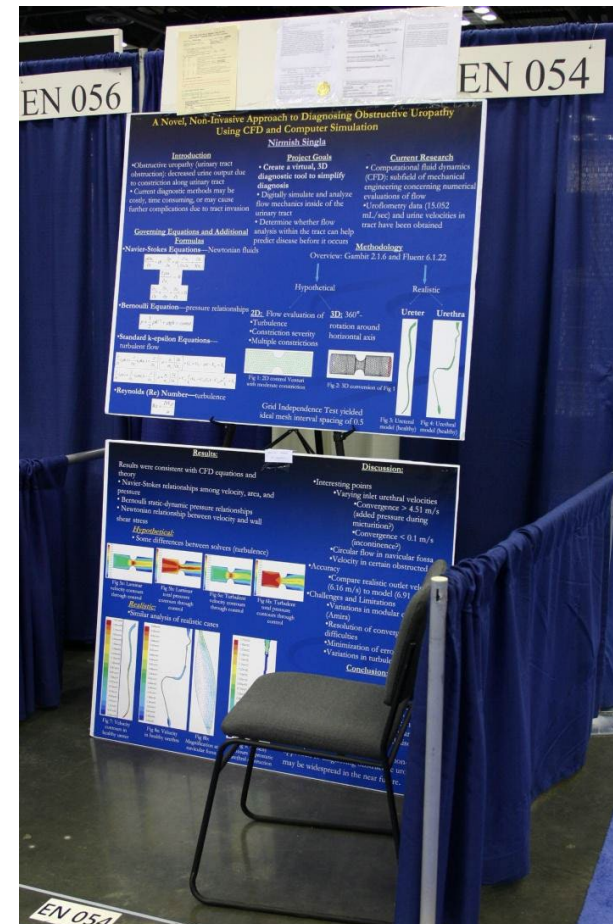
Use the Safety inspection form on the reverse side as your inspection guide for projects.

There is no Paper Project Only form.

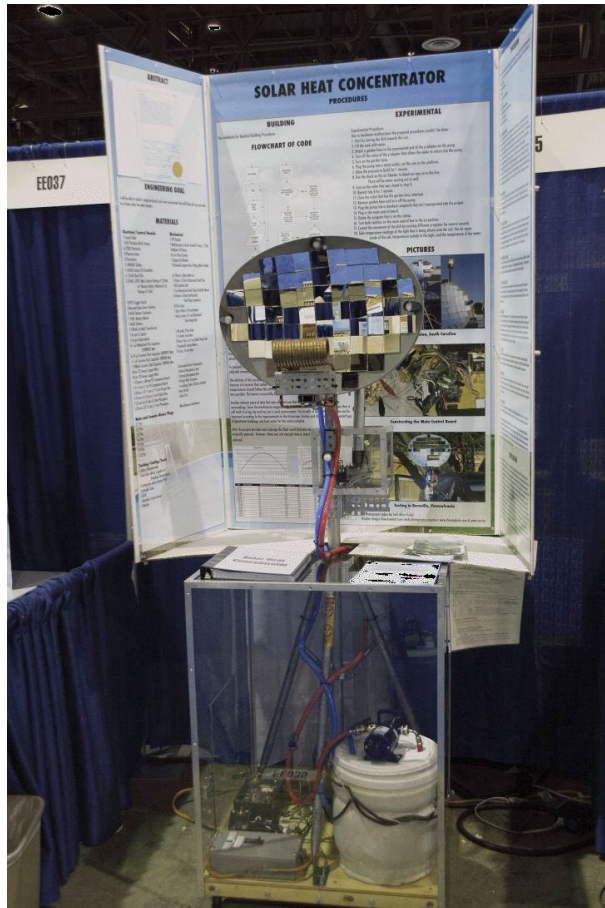
Have the student read the Acknowledgement at the bottom and sign the form.

Check Size and Position

Verify that the exhibit meets display rules, whether set up on the provided table or freestanding, it should be positioned against the back of the assigned location.

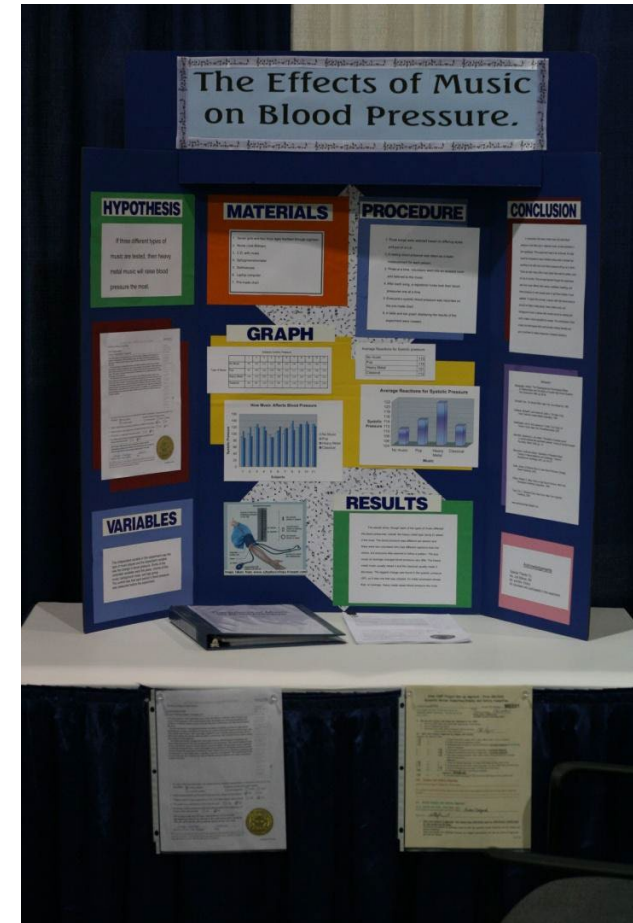


Properly Placed Projects



Freestanding Project

Examples of projects properly placed and adhering to size limitations.



Uses only Tabletop



Typical Project Size Violations

Project 1



Objects outside the allowed width.

Project 2



Objects hanging over front edge.

Project 3



Objects outside allowed depth.

Freestanding Display



This project shows a proper freestanding display.

Floor items and board fit within allowed dimensions.

Page 2 of Display Form

ITEMS NOT ALLOWED ON EXHIBIT	
<i>Photographs of these items are allowed as long as they are appropriate and not deemed offensive by Display & Safety inspectors.</i>	
<input type="checkbox"/> Living organisms, including plants	<input type="checkbox"/> Glass (including light/heat sources)
<input type="checkbox"/> Taxidermy specimens or parts	<input type="checkbox"/> Preserved vertebrate or invertebrate animals
<input type="checkbox"/> ALL chemicals including water. Absolutely no liquids can be utilized in the project display	<input type="checkbox"/> Flames and highly flammable materials. Any materials that were previously flame or fire tested.
<input type="checkbox"/> Plant materials (living, dead, or preserved) that are in their raw, unprocessed, or non-manufactured state	<input type="checkbox"/> Any apparatus with belts, pulleys, chains, or moving parts with tension or pinch points that are not appropriately shielded
<input type="checkbox"/> Human or animal food	<input type="checkbox"/> 3D Printers unless the power source is removed
<input type="checkbox"/> Human/animal parts or body fluids	<input type="checkbox"/> Batteries with open-top cells or wet cells
<input type="checkbox"/> Soil, sand, rock, cement, concrete, and/or waste samples, even if permanently encased in acrylic	<input type="checkbox"/> Inadequately insulated apparatus capable of producing dangerous temperatures
<input type="checkbox"/> Sharp items (examples: syringes, needles, pipettes, knives)	<input type="checkbox"/> Any display items that are deemed distracting (i.e. sounds, lights, odors, etc.)
<input type="checkbox"/> Items that may have contained or been in contact with hazardous chemicals (Item may be permitted if professionally cleaned and documentation for such cleaning is available)	<input type="checkbox"/> All hazardous substances or devices (examples: poisons, drugs, firearms, weapons, ammunition, reloading devices, grease/oil and sublimating solids such as dry ice)
<input type="checkbox"/> Drones or any flight capable apparatus unless the propulsion power source is removed	<input type="checkbox"/> Brand names, logos, copyrighted /trademarked images UNLESS integral to the project
<input type="checkbox"/> Incandescent and fluorescent light bulbs or any other heat generating light source	<input type="checkbox"/> Any apparatus or project material deemed unsafe by the Display & Safety Committee
ELECTRICAL REGULATIONS	
<i>Note: when student is not at exhibit, all electrical power must be disconnected or switched off.</i>	
<input type="checkbox"/> Electrical power supplied to the project is standard 120 Volt, AC single phase, 60 Hz.	
<input type="checkbox"/> Power strips/surge protectors and extension cords must be UL-listed, in good condition, and unmodified.	
<input type="checkbox"/> Electrical devices must be protectively enclosed. Any enclosure must be non-combustible. All external non-current carrying metal parts must be grounded.	
<input type="checkbox"/> Energized wiring, switches, and metal parts must have adequate insulation. Over-current safety devices (ex: fuses) must be inaccessible to anyone other than the student.	
<input type="checkbox"/> Exposed electrical equipment or metal that may be energized must be shielded with a non-conducting material or with a grounded metal box to prevent accidental contact	
<input type="checkbox"/> An insulating grommet is required at the point where any wire or cable enters any enclosure.	
<input type="checkbox"/> No exposed live circuits over 36 volts are allowed.	
<input type="checkbox"/> There must be an accessible, clearly visible on/off switch or other means of quickly disconnecting from power source.	
LASER/LASER POINTER REGULATIONS	
<input type="checkbox"/> Any Class 1, 2, 3A, or 3R lasers are allowed to be used RESPONSIBLY. No other lasers are allowed.	
<input type="checkbox"/> Laser beams may not pass through magnifying optics such as microscopes and telescopes.	
<input type="checkbox"/> Lasers must be labeled by the manufacturer so that power output can be inspected. Lasers without labels will NOT be permitted.	
<input type="checkbox"/> Use of handheld lasers is discouraged.	
<input type="checkbox"/> Lasers will be confiscated with no warning if not used in a safe manner.	

Use page 2 of the Display Form as your inspection guide for more complicated projects.

Ask the exhibitor if the project is complete or if additional items will be brought in on Friday between 7:30 -8:00 am. If so, an Additional Item card must be filled out.

The original is given to the exhibitor as their entry for Friday morning, and the carbon copy return to the HUB.

General Inspection Matters

Use the Safety Checklist as a guide as you conduct the inspection. *If you encounter a situation that is unclear contact Tim Riley or James Vigerust through the HUB for a final determination.*

1. Try to put the Exhibitor at ease.
2. Review the project and if it passes place your name and signature on the Form and ensure the exhibitor signs the acknowledgement.

Handling Violations

- When you encounter violations of the rules that can be quickly corrected, give the Exhibitor a minute or two to make the correction.
- Some violations can be corrected by taking a photograph of the object/apparatus and having the Exhibitor explain the project to the Judges. Photos are available through photographers at the HUB.
- If the violation is a major one and will take time to correct, note it and the time on the Safety Form. Return the form to the HUB and provide a short description to the HUB Coordinator. The HUB Coordinator will redistribute the Form after a prudent time.

Photograph Requirements

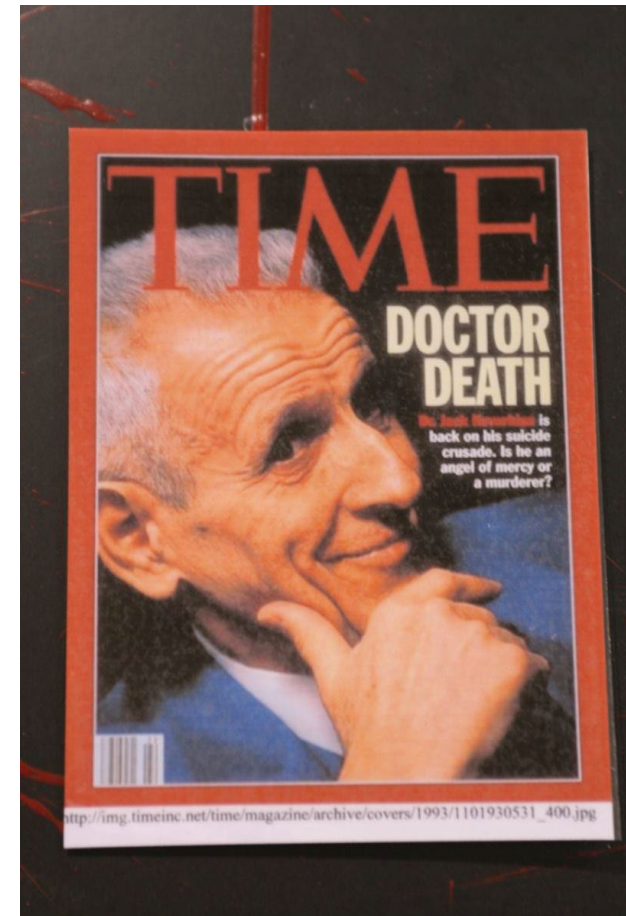
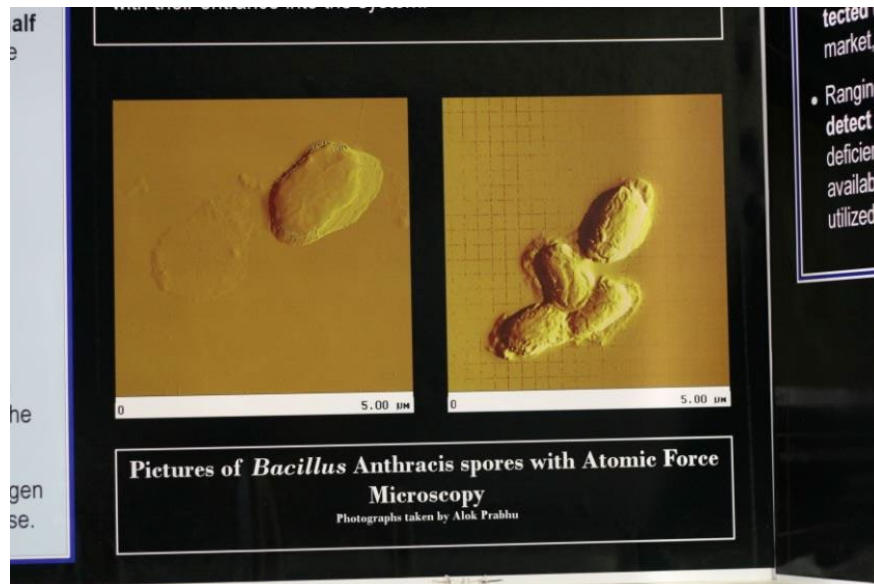
Finalists must show the inspector a photo/release consent form for each human subject, other than the Finalist or family, shown in photographs on the board.

Note: *Consent forms are confidential and must be kept in a folder at the project.*

Sample statement of release: *“I consent to the use of visual images (photos, videos, etc.) involving my participation/my child’s (under 18) participation in this research.”*

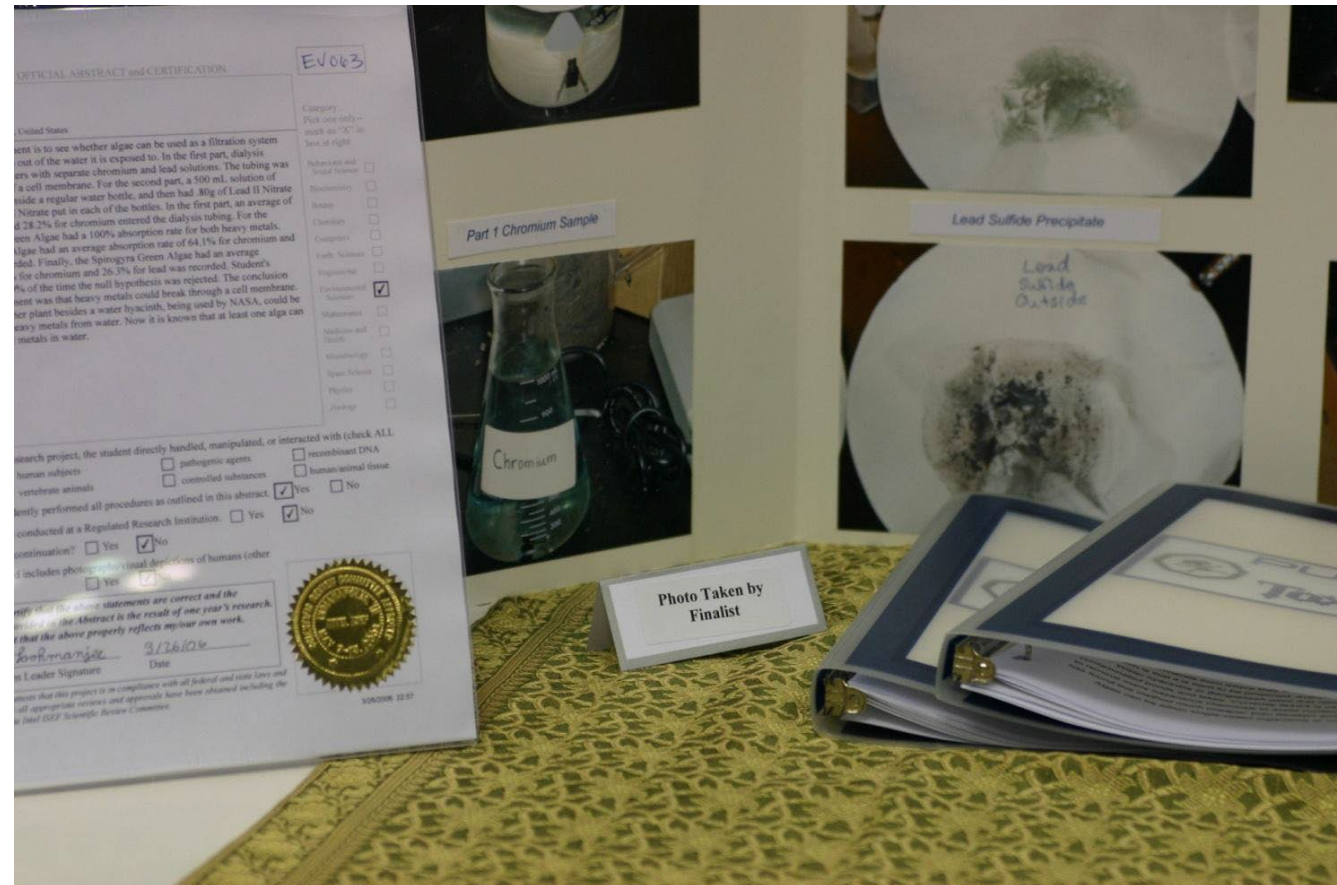
Properly Credited Images

In each example, the Exhibitor has identified the source of the image with a credit line prominently displayed beneath the image or images.



Single Credit Statement

A Finalist may provide a single credit statement to cover all images on the project.



Picture or Image Problems

Inappropriate images:

If an image(s) is questionable because of content, Tim Riley or James Vigerust to review the image.

Images/Graphs/Charts:

All must be labeled as to source. If the Finalist created the images, graphs and/or charts displayed, one credit line prominently and vertically displayed is sufficient. However, if they were taken from the Internet or some other source or several sources, a credit line for each is necessary.

Not Allowed at Project or in Booth

Items such as the following are not allowed:

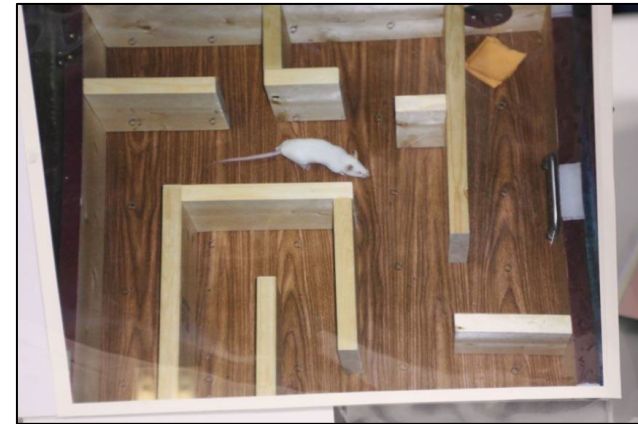
- living organisms (including plants)
- plant materials (living or dead)
- taxidermy specimens
- preserved vertebrate or invertebrate animals
- human/animal food
- human/animal parts or body fluids
- chemicals (including water)
- hazardous substances (laser restrictions)
- drugs
- ...other items listed in the [ISEF Rules](#).



Allowed at Project with Restrictions

Exceptions are judgment calls...

consult Tim Riley or James Vigerust if questions arise. The examples below illustrate when consultation may be required. Although integral to the project, the pictures are inappropriate for display as they show an animal in lab conditions or could be offensive to the general public.





Items Not Allowed at Project or Booth

An example of soil or waste materials.



Plant and soil materials may be allowed on projects if encased in acrylic,

Consult Tim/James to be sure!

Items Not Allowed at Project or Booth



Photographs of vertebrate animals in lab procedures, unnatural environments, or stress situations not allowed.

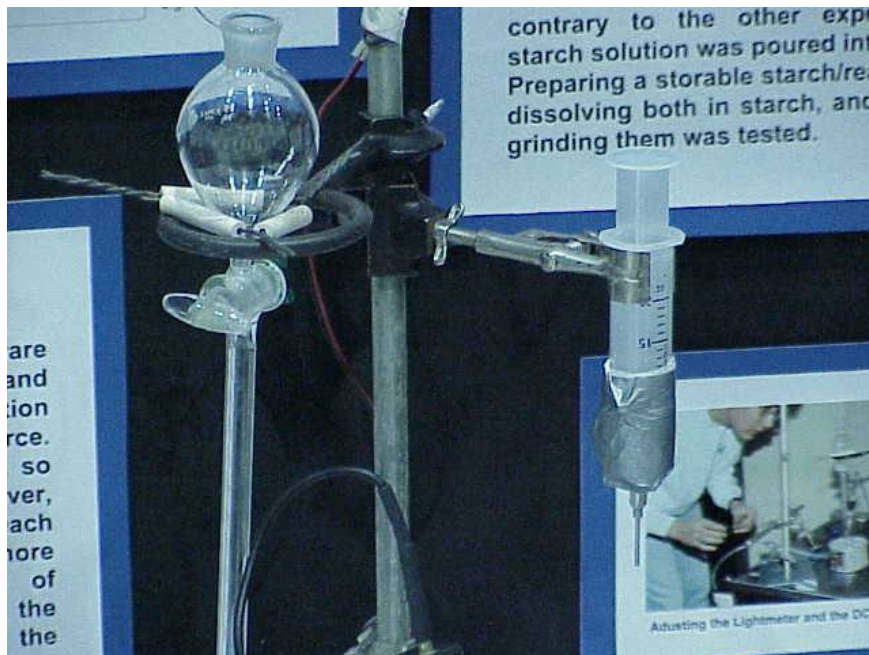
Containers of plants and dirt not allowed.



Glass items not allowed.



Items Not Allowed at Project or Booth



Sharp objects, such as this needle, not allowed. Nor is the lab glassware allowed.

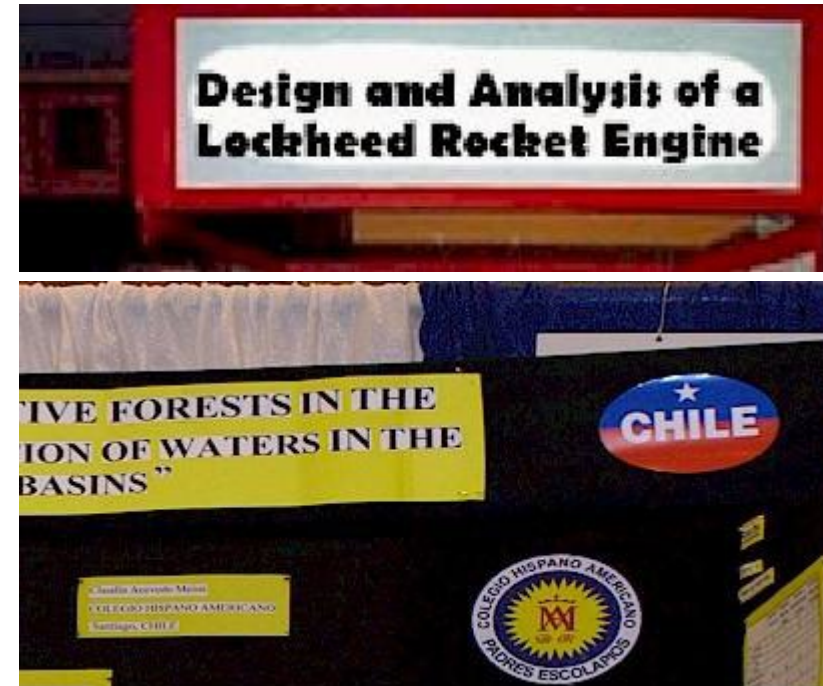


Plant and other dried materials scattered for decoration or display is not allowed.

Items Not Allowed at Project or Booth



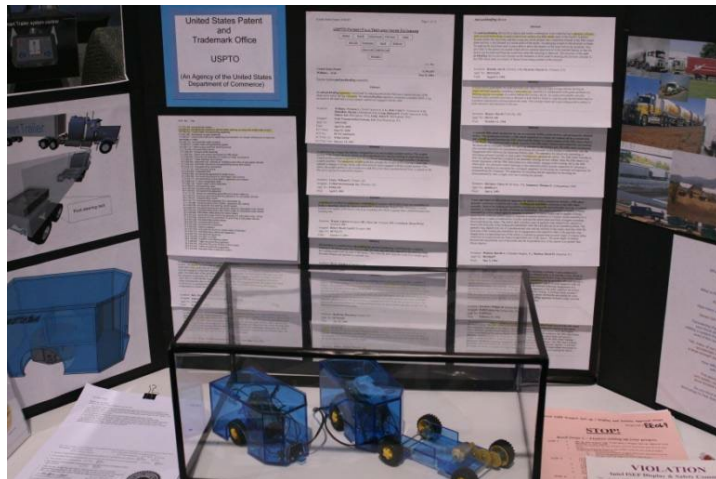
Weapons, as well as hazardous devices, not allowed.



If company and/or product names or logos are displayed, contact Tim Riley or James Vigerust to review the exhibit.



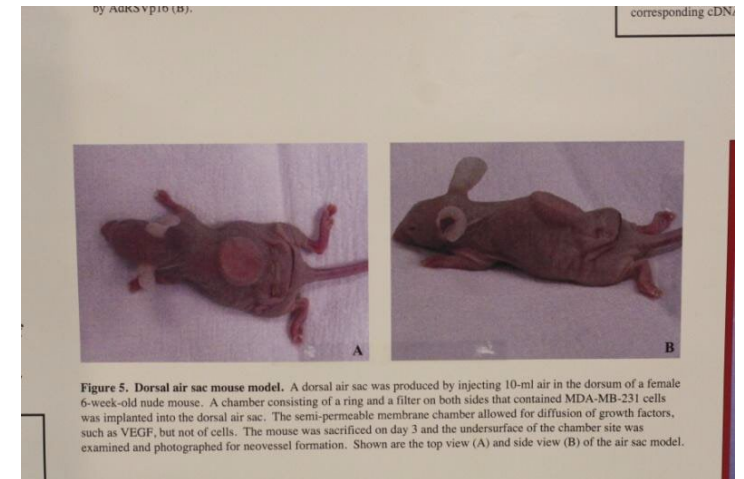
Typical Violations



Unofficial abstracts displayed



No Photo Credits



Inappropriate pictures of animals

Typical Violations

Liquids



Chemical compounds

Glass & combustive materials



Correct Display

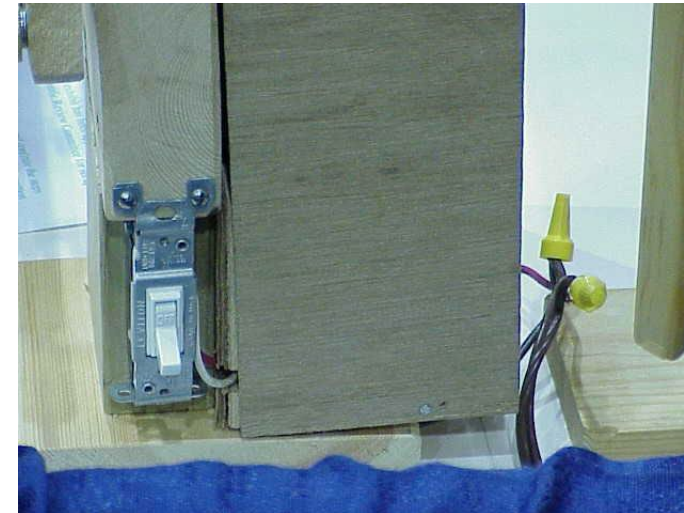
All equipment displayed here meets safety regulations. Paperwork hanging on top front edge of project permitted.



No awards, acknowledgments, handouts, etc., or addresses other than Exhibitor's are visible.

Safety Issues

Example illustrates open electrical connections and exposed electrical equipment. Low voltage DC circuits. Evaluate for safety.



Example illustrates the presence of an on/off switch which all projects using electricity (120V) must have. However, the wiring and screw connections are exposed.

Safety Issues

Example illustrates exposed wiring and connections without non-conducting shielding or a grounded metal box or cage.

Check voltages being used, DC possibly OK, 120 volt AC, needs guards or display static only.



Violations Review

- If the violation is a minor one and can be corrected quickly, have the Finalist do so.
- If the violation is one that will take considerable time for the Finalist to correct, write the violation on the top of the form and return the form to the HUB for re-distribution at a later time. Re-inspection once the violation is corrected.
- Assist the exhibitor with options/suggestions to bring the project into compliance.

Remember!

If you are in doubt or the Finalist questions your decision, contact Tim Riley or James Vigerust to assist in resolving the issue.

We are there to help the student succeed, and find/fix any issues now so in the event that the student wins and advances to the next round of competition, that they do not get disqualified then for something that we could have helped them identify and address now!



Completing the Inspection

Once you have checked for size, safety, allowed/ disallowed items and have not found any violations, only a few steps remain:

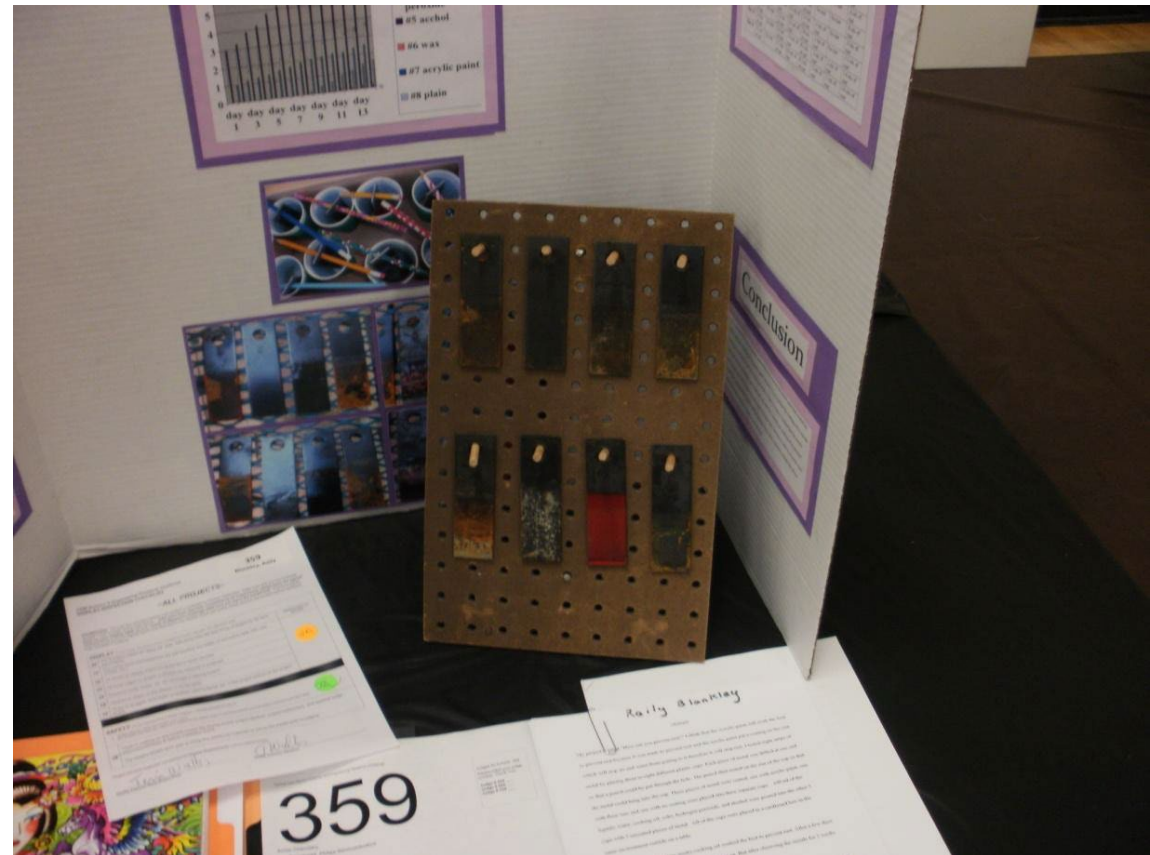
1. Sign the Safety Checklist Form and have the exhibitor read and sign the acknowledgement section at the bottom of the first page. Leave the Form on display at the Exhibit.
2. Wish the Exhibitor good luck and return to the HUB for another assignment.

Knowledge Check



What is the Issue?

Rusted metal can
transfer rust and
debris to the public.



What is the Issue?

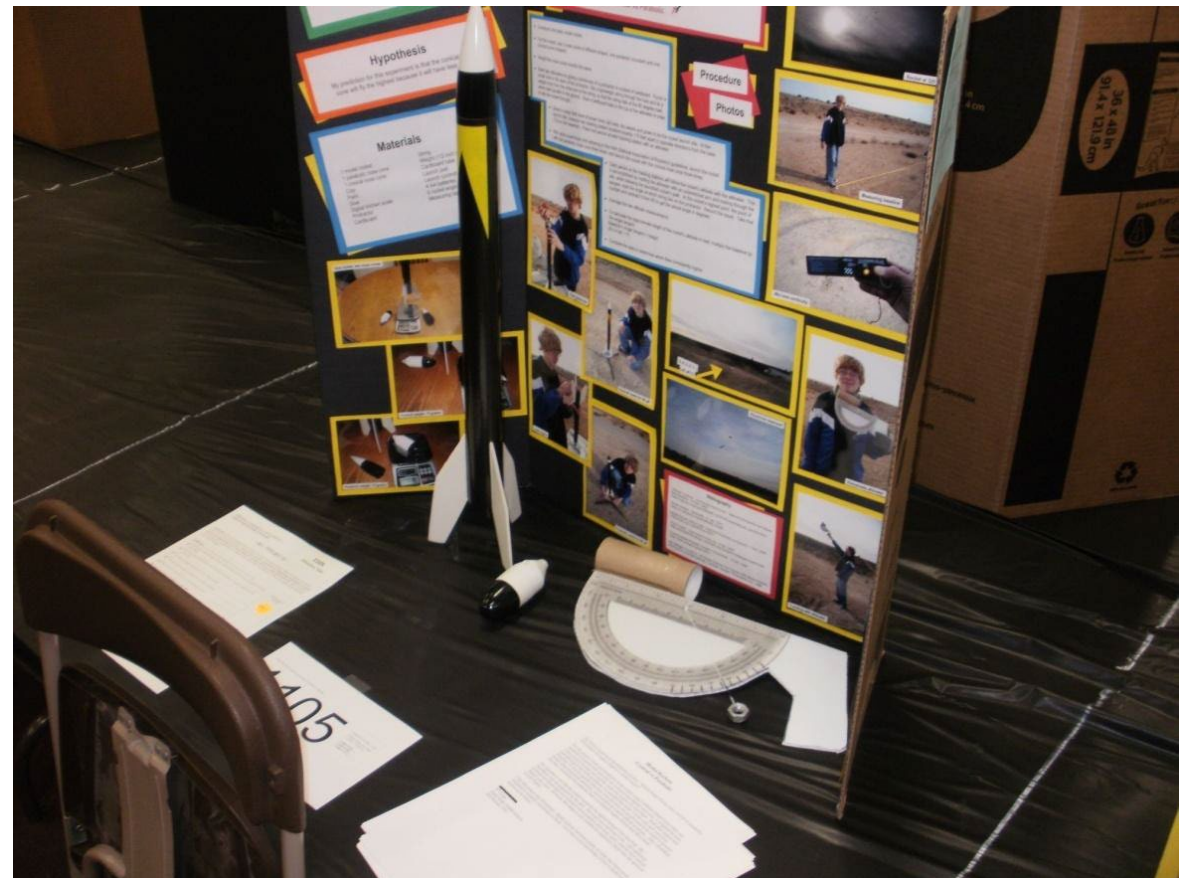
Glassware is not allowed.



What is the Issue?

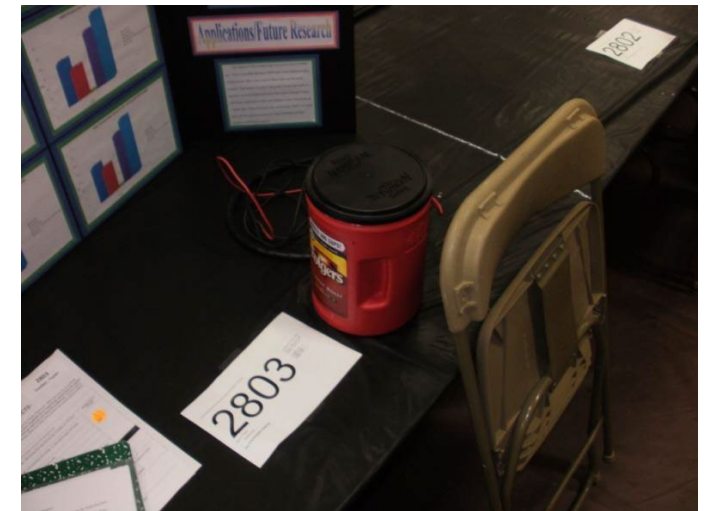
Are rocket motors
present? (not
allowed)

Spent rocket motors
present? (also not
allowed)



What is the Issue?

Chemical residue is present (not allowed).



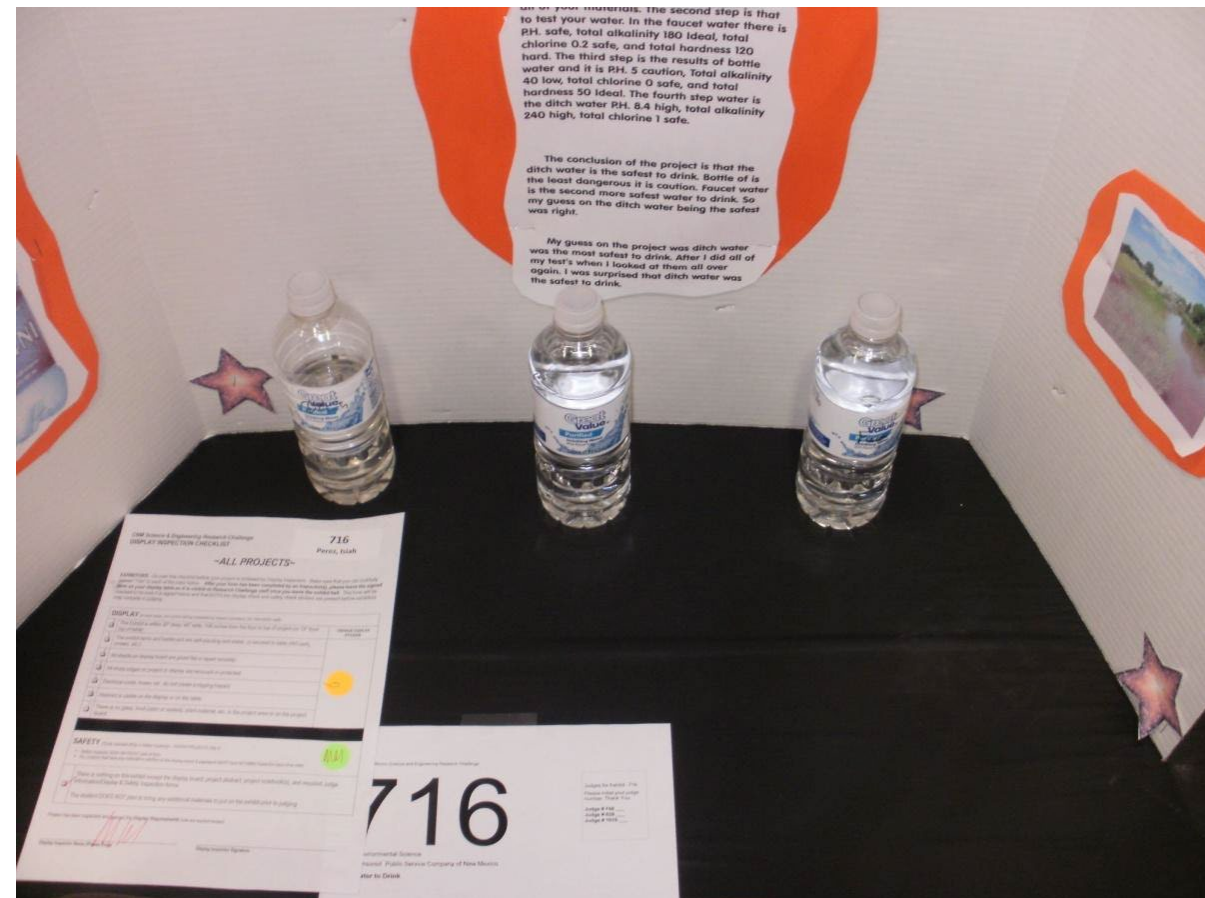
What is the Issue?



Crystals are not allowed
even if sealed in acrylic.

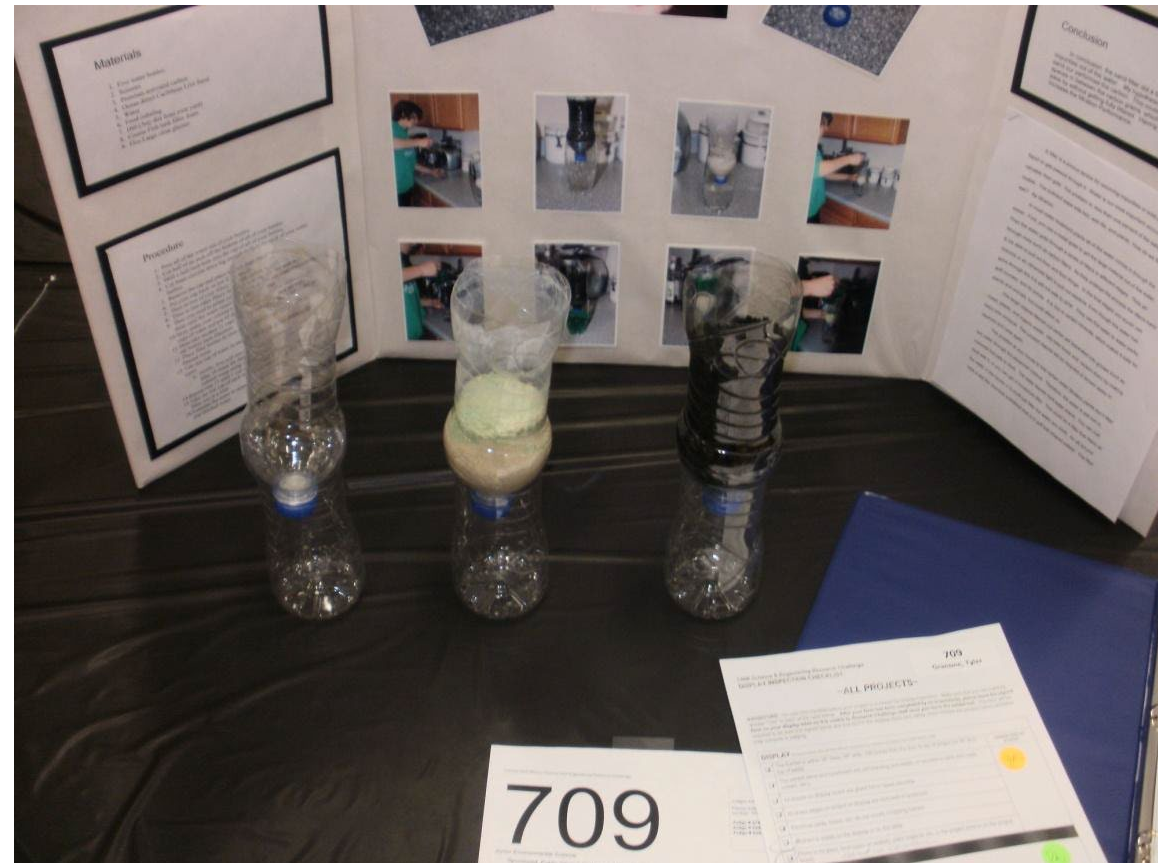
What is the Issue?

Water is not allowed
except for drinking
water being used by
the exhibitor.

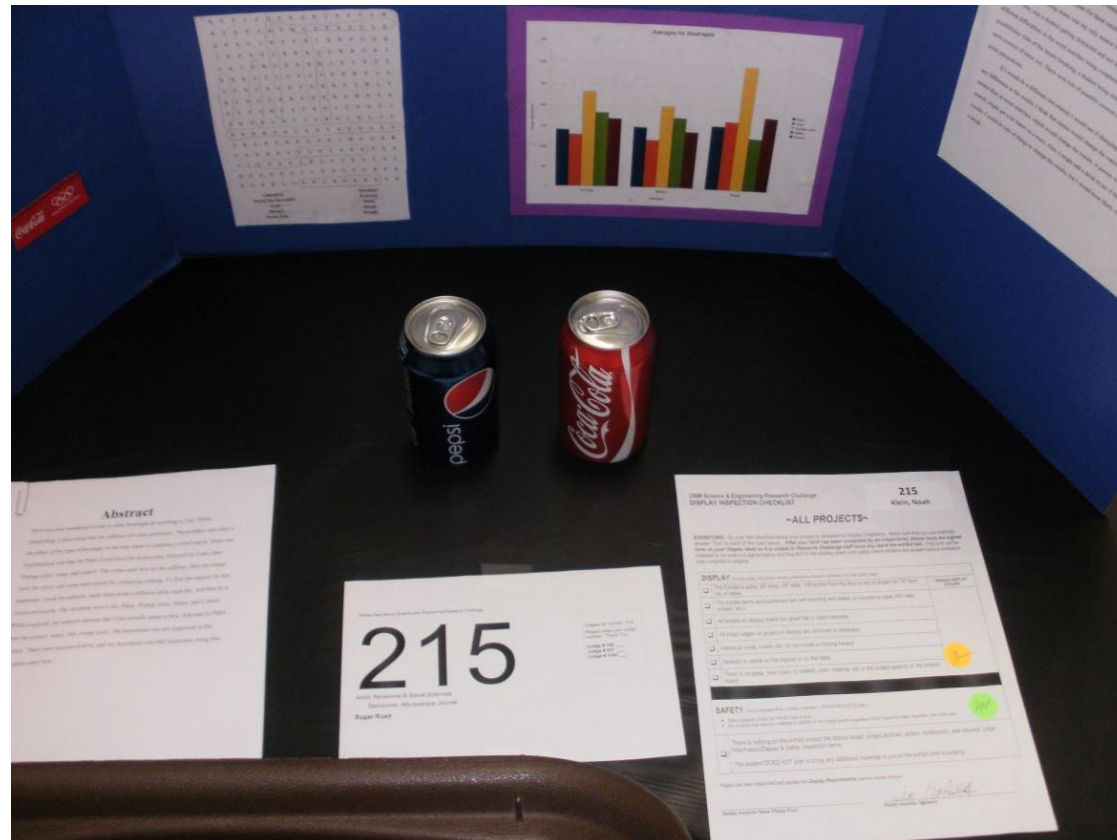


What is the Issue?

Charcoal and clay are not allowed.

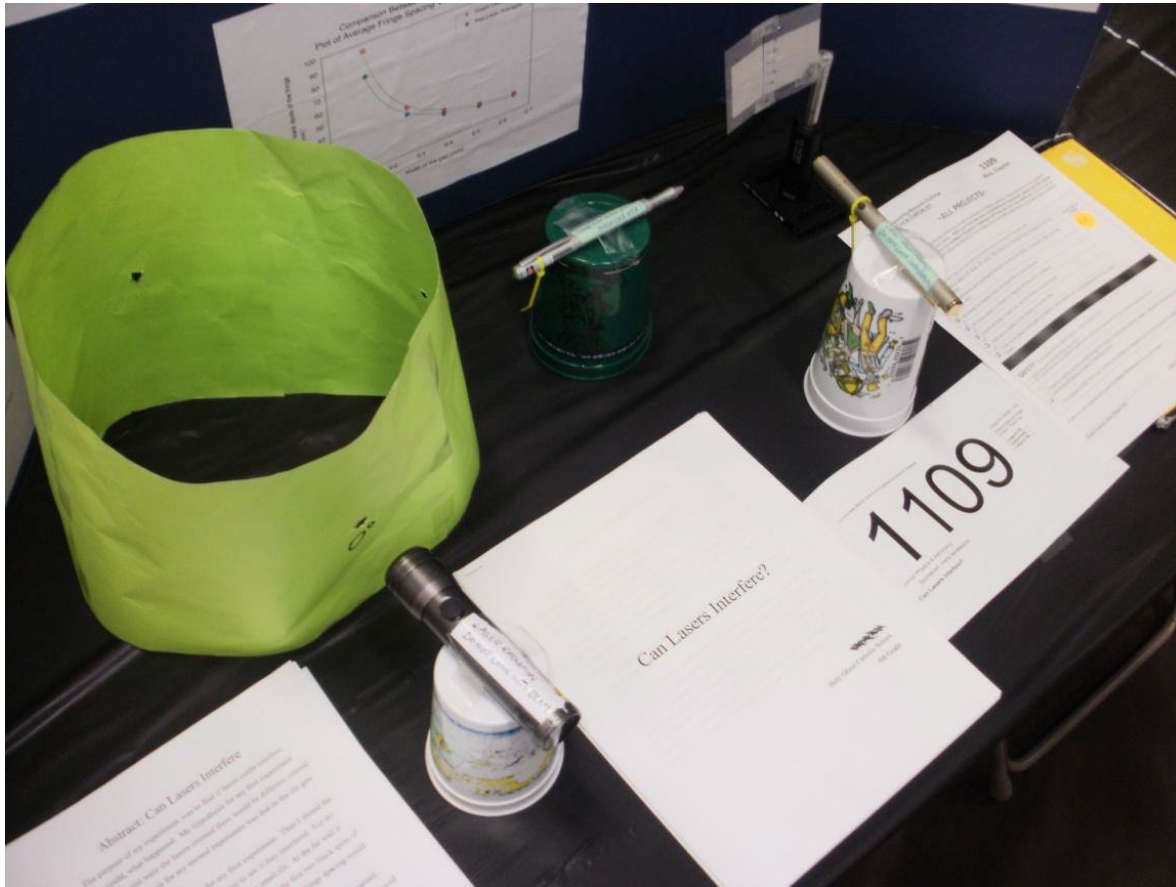


What is the Issue?



Food is not allowed, *even in sealed containers.*

What is the Issue?

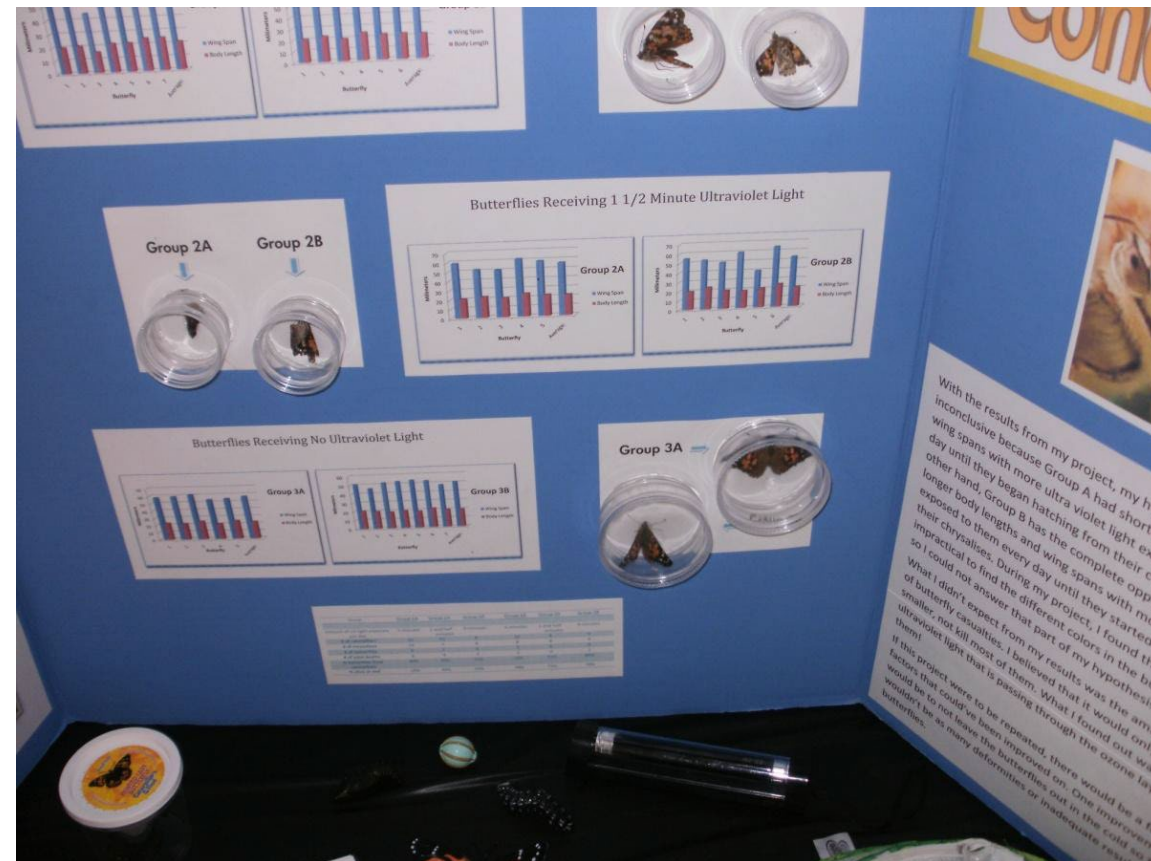


Class IV lasers not allowed.

Class 1, 2, 3A or 3R are allowed *with restrictions*.

What is the Issue?

Insects, plants and animals are not allowed.



What is the Issue?

Chemicals or cloth used as filters are not allowed.



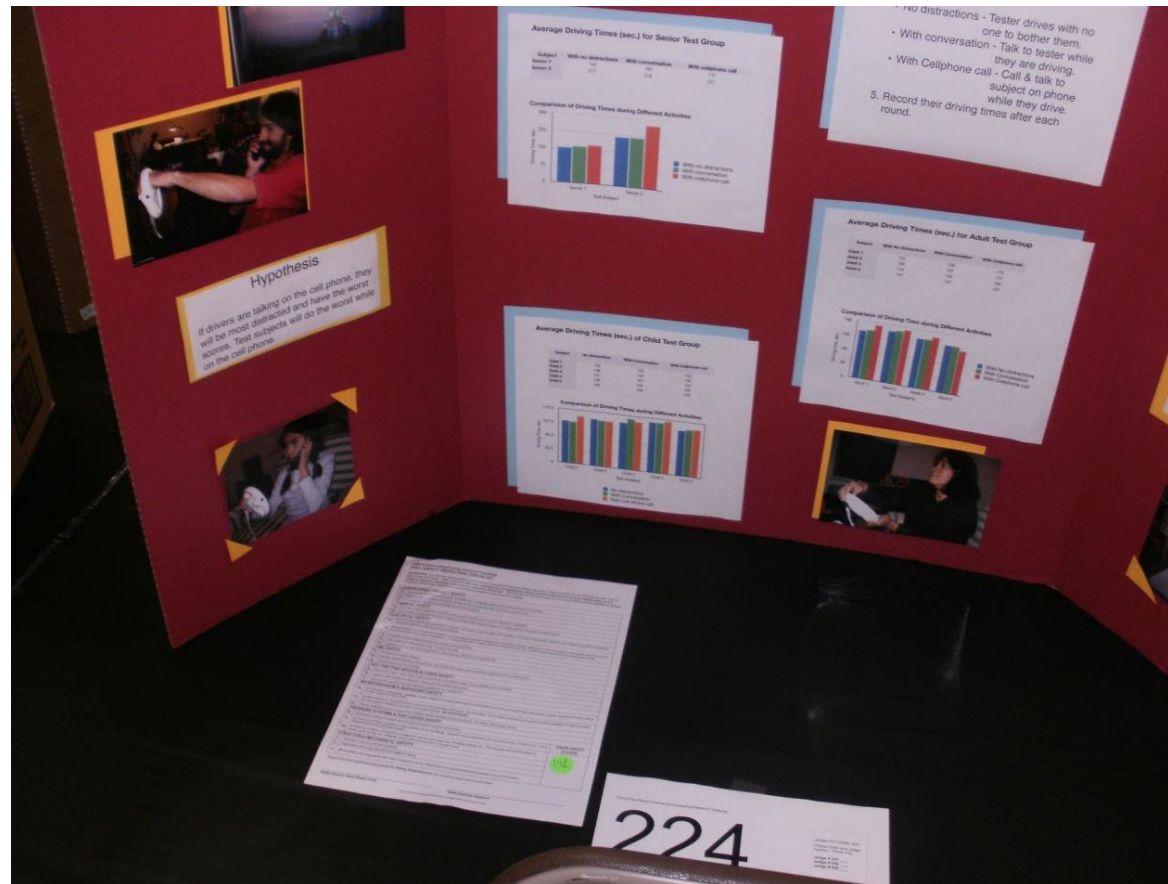
What is the Issue?



Materials that can transfer char and soot are not allowed.

NOTE: If encased in acrylic, these may be allowed – **CONSULT!**

What is the Issue?



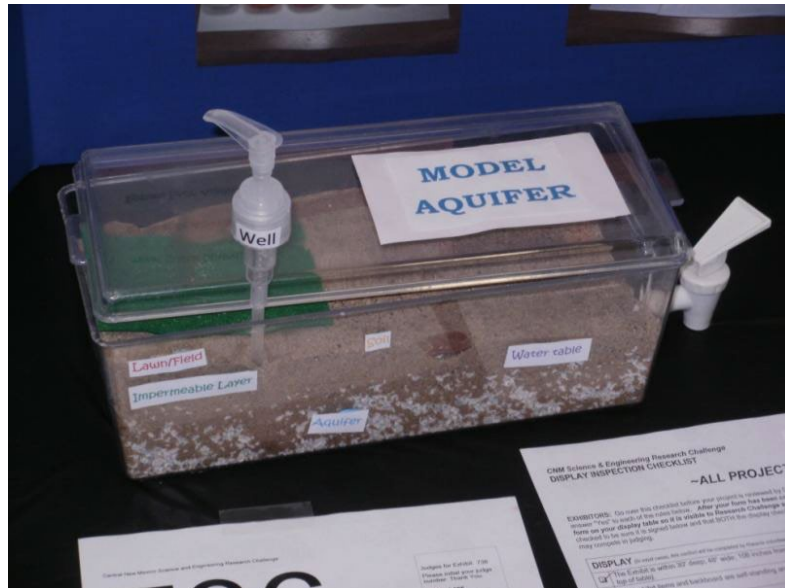
No photo credit (a common oversight).

What is the Issue?

Animal fur is not allowed.



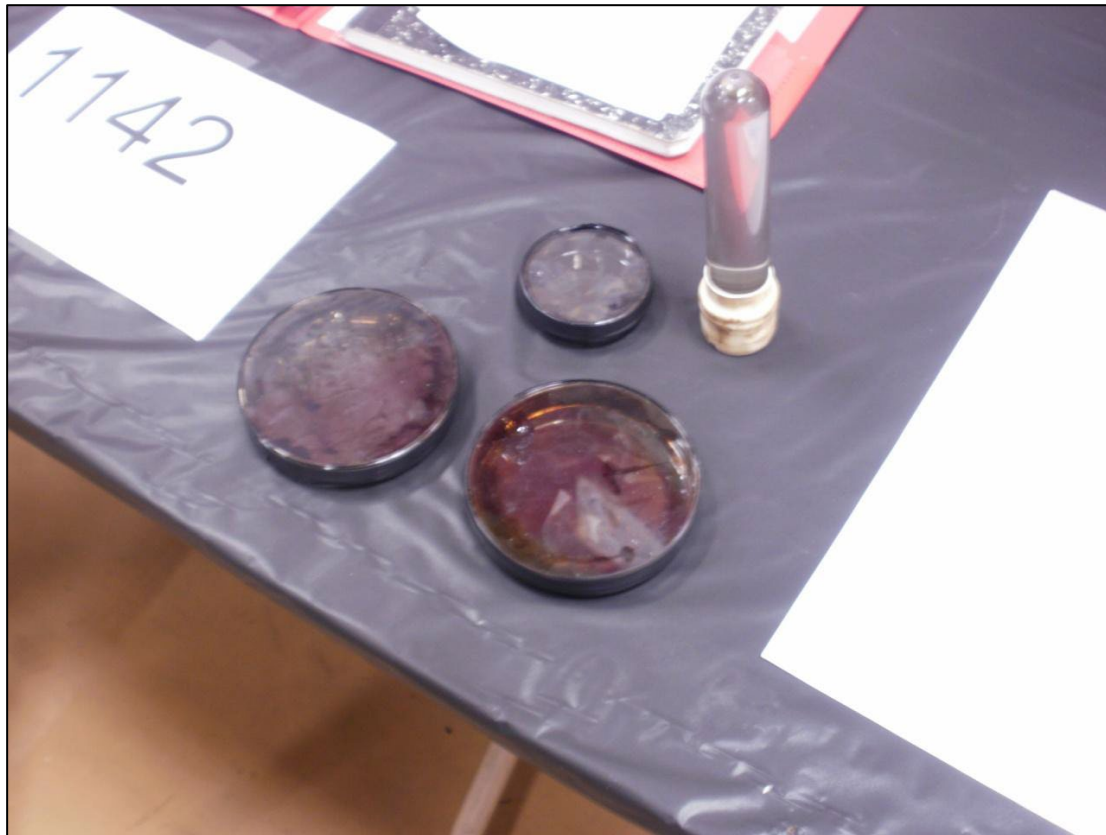
What is the Issue?



Sand is not allowed.



What is the Issue?



Chemicals and liquids are not allowed.

What is the Issue?



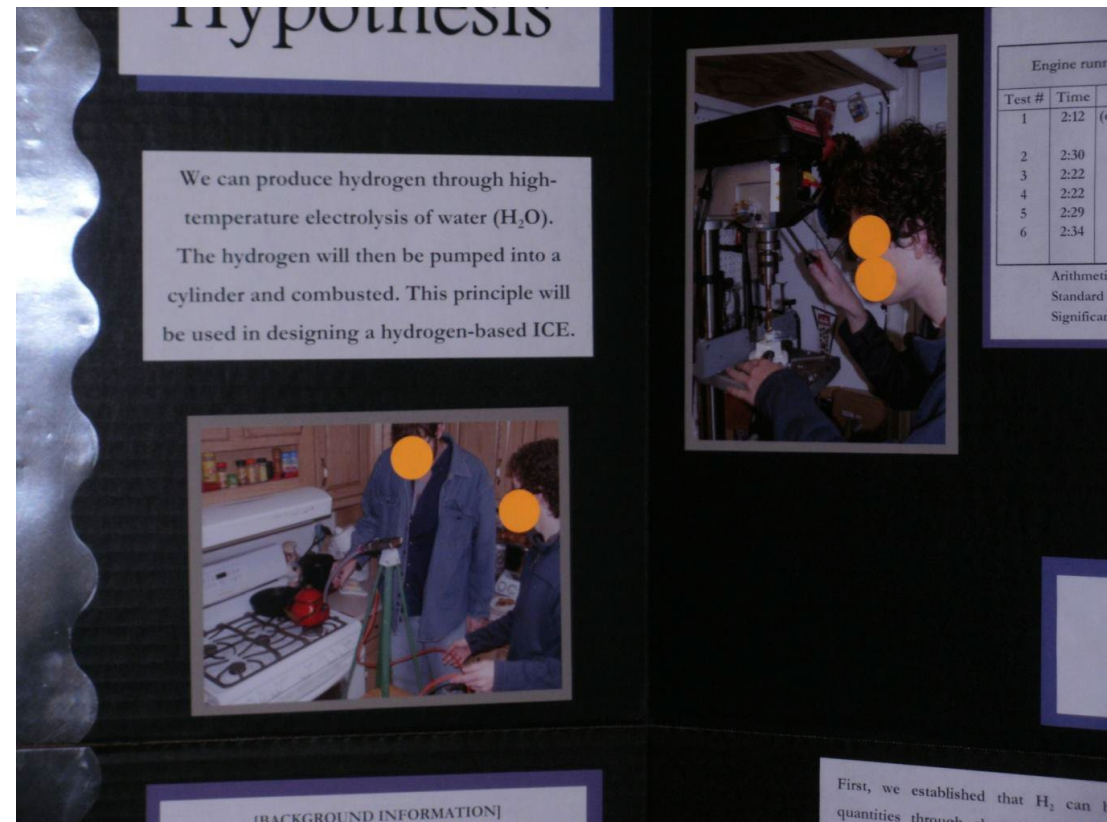
Only commercial building products are allowed.

Homemade products that create fragments or dust from the product are not allowed.

What is the Issue?

Only photos of the Exhibitor are allowed on the board unless releases have been signed.

Concealing the faces is allowed in lieu of releases.



In Closing

The friendly Display and Safety Committee members are there to help.

Contact one of them any time you are in doubt, or contact Tim Riley' or James Vigerust.

Finally **THANK YOU** for volunteering!

Volunteers help the students make the most of their hard work and displays, and showcase the awesome science that they are learning.



