



BASEF Safety Inspectors Workshop

March 11, 2024

Introduction



- Follow along with the *Safety Inspection Guide* if you want. Download a copy from www.basef.ca/safety/ for reference on inspection evening.
- Please stay on mute to reduce background noise.
- Please use chat function for questions during presentation session.

BASEF



Bay Area Science & Engineering Fair - one of the largest and longest-running science fairs in Canada (established 1960)



Daniel Cowman (left), Garth Gryer, Wayne Hulme, Keith Smith and Hal Hemp, Grade 12 students at Hill Park High School, prepare their high voltage Tesla coil for the Hamilton Science



Fair March 23-25. The instrument creates an electrical-force field which will cause an un-connected, near-by neon light tube to illuminate.

BASEF

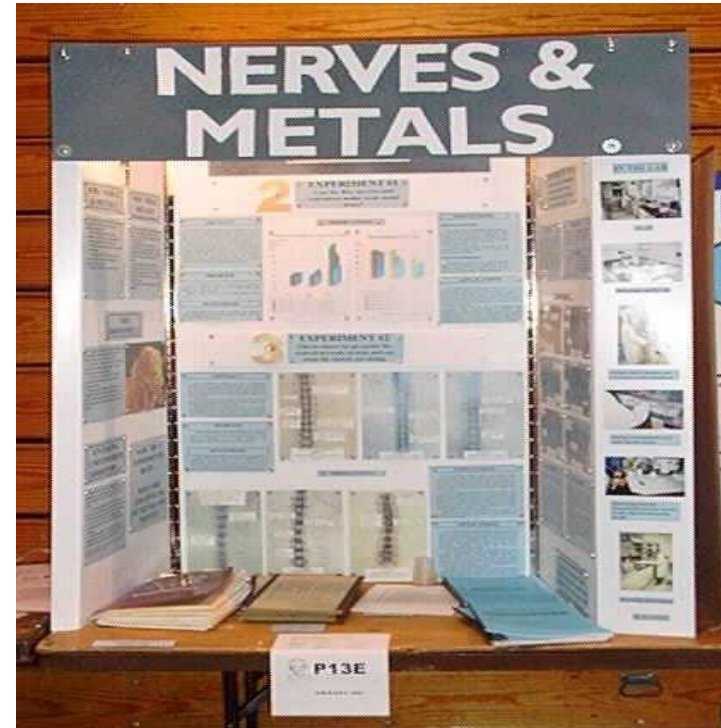


- The Bay Area Science & Engineering Fair draws students in Grades 7 through 12 from both public and private schools in:
 - City of Hamilton (including Ancaster, Dundas and Stoney Creek)
 - Regional Municipality of Halton (including Burlington, Oakville and Milton)
 - Six Nations in Southern Ontario
 - Haldimand and Norfolk Counties
 - City of Brantford and Brant County

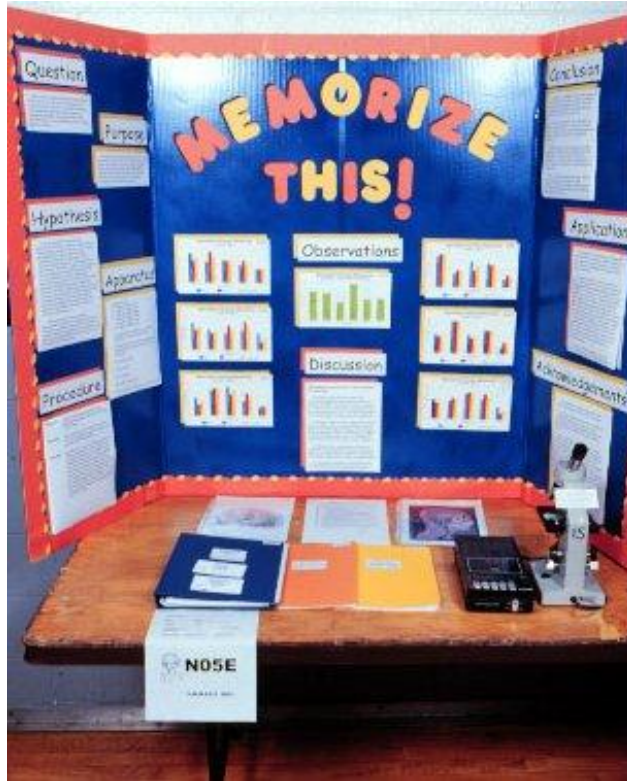
Typical BASEF Exhibition



Typical BASEF Display



Typical BASEF Display



Role of Safety



- To help students display their projects during the Fair in a safe manner for all involved.
- Project Safety Check Sheet identifies each safety rule.
- Safety Inspectors ensure the rules are followed.
- Safety Inspectors may need to explain the reasoning behind the rules.

Your Role



- Evaluate
- Counsel
- Motivate
- Facilitate
- Role Model
 - Be Genuine, Show Interest and Smile
 - Show a commitment to Safety

Volunteer Conduct



- As an adult volunteer BASEF Safety Inspector, you are in a position of authority/power/trust with the exhibitors you will meet with.
- BASEF expects Safety Inspectors will behave in a responsible manner.
- Keep your conversation with the exhibitor BASEF related.
- Follow the 'Rule of Two' principle.
 - All one-on-one interactions between you and an exhibitor must take place within earshot and in view of a second adult.
- If you observe any problem, unsafe or inappropriate behaviour, promptly report it to any member of the BASEF Organizing Committee.

BASEF Judging Team



- Safety falls under Project Judging.
- Many of the Safety Inspectors are also project judges. Some Safety Inspectors have years of experience.
- Excuse yourself from inspecting projects you know you are scheduled to judge.

Resources



- BASEF Project Safety Inspection Guide
 - Available for download from www.basef.ca/safety/
- The Safety Checklist
- Safety, Fix-It & Unsafe Photo Tables



Safety Checklist

BASEF SAFETY & REGULATIONS CHECKLIST



Exhibitor(s):

Project Info:

Title:



Check

Display

- 1 The Exhibit is within 2.5 m high from the floor, 1.2 m wide and 0.8 m deep.
- 2 Project apparatus is within the project display area.
- 3 The exhibit items and backboard are self-standing and stable, or secured to table.
- 4 All sheets on display board are glued flat.
- 5 All sharp edges on project or display are removed or protected.
- 6 Electrical cords, hoses, etc. do not create a tripping hazard.
- 7 No more than 2 people are presenting this project.

Human Projects

- 8a Display may include pictures of participants if prior permission has been obtained.
- 8b Project displays must avoid sensational or gratuitous, macabre images.

Animal Projects

- 9 Live animals are not being displayed.
- 10 Display shows no evidence of harm or distress to the animals that were used.

Chemicals

- 11 Any flammable or poisonous chemicals (solid, liquid, gas) are simulated and noted as "chemical simulated"

Electrical

- 12 Electrical power bars, supplies and cords in good condition, non-modified, CSA approved, and provide necessary grounding if required for apparatus.
- 13 No exposed live parts over 36 V. Exposed metal parts in systems over 36V are grounded.
- 14 Potential heat generating electrical devices are non combustible.
- 15 Only sealed type batteries are used.
- 16 Apparatus such as Van de Graff generator, spark gap etc. are non-operational

Fire Safety

- 17 No flames are used in display.
- 18 Packing material has been removed from the Exhibit Hall.
- 19 Student knows the Fire Exit Plan.

Light Emitting Devices & Lasers

- 20 Only ANSI 'Class 1' unmodified Lasers or laser diodes can be operated.
- 21 Lasers or laser diodes are affixed to display and not pointing into gallery.
- 22 Light sources used for heat are thermally guarded or non operational.

Microorganism & Biohazards

- 23 No plants, plant tissues or soils shall be exhibited.
- 24 No materials which could decompose shall be exhibited.
- 25 Fibrous materials are in sealed containers (example: insulation).

Pressure Systems & Explosives

- 26 Air/ Hydraulic pressure systems are non operational and open to atmosphere.
- 27 No pressurized tanks, canisters or gas cylinders are in the display.
- 28 No firearms or explosives are displayed. (Mockups may be displayed.)

Structural Mechanical

- 29 Hazardous moving parts are protected.
- 30 Apparatus is self supporting and not subject to falling.

BASEF Safety Committee Use Only

BASEF Safety Inspector

Print Name: _____

Signature: _____



Safety Checklist



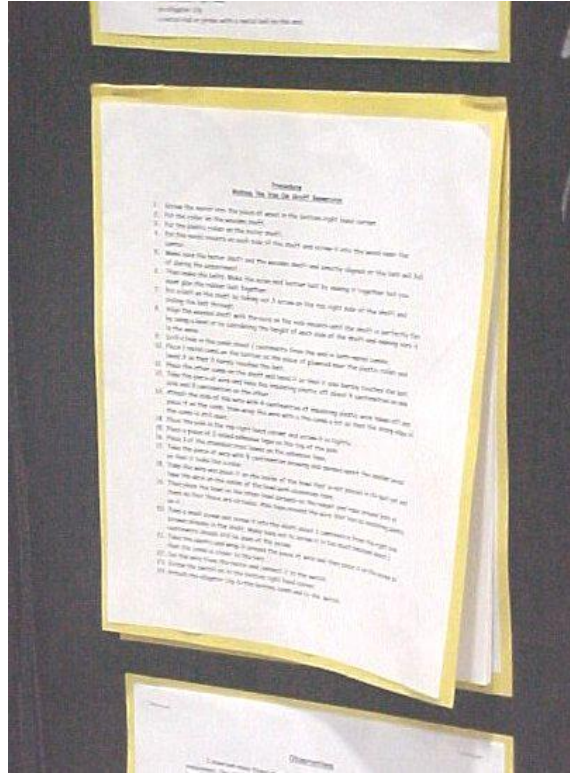
- Inspector enters a checkmark when an item passes the safety check criteria. Enter a checkmark for items that are not applicable.
- If any Safety Checklist criteria are not met, document the reason why on the back of the form. No checkmark for that item yet.
- Inspector returns partially completed Checklists to the Safety Station.
- The Checklist and exhibit placard must be signed only when all safety requirements are met (or N/A).
- Inspector returns completed Safety Checklists to Safety Station for BASEF records.

Display

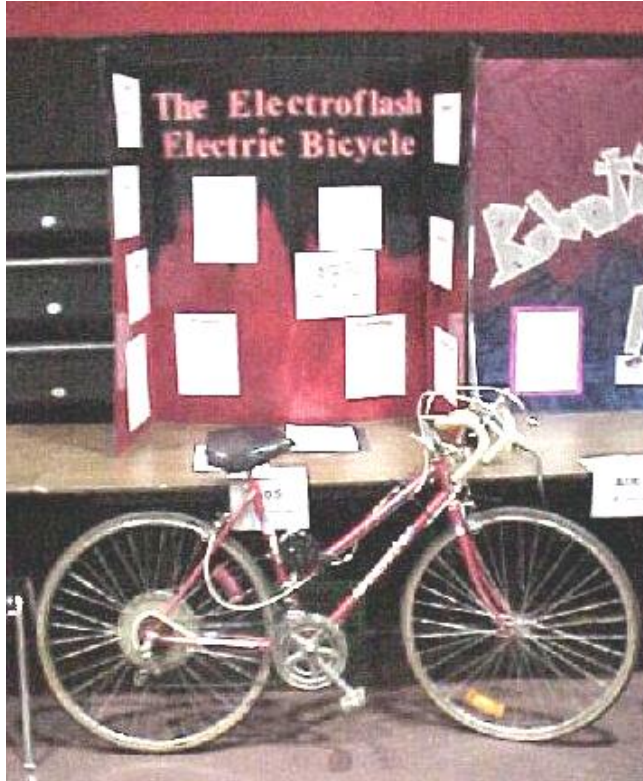


1. The Exhibit is within 2.5 m high from the floor, 1.2 m wide and 0.8 m deep.
2. Project apparatus is within the project display area.
3. The apparatus and backboard are self-standing and stable, or secured to table.
4. All sheets on backboard are glued flat.
5. All sharp edges on apparatus or display are removed or protected.
6. Electrical cords, hoses, etc. do not create a tripping hazard.
7. No more than 2 people are presenting the project.

Display



Display



Human and/or Animal



1. Display may include pictures of participants if prior permission has been obtained.
2. Project displays must avoid sensational or gratuitous, macabre images.
3. Live animals are not being displayed.
4. Display shows no evidence of harm or distress to the animals that were used.
5. Anything grown from animal or human source is not be displayed.

Human and/or Animal



Human and/or Animal



Chemicals



1. Any dangerous, explosive, flammable, hazardous, poisonous or toxic chemicals (solid, liquid, gas) are simulated and noted as "chemical simulated"
2. Some examples: prescription drugs, over-the-counter medication; kitchen and laundry supplies; chemicals that come with hazard warning labels or have a MSDS sheet indicating any hazard; known carcinogens.
3. **No project will be penalized because the key (but potentially dangerous) components were not on display.**

Chemicals



Chemicals

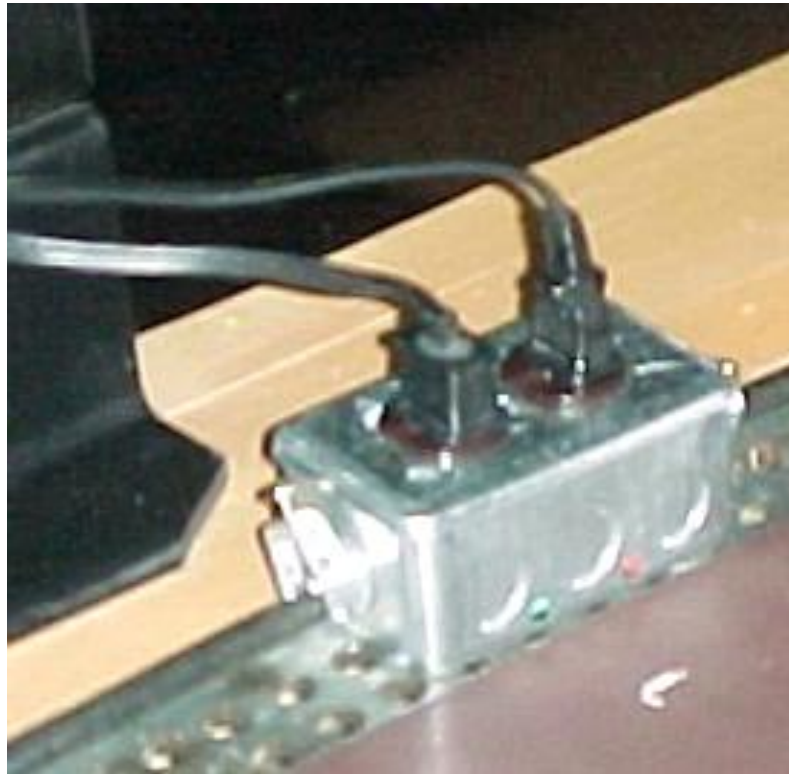


Electrical

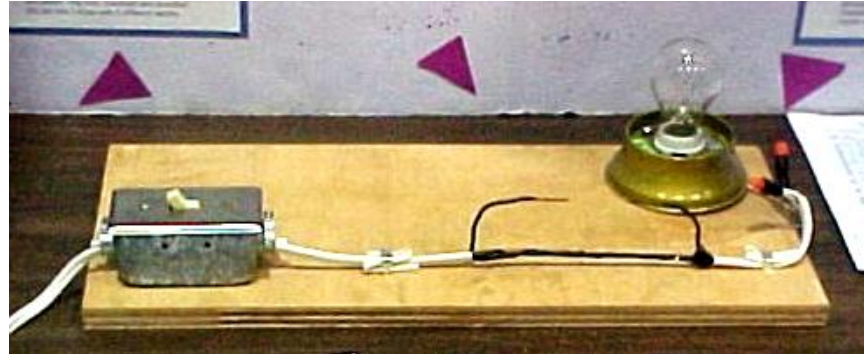


1. Electrical power bars, supplies and cords in good condition, non-modified, CSA approved, and provide necessary grounding if required for apparatus.
2. No exposed live parts over 36 V. Exposed metal parts in systems over 36V are grounded.
3. Potential heat generating electrical devices are non combustible.
4. Only sealed type batteries are used.
5. Apparatus such as Van de Graff generator, spark gap etc. are non-operational

Electrical



Electrical



Fire Safety



1. No flames are used in display.
2. Packing material has been removed from the Exhibit Hall.
3. Student knows the Fire Exit Plan.

Fire Safety



Light Emitting Devices & Lasers



1. Only ANSI 'Class 1' unmodified Lasers or laser diodes can be operated.
2. Lasers or laser diodes are affixed to display and not pointing into gallery.
3. Light sources used for heat are thermally guarded or non operational.

Microorganism & Biohazards

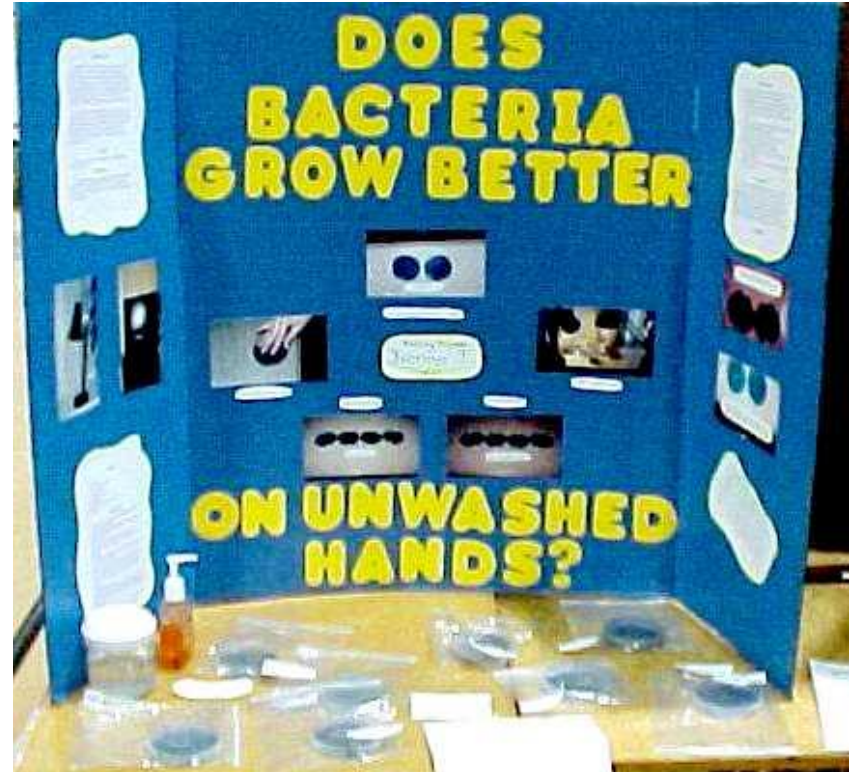


1. No plants, plant tissues or soils shall be exhibited (microorganisms).
2. No materials which could decompose shall be exhibited (biohazards).
3. Fibrous materials are in sealed containers (example: insulation).

Microorganisms & Biohazards



Microorganisms & Biohazards



Microorganisms & Biohazards



Pressure Systems & Explosives



1. Air/ Hydraulic pressure systems are non operational and open to atmosphere.
2. No pressurized tanks, canisters or gas cylinders are in the display.
3. No firearms or explosives are displayed. (Mock-ups may be displayed.)

Pressure Systems & Explosives

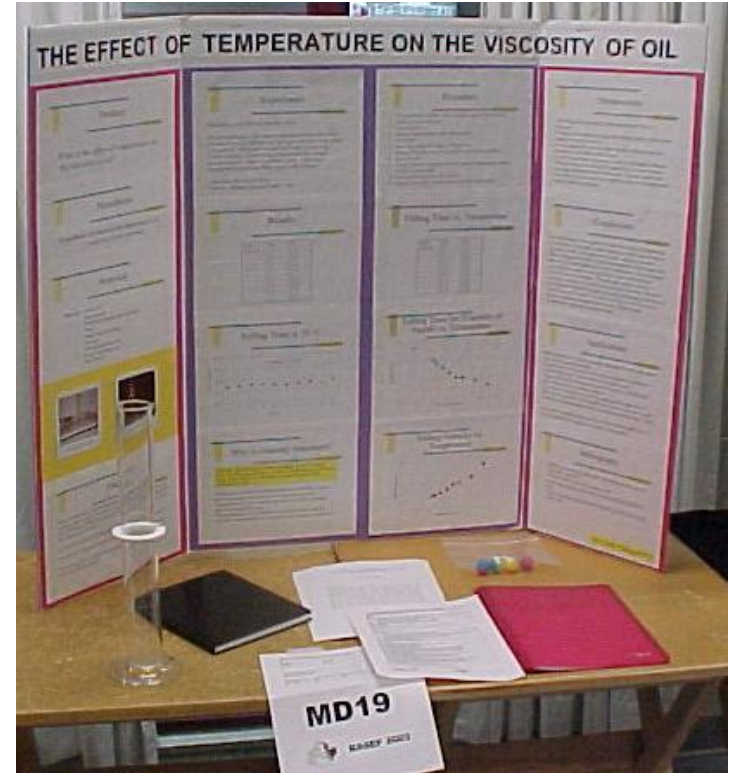


Structural Mechanical



1. Hazardous moving parts are protected.
2. Apparatus is self supporting and not subject to falling.











Structural Mechanical



Final Comments



If you see any of these symbols, review the appropriate section of the Project Safety Inspection Guide

	Exploding bomb (for explosion or reactivity hazards)		Flame (for fire hazards)		Flame over circle (for oxidizing hazards)
	Gas cylinder (for gases under pressure)		Corrosion (for corrosive damage to metals, as well as skin, eyes)		Skull and Crossbones (can cause death or toxicity with short exposure to small amounts)
	Health hazard (may cause or suspected of causing serious health effects)		Exclamation mark (may cause less serious health effects or damage the ozone layer*)		Environment* (may cause damage to the aquatic environment)
	Biohazardous Infectious Materials (for organisms or toxins that can cause diseases in people or animals)				

* The GHS system also defines an Environmental hazards group. This group (and its classes) was not adopted in WHMIS 2015. However, you may see the environmental classes listed on labels and Safety Data Sheets (SDSs). Including information about environmental hazards is allowed by WHMIS 2015.

Safety Table



- Safety inspection station - staffed by two volunteers
 - Inspectors sign in, receive t-shirt
 - Receive and return inspection sheets here
 - Maintains Unsafe Item and Removed Item logs
 - Inspectors need own pen (clipboards provided if desired)

Tool Loan Table



- Tool loan (fix-it) station - staffed by two volunteers
 - Has basic tools and materials required for fixing project displays or making project displays safe
 - Has Tool Sign-out log
 - Consumable materials available; not signed out
 - Should know my current location

Photo Table



- Volunteers who can photograph and print pictures of unsafe items (that cannot be made safe).
 - Exhibitors will replace the unsafe item with a picture for judging purposes.
- Volunteers who can photograph and print pictures of valuable items that are required for judging on Friday morning.
 - Exhibitors will replace the valuable item with a picture until they return Friday afternoon.

Parking



- Parking provided.
- Details for parking Thursday evening will be communicated via email closer to March 21.

What to Expect



- 3:30 p.m. Meet in Exhibit Room at Safety Station
- 4:00 p.m. Exhibitors arrive and start setting up
- 5:00 p.m. First rush of project inspections expected
- 7:00 p.m. Second rush of project inspections expected
- 8:00 p.m. Exhibit setup officially ends
- 9:00 p.m. Majority of checks should be complete
- expect 25% to 40% of the exhibits to require modifications to be made safe for viewing

Thursday Evening Breaks



- Supper provided
 - Supper breaks @ 5:30pm & 6:30pm
- Other personal breaks
- Inspections after 8:00pm



Questions?



Thank You!

We could not have a successful
Fair without you.