



Instructions & Information for Judges

Goals for the Fair

- Fair Judging Process
- Encouragement for each student in their pursuit of Science, Technology, Engineering and Math
- Positive experience for all
 - Students
 - Teachers
 - Parents
 - Judges



Our Judging Process => Middle + High School

- **Preliminary Round**

- 1st round of judging
- Projects are judged online based on student submitted materials
 - Display Slides (up to 12 slides)
 - Project Report (optional)
- Projects are primarily scored by judges in their categories (1-2 cross category to provide representative comparisons)
- Outcome
 - Top 35-50% of projects are Finalists

- **Finalist Round**

- 2nd round of judging, at project display board
- Non-Finalist
 - 1 – 2 interviews at project display board
 - Determine Research Fellow or Honorable Mention
 - Goal: Excite and inspire students
- Finalist
 - Determine Grand Award placing (1st, 2nd, 3rd....)
 - 3 – 10 (depends on level) judging interviews (individual or teams of judges)
 - High School judging is across disciplines
- Final score is 10% preliminary round, 90% finalist round

Our Judging Process => Elementary

- **Judging**

- Interviews at project display board
- Determine Grand Award placing (Gold, Silver, Bronze)
- 3 – 5 judging interviews
 - Please do individual interviews when possible to not overwhelm students
- Goal: Excite and inspire students

Judging Criteria – 2025 Preliminary

- **Introduction and Background 10%**
 - Provides an intro that begins with general information leading up to the area of their project.
 - Student understands how their research is relevant in their area of study or the world.
- **Problem Statement / Goals / Hypothesis 15%**
 - Student clearly explained the goals or purpose of the research.
 - Explains how the goal addresses a problem or gap in understanding.
- **Methods / Materials 15%**
 - Explains method of scientific work.
 - A clear plan was shown and variables were identified.
 - If controls were necessary, appropriate controls were selected.
 - Sample size was appropriate.
 - If appropriate, prototype solutions were developed.
 - If using a survey, the questions adequately addressed the problem.
- **Results / Analysis / Discussion 15%**
 - Student clearly and adequately explained the results of their work and understands the relationship of the results with respect to the goals.
 - Sufficient data was presented to support the conclusion. If applicable, statistical analysis was used properly.
 - Student was able to explain method of analysis, including statistical analysis.
 - Student interpreted the data in a way that is consistent with the original hypothesis / problem statement.
 - If applicable: Solution provides improvement or alternative to existing product or designs.
 - If applicable: Solution was tested for performance.

Judging Criteria – 2025 Preliminary

- **Conclusion / Application / Future Research 15%**

- Sound conclusions were made based on the data / schematics presented.
- Project was carried out to completion within the scope of the original intent.
- The student provided possible applications of their work.
- Demonstrated a clear direction for further study in the area of research.

- **Novelty / Creativity 15%**

- A creative project demonstrates imagination and inventiveness.
- Such projects often offer different perspectives that open up new possibilities or new alternatives.
- The project demonstrates considerable creativity in one or more of the following criteria: research question, design and methods, or execution (prototype development, data collection, analysis or interpretation).

- **Quality of Materials 15%**

- The display slides demonstrate an organized scientific approach.
- Slides clearly showed the data that was presented in identifiable tables and or figures.
- Slides clearly presented the specific goals or specific purpose of research study.
- Text was clearly visible with readable formatting.
- Information was organized in a way that enhanced the presentation of the student's research.

Judging Criteria – 2025 Finalist

- **Introduction and Background 10%**
 - Provides an intro that begins with general information leading up to the area of their project.
 - Student understands how their research is relevant in their area of study or the world.
- **Problem Statement / Goals / Hypothesis 10%**
 - Student clearly explained the goals or purpose of the research.
 - Explains how the goal addresses a problem or gap in understanding.
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 - The project demonstrates considerable creativity in one or more of the following criteria: research question, design and methods, or execution (prototype development, data collection, analysis or interpretation)
- **Quality of Presentation 10%**
 - Student presented the material in a clear and organized manner.
 - Student demonstrate enthusiasm in the presentation of their research.
- **Student Understanding 15%**
 - Student demonstrated understanding of the project.
 - Student clearly explains all aspects of the project.
- **Display Organization 10%**
 - The display demonstrates an organized scientific approach.
 - Display clearly showed the data that was presented in identifiable tables and or figures.
 - Display clearly presented the specific goals or specific purpose of research study.
 - Text was clearly visible with readable formatting.
 - Information was organized in a way that enhanced the presentation of the student's research.

Judging Criteria – 2025 Elementary

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 - Student clearly explained the goals or purpose of the research.
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Judging Criteria – 2025 Elementary

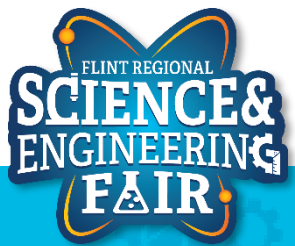
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 - Project was carried out to completion within the scope of the original intent.
- **Novelty / Creativity 10%**
 - A creative project demonstrates imagination and inventiveness.
 - Such projects often offer different perspectives that open up new possibilities or new alternatives.
 - The project demonstrates considerable creativity in one or more of the following criteria: research question, design and methods, or execution (prototype development, data collection, analysis or interpretation)
- **Quality of Presentation and Display 15%**
 - Student presented the material in a clear and organized manner.
 - Student demonstrate enthusiasm in the presentation of their research.
 - The display demonstrates an organized scientific approach.
 - Display clearly showed the data that was presented in identifiable tables and or figures.
 - Text was clearly visible with readable formatting.
- **Student Understanding 15%**
 - Student demonstrated understanding of the project.
 - Student clearly explains all aspects of the project.

FRSEF Rules

International Science & Engineering Fair

Regulated Research Institutions

- Students allowed to work at Regulated Research Institutions (RRI)
- Students must declare what work was conducted at the RRI and what assistance was received. => Form 1C (RRI)
 - This is signed by someone at the RRI
- Two categories of projects with a **Form 1C**
 - Complete project at RRI: student received significant guidance and did their project at the RRI
 - Equipment usage: student conducted the majority of their project at home or school and used specialty equipment from an RRI for a portion of their project
- **Judge the project based on the work and knowledge of the student**
- The Form 1C will be displayed vertically on the table in a **blue sleeve**

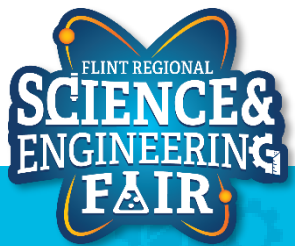


FRSEF Rules

International Science & Engineering Fair

Continuation Projects

- Students are only allowed to work on a project for 12 months
 - Students are allowed to work on a project longer and across multiple years if it is a continuation
 - Students can only present on the work of this year but are allowed to reference previous data and research
- Students must declare what work is new and for this year => **Form 7** (continuation)
- **Judge the project based on the work for this year**
- The Form 7 will be displayed vertically on the table in a **yellow sleeve**



Judging Platform

You also can go directly to zFairs
<https://mi-frsef.zfairs.com>

- www.flintsciencefair.org – and click on yellow box

- Put in username and password. If you have forgotten either, click on forgot username/password and follow the directions

Student, Judge
Login &
Registration

The screenshot shows the FRSEF website with a blue header. The main content area is divided into two columns. The left column, titled 'Home Page', contains a welcome message and instructions for creating an account. The right column contains a 'Login' section with fields for 'Username' and 'Password', a 'Login' button, and a 'Forgot Username/Password' link. Below the login section is a 'Create Account' section with fields for 'First Name', 'Last Name', and 'Email', and a 'Create Account' button. The 'Home Page' section also includes a list of '2021 Virtual Fair Dates'.

FRSEF Flint Regional Science and Engineering Fair

Home Create Account Fair Help Login

Welcome to the Flint Regional Science and Engineering Fair

General

Home Page

Welcome to the FRSEF registration and fair operations portal. The 2021 FRSEF will be a virtual event.

Step 1 is to create an user account. From there you can identify as a student, teacher, judge or volunteer (monitor, SRC). Check out the directions above for further instructions.

- *This is a new system for 2021 and everyone needs to create a new account (students, teachers, judges and volunteers), even returning students and judges.*
- Check your spam folder if you do not receive the registration email within 5 minutes.

2021 Virtual Fair Dates

- Senior Preliminary Judging: March 13 - 17
 - Information Meeting: March 11 @ 7:00 PM (recommended, optional)
 - Information Meeting: March 13 @ 10:00 AM (recommended, optional)
 - Judge Office Hours: March 15 @ 7:00 PM (if you have questions)
- Senior Finalist Judging: March 20
 - Finalist Student Orientation: March 19 @ 7:00 PM (required)
- Junior / Elementary Preliminary Judging: April 11 - 15
- Junior / Elementary Finalist Judging: April 17

Login

Username: Dorishill@Flintsciencefair

Password:

Login Forgot Username/Password

Google Windows Facebook

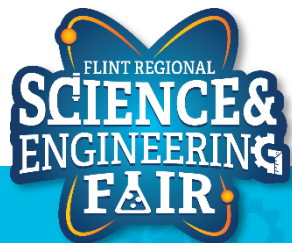
Create Account

First Name: First Name

Last Name: Last Name

Email: Email Address

Create Account



Converting raw scores to z-scores "normalizes" scoring from judge to judge.

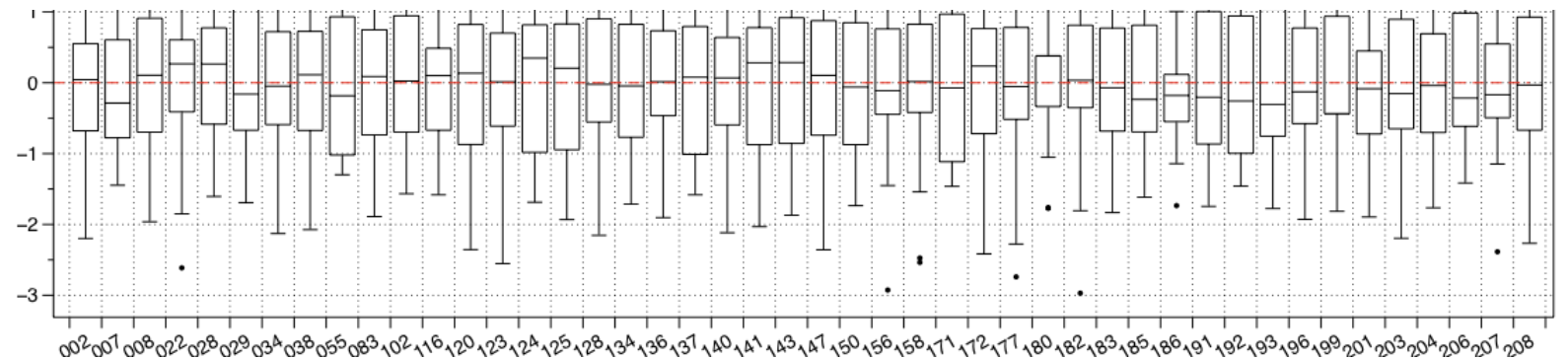
Each judge's raw scores are converted to z-scores with a formula.

$$\text{Z-Score} = (\text{Raw Score} - \text{Judge's Mean Score}) \div \text{Judge's Standard Deviation}$$

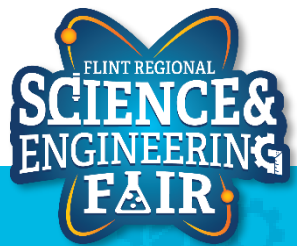
Z-Scores by Judge

Do not give every project the same score!
There must be some variation!

All scores are converted into z-scores.

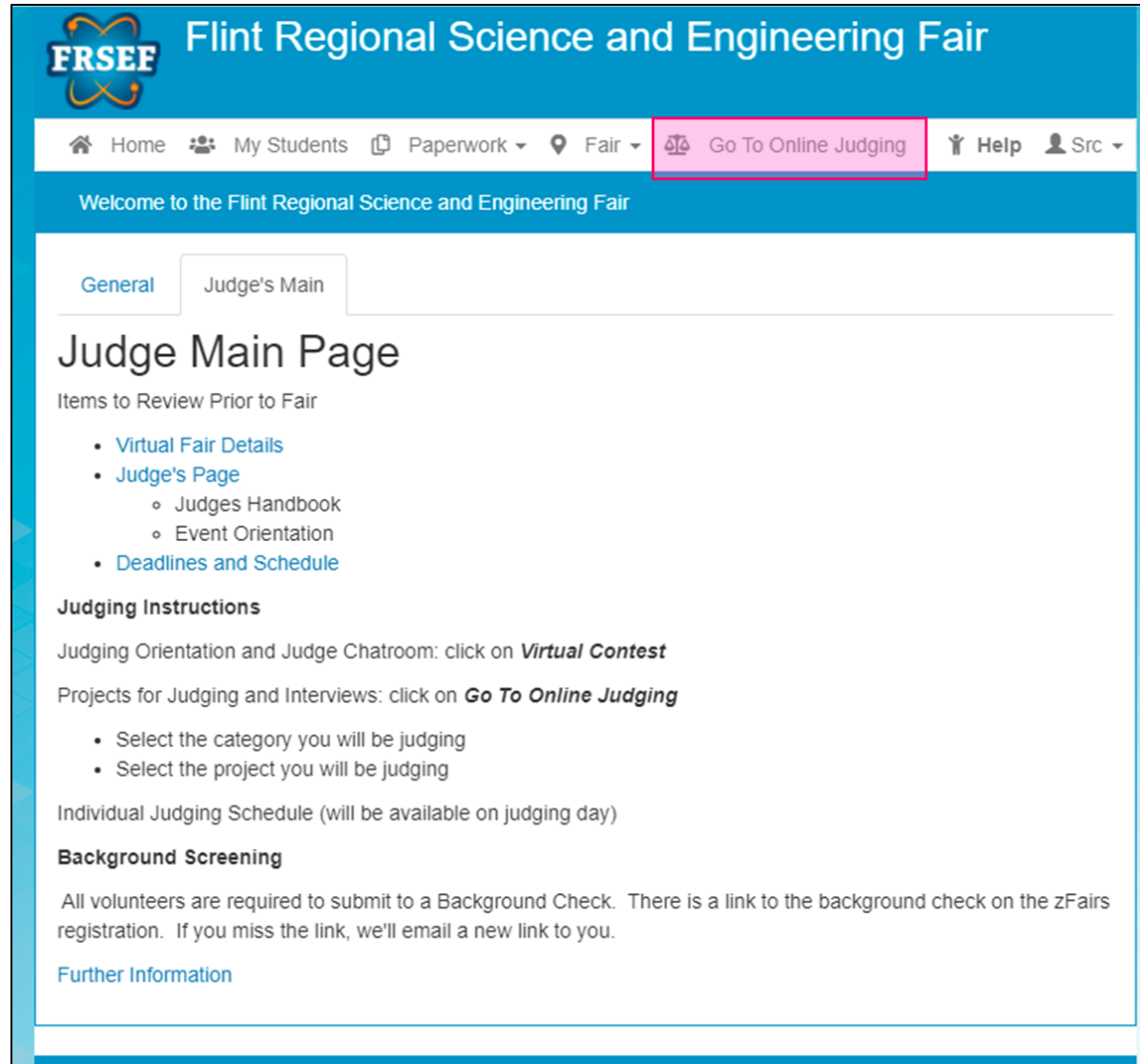


This allows each judge to pick the mean that is natural to them



Online Judging (where to view & score)

- 
- 1) Log into FRSEF (previous page)
 - 2) ***Go to Online Judging*** to start !



FRSEF Flint Regional Science and Engineering Fair

Home My Students Paperwork Fair **Go To Online Judging** Help Src

Welcome to the Flint Regional Science and Engineering Fair

General Judge's Main

Judge Main Page

Items to Review Prior to Fair

- [Virtual Fair Details](#)
- [Judge's Page](#)
 - Judges Handbook
 - Event Orientation
- [Deadlines and Schedule](#)

Judging Instructions

Judging Orientation and Judge Chatroom: click on **Virtual Contest**

Projects for Judging and Interviews: click on **Go To Online Judging**

- Select the category you will be judging
- Select the project you will be judging

Individual Judging Schedule (will be available on judging day)

Background Screening

All volunteers are required to submit to a Background Check. There is a link to the background check on the zFairs registration. If you miss the link, we'll email a new link to you.

[Further Information](#)

In person Judging

For preliminary judging and special awards, the projects are judged without the students present

- On Saturday, the judges will have the opportunity to ask questions to the students to gauge their understanding
- Finalist Judges: The projects listed have been pre-assigned to you. We make every effort to match projects to your expertise. But, you may be asked to judge projects outside of your educational expertise, that is okay. Clarity is an important requirement for students.
- Special Awards: All projects are listed, use *search* bar to find applicable projects.
- All Senior projects have been pre-loaded onto laptops in the various judging rooms.

Projects assigned to you.
Click on the project to view and score

The screenshot shows a web interface for online judging. At the top, it says "Hi Chris" and "Welcome to online judging." Below this is a grey box with the text "Hi Judges, Please judge projects and provide feedback on the process!". The main section is titled "Senior Prelim Test" and includes a note "This is the default round." Below the title is a search bar labeled "search projects" with a magnifying glass icon. A list of projects is displayed, each in a white box with a grey border. The projects are: SR-EEC-002 (chemical or organic fertilizer), SR-EEC-003 (How Much Fat is in Your Food?), SR-EEC-006 (Yeast Metabolism With and Without Aeration), SR-LS-013 (Effect of bacterial diet on reproductive aging in C. elegans), SR-LS-051 (An Evaluation of the Effects of d-alpha-tocopherol and Amygdalin on Regeneration of Dugesia tigrina), and SR-PSE-077 (Comparing Methods of Recoil Measurement). At the bottom, there is a "Find projects" section with a "Search by Category" dropdown menu and a "Search by Division" dropdown menu.

Hi Chris
Welcome to online judging.

Hi Judges,
Please judge projects and provide feedback on the process!

Senior Prelim Test This is the default round.

Senior Prelim Test

search projects 🔍

SR-EEC-002
chemical or organic fertilizer

SR-EEC-003
How Much Fat is in Your Food?

SR-EEC-006
Yeast Metabolism With and Without Aeration

SR-LS-013
Effect of bacterial diet on reproductive aging in C. elegans

SR-LS-051
An Evaluation of the Effects of d-alpha-tocopherol and Amygdalin on Regeneration of Dugesia tigrina

SR-PSE-077
Comparing Methods of Recoil Measurement

Find projects

Search by Category

Search by Division

In-Person Judging

Scored projects are highlighted.
Judges can adjust scores until scoring deadline.

Scored Project

Unscored Project

Senior Prelim Test

This is the default round.

Senior Prelim Test

search projects

Q

SR-EEC-002

chemical or organic fertilizer

51.00

SR-EEC-003

How Much Fat is in Your Food?

100.00

SR-EEC-048

Emission Recognition

SR-LS-013

Effect of bacterial diet on reproductive aging in C. elegans

SR-PSE-077

Comparing Methods of Recoil Measurement

75.00

SR-PSE-079

Early Forest Fire Detection

Project View

Review the materials

- *Display Slides*
- *Quad Chart*
- *Abstract*
- **Form 7 (Continuation)*
- **Form 1C (Regulated Research Institution)*

**Some projects will have this.*

Score the Projects in the different criteria.

Project Info

ISEF Form 1C - Research Institutional / Industrial Setting

Project Abstract (due last day of registration)

Project Display Slides (due last day of registration)

Project Quad Chart (due last day of registration)

Plan

≡

b1b6c234-cdc...

1 / 11

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37%

+

🔍


↺

⬇️

🖨️

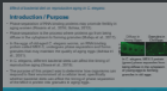
⋮

Effect of bacterial diet on reproductive aging in *C. elegans*




1

Effect of bacterial diet on reproductive aging in *C. elegans*




2

Effect of bacterial diet on reproductive aging in *C. elegans*



Effect of bacterial diet on reproductive aging in *C. elegans*



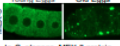
Effect of bacterial diet on reproductive aging in *C. elegans*

Introduction / Purpose

- Phase separation of RNA binding proteins may promote fertility in aging women (Rosario et al., 2016; Schisa, 2012).
- Phase separation is the process where proteins go from being diffuse in the cytoplasm to forming granules (Mateju et al., 2017).
- In the eggs of old-aged *C. elegans* worms, an RNA binding protein called MEX-3, undergoes phase separation and forms granules that may maintain the quality of aging eggs (Schisa et al., 2001).
- In *C. elegans*, different bacterial diets can affect the timing of *Caenorhabditis elegans* phase separation (Schisa et al., 2014).

Diffuse in Young Eggs

Granules in Old Eggs



In *C. elegans*, MEX-3 protein (green) phase separates from

Trouble viewing? [Open in another tab.](#)

Scientific Thought / Engineering Goal																			
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<ul style="list-style-type: none"> - The problem / goal was clearly stated and limited so that it was possible to solve. - Variables and constraints or design criteria were clearly defined. - There was a plan for reaching a solution. - There was enough data to support the conclusion. (Was there enough data to make a conclusion, not if the hypothesis was correct.)																			
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	20				21				22			23			24			25	

SR-LS-013

close

Effect of bacterial diet on reproductive aging in *C. elegans*

Alexander DeMattei 11

Project Info

Clarity

Clarity

- The question / problem to resolve, results and process undertaken are clearly displayed?
- Graphs, pictures and graphics are effectively used.
- Project demonstrates a clear understanding of the Scientific Method / Engineering Method through experimentation and a clear presentation of the results.

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Creative Ability

Creative Ability

- Project shows creative ability and originality in the question asked and the approach used to solve the problem.
- Project shows creative use of materials and equipment.

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
20 21 22 23 24 25

Scientific Thought / Engineering Goal

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0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
20 21 22 23 24 25

Skill

Skill

- Did the student have the laboratory, computation and design skills required to gather data to support the project?

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Thoroughness

Thoroughness

- The project has completely covered the problem.
- Are the conclusions based on a single experiment or several?

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
20

Participant Feedback (possibly shared with student):

Submit Score & Close

No Show

Place your encouraging comments to the students here.

When complete, click **Submit Score & Close**

Project Feedback & Comments

Goal: Encourage students and provide constructive feedback.

- Non-Finalists may choose to defer Judging, so many students may only receive feedback from these comments.

Examples:

- *My favorite part of your project is:*
- *Strength of project is:*
- *I would like to see more of:*
- *If you continue, focus on:*

Place your encouraging comments to the students here.



SR-LS-013 close

Effect of bacterial diet on reproductive aging in *C. elegans*
Alexander DeMattei 11

Project Info +

Clarity

Clarity
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0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
20

Participant Feedback (possibly shared with student):

Submit Score & Close No Show

Determining overall student scores

Students are ranked during finalist judging by their average z-score.

- All finalists receive awards (~\$10,000 for senior division) at the awards ceremony based on their Saturday z-score average.
- Certificates, Prizes and Ribbons are presented during the awards ceremonies (or mailed if students are not present).
- A wide variety of additional special awards are given by various companies and associations.

Perceived or Actual Judging Conflicts

If you have a child or science fair participant whom you mentored participating in the division that you are assigned to judge:

- ✓ Please let a science fair official know
- ✓ You will be reassigned to avoid an actual or perceived conflict of interest



Student Safety

Student Safety is Our Top Priority

- See Something, Say Something
 - If you observe any behavior that is inappropriate toward a student, volunteer or parent
 - ⇒ Notify FRSEF personnel immediately (green shirts)
 - ⇒ The situation will be addressed immediately
- Safety text line
 - If you are in a situation, please text the help line and FRSEF personnel will address it immediately
 - If you have not received the introduction text message already, let us know

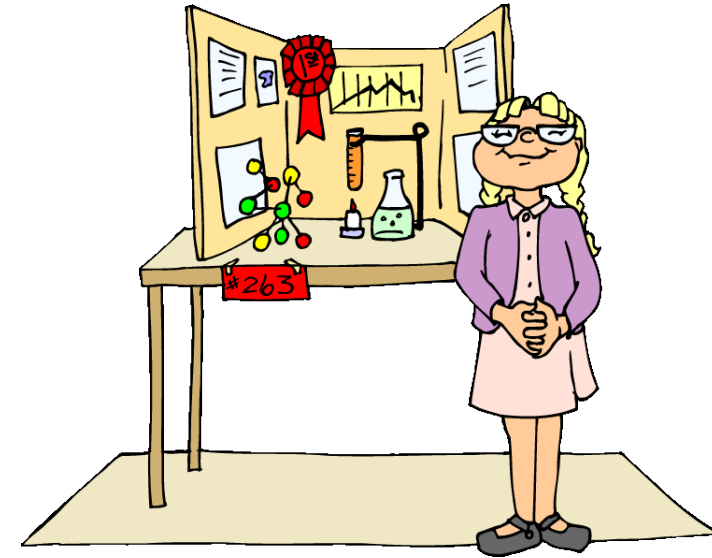
Special Notes for Finalist Judging

- On Saturday Finalist judging, student interviews will measure the student's knowledge.
- Please judge using the rubric and outlined criteria.
- Please leave comments for each project.
 - These will be given to the teachers so the students can receive feedback.
- Prepare to be impressed and inspired.



Thank you for spending your time to encourage and inspire our students.

We couldn't do it without you!



Thank you!

Any questions, please email

azick@flintsciencefair.org

jkrell@flintsciencefair.org

cwagner@flintsciencefair.org

We will assist as soon as possible.