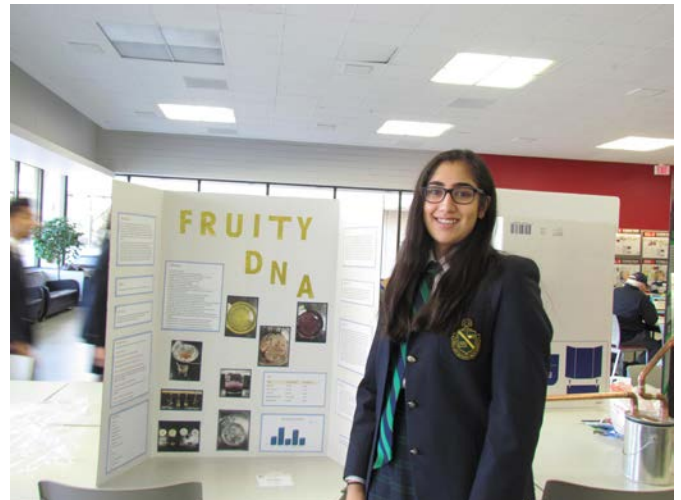
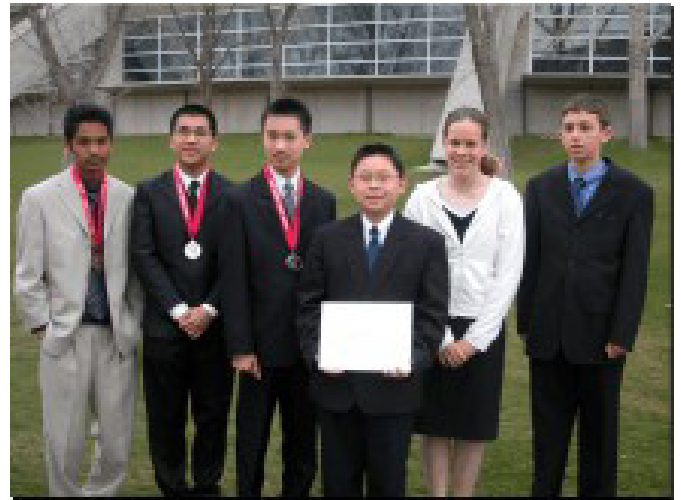


QRSTF Handbook



QRSTF-April 6, 2024- Centennial SS

This manual includes all expectations and policies of the Quinte Regional Science and Technology Fair. This includes information on the Types of projects, safety and ethics, planning, Judging Forms, Awards, instructions for judges, day of fair instructions, and planning time line

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Quinte Regional Science and Technology Fair

Introduction

"Science Fairs offer students in grades 4 to 12 the opportunity to create original scientific research or innovative projects which are then displayed at various levels of competition. Science Fairs are offered at school, district, regional, national and international levels. Science Fair participants progress from a school or district Fair to a regional Science Fair. Each regional Science Fair sends its top projects to the National Fair. Here young people share a week of competition, socializing, cultural activities, scientific tours and workshops. Some students also go on to attend

International Science Fairs." (BASEF)(B.C science)

Eligibility for the Fair

2.1 A project shall be eligible for the QRSTF if the following conditions are met:

- a) the project is the work of one or two students from start to completion. This does not include the assistance of teachers, parents, or collaboration with a mentor;
- b) the project is registered for the QRSTF by a teacher or science co-ordinator;
- c) registration for the project is completed by the published QRSTF deadline;
- d) the project is the only entry by the finalist(s) in the current QRSTF;
- e) the project complies with all Youth Science Canada policies governing ethical research and safety; and
- f) the project has complied with all other regional fair and CWSF eligibility requirements
- g. If different grade groups the pair must compete at the higher grade level.
- h. the participant must reside in the Hastings-Prince Edward area. (Quinte)
- i. QRSTF -grades 4-6 , 7-8, 9-10, 11-12 CWSF-grades 7-12, Jr. 7-8,Int. 9-10, Sen. 11-12

Information for Judges:

General: QRSTF judges are volunteers from throughout the community: a mix of returning and new judges. Whenever possible, new judges are paired with experienced judges. Judges receive an orientation session prior to the fair, and a briefing immediately before the fair.

Our judges do an excellent job; we thank them very much! We are always in need of new judges. If you are interested, please contact our coordinator, Panch - treasurer.qrstf@gmail.com or qrstf@live.com

SCHEDULE FOR JUDGING: Judges are asked to please arrive at the Kente Building main entrance and follow signs to the judges headquarters. Judges should arrive no later than 8:15 so they can sign in, meet their partners and preview the judging package. A short briefing will begin at 8:30 sharp. The major portion of the judging will be accomplished between 9:00 a.m. and 11:30. Most judges who are not involved with second round judging, are free to leave after the morning session or stay and view the projects.

9:00 - 11:00 - Grades 4 to 6 First Round Judging and until 11:30 for grade 7 to 12.-- **Exhibition Hall will be closed to the general public for judging.**



Quinte Regional Science and Technology Fair

Schedule for Participants

Elementary School Judging

All of the exhibits in Grades 4 - 12 will be placed into groups of 5 - 7 according to grade, type, and class (either life science or physical science, when possible). One judge or a pair of judges will be assigned to each group, whenever possible. After judging is completed, the judges will give out participation certificates to each entrant and third, second and first place ribbons. These tasks should be completed by 11:30 am.

This schedule may change at any time due to scheduling conflicts

Participants-Schedule for the Day (Addendum)

8:00-8:45 Student Setup

8:45-9:00 Safety Check

9:00-11:00 First Round/ special awards

11:00 –11:30 Hand out awards

11:30-12:00 Lunch

12:00- 2:30– No one packs

11:30-2:30 – second round judging, Public Viewing Time. –

2:30-3:00 Students Pack-up

3:30 Awards Ceremony-3:30-5:00 in the Auditorium

All schedules are due to change as we get closer to the fair

Prizes will be awarded starting as close to 3:30 p.m. as possible. Sometimes the start is delayed because the Judging Teams are in need of a few more minutes to complete their final deliberations.

Science Fairs allow students to meet and learn from experienced scientists and technologists, to discover where new career opportunities exist and to make contacts which could lead to a first job. Students who participate in Science Fair projects always agree that they have fun doing the work while learning something new about the world around them. Their Science Fair project work provides an opportunity to extend science beyond the classroom and to take an in-depth look at a topic that is of interest to them personally, their family, or their community. " (Science Fair Foundation of British Columbia)



Quinte Regional Science and Technology Fair

Which Type of Project?

The judging of scientific thought requires special attention. One important consideration is the existence of different types of projects. The most common types of science fair projects are Experiments, Studies and Innovations. Many projects will contain elements of two or three project types. Projects of each type are equally capable of winning top awards at the Fair, providing they meet the necessary criteria. All types of projects have equal merit!

An Experiment

Projects of this type should involve an original scientific experiment to test a specific hypothesis in which the student recognizes and controls all significant competing variables and demonstrates excellent collection, analysis, and presentation of data. The judge should also realize that it is not essential that the project produce a significant positive finding. It is the design rather than the results that is most important.

Example question: How does _____ affect _____ ?

A Study

This type of project involves the collection and analysis of data from other sources to reveal evidence of a fact, situation or pattern of scientific interest. This could include a study of cause and effect relationships or theoretical investigations of scientific data. The data may be obtained from other sources rather than being collected by the student. Projects in this area must be able to demonstrate that the methods originally used to obtain the data are based on sound scientific techniques and controls, and demonstrate insightful analysis.

Example question: What type of relationship exists between _____ and _____ ?

An Innovation

A project of this type would involve the development and evaluation of new devices, models, techniques or approaches in fields such as technology, engineering or computers (both software and hardware).

Projects should integrate several technologies, inventions or designs and construct an original innovative technological system that will have commercial application and/or human benefit. It must demonstrate how the innovation was designed or developed on the basis of a sound understanding of the scientific, engineering or technological principles involved.

Example question: In what way could _____ improve the performance of _____ ?





Use of Firearms, Hazardous Materials and Equipment, Use of Pesticides

All projects involving these materials must have prior approval

Introduction

1.1 Youth Science Canada (YSC) and the QRSTF allow students to conduct research involving hazardous materials, equipment and firearms as long as they adhere to federal and provincial/territorial regulations and guidelines that are designed to protect the safety of the researchers. The QRSTF shall form an Ethics/Safety subcommittee.

1.2 Any experimental design involving firearms, and/or hazardous devices, must be approved by the QRSTF or YSC Canada Ethics/Safety Committee prior to beginning to ensure compliance with regulations and restrictions. If necessary, the QRSTF or YSC will refer the project to the authorities cognizant of current regulations.

1.3 Use of hazardous equipment, dangerous goods, explosives and firearms requires proper supervision by an Adult Supervisor. The Adult Supervisor must be directly responsible for overseeing student experimentation and must provide proof to the QRSTF Ethics/Safety Committee of his/her licensing and expertise in the use of a firearm, volatile substance or device, and/or explosives BEFORE the project commences. All adult supervisors must be approved prior to the experiment being started. (eg OPP officer)

1.4 When considering a project which involves the use of firearms, ammunition, dangerous goods or explosives, students and Adult Supervisors must make contact with one or more of the following agencies/government ministries: Provincial Police, Municipal Police, Federal and Provincial Justice Ministries, Provincial Ministries responsible for hunting and fishing regulations, Municipal offices regarding the use of firearms within their jurisdiction, National and Provincial hunting organizations, federal Ministry of Mines and Resources.





Legislative Framework

Potential violations of the Criminal Code, Explosives Act and Transportation of Dangerous Goods Act must be considered and researched prior to experimentation: Criminal Code considerations that should be addressed by students and Ethics/Safety Committees in reviewing a project include:

i) Possess, trade, transfer or give as a gift a firearm to a person without a Possession

Only Licence (POL) or a Possession and Acquisition Licence (PAL) with the proper classes of firearms.

ii) Unlawfully making an explosive.

iii) Possession of a weapon dangerous to the public peace.

iv) Unlawful storage of a firearm, ammunition or explosive.

v) Pointing a firearm.

vi) Careless use of a firearm.

vii) Criminal Negligence causing bodily harm or death.

viii) Arson or unlawfully setting fire to a substance

ix) Failure to sign vehicle properly that a dangerous good is being transported.

2.2 Other considerations for projects involving the use of firearms, ammunition, dangerous goods or explosives include Provincial and Federal acts such as the Environmental Protection Act, Migratory Bird Game Act and Canada Shipping Act. Students and the QRSTF and YSC Ethics/Safety Committees are responsible for knowledge of and adherence to all Municipal, Provincial and Federal laws governing the materials and the use of those materials.

2.3 Prohibited weapons may NOT be used in a science fair experiment or be displayed or worn at a science fair. Prohibited weapons include spiked wrist bands and neck bands, maces, martial arts throwing weapons, nunchakus or any other weapons defined by the Criminal Code as prohibited.

2.4 Weapons include all firearms or anything else that may be used as a weapon. Pellet guns, paint ball guns, slingshots, potato guns or other devices that propel an object are, for the purposes of subsection 2.1.iii and 2.1.vii, dangerous weapons. These devices may not be displayed at the Regional Science Fair.





ANIMAL TISSUE AND BIOHAZARDS - ETHICS

All projects involving animals must have prior approval

Introduction

1.1 The QRSTF strictly adheres to the ethical treatment of animals. The procurement of animal tissues and parts is strictly regulated.

1.2 Animal tissues and parts must be procured from a registered science supply store.

Teeth, blood and organs are included in Animal Tissues. The QRSTF has a high standard of bio-safety that will be strictly enforced. This high standard is for the protection of our students, their families and fellow students and teachers.

Animal tissues are not permitted to be displayed at the Regional Fairs but pictures or models are allowed. Pictures that may be offensive or have shock value shall not be displayed on the student's backboard. Judges shall be told that the pictures in the student's workbook may be offensive prior to being judged. The student must prove to the QRSTF Ethics/Safety committee that the animal tissue was procured at a registered science supply store by showing the documentation and re-ceipt that comes with the samples.

1.3 Naturally shed tissues, such as snake skins, may be used in a science fair project. The article should be displayed in a sealed container. The QRSTF Ethics/Safety committee should be consulted if the student/teacher is unsure if the article should/can be displayed.

1.4 Vertebrates must not be harmed. Lower forms of life may be used to replace vertebrates except for cephalopods. Intentional torturing or unnecessary killing of test subjects will result in the project being disqualified. Vertebrates are any animal with a backbone or spinal column including fish, amphibians and reptiles. Cephalopods include octopi and squid.

1.5 Students wishing to do science projects on any animal or animal tissue, must send a written proposal to the QRSTF Ethics/Safety committee. The committee will review the proposal for its scientific merit, ethics and safety procedures. The project, if passed, will then be sent to a Scientific

1.6 All projects must follow the YSC policy <https://youthscience.ca/Introduction%20to%20Ethics>

Request for ruling: https://youthscience.ca/sites/default/files/request_for_ethics_ruling_en_03.doc

1.7 All containers must be sealed

Ethics Review Committee at a research university or a hospital for review. The National Judges Advisory Committee of YSC will also be consulted and that committee may also review the proposal. Any of these committees may make recommendations for improvement to the project or its procedure. These recommendations shall be followed by the student before final permission to start the project is given. <https://youthscience.ca/node/8223>



Quinte Regional Science and Technology Fair

**** Absolutely no experiments that involve ingestion ****

YSC -

Introduction

There are two types of human involved experimentations, low and high risk. The purpose of this policy is to protect the identity and health of people taking part in science projects. Ingestion projects of drugs or chemicals are **not allowed**. Example: Testing which energy drink gives more energy is **not allowed** as they contain the drug caffeine. Testing chewing gum to see which lasts longest would **not be allowed**. Students wishing to do a project in this area should consult with the QRSTF Safety Sub-Committee first.

1 Low Risk Human Involved Experimentation

1.1 Low risk human experimentation projects include surveys and testing apparatus. Surveys and testing data must be anonymous. A numerical identification system shall be used. The test subject will be given his or her test number. Items such as age or gender may be asked on the survey or test protocol. A test subject may withdraw from the project at any time either verbally or in writing. The original survey or test data will be returned to the test subject. **All subjects under the age of 18 must sign a release form found on the QRSTF site.**

1.2 Low risk human experimentation projects that are going to compete in the Canada Wide Science Fair must have the Low Risk YSC form completed before or at the Regional Fair.

<https://youthscience.ca/node/3576>

<https://youthscience.ca/node/8196> <https://youthscience.ca/node/728>

2 High Risk Human Involved Experimentation

2.1 High Risk Human Experimentation Projects include projects where surveys are taken, bodily fluids, rigorous physical testing is performed or any other procedure that is deemed high risk by the QRSTF Chair, Safety Sub-Committee, National Judges Advisory Committee or YSC.





Quinte Regional Science and Technology Fair

2.2 High Risk Human Experimentation Projects must first be passed by the QRSTF Chair/Safety Subcommittee before further qualification proceeds. The safety of the test subjects is paramount. The student must present the safety protocols, benefit to scientific investigation and ethical standards to the Chair/Safety Subcommittee. Once the project has been passed at this level, the procedure and protocols must be reviewed by a university ethics and safety committee or an ethics review committee at an approved hospital. If and when one of these committees has passed the project, then the project will be submitted to the National Judges Advisory Committee for final review.

2.3 Deficiencies that are identified at any review level may be resolved by the student and resubmitted for further review.

2.4 All of the YSC High Risk Human Experimentation forms must be completed before the project is allowed to begin. These forms may be found on the YSC website

3 Legislative Framework

3.1 All Federal, Provincial and Municipal Freedom of Information and Protection of Privacy Acts shall be followed to protect the privacy of the test subjects.

Approval must be done before the experiment is started and all forms must be filled out and approved. Participants under the age of 18 must have signed release forms

Electricity:

1.1 ****No electricity will be provided for projects.** **The only exception is those that are computer programming projects. Use pictures and other aids to display your project. (this is due to safety regulations and the number of electrical receptacles)

Your project display, including the backboard, title board, presentation and prop material, and all display equipment, must fit entirely within these dimensions:

1.2m wide, 0.8 m deep and 3.5 m high from the floor.

Exhibits exceeding these dimensions must be modified before they will receive safety approval.

No portion of the display shall project into any aisle; however, a limited number of separate display spaces are provided for oversized innovations. These must be requested by a Regional Coordinator in advance.

Eligibility

A participant must follow all the rules and regulations of the fair as described in the handbook. The project must be registered and all forms handed in and arrive in times prescribed. Failing to do so may result in the disqualification of the project.

HUMAN INVOLVED EXPERIMENTATION

Planning a QRSTF Entry

Display Safety Guidelines

<p><u>Size:</u></p> <p><u>The exhibit is no more than:</u></p> <p><input type="checkbox"/> 3.5 m high (11.4') from the ground</p> <p><input type="checkbox"/> 1.2 m wide (3.9')</p> <p><input type="checkbox"/> 0.8 m deep (31.2")</p> <hr/> <p><u>Safety:</u></p> <p><input type="checkbox"/> No hazardous materials have been used.</p> <p style="text-align: center;">OR</p> <p><input type="checkbox"/> Hazardous materials were involved.</p> <p><u>The experiments were supervised by:</u></p> <p><small>Read all safety regulations from Youth Science Canada</small></p> <p>Name: _____</p> <p>Qualifications: _____</p> <p><input type="checkbox"/> Hazardous moving parts are protected.</p> <p><input type="checkbox"/> NO exposed heat component will be used. (flame, wire etc...)</p> <p><input type="checkbox"/> Flammable and poisonous chemicals are simulated in the display.</p> <p><input type="checkbox"/> No weapons of any type are used or displayed.</p> <hr/> <p><u>Electricity: No electricity will be provided</u></p> <p><small>Read all safety regulations from Youth Science Canada</small></p> <p><input type="checkbox"/> No electrical cords</p> <p><input type="checkbox"/> No electrical connections allowed</p> <p><input type="checkbox"/> Any non-current-carrying metal parts are connected to the ground lead.</p> <p><input type="checkbox"/> Exposed live parts are at a potential of less than 10V to ground.</p> <p><input type="checkbox"/> No voltages above 10kV are generated.</p> <p><input type="checkbox"/> No car batteries.</p>	<p><small>Read all safety regulations from Youth Science Canada</small></p> <p><u>Radiation:</u> (Make sure all forms are completed)</p> <p><input type="checkbox"/> Lasers will not be operated during public display.</p> <p><input type="checkbox"/> X-ray and other high energy radiation sources, if used, have been registered and approved by provincial authorities.</p> <p><input type="checkbox"/> Radio-isotopes present at normal background activity.</p> <hr/> <p><small>Read all safety regulations from Youth Science Canada</small></p> <p><u>Animal Use:</u> (Make sure all forms are completed)</p> <p><input type="checkbox"/> animals were used. - Read on.</p> <p><u>These experiments must be approved before you begin -Must follow all QRSTF and National guidelines.</u></p> <p><input type="checkbox"/> Live animals are not displayed.</p> <p><input type="checkbox"/> Active procedures which could harm or distress the animals were not used.</p> <hr/> <p><small>Read all safety regulations from Youth Science Canada</small></p> <p><u>Micro-organism Use:</u> (Make sure all forms are completed)</p> <p><input type="checkbox"/> All microbial cultures have been sealed.</p> <p><input type="checkbox"/> No organisms pathogenic to animals are on display.</p> <p><input type="checkbox"/> No biological toxins are on display.</p> <div style="border: 2px solid black; padding: 10px; margin-top: 10px;"> <p>Some science fair projects must be pre-approved by the QRSTF ethics committee; for example, projects involving live animals. **No human based projects -no ingestion projects.*</p> </div>
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If your inquiry meets the expectations of this checklist, then it will be accepted at the Quinte Regional Science and Technology Fair.



Quinte Regional Science and Technology Fair

Planning a QRSTF Entry

The Process for developing Experiment or Study projects

**** make sure before you do an experiment you check all safety guide lines and have approval ****

Displaying Your Project

Before you build your display consider

- What materials are easily obtainable bi-fold and tri-fold display boards are available at stationery stores. What design is best for displaying my project

Getting Started

Here is what you should do once you have chosen your topic.

Research your Topic

Read books from the library; observe related events; gather existing information; look for unexplained or unexpected results. Talk to professionals; write to companies; and obtain or construct needed equipment.

Organize and Theorize

Organize your research, narrow your hypothesis by focusing on a particular idea.

Make a Timetable

Choose a topic that can be done in the amount of time you have. Identify important dates.

Allow plenty of time to experiment and collect data. Leave time to write a paper and put together an exhibit.

Plan your Experiment, Study or Innovation

Write a research plan to explain how you will do your experiment.

Consult your Teacher/Supervisor/Mentor

Discuss your work with an adult supervisor on an ongoing basis.

Conduct Your Experiments, Study or Innovation

Keep detailed notes of every experiment, measurement and observation. Change only one variable at a time when experimenting. Include control experiments in which none of the variables are changed. Include sufficient numbers of test subjects in both control and experimental groups.

Examine Your Results

When you complete your experiments, examine and organize your findings. Did your experiment give you the expected results? Was your experiment performed with the exact same steps each time? Are there other causes that you had not considered or observed?

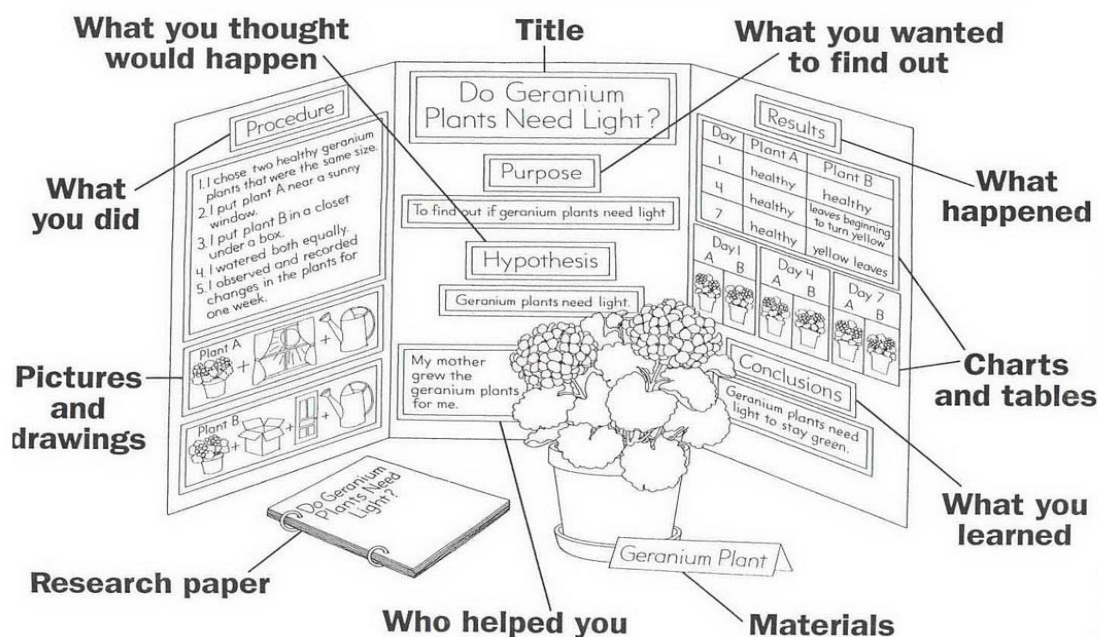
Were there errors in your observations? If possible, analyze your data statistically.

Draw Conclusions

Which variables are important? Did you collect enough data? Do you need to conduct more experimentation?



Quinte Regional Science and Technology Fair

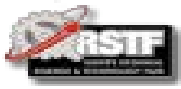


Displays should be neat and informative.

When placed on tables they should be:

- Self supporting and sturdy
- Tall enough to view at eye level and judge will not need binoculars to see the print
- Large enough for showing charts, pictures and information.
- Tall enough to view at eye level
- If elements of your project cannot be safely exhibited at the Fair, incorporate photographs of important phases of your experiment to use in your display.
- Your display should be presented logically and be easy to read. When you arrange your display, imagine you are seeing it for the first time.
- Make your display stand out. Use neat, colourful headings, charts and graphs. Homemade equipment, construction paper and coloured markers are excellent for project displays. Pay special attention to the labeling of graphs, charts, diagrams and tables.
- Displays should be neat and informative
- When placed on a table they should be self supporting

*** Make sure your display follows all guidelines detailed in this handbook***



Quinte Regional Science and Technology Fair

Experiment Project..

**** - See appendix for examples and how to.**

Experiment: An experimental project is a project that collects and analyses qualitative and quantitative data. This data is analyzed and displayed in graphs. If the data is over time a line graph should be used. The data should also be get in a report book and you should have a log book of all the steps you took to complete your experiment. Pictures are an excellent way to show the process you followed.

Display Headings (**suggested but not mandatory**)

The display for your project must contain the following headings. Use the checklist below to ensure that you have included them in your project.

- Title
- Scientific Inquiry Process
- Research into your topic siting references and keeping a log book or all your work
- Problem: What question are you trying to answer?
- Hypothesis and Rationale: A testable prediction or guess, what do you think will happen?
- Materials: List the things you have used.
- Method: List the steps taken to carry out your experiment. Use metric units for all measurements. Use drawings or photographs where appropriate.
- Observations: Record all test results. Include charts and graphs. All items should be clearly labeled.
- Conclusion: What did you learn from your results. Did you prove your hypothesis?
- Applications: How does this experiment apply to the real world and what extensions can be done with this experiment. (next steps)

Future Study - A statement which tells what you might do if you decide to perform this experiment again.

- Bibliography: List articles, books, websites. A minimum of three sources is required.
- Acknowledgements: List the people who helped you with your project.
- Your name and grade: List your name and grade level on the back of the display board.





The Inquiry Process

The Scientific Method and the Inquiry process use similar processes but the Inquiry process expands on the questioning process. It leads to more questions.

The steps are as follows:



Problem Statement (Initial Inquiry)

Hypothesis (Predicting)

Experimental Design (Materials and Procedure)

Data Collection (Observations / Measurements)

Analysis / Interpretation of Data (Inferring)

Drawing Conclusions (Answering the question / problem)

Extension (Further Inquiry - pose new questions that are related to the original question that can lead to new investigations)

SCIENCE PROCESS SKILLS

1. OBSERVING - Using all the senses
2. CLASSIFYING - Grouping related objects and ideas
3. QUANTIFYING - Using numbers & measurements related to length, width, volume and ratios.
4. COMMUNICATING - Describing verbally or non-verbally, tabulating, graphing
5. INTERPRETING DATA - Explanation of an observation
6. HYPOTHESIS - A hypothesis is a possible tentative explanation for a phenomenon
7. PREDICTING - Based on observations, measurements, and relationships between observed variables.
8. DEFINING TERMS - All our interactions are vitally dependent on the precise use of terms.
9. DEFINING AND USING VARIABLES - Identify and distinguish when using variables in an investigation which are controlled (held constant) and which are manipulated.



Quinte Regional Science and Technology Fair

EXPERIMENTAL VARIABLES

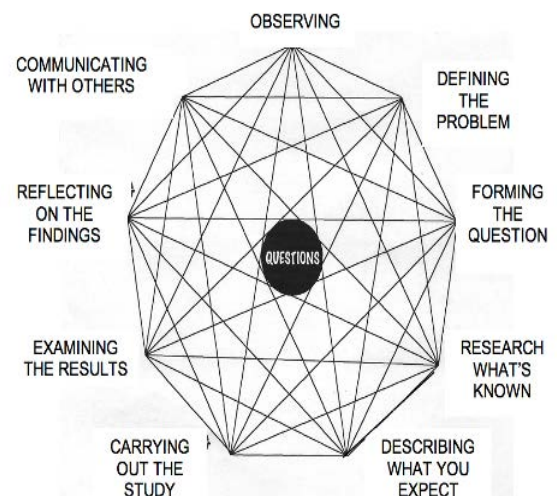
1. MANIPULATED VARIABLE - The measurement or condition that is regulated by the person doing the experiment.
2. RESPONDING VARIABLE - What you measure to find the data you obtain from your experiment.
3. CONTROLLED VARIABLE - Allows you to determine if in fact there was a change. Experiments in which the experimenter keeps all factors (variables) the same except for one, are called controlled experiments.

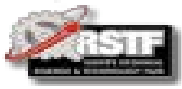
<http://www.edquest.ca/component/content/article/91>

Create the experiment and develop a process to answer your questions and answer your hypothesis. This process all includes adding bibliographies, log books, research and the subject.

NSTA, in The National Science Education Standards (NSES p. 23) defines scientific inquiry as "the diverse ways in which scientists study the natural world and propose explanations based on the evidence derived from their work. Scientific inquiry also refers to the activities through which students develop knowledge and understanding of scientific ideas, as well as an understanding of how scientists study the natural world."

http://www.curriki.org/xwiki/bin/view/Coll_cmytko/ARefresheronthePrinciplesofScientificInquirytheScientificMethod





Project Content Checklist

Scientific Thought

- _____ Is the problem stated clearly?
- _____ Was there an effective plan for obtaining a solution?
- _____ Does the project carry out its purpose?
- _____ If controls were necessary, was there a recognition of their need and were they used correctly?
- _____ Are the variables clearly recognized and defined?
- _____ Are there adequate data to support the conclusion?
- _____ Are the experimental errors inherent in the measurements made and recognized in the materials used? (The variability inherent in living materials is often overlooked by students.)
- _____ Is it clear how the project ties in with related research?
- _____ Does the project cite scientific literature?
- _____ Does the project state that further research is indicated?
- _____ Is there a practical application for your work?

Originality

- _____ Does the work reflect your own thought, experience and knowledge? Avoid reproducing the work of others. Collections are not considered original unless they are used to support an investigation and help to answer a question in a creative way.

Skill

- _____ Are the data complete and are they the product of individual research?
- _____ Did you build the equipment?
- _____ Did you make skillful use of the information facilities available?
- _____ Is an adequate scientific vocabulary demonstrated in relation to the problem?
- _____ Do you understand the terms used?
- _____ Is the finish on the exhibit display board attractive, neat and well done?



Quinte Regional Science and Technology Fair

Log Books (Part of the assessment- make sure you have one)

Begin a Log Book

The log book is a hand-written start to finish dated record of all work done on a project. It is generally hand-written with all pages numbered in the top right corner. It is to contain detailed notes of every step of the project from beginning to end - all notes on background information, all observations, all plans and actions, all data, and all thoughts, reflections, and conclusions. You may acknowledge those who helped you but refer to them as "teacher," "parent," etc. Do not include names of any people in your log book, report, or on your display. The log book is the single most valued piece of work in your project. Your log book begins with a record of possible topics and ideas, areas of interest, and a brainstorming list of possible problems to study. You always keep your log book with you whenever you work on your project. It is your personal record of your science fair project.

INCLUDE:

READING NOTES, ARTICLES, AND DATA

Any information you gather for your research goes in this section. Your notes and recorded data belong here as well.

DECISIONS, ACTIONS, OBSERVATIONS

I've decided to experiment with plants.

ACTIONS

Today I went to the library to find books on my topic. I found a lot of books,.....

I set up my planters and grow lights, and I took pictures of them to show my progress.

OBSERVATIONS

I noticed that the plants are starting to wilt, so I need to water them more.

The crystals are very fragile, so I can't put them on my display. I will need to take lots of pictures.

THOUGHTS AND REFLECTIONS

I noticed that many of the seedlings are dying. I wish I used more seeds. I'm worried that all my plants will be dead before the experiment is finished.

What Makes a good log book: http://www.sciencebuddies.org/science-fair-projects/printable_project_logbook.pdf



Case Study

***Case studies are no less in importance than experiments or innovations. All three types of projects are judged equally.**

Choose your Study Design

A case study is the research on a certain topic and follow the process of the experiment except that there is no quantitative data.

Inventions---Innovation

Invention Study (the purpose is a specification set for a model or experiment)-Mostly Engineering, Math, and Computer projects. Create something new.

DEVELOP A FOCUS

Background

- think about something that interests you or puzzles you in your Science/Technology
- research the topic
- include a description of the features of a previously developed prototype(s) Information

Problem

- describe concisely the problem, product and its purpose or practical value

Performance Criteria

- outline what your invention is to be like and how well it is to perform

DEVELOP A PLAN

Possible Solutions

- outline the planning steps to be followed
- list a description and a costing of materials
- outline a framework to record the results of the tests of the prototype against performance criteria

Preliminary Discussions

- draw rough sketches showing different views of a possible end product

Working Drawings - Photographs too..

- make scale drawings showing all information needed to produce a prototype
- specifically describe the construction methods to be used



Quinte Regional Science and Technology Fair

CARRY OUT THE PLAN

Prototype

- describe the results obtained from the working model

Data Collection & Analysis

- summarize the results of the trial tests

PROCESS INFORMATION

Discussion

- summarize the relationships between the performance criteria and the test results
- base statement claims on your data
- identify modifications needed to improve the performance of the prototype

Application

- outline possible applications to other situations
- relate findings to real-life situations

COMMUNICATE

Display

- produce a display that will clearly demonstrate your work to the public





Quinte Regional Science and Technology Fair

Day of the Fair - April 6, 2023- Centennial SS

Important Information:

2023 Quinte Regional Science and Technology Fair.

New Location and Date: Centennial SS, April 6, 2024

Information for Participants: Students should come to the main entrance of the Centennial SS off the semi-circular drive, by 8:45 (see map). To find your space, register at the appropriate station listed below. Note - Tables will already be set up and each project will be assigned a 4ft by 3ft display area. Displays should be ready for judging by 9:00 am. **-Exhibition Hall will be closed to the general public for judging.**

Station 1: Grades 4 and 5. Station 2: Grade 6 and grades 9 to 12. Station 3: Grade 7. Station 4: Grade 8

THIS IS CSS

We have fantastic facilities for all the great things you're going to do here.



Lower Level



Eating Area



Display Area

Awards Ceremony



Break out Room



Judges' Room





Quinte Regional Science and Technology Fair

Information for Judges:

General: QRSTF judges are volunteers from throughout the community: a mix of returning and new judges. Whenever possible, new judges are paired with experienced judges. Judges receive an orientation session prior to the fair, and a briefing immediately before the fair.

Our judges do an excellent job; we thank them very much! We are always in need of new judges. If you are interested, please contact our coordinator, qrstf@live.com

SCHEDULE FOR JUDGING: Judges are asked to arrive at the Kente Building main entrance and follow signs to the judges headquarters. Judges should arrive between 8:00 and 8:15 so they can sign in, meet their partners and preview the judging package. A short briefing will begin at 8:30 sharp. The major portion of the judging will be accomplished between 9:00 a.m. and 11:30 noon. Most judges who are not involved with second round judging, are free to leave after the morning session.

9:00 - 11:00 - Grades 4 to 6 First Round Judging and until 11:00 for grade 7 to 12. **-Exhibition Hall will be closed to the general public for judging.**

Participant Judging

All of the exhibits in Grades 4 - 8 will be placed into groups of 5 - 7 according to grade, type, and class (either life science or physical science, when possible). One judge or a pair of judges will be assigned to each group, whenever possible. After judging is completed, the judges will give out participation certificates to each entrant and third, second and first place ribbons. These tasks should be completed by noon.

Participants-Schedule for the Day (Addendum)

8:00-8:45 Student Setup

8:45-9:00 Safety Check

9:00-11:00 First Round/ special awards

11:00 –11:30 Hand out awards

11:30-12:00 Lunch

12:00- 2:30– No one packs

11:00-2:30 – second round judging, Public Viewing Time. –

2:30-3:50 Students Pack-up

3:30 Awards Ceremony-3:30-5:00 in the Automotive Centre

This schedule may change as we get closer to the date of the fair

Prizes will be awarded starting as close to 3:30 p.m. as possible. Sometimes the start is delayed because the Judging Teams are in need of a few more minutes to complete their final deliberations.



Quinte Regional Science and Technology Fair



Canada Wide Section Judging

Canada Wide Science Fair Selection Judging is completed by a panel of selected judges and committee member who usually have experience at the National level. This panel has former and current national judges, former competitors at the national level, many who have been as delegates or volunteers and those with a specialized knowledge field.

The selection of students who go to compete at the national level is done in the afternoon. The participants chosen for this honour do not necessarily come in first or even second in their divisional judging. The criteria for the national level is based on criteria set down by the national judging form, Quinte Regional Science and Technology fair judging form, committee experience and the project.



Quinte Regional Science and Technology Fair

Judging: (What to know)

Student Attire

Make a special effort to look nice. You are representing your work. In effect, you are acting as a salesperson for your project and you want to present the very best image possible. Your appearance shows how much pride you have in yourself and is the first step in introducing your product, your science project. Below are some dress code guidelines:

Slacks (no jeans), Skirts or dresses, No t-shirts, comfortable shoes, No gym shoes, No shorts, Lab coats (optional) ... In other words.. look good and ready to present.

- Stand when the judges come and offer a seat to the judge.
- Do not read from the board, tell the judge about your project and further extensions
- If you have a partner share the presentation..
- Read over the judging form.. included..before the judges arrive

Oral Presentation:

The judges give points for how clearly you are able to discuss the project and explain its purpose, procedure, results, and conclusion. The display should be organized so that it explains everything, but your ability to discuss your project and answer the questions of the judges convinces them that you did the work and understand what you have done. If you do not know the answer to a question, never guess or make up an answer or just say, "I don't know." Instead, say that you did not discover that answer during your research, and then offer other information that you found of interest about the project. Be proud of the project, and approach the judges with enthusiasm about your work.

Introduction

Tell the judge/audience your name.

Say the name of your project.

Explain how or why you became interested in this topic.

Tell where you obtained your information.

Body of Your Presentation

Explain what you have learned about the subject or process.

Describe the equipment, specimens, and/or pictures as you explain the procedures you used.

Point to the tables and graphs as you explain the results of the experiment,

Show and explain the conclusion and whether your hypothesis was supported or not by the data.

Explain the background knowledge that helped you understand your experiment and the results better.

Closing

State the most important thing you learned by doing the experiment.

Explain any new questions you may now have as a result of working on this project.

Offer to answer any questions from the audience or judges.



Quinte Regional Science and Technology Fair



Judging Form

Project Number _____ Project Title _____

Part A: Scientific Thinking Mark: ____ / 50		
Experiment	Innovation	Study
Level 1 Mark Range 26 to 30		
Duplicate a known experiment to confirm previous findings.	Build models (devices) to duplicate existing technology.	Study existing printed material related to the basic issue.
Level 2 Mark Range 31 to 35		
Extend a known experiment through modification of procedures, data gathering, and application.	Make improvements to or demonstrate new applications for existing technological systems or equipment and justify them.	Study material collected through a compilation of existing data and through personal observations. Display attempts to address a specific issue.
Level 3 Mark Range 36 to 41		
Devise and carry out an original experiment. Identify and control some of the significant variables. Carry out an analysis using graphs or simple statistics.	Design and build innovative technology or provide adaptations to existing technology that will have human benefit and/or economic applications.	Carry out a study based on observations and literary research (illustrating various options for dealing with a relevant issue. Include appropriate analysis (arithmetic, statistical, or graphical) of some significant variable(s).
Level 4 Mark Range 42 to 50		
Devise and carry out original experimental research which attempts to control or investigate most significant variables. Include statistical analysis in the treatment of data.	Integrate several technologies, inventions or designs and construct an innovative technological system that will have human and/or commercial benefit.	Correlate information from a variety of significant sources which may illustrate cause and effect or original solutions to current problems through synthesis. Identify significant variable(s) with an in-depth statistical analysis of data.

Part B: Creativity and Originality Mark: ____ / 20			
Level 1 (10 to 11)	Level 2 (12 to 14)	Level 3 (14 to 15)	Level 4 (16 to 20)
Simple design with little student input. A textbook (internet type) project.	Some creativity in a project of fair to good design. Tools is a common one.	Imaginative project, well thought out. Some creativity in design or use of materials.	Highly original approach, showing much resourcefulness and creativity in design use of equipment or analysis.

Part C: Communication Total Mark: ____ / 30			
The level is based on four elements: visual display, oral presentation, project report with background research and logbook.			
Level 1 (15 to 17)	Level 2 (18 to 20)	Level 3 (21 to 24)	Level 4 (25 to 30)
Most or all of the four elements are simple or incomplete. There is little evidence of attention to effective communication. In a pair project, one member may have dominated the presentation.	Some of the four elements are simple, or incomplete, but there is evidence of student attention to communication. In a pair project, one member may have made a stronger contribution to the presentation.	All four elements are complete and demonstrate attention to detail. The communication components are each well thought out and executed. In a pair project, both members made an equitable contribution to the presentation.	All 4 elements are complete and exceed age/grade expectations. The visual display is logical and well presented. The project report and logbook are informative and clearly written. The bibliography goes beyond web-based articles. The oral presentation is clear, logical, enthusiastic and contributed to equally in a pair project.

Submit Judging Forms to the Main Desk in the Judges' Headquarters after completing your ranking. *These forms are not to be given to students.* To provide feedback to students use the Project Feedback form.

Total Score: ____/100

Formulaire d'évaluation



Numéro de projet _____ Titre du projet _____

Partie A: Pensée scientifique			Note: ____ / 50
Expérience	Innovation	Étude	
Niveau 1 (Note de 26 à 30)			
Reproduire une expérience connue pour confirmer les résultats précédents	Construire des appareils scientifiques pour reproduire une technologie existante	Étudier des matériaux imprimés existants liés à un problème connu.	
Niveau 2 (Note de 31 à 35)			
Reproduire une expérience connue en modifiant les procédures, la collecte de données et l'application.	Améliorer ou démontrer de nouvelles applications pour des systèmes ou équipements technologiques existants et les justifier	Étudier le matériel recueilli grâce à la compilation de données existantes et à des observations personnelles. Tenir de résoudre un problème spécifique.	
Niveau 3 (Note de 36 à 41)			
Réaliser une expérience originale. Identifier certaines des variables significatives et les contrôler. Effectuer une analyse à l'aide de graphiques ou de statistiques simples.	Concevoir et construire des technologies innovantes ou apporter des adaptations aux technologies existantes qui auront des avantages humains et / ou des applications économiques.	Réaliser une étude basée sur des observations et une recherche littéraire illustrant diverses options pour traiter un problème pertinent. Inclure l'analyse appropriée (arithmétique, statistique ou graphique) de certaines variables importantes.	
Niveau 4 (Note de 42 à 50)			
Concevoir et mener des recherches expérimentales originales qui tentent de contrôler les variables les plus significatives. Inclure une analyse statistique dans le traitement des données.	Intégrer plusieurs technologies, inventions ou conceptions et construire un système technologique innovant présentant des avantages humains et / ou commerciaux.	Corroborer les informations provenant de diverses sources significatives pouvant illustrer les causes et les effets ou les solutions originales aux problèmes étudiés. Identifier les variables significatives grâce à une analyse statistique approfondie des données.	

Partie B: Créativité and Originalité				Note: ____ / 20
Niveau 1 (10 à 11)	Niveau 2 (12 à 14)	Niveau 3 (14 à 15)	Niveau 4 (16 à 20)	
Conception simple, un projet facilement retrouvé dans un manuel ou en ligne.	Un peu de créativité avec un sujet commun mais bien pensé.	Projet imaginatif, bien pensé. Un peu de créativité dans la conception.	Approche très originale, faisant preuve de beaucoup d'ingéniosité et de créativité dans la conception.	

Partie C: Communication				Note : ____ / 30
Le niveau est basé sur quatre éléments: le visuel, la présentation orale, le rapport de projet et le journal de bord.				
Niveau 1 (15 à 17)	Niveau 2 (18 à 20)	Niveau 3 (21 à 24)	Niveau 4 (25 à 30)	
La plupart ou la totalité des quatre éléments sont simples ou incomplets. Il y a peu de preuves d'attention à la communication efficace. Pour un projet avec deux étudiants, un membre peut avoir dominé la présentation.	Certains des quatre éléments sont simples ou incomplets, mais il est évident que les étudiants sont attentifs à la communication. Pour un projet avec deux étudiants, un membre peut avoir apporté une contribution plus importante à la présentation.	Tous les quatre éléments sont complets et démontrent une attention particulière aux détails. Les composantes de la communication sont bien préparées et présentées. Pour un projet avec deux membres, les deux étudiants ont apporté une contribution égale à la présentation.	Les 4 éléments sont complets et dépassent les attentes. L'affichage visuel est logique et bien présenté. Le rapport de projet et le journal de bord sont informatifs et clairement écrits. La bibliographie ou le site des articles Web. La présentation orale est claire, logique et enthousiaste et les participants ont contribué également dans un projet en double.	

Après avoir complété votre formulaire, le soumettez au bureau principal des juges... *Ces formulaires ne doivent pas être donnés aux étudiants (fournir des commentaires sur l'autre formulaire)*

Note Final : ____/100



Appendices



This section includes the judges forms, links, how to do an experiment, checklists and forms



Quinte Regional Science and Technology Fair

Registration for the 2023 Quinte Regional Science and Technology Fair

If you have any trouble with completing the participant registration, please contact qrstf.reg@gmail.com or qrstf@live.com.

These pages have been updated... please go to <http://www.qrstf.ca/registration.html> and learn more on how to register for QRSTF 2023.

Date of Fair	April 15, 2023
Registration System Opens	Jan. 1, 2023
Registration system Closes	April 8, 2023
Registered participants are posted on the website	TBA
Winners are posted on the website	April 16-18, 2023
Judges registration opens	Jan. 1, 2023
Judges registration closes	April 8, 2023
Judge assignments and schedule are available to judges	April 12, 2023
Special Awards self-nomination opens	March 1, 2023
Special Awards self-nomination closes	April 8, 2023

Rules and Regulations

Registration

There are four parts to the registration process. All are to be completed by **April 8**.

1. Registering. Yourself, partner (if you have one) and your project . Click on this link to register.
2. Safety and Ethics Checklist: Click on this link and follow the directions
3. Permission Form: You will need signatures from you, your teacher, and a parent or guardian. Go to this link to see the two page permission form.
4. Special Awards Form: You may apply for up to three special awards . View the available awards and their criteria at this link Fill out the Special Awards Form at this link



Quinte Regional Science and Technology Fair

REGISTRATION REMINDERS

1. A teacher's signature (or parent/educator if home-schooled) is required to register a project.
2. By signing the consent form, the participant(s), parent/guardians and teacher agree that the project shall follow the QRSTF rules and regulations.
3. If one of the students in a pair project lives or attends a school belonging to a different Regional Science Fair, the students must select a single Regional Science Fair to apply to.
4. If the students in a pair project are from different age categories, then they shall register the project in the age category of the older student.

PROJECTS

- * The project shall only be the work of one or two students from start to completion. Projects and work done by more than two students at any point in the project's development are not permitted.
- * A project worked on at any point by two students cannot register as a single person project.
- * A participant may not present more than one project each year, and may not display or reuse an identical project from a previous Regional Science Fair.
- * A project presented at any Regional Science Fair in the past may not be presented again unless there is a substantial expansion or extension of the previous investigation or design process. The project must only present work completed since the previous Regional Science Fair, though previous work may be referenced.
- * Ethics Pre-Approval is mandatory for all projects using animal and human participants. Contact us at qrstf@live.com if you have any questions or concerns.

PROJECTS

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Quinte Regional Science and Technology Fair

TEACHERS:

1. Registration will take place - starting Jan. 1, 2023 and ending April 8, 2023
2. Assist in the planning of the projects. Provide an opportunity for students to explain their projects
3. Be advised that we take great pains to provide a safe environment for all our participants.
4. When the Registration is ready we will be sending out a notification for the students to register.
5. The science fair will take place.

If you have any trouble with completing the participant registration, please contact qrstf.reg@gmail.com or qrstf@live.com



Quinte Regional Science and Technology Fair



Planning a QRSTF Entry:

The Process for developing Innovation projects

<i>DEVELOP A FOCUS</i>		
Background Information	▶	think about something that interests you or puzzles you in your Science/Technology
	▶	research the topic
	▶	include a description of the features of a previously developed prototype(s)
Problem	▶	describe concisely the problem, product and its purpose or practical value
Performance Criteria	▶	outline what your invention is to be like and how well it is to perform
<i>DEVELOP A PLAN</i>		
Possible Solutions	▶	outline the planning steps to be followed
	▶	list a description and a costing of materials
	▶	outline a framework to record the results of the tests of the prototype against performance criteria
Preliminary Discussions	▶	draw rough sketches showing different views of a possible end product
Working Drawings	▶	make scale drawings showing all information needed to produce a prototype
	▶	specifically describe the construction methods to be used
<i>CARRY OUT THE PLAN</i>		
Prototype	▶	describe the results obtained from the working model
Data Collection & Analysis	▶	summarize the results of the trial tests
<i>PROCESS INFORMATION</i>		
Discussion	▶	summarize the relationships between the performance criteria and the test results
	▶	base statement claims on your data
	▶	identify modifications needed to improve the performance of the prototype
Application	▶	outline possible applications to other situations
	▶	relate findings to real-life situations
<i>COMMUNICATE</i>		
Display	▶	produce a display that will clearly demonstrate your work to the public

Planning a QRSTF Entry

The Process for developing Experiment or Study projects

<i>DEVELOP A FOCUS</i>	
Background Information	<ul style="list-style-type: none"> ▶ think about something that interests you or puzzles you in your Science/Technology class ▶ research the topic
Question	<ul style="list-style-type: none"> ▶ identify and clarify a single question
(Hypothesis)	<ul style="list-style-type: none"> ▶ If your question allows you to make a prediction, form a hypothesis or tentative explanation to question
<i>DEVELOP A PLAN</i>	
Materials	<ul style="list-style-type: none"> ▶ list a description of the materials used
Method	<ul style="list-style-type: none"> ▶ list the specific steps to be followed ▶ describe the control situation for the experiment, if applicable ▶ outline the types of observations to be collected
<i>CARRY OUT THE PLAN</i>	
Data Chart	<ul style="list-style-type: none"> ▶ record the results accurately and precisely from the inquiry in a proper data chart
Data Graph	<ul style="list-style-type: none"> ▶ graph the results where appropriate, using the proper type of graph
<i>PROCESS INFORMATION</i>	
Conclusion	<ul style="list-style-type: none"> ▶ analyze and assess the results to state a claim ▶ relate the claim to the initial hypothesis in terms of whether it agrees or not ▶ explain the differences between the actual and predicted results
Application	<ul style="list-style-type: none"> ▶ outline possible applications to other situations ▶ outline further investigation(s), if possible ▶ relate findings to real-life situations
<i>COMMUNICATE</i>	
Display	<ul style="list-style-type: none"> ▶ produce a display that will clearly demonstrate your work to the public

Volunteering

There are many reasons for volunteering and contributing to the Quinte Regional Science and Technology. The first and most important for the students is to be a participant. Our fair covers all schools in the Hasting-Prince Edward area. We have participants from all school organizations including the home schooling association.

Also, as a high school student, you can volunteer your time to help out at the fair. This is an excellent opportunity to help put the fair on and to support the many students who come to our fair.

The Quinte Regional Science and Technology Fair is always looking for volunteers to join our dynamic committee to help provide an opportunity for the students in our area an opportunity to explore science and to present their findings. Our committee is made up of many dedicated people from diverse backgrounds.

Volunteering as a judge is a worthwhile opportunity to help shape the scientists of tomorrow and to give an opportunity to these students to share their knowledge.



An event like this takes many hours by volunteers working endlessly behind the scenes trying to make everything work well. We want to thank all our volunteers, and the sponsors who help to provide the awards that the students strive to attain. If you wish to become a sponsor of the Quinte Regional Science and Technology Fair please contact us through our website at <http://www.qrstf.ca>.



Volunteering

Ways to Support QRSTF:

- do a science fair project
- Become a member of our committee
- Volunteer for volunteer hours
- become a sponsor of our fair
- become a member of one of our sub-committees that deal with specific tasks.
- Become a judge
- Donate a prize or award to be given at the awards ceremony.
- Help with a school's science club or science fair
- encourage others of the importance of science and science research
- volunteer at a local school to mentor a student with a science project.
- volunteer for our fair to be a tour guide
- become a volunteer that provides service at one our booths we have at our fair.
- provide ideas for dynamic entertainment.
- Create a poster for our fair.
- Support our fair.



QRSTF

Email qrstf@live.com

Web: www.qrstf.ca

Facebook: <http://www.facebook.com/QRSTF>

Twitter: www.twitter.com/#qrstf

Youtube: www.youtube.com/user/qrstf

Instagram: www.instagram.com/qrstf

**LOYALIST
COLLEGE**