

Dear Student,

The South Fraser Regional Science Fair will take place at Kwantlen Polytechnic University, Surrey from April 20-21, 2018. Attached are important items listed below:

- 1) Schedule (Note: you do not need to leave school early. No admittance until 3:30pm Friday)
- 2) Directions & Map for parking (note: pay parking regulations apply during the fair. Go to <http://www.kpu.ca/parking-transit/visitors> for details)
- 3) Science Fair Safety Rules (same as the ones on the registration site)
- 4) Science Fair Written Materials (Students can assemble this before the fair. Must include Human Participation and Ethics ruling form if appropriate)
- 5) Judge Marking Sheet (blank)

Please note the following:

- a) The projects will be displayed in the Conference Centre (in the Cedar Building). Enter the parking lot from 126th St., 128th Street or 72nd Ave. (see attached map).
- b) There are classes and exams taking place at the same time. It is critical that you conduct yourself quietly as you move about the campus.
- c) Parents and guardians are NOT permitted in the exhibit halls during judging on Friday night (5:30 – 9:00pm). **Electronic devices for communication are NOT permitted to be turned on during judging.**
- d) **PLEASE NOTE** .Bring your own food for BOTH **Friday and Saturday**. There is no food for purchase on either day.
- e) No food is to be consumed in the Conference Centre. Only capped beverage bottles are allowed.
- f) Please bring a book to read or a quiet activity such as puzzles e.g Sudoku, while you are waiting for your project to be judged.
- g) This is a school event. Appropriate public behaviour is expected. *****Students must remain at their projects at all times unless on tour or dismissed for dinner.*****

On arrival, you will need to register in front of the Conference Centre where you will receive your designated set up location and registration package. **Please know your project number.**

If you have any questions, please contact sfrsf.query@gmail.com

We look forward to meeting you at the Science Fair!

Sincerely,

South Fraser Regional Science Fair Committee

SCHEDULE FOR THE 2018 SOUTH FRASER REGIONAL SCIENCE FAIR

Friday,
April 20

- 3:30 - 4:30 PM Participants to set up project displays in KPU Surrey 1205 (Cedar Building) in preparation for the judging.
No admittance before 3:30 PM.
Safety checks of projects - all students remain at their projects until safety checks are complete.
- 4:00 - 5:00 PM Photos of participants with projects.
Participants must remain with their projects until dismissed.
- 5:00 - 5:30 PM Welcome and special instructions followed by meal break.
Participants make individual arrangements. Please bring your own dinner.
- 5:30 - 8:30 PM Judging. ONLY judges and project participants are to be in the Conference Centre (Room 1205) during adjudication. Participants stay at their displays ready to discuss them with judges.
- 9:00 PM approx Participant dismissal as authorized by the Chief Judge.
Displays are to be left in the Conference Centre, but all valuables should be taken home.

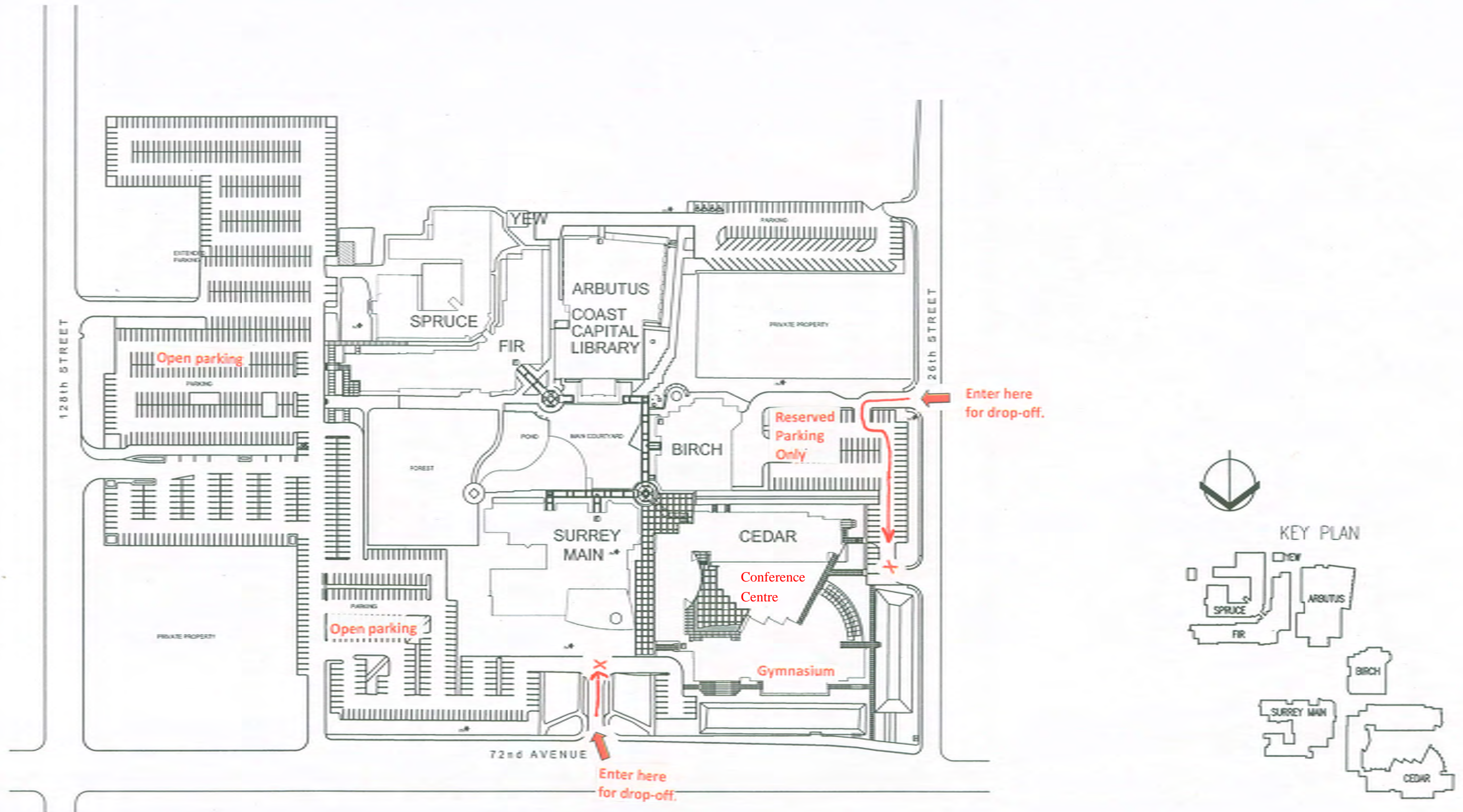
Saturday,
April 21

- 9:30 - 11:00 AM Participants return to the Conference Centre. Additional adjudication of projects.
- 11 AM - noon Public viewing.
- noon - 1:00 PM Meal break. Participants make individual arrangements. Please bring your own lunch.
- 1:00 - 2:00 PM Awards Ceremony held in the Atrium of KPU Surrey Main Building.
- 2:00 - 2:30 PM Photos with Canada-Wide Science Fair winners.
Take down of projects - all projects must be removed from the Conference Centre by 2:30 PM.
- 2:30 PM Dismissal. Participants chosen to attend the Canada Wide Science Fair stay until 3:00 PM.

Directions & Map for parking (note: pay parking regulations apply during the fair. Go to http://www.kwantlen.ca/supply/park_transit/visitors.html for details)

FACILITIES

KWANTLEN POLYTECHNIC UNIVERSITY



South Fraser Regional Science Fair Rules (Safety Checklist) 2018

- All parts of the project preparation and presentation have been prepared by 1 or 2 students only. Only these students may be present at the fair.
- Exhibit will not collapse: It is free-standing, well-balanced, and of solid construction, no more than 1.2m wide (at the widest point), by 0.8 metres deep (at the deepest point) by 3.5 metres from the floor.
- All display posters are completely and securely fastened to the exhibit baseboard.
- All moving parts are securely affixed and will not separate from the exhibit (ie: gears, pulleys, etc.).
- All sharp edges or corners (such as those on prisms or mirrors) are covered.
- All hoses and cords required in the exhibit are securely taped and of minimal length.
- All pressurized vessels have safety valves.
- Exhibit does not contain any compressed gases.
- Aisle and area under table will be clear of any debris.
- No combustible material is near a heat source.
- No open flames are present in the exhibit.
- No packing material or any other unnecessary flammable material is present in the exhibit hall.
- No burning or smoldering substances are present in the exhibit hall (including cigarettes).
- No radioisotopes are present in the exhibit.
- No biological toxins, microorganisms, or cultures are displayed in the exhibit. Where such displays are integral to the project content, visual substitutes (ie: photographs) may be used. (No project will be penalized due to the replacement of hazardous material with innocuous substitutes.)
- No matter subject to decomposition is present in the exhibit. No living plants or soil are allowed on display. Visual substitutes are required (photographs, video).
- No live animals are present in the display (but properly housed, non-decomposing animal parts may be displayed (ie: a snake skin)).
- If any animal is part of an experiment, collection and use thereof must be humane. (Download procedures and forms for "use of animals in research" under "safety and ethics" under "resources on SFRSF website). **FORMS ARE PRESENT.**
- No toxic, noxious, or flammable chemicals (including chemical preservatives) are present in the exhibit.
- No drugs, whether prescription or over-the-counter, are present in the exhibit.
- Where chemicals are required for illustrative purposes, appropriate safe substitutes have been used (ie: water for alcohol), which may be labeled with the intended name followed by 'simulated' (ie: ether simulated)). (No project will be penalized due to the replacement of hazardous material with innocuous substitutes.)
- Electrical devices use as low a voltage as possible; no exposed part greater than 36V.
- Electrical devices constructed by participants may only be connected and operated during judging. A pilot light must be used to indicate when power is on.
- Electrical devices must be protected by a non-combustible enclosure (An insulating grommet is required at the point where electrical service enters an enclosure. This prevents the cord from being frayed).
- All metal parts not intended to carry a current but present in an exhibit that uses electrical components are grounded.
- All cords are three pronged and CSA approved and in good repair (no exposed wires or breaks in insulation).
- Any modification to an electrical device negates the CSA approval and that device must not be used unless constructed by the participant.
- Dry cells (Alkaline, NiCad, NiMH, LiIon, etc.) and sealed lead-acid batteries (gel cells) may be used. Wet cell batteries are not permitted.
- Exhibit is capable of being turned off at the end of the viewing period.
- No radiation-producing component is displayed without proper governmental authorization and adherence to governmental radiation safety protocols (exhibits involving voltages above 10kV are considered to be radiation-producing).
- NEW!** All human participation projects include the **appropriate consent letters and forms.**
- No ingestion projects are included, See exceptions under "Human Participation" under "Safety and Ethics" under "Resources" on SFRSF website. **Prior approval by the Ethics Committee is required.**

Science Fair Project Written Materials

In addition to your poster display, the following written materials should to be available for your judges.

ABSTRACT:

An abstract is written once your research and experimentation are complete. It should include a statement of the problem/purpose of the experiment, the procedures used, your data and your conclusions. For the Canada-Wide Science Fair, your abstract must not exceed five double-spaced typewritten pages. Check locally for requirements of your regional fair. Abstracts are distributed to the judges to familiarize them with the project. The abstract is evaluated as part of the project.

PROJECT DATA BOOKLET:

A project data book should contain accurate and detailed notes to demonstrate consistency and thoroughness to the judges and to assist you with your research paper.

RESEARCH PAPER:

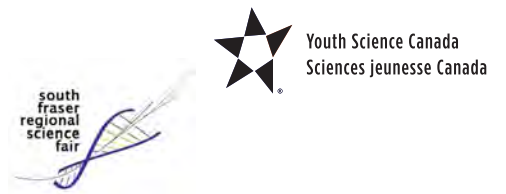
A research paper includes the following:

- **Title Page:** Centre the project title and put your name, address, school and grade at the bottom right.
- **Table of Contents:** Include a page number for the beginning of each section.
- **Introduction:** Includes your hypothesis or purpose, an explanation of what prompted your research and what you hoped to achieve.
- **The Experiment, Study or Innovation:** Describe in detail the methodology used to collect your data or make your observations. Include detailed photographs or drawings.
- **Discussion:** Thoroughly discuss exactly what you did in your project. Your results should be compared with theoretical values, published data, commonly held beliefs and/or expected results. A discussion of possible errors should be included as well as how the data varied between repeated observations, how your results were affected by uncontrolled events, what you would do differently if you repeated the project, and what other experiments should be conducted.
- **Conclusion:** A summary of your results.
- **Acknowledgements:** Credit individuals, businesses and educational or research institutions which assisted you. Identify financial support or in-kind donations.

References: List any documentation that is not your own (ie books, websites, journals articles).

Forms: include any required Ethics Policy forms

Project Judging Criteria & Form
South Fraser Regional Science Fair



Project ID Label

Use this rubric to assign a Level (1, 2, 3, or 4) to Parts A, B, and C for the project. The percentages shown in each **PART** reflects the weighting of each section. In addition to the **LEVEL**, please enter a mark within the given **LEVEL RANGE** that reflects the quality of the project and its strength relative to other projects you have assigned the same level. **Note: Finalists will not see this sheet.**

PART A: SCIENTIFIC THOUGHT (60%)			MARK
Experiment Undertake an investigation to test a scientific hypothesis by the experimental method. At least one independent variable is manipulated; other variables are controlled.	Innovation Develop and evaluate new devices, models, theorems, physical theories, techniques, or methods in technology, engineering, computing, natural science, or social science.	Study Analysis of, and possibly collections of, data using accepted methodologies from the natural, social, biological, or health sciences. Includes studies involving human subjects, biology field studies, data mining, observation and pattern recognition in physical and/or socio-behavioural data.	
LEVEL 1: LOW (Range 1-15 marks)			
Replicate a known experiment to confirm previous findings.	Build a model or device to duplicate existing technology or to demonstrate a well-known physical theory or social/behavioural intervention.	Existing published material is presented, unaccompanied by any analysis.	
LEVEL 2: FAIR (Range 16-30 marks)			
Extend a known experiment with modest improvements to the procedures, data gathering and possible applications.	Improve or demonstrate new applications for existing technological systems, social or behavioural interventions, existing physical theories or equipment, and justify them.	Existing published material is presented, accompanied by some modest analysis and/or a rudimentary study is undertaken that yields limited data that cannot support an analysis leading to meaningful results.	
LEVEL 3: GOOD (Range 31-45 marks)			
Devise and carry out an original experiment. Identify the significant variables and attempt to control them. Analyse the results using appropriate arithmetic, graphical or statistical methods.	Design and build innovative technology; or provide adaptations to existing technology or to social or behavioural interventions; extend or create new physical theory. Human benefit, advancement of knowledge, and/or economic applications should be evident.	The study is based on systematic observations and a literature search. Quantitative studies should include appropriate analysis of some significant variable(s) using arithmetic, statistical, or graphical methods. Qualitative and/or mixed methods studies should include a detailed description of the procedures and/or techniques applied to gather and/or analyse the data (e.g. interviewing, observational fieldwork, constant comparative method, content analysis).	
LEVEL 4: EXCELLENT (Range 46-60 marks)			
Devise and carry out original experimental research in which most significant variables are identified and controlled. The data analysis is thorough and complete.	Integrate several technologies, inventions, social/behavioural interventions or design and construct an innovative application that will have human and/or commercial benefit.	The study correlates information from a variety of peer-reviewed publications and from systematic observations, and reveals significant new information, or original solutions to problems. Same criteria for analysis of significant variables and/or description of procedures/techniques as for Level 3.	

PART B: ORIGINALITY & CREATIVITY (20%)			
LEVEL 1: LOW (Range 1-5 marks)	LEVEL 2: FAIR (Range 6-10 marks)	LEVEL 3: GOOD (Range 11-15 marks)	LEVEL 4: EXCELLENT (Range 16-20 marks)
The project design is simple with little evidence of student imagination. It can be found in books or magazines.	The project design is simple with some evidence of student imagination. It uses common resources or equipment. The topic is a current or common one.	This imaginative project makes creative use of the available resources. It is well thought out, and some aspects are above average.	This highly original project demonstrates a novel approach. It shows resourcefulness and creativity in the design, use of equipment, construction and/or the analysis.
MARK			

PART C: COMMUNICATION (20%)			
The level is based on four elements: visual display, oral presentation, project report with background research, and logbook.			
LEVEL 1: LOW (Range 1-5 marks)	LEVEL 2: FAIR (Range 6-10 marks)	LEVEL 3: GOOD (Range 11-15 marks)	LEVEL 4: EXCELLENT (Range 16-20 marks)
Most or all of the four elements (visual display, oral presentation, project report with background research, and logbook) are simple, unsubstantial 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 (visual display, oral presentation, project report with background research, and logbook) are simple, unsubstantial 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 (visual display, oral presentation, project report with background research, and logbook) are complete and demonstrate attention to detail and substance. The communication components are each well thought out and executed. In a pair project, both members made an equitable contribution to the presentation.	All four elements (visual display, oral presentation, project report with background research, and logbook) are complete and exceed reasonable expectations of a student at this age/grade. The visual display is logical and self-explanatory, and the exhibit is attractive and well-presented. The project report and logbook are informative, clearly written, and the bibliography extends beyond web-based articles. The oral presentation is clear, logical, and enthusiastic. In a group project, both members contributed equitably and effectively to the presentation.
MARK			