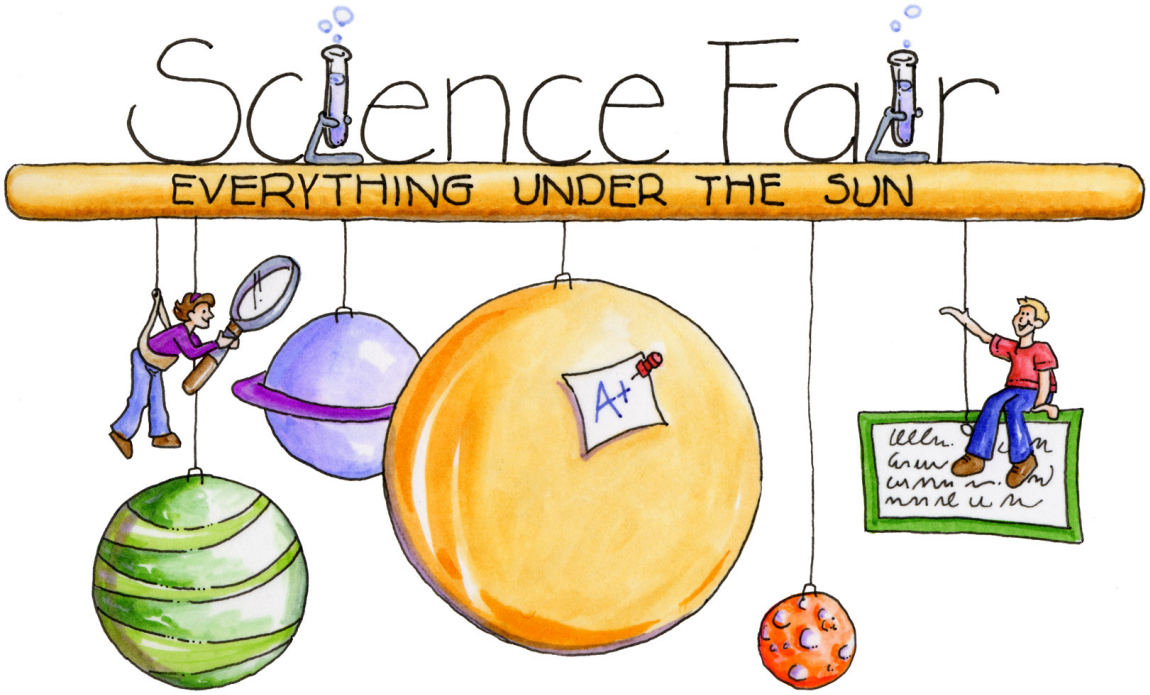
Address: 14525 127 ST, Edmonton, AB T6V 0B3 **Phone:** (780) 454-4573

Science Fair Guide and Timeline



Everything under the sun [Science Fair]. (n.d.). Retrieved December 24, 2017, from https://www.pinterest.com/pin/533746993311815722/

Prepared by: Br. Mustafizur Rahman ATA, OPC, OCT
Prepared on: 10/10/2018 (dd/mm/yyyy)

Address: 14525 127 ST, Edmonton, AB T6V 0B3 **Phone:** (780) 454-4573

1st Safar, 1440
October 10th, 2017

As-salaamu Alaikum Wa Rahmatu Allahi Wa Barakaatuhu ("Peace be unto you and so may the mercy of Allah and His blessings"),

Re: EIA Science Fair Package Information Letter

Dear Respected Parents and Guardians of Grade Six:

We are enthusiastic about starting our endeavor toward the science fair projects. An experiment is the process to actually test a hypothesis to solve a problem. The science fair project is a unique learning experience in which students perform a problem solving techniques while relating science to their real-life experiences.

Every project must use the scientific method as described in the EIA science fair guideline. It is encouraged and not mandatory to choose a problem that is related to the science curriculum at their grade level. Whatever project they choose to complete, the topic **MUST be approved by myself first**.

In my classroom website, the *EIA science fair guide and timeline* document, you will find a detailed description of each component. Having said that, student should use the rubric as a guide to help complete their project to the best of their ability. By the way, they will be also turning in each step of their project as we go along this learning journey. On a side note, all the due dates for each step are provided on page three in this document.

During the process in each step, students will be receiving a *home learning grade* for actually turning their work in, but this grade is no indication of their progress toward the project. For example, when they turn in a rough draft, the child can receive an '**A**' grade for turning in the rough draft of their *background information*, but if they do not make the necessary corrections that I have suggested, the result may be a '**C**' grade for their *background information*. However, if they make all of the necessary suggested correction, they will get an '**A**' grade for each part of the project.

If you have any questions, please do not hesitate to contact me. As your child's science teachers at EIA, I am here to help them through every step of this unique learning experience. The *EIA science fair guide and timeline* is thorough and self-explanatory. Inshallah, ***classroom presentation*** of the Science Fair will be held on ***Monday, January 28, 2019***. Students **MUST** bring their projects to school by the morning of ***Friday, January 25, 2019***.

Website that may be of help your child:

*Regional Fair Information: http://www.ersf.ca/ ➔ www.sciencebuddies.org ➔ https://www.education.com/science-fair/ (highly recommended) ➔ https://www.sciencefaircentral.com/	➔ sciencepage.org/scifair.htm ➔ www.all-science-fair-projects.com/ ➔ https://www.sciencebuddies.org/science-fair-projects/project-ideas/list

Sincerely,

_ _ _ _ _ _ _ _

Mustafizur Rahman, OPC, ATA , OCT
Ed.D (candidate), MEd, BEd, BSc
Grade 6C Homeroom Teacher

Basic Rules Summary

***Please follow the time frame and instructions on this sheet for every part of the scientific method as closely as possible in order to get the most possible points earned for this important project. You must perform an experiment for your science fair project. If you have any questions, please contact your science teacher as soon as possible.**

***Teams are allowed but limited to a maximum of two students. If you are working with partners, each person is responsible for their own share of the work. Delegation and completion of the tasks will be decided and regulated by the members of the team.**

***There will be No Changes in group's members after week 1. Any group problems, including disagreements, members not completing tasks, etc., will be handled by the GROUP MEMBERS. The teacher will not deal with any group issues.**

***Your project title and experiment must be approved by your teacher before you begin!!!**

***Project may NOT use:**

- **Animal/human testing allowed**
- **Pathogens**
- **Controlled/ Hazardous Substances**
- **Hazardous Devices**

***Once your project title and experiment have been approved, please stick to that project.**

***A data log must be kept.**

Your work:

- Must be **typed with Times New Roman font size 12, double space, front only.**
- Must have **one inch margins** all around.
- Must include and follow requirements for **all steps within the Scientific method**
- Must include **data log**
- Must have **at least three different resources/references.**
- Must include **bibliography** (See How to Write a Bibliography).
- Must follow correct **grammar and punctuation.**

****NO Plagiarism: DO NOT use and pass off (the ides of writings of another) as one's own.***
Plagiarism is unethical and illegal. Plagiarized work will receive a zero grade.

Research Project Types

➔Experiment
This is traditionally the most common type of science fair project in the life or physical sciences divisions. A winning exhibit 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 regarded as essential that any significant positive findings result from the project. It must be recognized that it is the design rather than the results that are most important.

➔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. A winning exhibit in this area must be able to demonstrate that the methods used to obtain the original data involved sound scientific techniques and controls, and demonstrate insightful analysis.

➔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). A winning project 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.

Students should be aware of all of the different areas and methods of research available to them before starting their research. By identifying their field and method of research from the beginning, they limit the number of side tracks they may take in their research. A good project is one that is focused on a very specific topic using specific methods of research.

What is a Science Fair Project?

1. A unique project that aims to test a specific hypothesis and draw a conclusion based on that hypothesis.
2. A study that has a focused question, and a design to answer that question.
3. An experiment, innovation or study designed by the researcher with a specific goal in mind.
4. A chance to explore science from one's own perspective and examine topics of individual interest.
5. Students behaving as scientists and examining their skills with the scientific method.

What Science Fair Project is not?

1. The repetition of an experiment or study that is found online or in text.
2. A research paper with a presentation.
3. An assignment that can be successfully completed on one weekend.
4. An easy activity.
5. An explanation of how something works, if it is already known how it works.
6. An instruction manual for a piece of technology or scientific principle.

Guide and Recommendations

The Scientific Method

A science project is an investigation using the scientific method to discover the answer to a scientific problem. Before starting your project, you need to understand the scientific method. This section uses examples to illustrate and explain the basic steps of the scientific method. The scientific method is the "tool" that scientists use to find the answers to questions. It is the process of thinking through the possible solutions to a problem and testing each possibility to find the best solution.

The scientific method involves the following steps:

- **Question /Problem Statement**
- **Hypothesis**
- **Research**
- **Hypothesis**
- **Investigation/Experimentation**
- **Data**
- **Results / Data Analysis**
- **Conclusion**
- **Data Log and Abstract**

Do start planning and working on the experiment as soon as possible.

Do use many references from printed sources (books, journals, magazines, newspapers, and electronic sources such as computer software and online services).

Do gather information from professionals (instructors, librarians, and scientists, such as physicians and veterinarians).

Do perform other exploratory experiment related to your topic.

*******This Space was left blank intentionally*******

Science Fair Guide and Timeline:

Week 1: October 15 - November 2, 2018 - Problem and Research
STEP 1: Identify the Problem and Perform Research

Date Due typed: 5/11/18

✓ Title of Project/ Problem Statement:

It's encouraged (not mandatory) to choose a problem related to the science curriculum for your grade level. The topic **MUST be approved by the science teacher first**. Be **specific**, **creative**, and make sure that it the catches the readers attention. A good title should simply and accurately **present the research** and make the casual observer want to know more.

The **problem statement** is the scientific question to be solved. It is best **expressed as an "open-ended" question**, which is a question that is answered with a statement, not just a yes or a no. For example: "How does light affect the reproduction of bread mold on white bread?"

- **Do** limit your problem. Note that the previous question is about one life process of molds—reproduction; one type of mold—bread mold; one type of bread—white bread; and one factor that affects its growth—light. To find the answer to a question such as "How does light affect molds?" would require that you test different life processes and an extensive variety of molds.
- **Do** choose a problem that can be solved experimentally. For example, the question "What is a mold?" can be answered by finding the definition of the word *mold* in the dictionary. But, "At room temperature, what is the growth rate of bread mold on white bread?" is a question that can be answered by experimentation.

✓ Research/Background Information:

Research helps you form your hypothesis. Research is the process of collecting information from your own experiences, knowledgeable sources, and data from exploratory experiments. The initial research helps select a project topic. This is called **topic research**. For example, you observe a black growth on bread slices and wonder how it got there. Because of this experience, you decide to learn more about mold growth. Your topic will be about fungal reproduction. (*Fungal* refers to plant-like organisms called fungi, which cannot make their own food, and *reproduction* is the making of a new offspring.) **CAUTION**: If you are allergic to mold, this is not a topic you would investigate. Choose a topic that is safe for you to do.

After you have selected a topic, you begin what is called **project research** which helps you understand the topic, express a problem, propose a hypothesis, and design one or more project experiments designed to test the hypothesis. Example: to place a fresh loaf of white bread in bread box and observe the bread over a period of time as an exploratory experiment. The result of this experiment and other research give you information for the next step—identifying the problem.

You must have a minimum of three resources (see bibliography instructions) of information of which ONLY ONE could be an internet web site. Research other similar experiments done in the past. If you can't find anything or can only find limited information on that, you can research information about your particular topic. **Your research must be written in your own words.**

Week 2: November 5 - 9, 2018

STEP 2: FORM A HYPOTHESIS AND WRITE PROCEDURES

Date Due: 13/11/18

✓ Hypothesis:

A hypothesis is an idea about the solution to a problem, based on knowledge and research. The hypothesis is the key to a successful project. All of your project research is done with the goal of expressing a problem, proposing an answer to it (**hypothesis**), and designing project experimentation. Then all of your project experimenting will be performed to test the hypothesis. You need to think about how changing you independent variable will affect your dependent variable. For example: **If** liquids are placed in containers with sided of different heights, **then** they will evaporate faster in the container with lower sides. To write such a hypothesis us and **"If…, then"** sentence: **If** the (independent variable) is (describe how you changed it), **then** the (dependent variable) will (describe the effect).

- **Do** state facts from past experiences or observations on which you base your hypothesis.
- **Do** write down your hypothesis before beginning the project experimentation.
- **Do** state the independent variable and dependent variable in the hypothesis. **"If…, then"** sentence: **If** the (independent variable) is (describe how you changed it), **then** the (dependent variable) will (describe the effect).
- **Don't** change your hypothesis even if experimentation does not support it. If time permits, repeat or redesign he experiment to confirm your results.

✓ Procedures:

The **independent variable** is the variable you purposely manipulate (change). The **dependent variable** is the variable that is being observed, which changes in response to the independent variable. The variables that are not changed are called **controlled variables or constants**.

Sample

The **problem** in this section concerns the effect of light on the reproduction of bread mold. The **independent variable** for the experiment is light and the dependent variable is bread mold reproduction. A **control** is a test in which the **independent variable** is kept constant in order to measure changes in the dependent variable. In a **control**, all variables are identical to the experimental setup—your original setup—except for the independent variable. Factors that are identical in both the experimental setup and the control setup are the controlled variables. For example, prepare the experiment by placing three or four loaves of white bread in cardboard boxes the size of a bread box, one loaf per box. Close the boxes so that they receive no light. If, at the end of a set time period, the mold grows, you might decide that no light was needed for mold reproduction. But, before making this decision, you must determine experimentally if the mold would grow with light. Thus, control groups must be set up of bread that receives light throughout the testing period. Do this by placing an equal number of loaves in comparable-size boxes, but leave them open.

The other variables for the experimental and control setup, such as the environmental conditions for the room where the boxes are placed—temperature and humidity—and the brand of the breads used must be kept the same. These are **controlled variables**. Note that when designing the procedure of your project experiment, you must include steps for measuring the results. For example,

to measure the amount of mold growth, you might draw 1/2-inch (1-cm) squares on a transparent sheet of plastic. This could be placed over the bread, and the number of squares with mold growth could be counted. Also, as it is best to perform the experiment more than once, it is also good to have more than one control. You might have one control for every experimental setup.

- **Do** have **only one independent variable** during an experiment.
- **Do** **repeat the experiment more than two times** to verify your results.
- **Do** include **constants**
- **Do** have **more than one control**, with each being identical.
- **Do** **organize data**
- **Do** **include a materials list** of materials needed to repeat the experiment.
- **Do** place the **procedures in order starting with the #1**.

Week 3: November 13, 2018 -December 14, 2018: Project Experimentation

STEP 3: TEST YOUR HYPOTHESIS AND STEP 4: ANALYZE DATA

Date Due: 17/12/18

Investigations:
Project experimentation is the process of testing a hypothesis. The things that have an effect on the experiment are called variables. There are three kinds of variables that you need to identify in your experiments: independent, dependent, and controlled

✓ **Displaying Data**: http://nces.ed.gov/nceskids/createagraph/
Graphs and charts are great because they communicate information visually. Consult website for creation of your three visual displays.

- **Do** make sure that the graph has a title, both axes are labeled clearly, and that the correct scale is chosen to utilize most of the graph space.
- **Do** record all observations.

✓ **Analysis of result**: Ask yourself, what happened? Did the results agree with your hypothesis?

Week 4: December 17, 2018 - January 7, 2019

STEP 5: Draw Conclusions

Date Due: 08/01/19

✓ **Conclusion:**
The project's conclusion explains why the experiment **Supported or rejected the hypothesis** using a summary of the results of the project experimentation and a statement of how the results relate to the hypothesis.

Students must answer the following seven questions:

1. What was investigated?

    a. Describe the problem.

2. Was the hypothesis supported by the data?
    a. Compare your actual result to the expected result
    b. Include a valid conclusion that relates to the initial problem or hypothesis.
3. What were your major findings?
    a. Did the findings support or not support the hypothesis as the solution to the problem?
4. How did your findings compare with other researchers?
    a. Compare your result to other experiments.
5. What possible explanations can you offer for your findings?
    a. Evaluate your method.
    b. State any assumptions that were made which may affect the result.
6. What recommendations do you have for further study and for improving the experiment?
    a. Comment on the limitations of the method chosen.
    b. Suggest how the method could be improved to obtain more accurate and reliable results.
7. What are some possible applications of the experiment?
    a. How can this experiment or the findings of this experiment be used in the real world for the benefit of society?

✓ **Applications:**

The application is how the information or knowledge gained in the experiment can be used.

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✓ How to Write a Bibliography

For a Book by One or Two Authors

Gilbert, Martin. *The Second World War: A Complete History*. New York: Henry Holt, 1989.

Sorensen, Sharon and Bob LeBreck. *How to Fly a Kite.* New York: Amsco Publications, 1994.

An Article in a Reference Book (like an encyclopedia)

Ollman, Bertell. "Mars." *Academic American Encyclopedia*. 1989 ed.
"Government." *American Heritage Dictionary*. 1986 ed.

Trainen, Isaac N., et al. "Bone Repair Rates in Mice." *Encyclopedia of Biology*. Ed. Warren T. Reich. 4 vols. New York: Free Press, 1978.

An Article from a Magazine

Begley, Sharon. "A Healthy Dose of Laughter." *Newsweek* 4 Oct. 1982: 74.
Motulsky, Arno G. "Genetic Ethics in Medicine." *Science* 14 Jan. 1983: 135-40

An Article from a Newspaper

Colling, Glenn. "Single-Father Survey Finds Adjustment a Problem." *New York Times* 21 Nov. 1983: 20.

Dalin, Damon. "A $7 Greeting Card? Yes, but Listen to the Melody It Will Play for You." *Wall Street Journal* 10 May 1983: A37.

A Video

Alzheimer's Disease. Videocassette. Prod. Hospital Satellite Network. *American Journal of Nursing*, 1985. 28 min.

A CD-ROM

Frey, Herbert. "Mars (planet)." *The New Electronic Encyclopedia*. CD-ROM. Danbury, CT: Grolier Inc., 1991.

"Cocker Spaniels." *Microsoft Dogs*. CD-ROM. Microsoft Corp., 1995.

A Web Page

Author. "Title of page or article." Title of Complete Work. Date last updated [if available.] URL. Date you visited.

Abilock, Debbie. "Research on a Complex Topic." *Nueva Library Help*. 8 August,1996.http://www.nueva.pvt.k12.ca.us/~debbie/library/research/advice.html. (3 Sept. 1996.)

You may use following websites to create **APA citation**:
➔**http://www.citationmachine.net/**
➔**http://www.bibme.org/apa**

Week 5: January 08 - 11, 2019
Step 6: Abstract and Data log

Date due: 22/01/19

Data log:

All scientists keep a record of their observations in some form of a data log. The data log will begin with the date and time the experimenter collects the data. Sometimes data will include environmental values such as humidity, temperature, etc. Entries must be written clearly and with detail of description so that another scientist can read the data log, simulate the conditions of the experiment, and repeat the experiment exactly.

Abstract: http://www.williamsclass.com/ScienceFair/ScienceFairAbstract.htm

The Abstract is a summary of your science fair project. Your abstract is made up of a brief statement of the essential, or most important, thoughts about your project. Abstracts should summarize, clearly and simply, the main points of the experiment. Spelling, grammar, punctuation, neatness, and originality are important. It is one of the last parts of your science fair project that you will complete. It is an easy part if you are using a computer to record and type your journal entries and other parts of the project. If you are using a computer then you will only have to cut and paste this information into the abstract.

- Must be **250 words or less** written in **paragraph form**.
- Must be **typed, double space, front only.**
- Must be **Times New Roman font size 12**.
- Must have **one inch margins** all around.
- Must have **at least three different resources/references.**
- Must include **bibliography** (See How to Write a Bibliography).
- Must follow correct **grammar and punctuation.**

***NO Plagiarism*: *DO NOT use and pass off (the ides of writings of another) as one's own*.** Do not plagiarize, it is unethical and illegal. Plagiarized work will receive a zero grade.

Parts of an Abstract

(http://www.sciencebuddies.org/science-fair-projects/project_sample_abstract.shtml)

1. **Heading:** COMPLETE PROJECT TITLE (all in capital letters, as it appears on the project & board)
   Student's name (Last name, First name, Middle initial, if used)
   Doral Middle School, Doral, Florida

2. **Introduction/Purpose:** This is where you describe the purpose for doing your science fair project or invention. Why should anyone care about the work you did? Why is the research being done? You have to tell them why. Did you explain something that should cause people to change the way they go about their daily business? If you made an invention or developed a new procedure how is it better, faster, or cheaper than what is already out there? **Motivate** the reader to finish the abstract and read the entire paper or display board.

3. **Hypothesis:** What is the expected outcome of the research?

4. **Problem Statement** Identify the problem you solved or the hypothesis you investigated.

5. **Procedures:** What was your approach for investigating the problem? Do describe the most important variables if you have room. In a brief paragraph describe the critical materials used and how the experiment was done. This section should a summary of your methods and not a list.

6. **Results:** summarize the data from charts and graphs in narrative form. What answer did you obtain? Be specific and use numbers to describe your results. Do not use vague terms like "most" or "some."

7. **Conclusions:** in narrative form cite interpretation of the results. Briefly, compare findings with other research. Include suggestions for procedural improvements and recommendations for future study, as well as applications of the research. State what your science fair project or invention contributes to the area you worked in. Did you meet your objectives?

Things to Avoid (http://www.sciencebuddies.org/science-fair-projects/project_sample_abstract.shtml)

- Avoid jargon or any technical terms that most readers won't understand.
- Avoid abbreviations or acronyms
- Abstracts do not have a bibliography or citations.
- Abstracts do not contain tables or graphs.
- For most science fairs, the abstract must focus on the previous 12 months' research (or less), and give only minimal reference to any earlier work.
- If you are working with a scientist or mentor, your abstract should only include procedures done by you, and you should not put acknowledgements to anyone in your abstract.

Abstract Sample

(http://www.sciencebuddies.org/science-fair-projects/project_sample_abstract.shtml)

Advertisers are always touting more powerful and longer lasting batteries, but which batteries really do last longer, and is battery life impacted by the speed of the current drain? This projects looks at which AA battery maintains its voltage for the longest period of time in low, medium, and high current drain devices. The batteries were tested in a CD player (low drain device), a flashlight (medium drain device), and a camera flash (high drain device) by measuring the battery voltage (dependent variable) at different time intervals (independent variable) for each of the battery types in each of the devices. My hypothesis was that Energizer would last the longest in all of the devices tested. The experimental results supported my hypothesis by showing that the Energizer performs with increasing superiority, the higher the current drain of the device. The experiment also showed that the heavy-duty non-alkaline batteries do not maintain their voltage as long as either alkaline battery at any level of current drain.

*******This Space was left blank intentionally*******

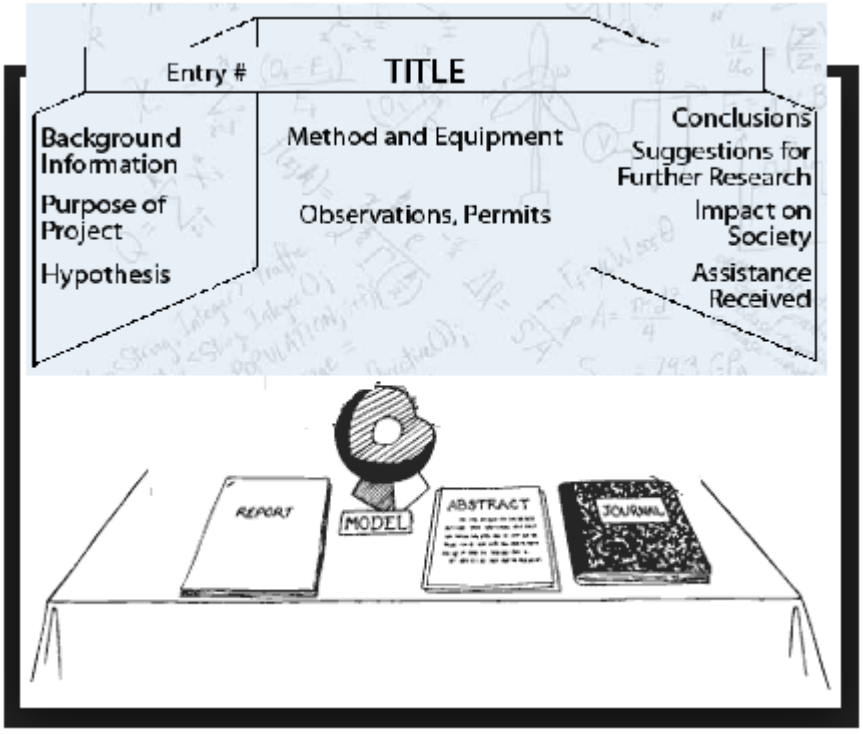
Week 6: January 22 - 25, 2019

STEP 7: Board preparation and Final check

Final product due on board: 25/01/19

When setting up the board it should stand out. Use neat, colorful heading, charts and graphs. Above all make sure your name, Teachers Name, and your period is on the board.

Project Board Set-up



Display. (n.d.). Retrieved January 25, 2018, from http://www.ersf.ca/project-information/display

***On the back of the board** **(not on the flaps), in permanent marker or typed, write the following:**
Last Name, First Name:
Grade & Section:
Teacher's Name:

Week 7 through 8: January 29 - February 1, 2019

STEP 8: Communicating the Findings - In Class Presentations and Selection of Best Projects

Oral Presentations Date: 29/01/19

Report: Your report must be typed, double spaced, using size 12 font and printed in black ink. Your report must be put together neatly in the order written below. Each section should be clearly labeled. DO NOT attach your research paper to your science fair board. Keep your report in a separate folder. Please do not use first person tense when writing the report.

a. Title Page
   i. Your name(s)
   ii. Grade
   iii. Abraar School
   iv. Your science teacher's name
   v. The project due date

b. Table of contents (include page numbers)
c. Introduction: problem statement, background information and hypothesis.
d. Materials and Methods
e. Data in table or graph form
f. Conclusion: Explain if your hypothesis was correct or not, what applications your findings might have for others and what may be done differently next time.

Presentation

You're going to have to make a presentation to the judges. So remember the Boy Scout Motto--"Be Prepared." Know what you are going to say before you have to say it by rehearsing your presentation over and over. Pretend you're lecturing to a large audience that has come to find out about your experiment. Explain it to them again and again until you can do so clearly and effortlessly. Imagine them asking you questions. How will you answer? When you're comfortable with your presentation and can answer any reasonable question you can think of, and then go to phase two.

Try to find people to play the role of the judges. Start off with friends and family members, but try to find some people who are as knowledgeable about science as your judges are likely to be. Doing you presentation for them will give you the self-confidence that will keep your calmer and more composed come science fair day than your competition.

Practicing your presentation is absolutely essential if you want to win. You'd hate to do all the hard work to carry out a killer project only to lose because you couldn't explain yourself clearly before the judges, right?

If absent, it is the student's responsibility to have the absence excused by the school's administration and re-schedule their science project presentation with their science teacher.

- ***The COMPLETE PROJECT is DUE on January 25, 2019***
- ***ORAL PRESENTATIONS will begin January 28, 2019***
- ***STUDENTS NOT READY to present by January 28, 2019 will receive a ZERO for their grade unless arrangements are approved by the science teacher***

In Summary

Week 1: October 15 - November 2, 2018

Date Due: 5/11/18

Step 1: Identify the Problem

- List of Participants
- Title of Project
- Problem Statement
- Background Information

Week 2: November 5 - November 9, 2018

Date Due: 13/11/18

Step 2: Form a Hypothesis and Write procedures

- Form a Hypothesis
- Variables and Controls and Constants
- Materials and Equipment
- Plan Step by Step Procedures for experiment

Week 3: November 13, 2018 - December 14, 2018

Date Due: 17/12/18

Step 3: Test your Hypothesis and Step 4: Analyze Data

- Experiment/Investigation
- Gather Data – No less than three (03) different type of graphic displays required (Either charts, graphs, observations, surveys, pictures and/or diagrams)
- Analysis of Results

Week 4: December 17, 2018 - January 7, 2019

Date Due: 8/01/19

Step 5: Draw Conclusions

- Conclusions: Support or reject hypothesis with reasons – why?
- Applications: How can your experiment apply to the real world, extensions/further investigation
- Bibliography: Supply all references

Week 5: January 08 - January 11, 2019

Date due: 22/01/19

Step 6: Abstract and Data log

- Abstract: Summary of purpose, procedures, results and conclusion (must be 250 words/typed)
- Data log: A dated log of what was done on a daily basis
- Prepare the presentation board & project report (be creative and detailed oriented)
- Review the complete written part of the project & report (Check grammar and spelling)

Week 6: January 22-25, 2018

Date due: 25/01/19

Step 7: Final Check

- Prepare the presentation board (be creative and detailed oriented)
- Review the presentation board (Verify that all the required information is in its correct place)

Week 7 through 8: January 28 - February 1, 2019

Date due: 28/01/19

Step 8: In Class Presentations and Selection of Best Projects

- Have report ready and be prepared to present your project (students are **REQUIRED** to present).
- Students not ready to present by January 28, 2019 will receive a zero

Address: 14525 127 ST, Edmonton, AB T6V 0B3 **Phone:** (780) 454-4573

Science Fair Agreement

Name of Student: _____ **Grade & Section:** ____

Project Type (check one): ☐ Experimental ☐ Innovation ☐ Research

Project Title: _____

Science Teacher: _____

Parent/Guardian Name: _____

By signing below, my child and I have agreed that he/she will complete a project for the Science Fair in accordance to the established Science Fair Guidelines and timeline which are available in the science link at: http://brmustafa.weebly.com/science.html. We have reviewed the timeline together and have complete understanding of each due date. We realize that doing the project will require many work hours outside of the school day. We also acknowledge that if in a group setting, the group has full responsibility of all required assignments and completion of this project. All persons in the group have completed understanding that the grade given for the Science Fair Projects are given as a team not individual.

- The complete project is due on **January 25, 2019**.
- Oral Presentations will begin **January 29, 2019**.
- Students not ready to present by **January 29, 2019** will receive a zero for their grade unless arrangements are approved by the science teacher.

Please **print**, **sign**, **date**, and **return this form** to the science teacher.

✂ _

Form Due Date: *October 19, 2018 by 3:30 pm*

Grade & Section: ____ Project Title: _____

_____	_____	_ _/_ _/_ _ _ _ (dd/mm/yyyy)
Student Name	Student Signature	Date

_____	_____	_ _/_ _/_ _ _ _ (dd/mm/yyyy)
Parent/Guardian Name	Parent/Guardian Signature	Date

Address: 14525 127 ST, Edmonton, AB T6V 0B3 **Phone:** (780) 454-4573

EIA Science Fair Judging Forms

One way to help students plan their projects is to make them familiar with the way they will be evaluated upon completing their research. The EIA Scinece Fair uses the following forms when evaluating projects. The judges at the fair are briefed on what to look for when evaluating projects and introduced to the different areas of the scoresheet. Included below are the scoresheets used by the judges at the fair.

EIA Science Fair (Grades 4 - 6)

PART A: SCIENTIFIC THOUGHT – 45%			
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) – Mark Range 6 to 15			**Circle One Mark**
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.	6 7 8 9 10 11 12 13 14 15
Level 2 (Fair) – Mark Range 16 to 25			
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.	16 17 18 19 20 21 22 23 24 25
Level 3 (Good) – Mark Range 26 to 35			
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).	26 27 28 29 30 31 32 33 34 35
Level 4 (Excellent) – Mark Range 36 to 45			
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.	36 37 38 39 40 41 42 43 44 45

PART B: ORIGINAL CREATIVITY – 25%

Rank 1 (Low) Mark Range 6 to 10	Rank 2 (Fair) Mark Range 11 to 15	Rank 3 (Good) Mark Range 16 to 20	Rank 4 (Excellent) Mark Range 21 to 25
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.
6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24 25

PART C: VISUAL DISPLAY – 8%		TOTAL
Layout logical and self-explanatory	1 2 3 4 5	
Exhibit attractive and well-constructed	1 2 3	

PART D: ORAL PRESENTATION – 8%		TOTAL
Clear, logical, enthusiastic presentation	1 2 3 4 5	
Response to questions	1 2 3	

PART E: PROJECT REPORT & PROJECT LOG – 14%		TOTAL
Information content / substance	1 2 3 4	
Readability / clarity	1 2 3	
Bibliography and citations	1 2 3	
Project log (hard copy or electronic)	1 2 3 4	

PROJECT EVALUATION SUMMARY		MAX	MARK
PART A	Scientific Thought (from page 1)	45	
PART B	Original Creativity (from page 1)	25	
PART C	Visual Display	8	
PART D	Oral Presentation	8	
PART E	Project Report & Project Log	14	

TOTAL MARK AWARDED TO THIS PROJECT	

JUDGING NOTES

FEEDBACK FOR THE FINALIST(S)
Strengths
Recommendations

Judge's Name (Please print.)	Judge's Signature