Calgary Board of Education | Earl Grey School

2024 Earl Grey School

Science Fair

Information Package
+
Planning Guide

THIS PACKAGE CONTAINS:

- SCIENCE FAIR REQUIREMENTS
- CALENDER TIMELINE AND IMPORTANT DATES
- EVALUATION SAMPLE SHEETS
- REGISTRATION FORM - TO BE RETURNED BY JANUARY 22ND, 2024
- PLANNING GUIDES

Science Fair Requirements

1. Decide whether you are working alone or with a partner. Remember that it is sometimes difficult to get together with someone else. Remember that you may have differing ideas. Is it best to work alone?

2. Choose a topic of interest.

3. Complete and submit contract to Ms. Aida by January 22, 2024.

4. Check the timeline and plan out your project.

- **Experimental projects involve testing a hypothesis under controlled conditions using the Scientific Method.**
- **Non-experimental/research projects include surveys, model construction, computer programming, and engineering design.**

5. Begin your log book. This is a scientific diary. It includes dated journal entries describing progress, thoughts and reflections, problems and concerns. It also includes all plans, observations, and rough notes. A binder, folder or box works well.

6. Plan your experiment. How much time will you need? When will you need to begin? Save the last-minute stress by starting early.

7. Research background information. For example, if you are doing a plant experiment, you may want to research Photosynthesis. If you are doing an electricity experiment, you may want to research Ben Franklin or Thomas Edison. (Gather one page of background information, in point or paragraph form, IN YOUR OWN WORDS).

8. Organize your information and design your trifold display. (Large trifolds for Grade 4-6 will be available in the office for a cost of $15. Grades 1-3 are required to purchase their own trifolds which can be found at most dollar stores or craft stores).

9. Plan and rehearse your oral presentation – see if friends or family can be your audience! Remember to speak clearly and make eye contact!

10. Have fun!

2024
JANUARY

SUN	MON	TUE	WED	THU	FRI	SAT
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22  REGISTRATION FORMS DUE	23 CONDUCT EXPERIMENTS	24	25	26	27
28	29	30	31 CONDUCT EXPERIMENTS			

2024
FEBRUARY

SUN	MON	TUE	WED	THU	FRI	SAT
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29		

2024
MARCH

SUN	MON	TUE	WED	THU	FRI	SAT
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24 / 31	25	26	27	28	29	30

PLAN AND PRACTICE PRESENTATION

FINAL TOUCHES

DIV. 1 SCIENCE FAIR

DIV. 2 SCIENCE FAIR

EG Science Fair Judging Tally Sheet
Grades 1-4

Please use the following Scale:
5 excellent
4 good
3 satisfactory
2 weak
1 poor
0 not present

Project: _____

Student Name(s): _____

1. **Background Information** - Relevant background research - Good use of resources - Understanding subject matter	0 1 2 3 4 5
2. **Planning and Organization** - **IF EXPERIMENTAL:** scientific process was used; process and variables are understood. - **IF NON-EXPERIMENTAL:** logical and complete organization of subject information.	0 1 2 3 4 5
3. **Design and Presentation** - Display is neat, attractive and free of errors - Project is imaginative and creative - Understandable and easy to read	0 1 2 3 4 5
4. **Oral Presentation** - Introduction and conclusion given - Questions answered effectively - Clear use of voice and good expression	0 1 2 3 4 5

What was good about this project?

_____

_____

_____

_____

What could be improved upon for next time?

_____

_____

_____

_____

TOTAL SCORE : **/20**

CALGARY YOUTH SCIENCE FAIR

Entry No: _____ Location: _____
Project Title: _____
Student Name(s): _____
_____

Elementary Project – Judging Tally Sheet

Please use the following scale:

5 Excellent
4 Good
3 Satisfactory
2 Weak
1 Poor
0 Not Present

1. SCIENTIFIC CONTENT (maximum 50 marks)

***Complete* EITHER** *1A - Experimental Project* **OR** *1B – Non-Experimental Project.*
Circle the score for each statement and note the subtotal on page 2.

1A. EXPERIMENTAL PROJECT – an investigation undertaken to test a scientific hypothesis using experimentation, usually featuring the identification and control of variables.

PROBLEM/HYPOTHESIS

1. The problem/hypothesis was clearly stated 0 1 2 3 4 5
2. Adequate background reading was evident in the presentation 0 1 2 3 4 5

METHOD

3. Experimental design reflected understanding of the scientific method and underlying scientific principles..... 0 1 2 3 4 5
4. Controlled, manipulated and responding variables were identified and understood 0 1 2 3 4 5
5. Repetition of tests (minimum three trials) and/or appropriate sample size were used to achieve reliable results.... 0 1 2 3 4 5
6. Logbook recorded the project progress including detailed procedures, results, and original data 0 1 2 3 4 5

ANALYSIS/CONCLUSION

7. Observations were clearly summarized in tables/graphs and were consistent with data collected..... 0 1 2 3 4 5
8. Results were logically explained and understood 0 1 2 3 4 5
9. Conclusions and summary remarks were based on experimental data and related to the problem/hypothesis..... 0 1 2 3 4 5
10. Possible sources of error were recognized 0 1 2 3 4 5

SECTION 1 SUBTOTAL / 50 _____

1 B. NON-EXPERIMENTAL PROJECT - the collection and analysis of data to reveal evidence of a fact or situation of scientific interest.

PROBLEM/HYPOTHESIS

1. The topic was clearly stated and provided direction and appropriate scope for the project 0 1 2 3 4 5

METHOD

2. Evidence of extensive research including reading and contacting knowledgeable people was demonstrated 0 1 2 3 4 5
3. The scientific information presented was accurate 0 1 2 3 4 5
4. The information was effectively gathered, combined and organized..... 0 1 2 3 4 5
5. Logbook recorded project progress including detailed research notes, contact names and discussions 0 1 2 3 4 5

ANALYSIS/CONCLUSION

6. Key points and concepts of the research topic were identified 0 1 2 3 4 5
7. Problems or issues related to the subject were understood 0 1 2 3 4 5
8. Critical analysis/interpretation of research material was presented 0 1 2 3 4 5
9. A logical conclusion/summary based on the research was reached 0 1 2 3 4 5
10. New ideas were formulated as a result of the research project 0 1 2 3 4 5

SECTION 1 SUBTOTAL / 50 _____

Earl Grey Science Fair 2024
Registration Form

Please return to Ms. Aida by Monday, January 22nd

Name(s)_____ Class _____

_____ Class _____

Brief Description of Project:

_____

_____

_____

_____

_____

Students will be responsible for the following components of the Science Fair project:

1. Logbook (Grade 4 to 6 only)
2. Experiment or Demonstration
3. Trifold Display
4. Oral Presentation

... to be ready for the school wide Science Fair on **March 11th for Grades 1-3** and **March 12th for Grades 4-6**.

Parent Signature:_____ Student Signature:_____

Display Boards: Grade 1-3 students will be required to provide their own trifold, which can be found at most dollar stores and craft stores. Grade 4-6 students will be able to purchase a large trifold from the office for $15.

If you have any questions, please contact:

Mr. Lowe at mhlowe@cbe.ab.ca or

Ms. Aida at sajaved@cbe.ab.ca.

Science Fair Planning Guide - Experimental

**** Set up a logbook/binder/box to keep track of everything you think and do!***
(It can be a coil ring book, a binder, a duo-tang folder, a box, some place to keep all your "stuff" together)

Problem: Write your problem in question form.

_____

_____

Hypothesis: What do you think the answer to your question might be? What do you think will happen in your experiment and why do you think this? State facts from past experiences or observations on which you base your hypothesis.

_____

_____

_____

Don't change your hypothesis even if experimentation does not support it.

Materials: List the materials used in your experiment

_____ _____

_____ _____

_____ _____

_____ _____

Variables: Organize your experiment:

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:

- Controlled or Constant - all the things you keep consistent in your experiment
- Manipulated or Independent – the variable that changes. You should have **only one** in your experiment.
- Dependent – the outcome or variable that is observed in response to your changing variable.

Repeat the experiment more than once, if possible, to verify your results.

Procedure: Explain the steps needed to conduct your experiment.

Example:

1. Choose 4 plants of equal size.
2. Put each in the same place.
3. Continue on with directions

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Observations – What happened during your experiment? - Should be recorded in your log book. Observations can include photographs, measurements, descriptions, graphs and charts

Example:

Day 1	Day 2	Day 3		
drawings	or	data		

or

Dec. 12 _____
Dec. 13 _____
Dec. 15 _____

Conclusions - This is the answer to your project question. This is what you discovered. Your conclusion should include:

- What happened?
- Why do you think it happened?
- What problems did you encounter?
- What things might have affected the outcome of your experiment?
- If you could do the experiment again, what would you change?
- What did you learn?
- What benefit is knowing what you have discovered? Can you make some real life connections to your experiment?

Background Information: A brief report outlining any background information relevant to your project.

Example: If you are doing an environmental project, you may wish to explain the Kyoto Protocol. If you are experimenting with batteries, you will need to research how a battery works. Break your research up into 2 – 4 sub questions. Collect jot note answers. Put the information into your own words.

Bibliography – a list of resources (books, websites, experts) that were used in your project.

Your trifold display should contain all these components, as well as your name and classroom.