Linwood School
2020 Project Fair
Wednesday, March 11th
Information Booklet

Important Information

Wednesday, March 11th, 2020

Project Set-Up (8:00-8:45am)

Projects are due. Students will set up their displays in the auditorium at their assigned area (names will be clearly marked)

Judging (9:00 am – 11:50 am)

All students will be judged in the morning between 9:00 am and 11:50 am. All students will receive a participation certificate. Some may receive a ribbon based on recommendations given by judges.

Classroom Viewing (1:00-3:30PM)

All classrooms will view projects in the afternoon.

Public Viewing (4:30 -7:00PM)

Projects will be on display until 7:00PM on **Thursday, March 12th**. Students are **NOT** required to stay with their projects during public viewing. This is an informal "come and go" viewing. **Please do not remove your project until the morning of March 13th.** (Friday morning)

Dismantling Projects (March 13th)

Students may dismantle projects between 9:15 and 11:15 am. The auditorium will be locked at 11:15 am. If you are not able to

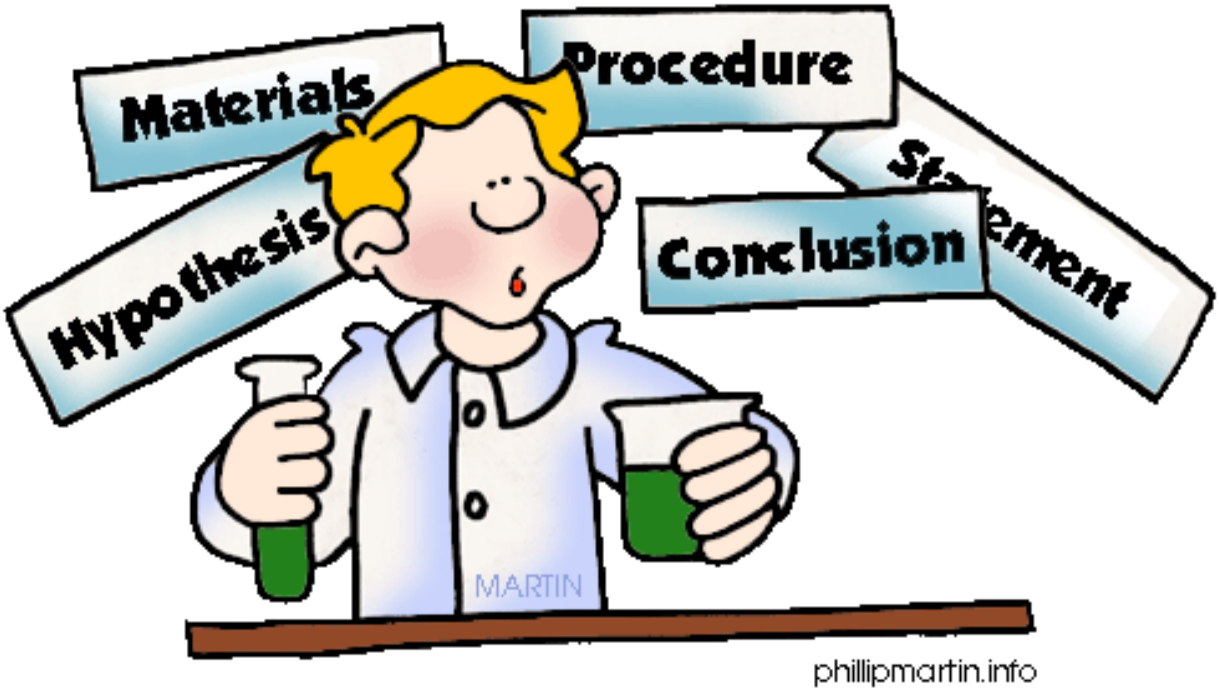
dismantle on Friday the deadline is Monday, March 16th **before school starts.**

Backboards

Backboards can be purchased at Linwood for $5.00. They will be available at the office on February the 3rd. The dimensions of the backboard are 36" x 66" with two scores 16 1/4" from each end and are made out of corrugated cardboard, white on one side.

Working with a Partner (only 2 – no small groups)

Whether a student works with a partner is left to the discretion of parents and students. There are many things to consider, such as where and when partners will work on the project, who will settle disputes, etc. **It is best to give careful consideration to working with a partner!!**



Helpful Hints For Families

One of the most difficult things for a science fair parent can be summed up as the following: "This is not a parent project! Your child's work is going to be judged, not the parent/guardian's. Please let your children do their own project!"

Here are some ways that families can help with the science fair project process:

- Talk about different topic possibilities, but let your child choose the topic. Helping your child narrow his/her focus will be very helpful. Keep in mind library books that will be available to you. You will want to have your child avoid topics with very little resources available. Keeping the project simple can be a good idea. Linwood is looking for quality projects; quantity is less important. Libraries often have books with examples of simple science experiments that your child may enjoy. Researching a topic of interest is another option.

- ❖ Set aside time to work with your child and help brainstorm ideas, help them build a model or assist with the layout of items on the backboard. Help your child follow a proper pace for their project to avoid last minute rushing to complete the work.
- ❖ Be an editor. Spelling and punctuation errors should be corrected whenever possible.
- ❖ Give your child a hand by allowing them to type their work on the computer. Not everyone has access to a computer, but typing the work looks much neater and is an expectation for science fairs.
- ❖ Help your child navigate through the Internet. Check the information given against other sources. Please ensure your child is not just printing volumes of information off the Internet. Teachers and judges can tell when a project is simply pages of information from the Internet.
- ❖ Stress neatness and creativity with your child when deciding how the backboard will be displayed.
- ❖ Students should know everything about their topic! Help them prepare for the judges. Rehearse with your child and have them talk all about their project. You may want to ask questions and your child should know how to answer them. This will help them to present their project with confidence.
- ❖ If your child wants to work with a partner, there are some things to consider:
    - How are they going to divide up the tasks?
    - Who will be responsible for the presentation to the judges?
    - What will happen if one person isn't doing a fair share of the work?
    - Who is going to settle disputes?

- If possible, help your child find an expert to talk to related to their project topic. You'd be surprised how eager most scientists are to spare a few minutes for an inquiring young mind! You can help your child telephone or write away to universities, labs or other research facilities to ask for help on specific questions.
- Encourage your child to keep a science log or journal. Right from the start, they can record everything they did – dates, observations, books used, Internet sites references, etc.. The log will act as a diary for their project. Students will also include all their raw data (if doing an experiment) or their research (if doing a research project). This is a working document and does not need to be typed or edited. Information can be pulled from this book to be edited and displayed on the backboard.
- Be supportive and have fun!!

Types of Projects

Experimental Project

- Experiments are used to test a hypothesis.
- This type of project has specific steps to follow (the Scientific Method)

Study or Research Project

- This type of project is literature based. You obtain information from a variety of sources and make a visual display about a particular topic.
- Examples: The Solar System, Polar Bears, Air Pollution
- Decide which information to display on the backboard.

Innovation Project

- This is a project where a new device (invention) is built for practical purposes.

All projects must have:

- A title
- A logbook
- A neat, eye-catching backboard (typed work looks best)
- Spelling and grammar checked by an adult

Parts of an Experimental Project

- Illustrations, photos, charts, diagrams, etc.

An experimental project follows the Scientific Method.

Problem

- The main question you are asking about what you want to know.
- A problem may be something like “What is the Effect of Acid Rain on Seedlings?” or “Which cereal stays crisp the longest in milk?” or “Why do you see fewer stars in the city than in the country?”
- The problem should be solved experimentally.
- It is best if the problem is open ended, rather than one that provides a simple yes or no answer.

Hypothesis or Prediction

- This is an educated guess based on your research and your own knowledge.
- This should be a statement that your experiment allows you to test. (It must be specific to the actual experiment that you will perform.)
- Simply state what you think will happen when you do the experiment. For example, “Acid rain slows the growth of bean seedlings.”

Materials

- This is a list of all the materials/items you are going to use in the experiment.

Method or Procedure

- This is the actual procedure of the experiment (how you did it).
- It is all of the steps you followed to do your experiment.

Observations

- This is what you see happening in the experiment.
- This is the data that you can display on your backboard using charts, diagrams, graphs and written descriptions. All charts, diagrams, and graphs should be labeled appropriately and coloured where necessary.

Conclusion

- This summarizes the results of the experiment.
- This is where you answer the problem, state whether your hypothesis/prediction was correct or incorrect and list other important things you have learned.

Application

- This step is very important.
- This is where you tell what use you can make of your information to the real world.
- How can your findings be useful to everyday life?

Please Note: All of these steps are only for projects that have a specific experiment. These steps are to be displayed on the backboard. Students are still required to keep a science logbook that shows what they did on specific dates from beginning to end. Remember, the science logbook is a working document and does not have to be typed.

Heritage Projects

Another type of project that you may consider doing is a **Canadian Heritage Project**. You can research and share information about a Canadian hero, event, etc. This research project can be on anything that has a **Canadian Theme**.

Some examples include:

- Henry Hudson
- 1950 & 1997 Flood
- Sir John A. MacDonald
- Pierre E. Trudeau
- Terry Fox
- The Montreal Canadians
- The Forks
- The Group of Seven
- The Fur Trade and the Hudson Bay Company
- The Golden Boy
- Winnie the Pooh

PROJECT REQUIREMENTS:

A Canadian Heritage project will have the same requirements as a non-experimental science project (research project).

- A backboard will be used to display your typed research and creative visuals such as artwork, diagrams, photographs, poetry, etc. Models or dioramas can also be displayed on the table in front of the backboard.

- A logbook of daily events, research notes, dates of library visits, etc. is required. This is a rough copy of your jot notes, thoughts, ideas, etc. It is handwritten and does not need to be typed.

- You will be judged and you will be graded on a specific judging rubric. You will be asked to explain your project, and you should

prepare a 2-5-minute presentation. You might even want to dress up in a costume if it is applicable to your project.

****PLEASE NOTE:**

You will also have to present a RESEARCH BOOK or RESEARCH REPORT. This is a collection of all of your research or findings. You can then "pull" some of this to display on your backboard.

This research book should have:

- A title page
- A table of contents
- Rational (why you chose the project)
- Research
- Diagrams/maps/charts/graphs/tables
- A glossary (terms or definitions used)
- Application (why you did the research and why it is important)
- Bibliography

This research book is only required for the social studies project. Science projects only require a logbook.

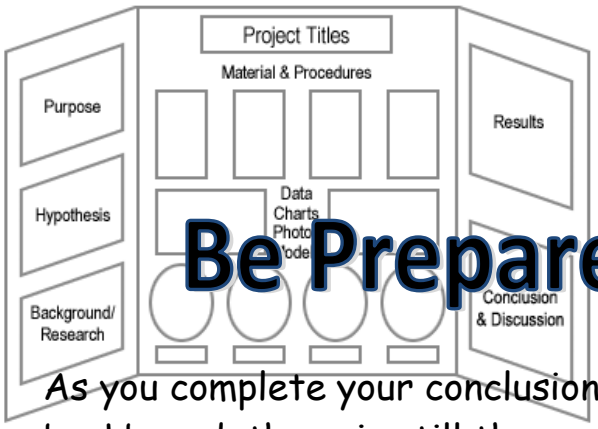
An Exhibit To Be Proud Of!

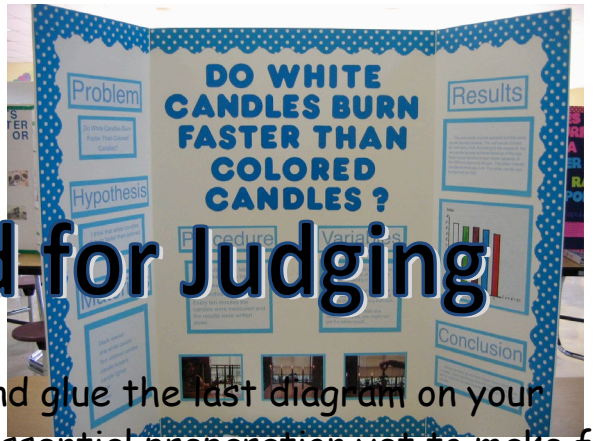
Creating a fabulous exhibit requires time, effort and artistic skill. A good display is well organized, colourful, and inviting to look at. The purpose of the backboard is to highlight the most important points about your project, and to draw the attention of the audience. Interested viewers can then get more in-depth information for your logbook. First you must attract their attention.

Here are a few points to keep in mind:

- Keep it simple. Make it as easy as possible for your audience to understand exactly what your project is about.
- The key is to make it look good. If you have access to a computer, use it! Everything should be printed neatly and mounted to the backboard in an attractive manner.
- You may want to use coloured borders around your printed information to make your backboard look attractive.
- Everything must be edited for grammar and spelling errors.

If you have done an experimental project, then you will organize the information on your backboard according to the Scientific Method. However, if you have done a study or innovative project, the organization depends on your topic and what you have learned. Below are examples of how a display may be organized.





Be Prepared for Judging

As you complete your conclusions and glue the last diagram on your backboard, there is still the most essential preparation yet to make for the competition. This is preparing your speech for the judging. Practice will make the difference in how well you present yourself to the judges.

Here is a step-by-step approach to constructing your presentation:

- Introduce yourself: "Hello, my name is _____."
- Give the title of your project: "The title of my project is_____."
- Explain the purpose of your project. "The purpose of my project is _____."
- Tell the judges how you got interested in this topic.
- Explain your procedure. "The procedure that I followed was _____."
- Show your results. If you have charts, graphs or a notebook, show them to the judges and explain them. If results are shown on your backboard, point them out.
- List your conclusions. Explain what you have proven. If you think that you had some problems or errors in your experiments, don't be afraid to admit these.
- Tell the judges what you might do in the future to continue your experimentation. What would you have done differently if you were to do the project again?
- Of what importance is your project to the world? Explain any applications of your study.
- "Do you have any questions?" If you do not know the answer to a judge's question, then say, "I'm sorry, I am not quite sure. However, it could be _____."
- Be sure to thank the judges at the end of your project!
- **Student Name(s): _____**

<u>Experimental Project Rubric</u> – An investigation to test a specific hypothesis

A. VISUAL PRESENTATION

Backboard: Rate the artistry, arrangements, neatness, spelling and general appearance

1 2 3 4 5 6 7 8 9 10

Use of visual aids: Rate usefulness of charts, posters, models, photographs, graphs, computer use, etc.

1 2 3 4 5 6 7 8 9 10

Total /20

B. SCIENTIFIC THOUGHT

Originality: Is the topic or problem unique?

1 2 3 4 5

Problem/Hypothesis: Is the problem/hypothesis clearly stated?

1 2 3 4 5

Experimental design: Is there an organized plan to solve the problem?

1 2 3 4 5 6 7 8 9 10

Measurement Techniques: Were measurements made? Are they accurate?

1 2 3 4 5 6 7 8 9 10

Data Analysis: Is there evidence of an analysis of their results? Are proper conclusions made?

1 2 3 4 5 6 7 8 9 10

Total /40

- Turn Page Over

C. KNOWLEDGE OF TOPIC – PRESENTATION OF TOPIC

Background Research: Is there evidence of research?

1 2 3 4 5 6 7 8 9 10

Oral Presentations: Is the presentation clear and well organized?

1 2 3 4 5 6 7 8 9 10

Knowledge of Topic: Rate the extent to which the student(s) understand their work.

1 2 3 4 5 6 7 8 9 10

Response to oral questioning: Can students answer questions pertinent to their research?

1 2 3 4 5 6 7 8 9 10

Total /40

Total Mark /100

Student Name(s): _____

Study/Research Rubric – Literature based research on a topic

A. VISUAL PRESENTATION

Backboard: Rate the artistry, arrangements, neatness, spelling and general appearance

1 2 3 4 5 6 7 8 9 10

Use of visual aids: Rate usefulness of charts, posters, models, photographs, graphs, computer use, etc.

1 2 3 4 5 6 7 8 9 10

Observation Journal: A collection of all your research or findings

1 2 3 4 5

Total: /25

B. SCIENTIFIC THOUGHT

Originality: Is the topic unique?

1 2 3 4 5

Complexity: Is the project very simple or is it quite complex dealing with many aspects?

1 2 3 4 5 6 7 8 9 10

Synthesis: Is there synthesis and assimilation of materials in an original form?

1 2 3 4 5 6 7 8 9 10

Quality of Research: Is the research limited or are many credible references used?

1 2 3 4 5 6 7 8 9 10

Total: /35

- Turn Page Over

C. KNOWLEDGE OF TOPIC – PRESENTATION OF TOPIC

Oral Presentations: Is the presentation clear and well organized?

1 2 3 4 5 6 7 8 9 10

Knowledge of Topic: Does the student(s) understand what was researched?

1 2 3 4 5 6 7 8 9 10

Response to oral questioning: Can students answer questions pertinent to their research?

1 2 3 4 5 6 7 8 9 10

Synthesis/Connections: Are some conclusions made? Is some application or connection to other aspects of science or society made?

1 2 3 4 5 6 7 8 9 10

Total: /40

Project Total: /100

Student Name(s): _____

Innovation Project Rubric – The student builds or designs something for a practical purpose. (Examples: a computer program, tool, machine, etc.)

Backboard: Rate the artistry, arrangements, use of visual aids, diagrams, graphs, spelling, neatness and general appearance

1 2 3 4 5 6 7 8 9 10

Originality: Is the project original?

1 2 3 4 5 6 7 8 9 10

Level of Difficulty: Is the level of difficulty suitable to the age/grade of students?

1 2 3 4 5 6 7 8 9 10

Design Procedure: Is there evidence of advanced preparations, calculations and planning?

1 2 3 4 5 6 7 8 9 10

Degree of Success/Quality of Construction:

1 2 3 4 5 6 7 8 9 10

Justification: Does the innovation have a practical purpose or provide some benefit?

1 2 3 4 5 6 7 8 9 10

Oral Presentation: Is the presentation clear and well organized?

1 2 3 4 5 6 7 8 9 10

Degree of Understanding: The student(s) has a solid understanding their design?

1 2 3 4 5 6 7 8 9 10

Background Knowledge: Has any background research been done on the theory involved in the innovation?

1 2 3 4 5 6 7 8 9 10

Response to oral questioning: Can students answer questions pertinent to their research?

1 2 3 4 5 6 7 8 9 10

Total: /100

Student Name(s): _____

Canadian Heritage Project Rubric

A. GENERAL APPEARANCE

Artistry: Is it attractive? Appealing?

1 2 3 4 5

Use of visual aids: Rate use of charts, posters, graphs, and diagrams

1 2 3 4 5

Apparatus Used: Is it displayed with meaning?

1 2 3 4 5

Backboard: Rate arrangement of materials, spelling, neatness and general appearance

1 2 3 4 5

Total: /20

B. RESEARCH PLANNING

Did the student use his/her own words?

1 2 3 4 5 6 7 8 9 10

Is the content appropriate and detailed?

1 2 3 4 5 6 7 8 9 10

Is the information organized?

1 2 3 4 5

Did the student use a variety of sources?

1 2 3 4 5

Is the bibliography included?

1 2 3 4 5

Logbook: Dates worked on project and rough notes are well documented

1 2 3 4 5

Total: /40

- Turn Page Over

C. KNOWLEDGE & PRESENTATION OF PROJECT

Does the student understand his/her project?

1 2 3 4 5 6 7 8 9 10

Did the presentation answer your questions?

1 2 3 4 5 6 7 8 9 10

Does the student understand how their topic is relevant to Canadian History?

1 2 3 4 5 6 7 8 9 10

Your general impression?

1 2 3 4 5 6 7 8 9 10

Total: /40

Project Total: /100

Project Ideas

- Can a musical instrument be made with rubber bands?
- What sounds do various kinds of work make?
- How much cooler is it in the shade than in the sun?
- How much water falls during a rainy day?

Science Fair Ideas

- What makes clouds?
- What things will the wind carry the farthest?
- What shapes roll the best?
- What substance makes things move easier?
- How is concrete made? How is it used?
- How are our streets made?
- Can the sun's shadow help us to tell time?
- Where do our breakfast foods come from?
- How fast do your fingernails grow?
- Where is your skin most "touchy"?
- What things can you identify by smell only?
- What things can you recognize by taste only?
- What is inside seeds?
- How are different kinds of seeds spread?
- Can plants be grown without seeds?
- How do the senses of taste, touch, and smell help us?
- How does sound travel?
- Can sound travel through solid objects?
- How does electricity light a bulb?
- How can we measure moisture in the air?
- How do wheels help us move things?
- How do levers help us do our work?
- What are some simple machines used in the home?
- How can steam be used to do work?
- How does temperature affect the movement of molecules?

- In how many ways is heat useful?
- What are the different types of environment that support life?
- What are the different kinds of pollution?
- What are the effects of various amounts of fertilizer on the growth of plants?
- Which paper towel is the strongest?
- Which chewing gum holds its flavor the longest?
- Do all falling objects accelerate at the same rate when dropped from a specific height?
- Is there life on Mars?
- The Ozone layer protects us. Can it be destroyed?
- How does light behave?
- How does a pinhole camera work?
- What is photosynthesis?
- Electromagnetism – what is it?
- How to simulate the making of sedimentary rocks.
- Can plants grow through a maze?
- What is carbon dioxide?
- What are optical illusions?
- How does inertia work?
- Friction, it's types and uses
- Acids and bases
- How does erosion change the shape of the earth?
- What instruments test weather and how do they work?
- Geometric shapes in nature.
- Does pollution affect plants and animals?

- How does bacteria grow?
- How do you hear?
- What is the effect of heat and cold on germination of seeds?
- Under which colour of light do plants grow best under?
- Which type of battery is the best buy for your money?
- Can we prove sound travels in waves?
- What is reaction time?
- How do your taste buds work?
- Which heat up faster, light or dark objects?
- How can you build a flashlight?
- What is the earth's magnetic field?
- How do plants grow without sunlight?
- Why is it hard to breathe with asthma?
- Which brand of mouthwash works best?
- How long does it take food to grow mold?
- Why sidewalks have spaces.
- What causes a shadow?
- What happens when something dissolves?

Heritage Project Ideas

"FIRSTS" IN YOUR COMMUNITY

- Graveyard
- Newspaper
- Railroad track
- Car/motor vehicle
- Baby born
- Retail store

FIRST NATIONS HISTORY AND CULTURE

- History and settlement
- Hunting and fishing
- Games, arts and crafts
- Types of housing
- Residential schools
- Interaction with Europeans

FOOD AND BEVERAGES

- Agriculture
- Cooking in the home
- Gadgets or inventions

GROGRAPHY AND CLIMATE

- Influence on settlement
- Weather extremes
- Landscape changes

GOVERNMENT

- Famous politicians
- Political parties
- Confederation

HOUSING

- Architecture
- Home furnishings
- Historic buildings
- Street names

IMMIGRATION

- Patterns of immigration
- Official immigration policies
- Multiculturalism

PERSONAL MEMORIES

- Self and family history
- Narrative histories

RECREATION

- Sports
- Dances
- Parks
- Old fashioned toys/games
- Entertainment, e.g. Theatres

SOCIAL STRUCTURES

- Families
- Community values
- Historical figures
- Famous pioneers
- Influential women
- Children's work
- Family trees
- Different customs

SYMBOLS OF CANADA

- Flag
- Coat of Arms
- Currency
- National anthem
- Maple leaf
- Beaver
- Canadian horse
- Provincial flags, flowers, etc.