

OLGC Science Foundation
8601 Wolftrap Road
Vienna, VA 22182

Dear 7th Grader,

The OLGC Science Foundation is currently seeking original science projects to increase our school's awareness of scientific progress. This year, you will become a research scientist as you investigate, design, and conduct a science project in an area of your choosing. You will demonstrate your results and scientific expertise on your topic at our school science fair on **February 11**.

You will follow the six steps in the scientific method to complete your project:

Step 1 – Ask a Question. Think about your hobbies, interests, and current topics in science. What scientific question can you develop based on this?

Step 2 – Perform Background Research. Use scientific studies, online information, encyclopedias, and books to thoroughly research your topic. Write a 2 to 3-page background paper that introduces your scientific question.

Step 3 – Form a Hypothesis. Based on your research, predict what you think will happen in the form of an “if...then...” statement.

Step 4 – Develop and Conduct a Scientific Experiment. Design your experiment by establishing an independent variable, dependent variables, and a control.

Step 5 – Analyze Data and Draw Conclusions. Summarize your results into tables and graphs and make conclusions about your hypothesis. Apply your results to real-world situations.

Step 6 – Communicate Your Results. Write a scientific paper and create a science fair display board to summarize your project and findings. Present this information to the OLGC community at the school science fair.

This is your chance to become a research scientist and delve into a science topic that interests you. This packet contains everything you need to succeed in this endeavor. Good luck and have fun!

Sincerely,

Mrs. Yvette Luketic
Director, OLGC Science Foundation

Science Fair Binder Guidelines

Please use a one or two-inch binder to organize science fair materials in one location.

Binder should have 4 sections:

- **Section 1** – Science Fair packet with due date log in front - remove and complete pages when they are due.
- **Section 2** – Notes/Experimental log – use theme paper to jot down notes and log activities pertaining to science fair, especially as experiments are being conducted. This will be like a journal where you date entries and summarize your activities. You will also use it to record your data as you conduct your experiment. You will use these notes to write your final procedures section so it's helpful to have a thorough record.
- **Section 3** – Background articles information – keep printouts and copies of references and additional materials that are helpful for writing your paper and completing your project.
- **Section 4** – Completed worksheets/science fair assignments that have been graded and associated grading rubrics.

Binders will be checked periodically to be sure activity logs are being maintained. Judges at the science fair will look for complete binders.

Science Fair Due Dates

Date	Science Fair Component	Turned in
Fri Sept 6 th	Science Fair Proposal Form – **Parent’s signature required in checklist #10 (15 pts)	
Fri Sept 13 th	Research Ideas for Background Paper Worksheet (10 pts) and Binder check (**bring binder to class – 10 pts)	
Tues Sept 24 th	Bibliography worksheet (15 pts)	
Wed Oct 9 th	40 Note Cards (40 pts)	
Wed Oct 16 th	Outline for Background Paper (30 pts)	
Wed Oct 30 th	Background Paper (75 pts)	
Wed Nov 6 th	Experimental Design Worksheet (15 pts) and Binder check (**bring binder to class – 10 pts)	
Nov 6 th -Dec 14 th	Work on Projects	
Thurs Dec 19 th	Science Fair Report (130 pts)	
Tues Jan 21 st	Abstract	
Tues Jan 28 th	3 copies of Abstract, 3 copies of Final Report, **Be sure to turn in Grading Rubric from first Science Fair Report and original paper if you made revisions and want to earn points back.	
Tues Feb 11 th	Science Fair – set up display board in DeSales before school (after 7:30)	

Please turn in hard copies of all science fair work – electronic copies will not be accepted. You may work ahead but if you miss a due date, appropriate points will be deducted. All forms, grading rubrics, and helpful guidance are posted in the Science Fair Folder in Showbie. You may not start your actual experiment until your Experimental Design Worksheet is approved. Please be sure to allow enough time for your experiment since you can not complete your Science Fair Report without all of your data.

Name: _____

Date: _____

Science Fair Project Proposal Form Worksheet

What is your topic or question?

What do you already know about this topic?

What is the category for your project? See descriptions at back of packet.

- Behavioral and Social Sciences Biochemistry Botany Chemistry
 Computer Science Earth & Space Sciences Engineering Environmental Science
 Mathematics Medicine and Health Microbiology Physics Technology
 Zoology

What kind of materials do you need to do your project?

What kind of data do you plan on collecting and how?

What will the title of your project be?

Science Fair Project Checklist

1. Does your project fall into a category as determined by the Catholic Diocese of Arlington?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. Is your topic interesting enough to read about, then work on, for the next couple of months?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
3. Can you find at least 5 sources of written information on this topic?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
4. Can you measure the changes to the important factors (variables) using a number that represents a quantity such as a count, percentage, length, width, weight, voltage, velocity, energy, time, etc?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
5. Can you design a "fair test" to answer your question? In other words, can you change only one variable or one factor at a time, and control other factors that might influence your experiment, so that they do not interfere?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
6. Is your experiment safe to perform?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
7. Do you have all of the materials and equipment needed for your project, or will you be able to obtain them quickly and at a relatively low cost?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
8. Do you have enough time to run a few trials of your experiment before the science fair?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
9. Is your experiment challenging enough for a 7 th grade Science Fair project?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
10. Is your parent supportive of this particular experiment and willing to help you with safety, purchasing materials, and helping you keep on track with your timeline? Parent Signature: _____	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Teacher comments:

This experiment has been approved! GOOD LUCK!

This experiment cannot be approved as written – please read through comments in red and submit another idea.

Name: _____

Date: _____

Research Ideas for Background Paper Worksheet

It is time to find out as much about your topic for Science Fair as you can in order to write a background paper and develop ideas for how to conduct your experiment. This research will also help you decide what you think the answer to your topic question might be and thus form a valid hypothesis. The goal of your background paper is to provide the reader with background information on your particular topic and to demonstrate that you've researched current scientific literature for similar studies. Your background paper provides the introduction for your project and will increase your knowledge about how to design your study.

What is the question for your Science Fair experiment?

What is the scientific field for your project? _____

What is your independent variable (what will you change)?

What is your dependent variable (what will you measure to see the response to the independent variable)?

What other keywords or phrases will you research regarding your question?

Now use your keywords and phrases from above to build some questions to guide your background research. You should develop at least 2 or 3 questions from each question word.

Question Word	Possible Questions (you can think of others)
WHY	Why does _____ happen? Why does _____ ? Why _____ ?

HOW	How does _____ happen? How does _____ work? How does _____ detect _____? How does one measure _____? How do we use _____? How _____?
WHO	Who needs _____? Who discovered _____? Who invented _____? Who _____? Who has researched _____?
WHAT	What causes _____ to increase / decrease? What is _____ made of? What are the characteristics of _____? What is the relationship between _____ and _____? What do we use _____ for? What _____?
WHEN	When does _____ cause _____? When was _____ discovered? When _____?
WHERE	Where does _____ occur? Where does _____ get used? Where _____?

Write additional questions/ideas here:

Name: _____

Bibliography Worksheet

You will need at least 5 references for your project (3 must be primary sources like books or scientific studies/publications). Scientific studies you locate online are considered primary sources. Websites like Wikipedia are considered secondary sources. You may locate sources through Internet and library research. The OLGC Website (www.olgcschool.org, choose academics, then specialty areas, then library) provides links to OLGC's catalog (library search) and to Fairfax County's library system. Webpath express (available in OLGC's catalog) is a valuable resource that provides age-appropriate materials and articles. Mrs. Holden and Mrs. Luketic can also provide research tips for your projects.

For each reference, complete as much of the information in the form below as possible. You won't fill out all of the blanks because not all references will have all of this information – just gather as much as you can find. The more information you collect now, the easier it will be to complete your bibliography when you write your paper.

This source is a: <input type="checkbox"/> Book <input type="checkbox"/> Encyclopedia <input type="checkbox"/> Magazine <input type="checkbox"/> Newspaper <input type="checkbox"/> Website			
Author's Last Name:		First Name:	Middle Initial:
Title of the Article:			
Publication / Website Title:			
Title of the Article:			
Place Published:		Publisher:	
Date Published:	Edition:	Volume Number:	
Page Number(s):	Date Accessed:	Date Last Updated:	
The URL for the website is:			

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This source is a: <input type="checkbox"/> Book <input type="checkbox"/> Encyclopedia <input type="checkbox"/> Magazine <input type="checkbox"/> Newspaper <input type="checkbox"/> Website		
Author's Last Name:	First Name:	Middle Initial:
Title of the Article:		
Publication / Website Title:		
Title of the Article:		
Place Published:		Publisher:
Date Published:	Edition:	Volume Number:
Page Number(s):	Date Accessed:	Date Last Updated:
The URL for the website is:		

This source is a: <input type="checkbox"/> Book <input type="checkbox"/> Encyclopedia <input type="checkbox"/> Magazine <input type="checkbox"/> Newspaper <input type="checkbox"/> Website		
Author's Last Name:	First Name:	Middle Initial:
Title of the Article:		
Publication / Website Title:		
Title of the Article:		
Place Published:		Publisher:
Date Published:	Edition:	Volume Number:
Page Number(s):	Date Accessed:	Date Last Updated:
The URL for the website is:		

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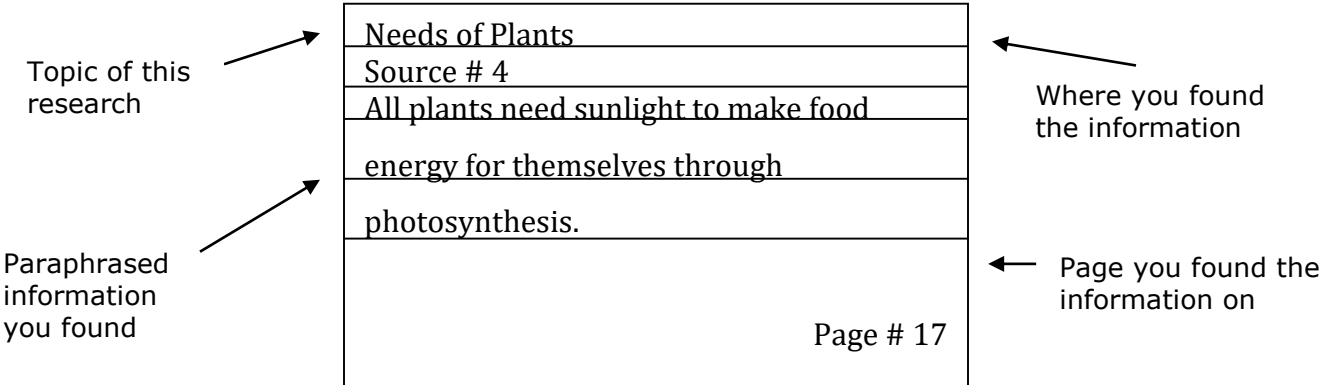
This source is a: <input type="checkbox"/> Book <input type="checkbox"/> Encyclopedia <input type="checkbox"/> Magazine <input type="checkbox"/> Newspaper <input type="checkbox"/> Website		
Author's Last Name:	First Name:	Middle Initial:
Title of the Article:		
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Title of the Article:		
Place Published:	Publisher:	
Date Published:	Edition:	Volume Number:
Page Number(s):	Date Accessed:	Date Last Updated:
The URL for the website is:		

This source is a: <input type="checkbox"/> Book <input type="checkbox"/> Encyclopedia <input type="checkbox"/> Magazine <input type="checkbox"/> Newspaper <input type="checkbox"/> Website		
Author's Last Name:	First Name:	Middle Initial:
Title of the Article:		
Publication / Website Title:		
Title of the Article:		
Place Published:	Publisher:	
Date Published:	Edition:	Volume Number:
Page Number(s):	Date Accessed:	Date Last Updated:
The URL for the website is:		

40 Note Cards

40 Note Cards

The most important part of background and literature research is organizing your information. To make it easier, we use the note card system. Your research must come from at least 5 different sources and at minimum, 3 of these should be primary sources and not a basic website or an encyclopedia. Scientific studies that you find online are primary sources. Don't forget to write down all of your source information on your bibliography worksheet and also to print information you find online and keep it in your binder. As you read your sources and find interesting facts about your topic, use your index cards to track these facts. Each sentence or idea that you find should be paraphrased or summarized into your own words and written on one separate index card. Each index card should have 4 pieces of information as outlined below.



Now that you have all of your research information written down you can organize your cards by topic and place them in piles (one topic per pile). You can have any number of piles and any number of note cards in each pile. Once you have separated your note cards into piles by topic, it will be easy to organize your outline for your background paper.

You should have a minimum of 40 note cards and all of your note cards should be kept in a Ziploc sandwich bag so they don't get lost. Label the sandwich bag with your name.

Outline for Science Fair Background Paper

The Outline for your Science Fair background paper may be typed or completed on theme paper with your name and class period in the top right corner. The title of your Outline should be on the top line of the paper, underlined in the center, and should be the question you are asking. Take your organized note cards and use them to create the outline. Number each major topic in Roman Numerals and add further details/explanation underneath, using capital letters and then numbers. Each line should be indented – please see the example below.

Your note cards should be extremely helpful when completing your outline and then your research paper. When complete, your Science Fair Background Paper should be 2 - 3 typed pages and include all of the information necessary for the reader to understand the need for your project. Please be sure your note cards and outline capture all of this information.

Example:

Joe Smith

Period 2

The Effect of Salt Levels on Brine Shrimp

I – Physical characteristics of brine shrimp

A. Body Structure

1. No outer shell
2. Segmented thorax and abdomen

B. Size

1. Adult average is 1 cm
2. Largest would be around 10 cm

Name: _____

#: _____

Science Fair Background Paper Outline Rubric

Proper heading and title	/ 5 pts
At least 5 sources used, 3 of which were not internet or encyclopedias	/ 5 pts
Proper outline format with Roman numerals, letters and numbers	/ 5 pts
Sufficient scientific content and information for a 2-3 page background paper (double-spaced)	/ 15 pts
TOTAL POINTS	/ 30 pts

Background Paper Tips

- The background paper is also considered a literature review. Scientists use it to show what research has been done and what is lacking on a particular topic. The background information/literature review is a major part of scientists' grant requests where they seek money to support their research.
- This is the beginning of your scientific story – be sure you introduce the reader to all the information necessary to understand your particular experiment while also containing the information to 2-3 double-spaced pages and about 5 paragraphs. Please be sure your paragraphs flow from one to the next.
- You will take the major sections from your outline and add words and citations to create the background paper.
- Do not use personal pronouns in scientific writing – use phrases such as “this study found...,” “researchers investigated...,” or “the results show...”
- Affect is a verb and effect is a noun – please use these terms correctly.
- Use metric units (meters, grams, liters) and degrees Celsius.
- Cite all information that is not your own. You will cite using the author and year of the publication and can do this two different ways:
 - at the end of the information: Research shows that plants respond to infrared light by growing toward it (Smith 2001).
 - by directly discussing a scientist's work: Smith (2001) found that plants respond to infrared light by growing toward it.
- Do not discuss your proposed procedures or actual experiment – this will come in later sections of your final paper.
- List all references that you cite in your bibliography and do not include references in the bibliography that you do not cite in your paper. There are a number of Websites (e.g., <https://owl.english.purdue.edu/owl/resource/747/01/>) that you can use to help with MLA formatting in your bibliography.

Hints for MLA format and the bibliography

MLA: Book

1. Write the author's last name, first name and middle name or initial. End with a period.
2. Write the title of the book in italics followed by a period.
3. Write the place where your book was published (city) followed by a comma. The city of publication is only used when the book is published before 1900, if the publisher has offices in multiple countries or is otherwise unknown in North America.
4. Write the publisher name followed by a comma.
5. Write the publication date (year) followed by a period.

MLA: Magazine

1. Write the author's last name, first name followed by a period.
2. Write the title of the article in quotation marks. End the title with a period inside the quotation marks.
3. Write the title of the magazine in italics followed by a comma.
4. Write the publication date (abbreviating the month) followed by a comma and the page numbers preceded by pp. and followed by a period.

MLA: Website

1. Write the author's last name, first name followed by a period.
2. Write the name of the article or page title in quotation marks. End the title with a period inside the quotation marks.
3. Write the title of the website in italics followed by a comma.
4. If the name of the publisher differs from the name of the website, write the name of the sponsoring institution or publisher (if any) followed by a comma.
5. Write the date published followed by a comma.
6. Write the URL (website address) followed by a period.

MLA Examples:

1. Here is an example for a book -- Smith, John B. *Science Fair Fun*. Sterling Publishing Company, 1990.
2. Here is an example for a magazine -- Carter, M. "The Magnificent Ant." *Nature*, 4 Feb. 2014, pp. 10-40.
3. Here is an example for a Web site -- Bailey, Regina. "How to Write a Bibliography For a Science Fair Project." *ThoughtCo*, 8 Jun. 2019, www.thoughtco.com/write-bibliography-for-science-fair-project-4056999.
4. Here is an example for a conversation -- Martin, Clara. Telephone conversation. 12 Jan. 2016.

Name: _____

Rubric for Background Paper

Proper heading is included – Name and class period in upper right corner	/ 5 points
Times New Roman, 12 point font, double-spaced	/ 5 points
Title of Paper is the Science Fair question and is centered	/ 5 points
Introduction Paragraph (well-written, informative, helps reader understand where the paper is heading, information is cited correctly)	/ 10 points
1st Body Paragraph (well-written, informative, including all pertinent scientific information, information is cited correctly)	/ 10 points
2nd Body Paragraph (well-written, informative, including all pertinent scientific information, information is cited correctly)	/ 10 points
3rd Body Paragraph (well-written, informative, including all pertinent scientific information, information is cited correctly)	/ 10 points
Conclusion Paragraph (well-written, informative, leads readers into what will be covered in this experiment)	/ 10 points
Bibliography (Use MLA format, at least 5 references)	/ 10 points
TOTAL GRADE:	/ 75 points

Name: _____

Date: _____

Experimental Design Worksheet



Title of Experiment:
Science Fair Category:
Problem / Question to be Studied:
Hypothesis (If...then...):
Independent Variable (what you will change/set):
Dependent Variable (what you will measure):
Control (if there is one):
Constants:
How will you conduct your experiment?
What data will you collect? How will you collect/measure it?

SCIENCE FAIR PROJECT REPORT



The report must be typed in 12 point Times New Roman font, double-spaced, and page numbers centered on the bottom of the page. Your report should include the components listed below in order. The title page, table of contents, background paper, and bibliography should all be on separate pages. Otherwise, the rest of the report needs to follow the proper order but you do not have to put each section on a separate page.

1 – **Title Page** (do not put your name on this – only your student number)

- Can be as colorful and creative as you want
- Make sure to include title of the project and student number only
- Include pictures or clipart if desired

2 – **Table of Contents**

- List components of project report in their proper order
- Include corresponding page numbers where they are found in the report

3 – **Background Paper** (insert your 2- 3 page paper)

4 – **Problem** (just state your question)

5 – **Hypothesis** (make sure it is in if...then...format)

6 – **Materials** (can simply list these – include amounts in metric units)

7 – **Procedure**

- Can be steps in a numbered list
- Write in past tense – you already did it (e.g., measured 10 mL of water)
- Be detailed – reader should be able to repeat your experiment

8 – **Results**

- Include all of your data in the form of tables and graphs
- Include an appropriate title for each diagram (graph or table)
- Include a short paragraph underneath each figure to summarize what the table or graph shows
- Do not interpret/analyze your results here – this section is simply a summary of your results (e.g., Figure 3 shows that ultraviolet light had a positive effect on the height of the tomato plants.)

9 – **Data Analysis**

- Explain your results – reference graphs and tables from results section (e.g., Tomato plants grown in higher levels of ultraviolet light may be taller because ultraviolet light increases the rate of cell growth (see Figure 3)).
- Indicate any trends in your data or any parts that stand out to you
- Suggest reasons why you saw these results
- Cite research from your background paper if you read any studies that got results that help support yours (e.g., Smith (2010) obtained similar results to these when he looked at the effect of ultraviolet light on grasses.)

10 – Conclusions

- Answer the question you investigated
- Explain if your results support your hypothesis or not and why

11 – Applications / Extensions / Improvements

- Explain how the experiment applies to the real world and why this is important
- Suggest ways you could improve your experiment if you repeated it – what were some of your limitations?
- Suggest ways to extend the project next time to learn something new – what could you add to what you did?

12 – Bibliography (at least 5 required sources – should come straight from your background paper unless you added some new references to your analysis and conclusions section)

Name: _____ Number: _____

Rubric for Science Fair Report

Part of the Report	Grade
Proper format <ul style="list-style-type: none"><input type="checkbox"/> 12 point Times New Roman Font<input type="checkbox"/> Double spaced throughout	/ 5 points
Title Page <ul style="list-style-type: none"><input type="checkbox"/> Includes title for experiment<input type="checkbox"/> Includes student number	/ 2 points
Table of Contents <ul style="list-style-type: none"><input type="checkbox"/> Components of report are listed in order<input type="checkbox"/> Page numbers are listed accurately	/ 3 points
Background Paper <ul style="list-style-type: none"><input type="checkbox"/> 2 - 3 typed pages in length<input type="checkbox"/> Sufficient scientific background information is found	/ 20 points
Problem <ul style="list-style-type: none"><input type="checkbox"/> Includes the question being studied<input type="checkbox"/> Written as a question	/ 5 points
Hypothesis <ul style="list-style-type: none"><input type="checkbox"/> Attempts to answer the question of the experiment<input type="checkbox"/> Written in an if...then...format	/ 5 points
Materials <ul style="list-style-type: none"><input type="checkbox"/> Includes all materials needed for the experiment<input type="checkbox"/> Includes all quantities listed using Metric Units<input type="checkbox"/> Is created in a list format	/ 10 points
Procedure <ul style="list-style-type: none"><input type="checkbox"/> Includes all important steps in the experiment<input type="checkbox"/> Uses a numbered list to be easy to follow<input type="checkbox"/> When quantities are listed, Metric units are used<input type="checkbox"/> Past tense	/ 10 points

<p>Results</p> <ul style="list-style-type: none"> <input type="checkbox"/> Data tables and graphs are formatted correctly and numbered in order (Table 1, Figure 1) <input type="checkbox"/> Titles appear above tables and underneath graphs <input type="checkbox"/> Short, descriptive paragraph is included under each table or graph 	/ 30 points
<p>Data Analysis</p> <ul style="list-style-type: none"> <input type="checkbox"/> Explains what the results show <input type="checkbox"/> Indicates any trends that are noticed in the results section <input type="checkbox"/> Is in paragraph form and references graphs or data tables when appropriate 	/ 10 points
<p>Conclusions</p> <ul style="list-style-type: none"> <input type="checkbox"/> Answers the question of the experiment <input type="checkbox"/> Validates hypothesis (were you right or wrong) and explain <input type="checkbox"/> Any other general conclusion is provided if necessary 	/ 10 points
<p>Applications / Extensions / Improvements</p> <ul style="list-style-type: none"> <input type="checkbox"/> Explains how the experiment applies to the real world <input type="checkbox"/> Explains how you might extend the project next time to learn something more <input type="checkbox"/> Explains any improvements that should / could be made 	/ 10 points
<p>Bibliography</p> <ul style="list-style-type: none"> <input type="checkbox"/> At least 5 different sources are used <input type="checkbox"/> A minimum of 3 sources are non-internet and non-encyclopedia sources <input type="checkbox"/> Follows proper bibliography format 	/ 10 points
<p>Total Grade</p>	/ 130 points

OLGC & DIOCESAN SCIENCE FAIR CATEGORIES

1. **Behavioral and Social Science** – human behavior, social and community relationships.
2. **Biochemistry** – chemistry of life processes – molecular biology, molecular genetics, photosynthesis, food chemistry, hormones, enzymes, etc.
3. **Botany** – study of plant life – agriculture, horticulture, forestry, plant taxonomy, plant psychology, plant genetics, hydroponics, algae, etc.
4. **Chemistry** – study of nature and composition of matter and laws governing it.
5. **Computer Science** – study and development of computer software and hardware and associated logical devices.
6. **Earth and Space Sciences** – geology, mineralogy, physiography, oceanography, meteorology, climatology, astronomy, speleology, seismology, geography, etc.
7. **Engineering** – projects that directly apply scientific principles to manufacturing and practical uses.
8. **Environmental Sciences** – study of pollution (air, water, and land) sources and their control; ecology.
9. **Mathematics** – development of formal logic systems or various numerical and algebraic computations, and the applications of these principles – calculus, geometry, abstract algebra, number theory, statistics, complex analysis, probability.
10. **Medicine and Health** – study of diseases and health of humans.
11. **Microbiology** – biology of microorganisms.
12. **Physics** – theories, principles, and laws governing energy and the effect of energy on matter.
13. **Technology** – application of scientific knowledge for practical purposes, especially in commerce and industry.
14. **Zoology** – study of animals, including diseases, behavior, and health.

DISPLAY AND SAFETY REGULATIONS

Unacceptable for Display

1. Living organisms e.g. animals, microbes, plants, fruits, vegetables, food, soil, and gravel. No chemicals or OTC chemicals can be used for display. Photographs should be substituted for visual display.
2. Preserved vertebrate or invertebrate animals (includes embryos).
3. Waste samples.
4. Poisons, drugs, controlled substances, hazardous substances or devices (i.e. solids which vaporize to a gas without passing through a liquid phase).
5. Dry ice or other sublimating solids (i.e. solids which vaporize to a gas without passing through a liquid phase).
6. Sharp items (i.e. syringes, needles, pipettes) or any glass containers.
7. Flames or highly flammable display materials.
8. Empty tanks that previously contained combustible liquids or gases, **UNLESS** purged with carbon dioxide.
9. No open cell batteries.
10. Awards, medals, business cards, flags, etc.
11. Hand-outs to judges must be limited to one page narratives related to the essentials of this year's project. Personal photographs, accomplishments, acknowledgements, addresses and phone and fax numbers are not permitted.
12. Photographs or other visual presentation depicting vertebrate animals in other-than-normal conditions (e.g. surgical techniques, dissection, necropsies or other lab techniques).
13. Large vacuum tubes or dangerous ray-generating devices.
14. Liquids or food products.
15. Lasers.

Acceptable for Display Only

(cannot be operated.)

1. Projects with unshielded belts, pulleys, chains, and moving parts with tension or pinch points.
2. Any device requiring over 110 volts.

Acceptable for Display & Operations

(with restrictions)

1. Any apparatus producing temperatures that will cause physical burns must be adequately insulated.
2. Pressurized tanks that contain noncombustibles may be on display if properly secured.

3. High-voltage equipment must be shielded with a grounded metal box or cage to prevent accidental contact.
4. High-voltage wiring, switches, and metal parts must have adequate insulation and overload safety factors, and must be inaccessible to others.
5. Electric circuits for 110-volt AC must have a 50-ft (min) cord. The cord must have sufficient load-carrying capacity and be approved by Underwriters Laboratories.
6. Electrical connections in 110-volt circuits must be soldered or made with approved connectors. Connecting wires must be insulated. Greater than 110 volts is not permitted.
7. Bare wire and exposed knife switches may be used only in circuits of 12 volts or less; otherwise, standard enclosed switches are required.
8. Any item of significant value should not be left unattended and should be removed immediately after judging.

Maximum Size of display Area must fit with these dimensions: 100 cm wide, 35 cm deep. The backboard may be no larger than 36 inches by 48 inches. No equipment may be placed outside of display area; this includes the floor.

NOTE: Backboards are not provided by the Diocese

Updated 2017.