Pasadena Unified School District

INNOVATION EXPOSITION

“Trust the young people; trust this generations innovation. They’re making things, changing innovation every day.”

- Jack Ma

gopusd.com/innovationexpo

Important Due Dates for the Science Project

Friday, November 9, 2018	DEADLINE for Winter SRC* Submission for proposed Student Experimentation/Research Note: this is the LAST opportunity for students to submit a proposal.
Thursday, November 15, 2018	**Project topic *and* parent student agreement form due**
Thursday, December 6, 2018	**Turn in last THREE research material that are not exclusively internet** (ex: book, internet print-out, magazine, etc.)
Thursday, December 13, 2018	**Research Notes-** Handwritten or typed notes taken while conducting research
Wednesday, January 10, 2019	**Typed Rough Draft** of Research Paper is due. Include all components of the final paper. Total of 5-16 pages.
Thursday, January 24, 2019	**Typed Final Draft** of research is due
Thursday, February 7, 2019	**Three Panel Display** is due
Wednesday, February 13, 2019	**School Wide Science Fair** Judged by scientists from our community. (Top 3 scientific inquiry projects will be selected to participate in the LA County Science Fair).
Wednesday, February 28, 2019	LA County Fair Registration Deadline (Winners Start Registration one week before deadline!)
Friday, May 10, 2019	**Innovation Exposition**
TBA Pasadena Convention Center	**LA County Science Fair** http://www.lascifair.org

Please fill out the section below for your reference:

My Science Fair Topic is:_____

Innovation Exposition

Blair High School

Please note that the LA County Science Fair and the District Innovation Exposition are two different entities. Different projects will be selected for each competition based on student performance and requirements for the competition.

gopusd.com/innovationexpo

The Innovation Exposition is Pasadena Unified School District's innovative alternative to the typical science fair. This exciting event will showcase elementary through middle school student-generated work - connecting students with their community.

More than just a Science Fair, the Innovation Exposition offers a place for PUSD students to exhibit their work. The Innovation Exposition enables students to explore their interests and talents by offering six elective categories from which students can choose: Invention, Science Fiction, Innovation, Reverse Engineering, Creativity with 3D Printing Challenge & Scientific Inquiry.

For this school year, the Innovation Exposition is for students in grades K to 9. Students in grades K-3 are automatically placed in the non-competitive arena. Students in grades 4-9 will have the option to allow judges to critique their project, or simply display it for viewing. Collaborative groups of 2-3 are permitted to work on projects and, in the non-competitive arena, even parents and mentors can work in tandem with students.

All schools are encouraged to hold their own fair and choose from the projects to send to the Innovation Exposition. Due to judge availability and space restrictions, sites are only allowed to send a limited number of projects to the competitive series. The restrictions are as follows:

Elementary schools are allowed to submit up to 8 competitive projects for grades 4&5.

Middle Schools are allowed to submit up to 10 competitive projects for grades 6-8.

High Schools are allowed to submit up to 4 competitive projects for grade 9.

Each site (K-9) is allowed to submit up to 15 non-competitive projects.

If more than the allowed number of projects per site register, the first allotted number, based on the time stamp, will be submitted to the exposition.

After site level competitions are held, students can sign-up on the Innovation Exposition website: gopusd.com/innovationexpo

This packet will provide teachers, students, and parents the criteria for each category, as well as the rubric that will be used for judging purposes.

Scientific Inquiry

Scientific Inquiry is the basic experimentation category where a question is asked, a hypothesis is create, an investigation is performed and a conclusion is reached. Scientific Inquiry requires students to use higher order thinking skills as they learn science using a hands-on minds-on approach.

The Scientific Inquiry category is the basic experimentation category and covers Scientific Methodology, Research, Hypothesis, Experiment Design, Data Collection and Analysis.

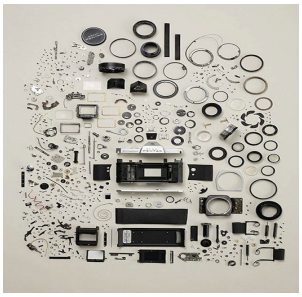
Scientific Method
The Scientific Method is a fundamental part of this category. It is, in essence, a sequence of operation for any Scientific Inquiry. The steps are:

- Ask a testable question
- Research the topic
- Make a hypothesis about the outcome based on the research or their own knowledge
- Design the investigation
- Conduct the investigation
- Collect Data
- Make sense of the data and draw a conclusion

An Entry In This Category Will be Reviewed And Judged On The Following:

- The scientific method (including completeness of thought processes and presentation of cause and effect)
- Preparation and display of information about the entry
- Presentation of the inquiry findings for peer review.
- Understanding of how the inquiry relates to broader scientific principles and real world applications
- Originality and/or innovative approaches or concepts

Rubric
Please review the judging rubric for this category.



Reverse Engineering

Reverse engineering is the process of discovering the technological principles of a device, object, or system through analysis of its structure, function, and operation. It often involves taking something apart and analyzing its working in detail to be used in maintenance.

Project Scope

A Reverse Engineering project should be of enough complexity to allow the student to gain an understanding of how something works in detail, without being overwhelming.

- Select and acquire at least one product (typically, mechanical in nature), disassemble the unit, then mount and label all components.
- A successful entry may have sub-components that are further disassembled
- The tools used can be simple or complex, but the methods and sequence for disassembly should be documented.

Project Display and Description

A successful entry in this category will have the components of the product mounted and labeled to show the following:

- The overall unit and operation of the unit is described
- Each component is described adequately, material is identified, and its function
- explained
- Components are arranged so that they are located to the assembled unit correctly
- A paper describing the operation and functionality of all of the components should be
- created and may include:
    - Illustrations or images of components and how they fit together
    - A description of the steps for deconstruction
    - Any notes or logs that are taken during the disassembly
    - A description of how the original object actually functions

An Entry In This Category Will Be Reviewed And Judged On The Following:

- Preparation and display of the components or subcomponents of the original object
- Shows completeness of thought and cause and effect are clearly identified
- Project scope is reasonable and allows for disassembly to adequate levels
- The understanding of how the object works is not generally understood
- High degree of complexity or complex disassembly procedure required

Rubric

Please review the judging rubric for this category.

Innovation

Innovation, for its part, can refer to something new or to a change made to an existing product, idea, or field. One might say that the first telephone was an invention, the first cellular telephone either an invention or an innovation, and the first smartphone and innovation.

Project Scope

- The innovation should provide benefits over current methods.
- This may be a physical construction, a procedure, a community event, or something else
- Entry should include a plan of implementation:
  - A timeline
  - Partnerships or required resources
  - Budgetary considerations
  - Comparison of existing methodologies
  - A description of the innovation, including steps necessary to implement or create
  - The plan may include promotional material or concepts that would assist in implementing the innovation

Project Display And Description

- A successful entry in this category will have the following components:
- The is a need for the innovation that improves the existing product.
- The implementation plan presents a complete description of the innovation
- A model of the innovation is provided (the model can be constructed or drawn).
- The budget is reasonable, and the innovation will not harm the environment.
- Publicity materials have been created.

Rubric

Please review the judging rubric for this category, and the entry rules and general requirements for other items that may be considered.

Science Fiction

Science fiction is a genre of fiction dealing with imaginary, but more or less plausible content such as future settings, futuristic technology, space travels, aliens, etc. Exploring the consequences of scientific innovations is one purpose if science fiction, making it a "literature of ideas". Go to tinyurl.com/innovationexposition for more detailed information about writing a Science Fiction story

Submitting A Science Fiction Entry

You must submit your entry via email to marchesso.jodi@pusd.us a week in advance. When you submit, you should be sure to include your name in the email so we can be sure to match it up with your registration. PDF format is preferred, but we can handle just about any electronic document format. If it's really obscure, we'll follow up with you!

Presentation

As in all categories, the general requirements must be followed for this category as well, including some form of display for the day of the event. This display may include:

- Description of the entry (an outline, a storyboard, etc. as appropriate).
- References to supporting or similar works
- A copy of the actual story/entry (see first item below in Media and Format)
- Any illustrations or images that represent the story

Media And Format

This category includes presentations in the form of stories, graphic novels, comic books, plays, videos, etc.

- There is no minimum or maximum length for any entry, but the quality of the entry should be "grade level appropriate"
- Illustrations for written stories, and storylines for non-written entries are appreciated, and collaborative efforts to provide those (and other) combinations are welcomed.

An Entry In This Category Will Be Reviewed And Judged On The Following:

- Use of creative ideas and imagination is important to the storyline of the entry
- Alternative thought process or physical rules are clearly expressed (but not necessarily described in detail)
- Alternative rules are consistent through the story
- Willful suspension of disbelief effort is almost negligible (willful suspension is defined as reader's ability to accept what they know to be untrue (or not yet proven) to be real for the duration of the story.)

Rubric

Please review the judging rubric for this category.

Invention

An invention is a new device, contrivance, process, or an improvement on an existing machine or product that solves a real or perceived problem or need.

Project Display

A successful entry display in this category may contain the following:
• A description of the use of the invention, and the benefits associated
• A 'mock-up', prototype, or construction of all or part of the invention
• Any marketing or promotional concept for the invention

Marketing Materials

Promotional materials may be provided to show how this invention would be presented for use.
This could include signs, video and/or audio clips or concepts, advertising copy, etc.

An Entry In This Category Will Be Reviewed And Judged On The Following:

• Preparation and display of the invention and/or its component
• Prototype or mock-up design and construction
• Research evidence that no similar product or process exists
• Invention offers functionality that solves a problem efficiently
• Invention addresses a real-world need
• Practicality in terms of size, cost, materials, etc. for the problem being solved
• Unique or innovative methodologies used

Rubric
Please review the judging rubric for this category.

Creativity with 3D Printing

Students can redesign an existing product to improve overall functionality or they can create a new product that solves a problem/need identified by the student. The products design must be completed on a 3D printer and present at the exposition. (Composite builds will be accepted.)

Requirements:

A successful entry must have the following:

- A proposal for a project and/or a product that demonstrates and existing problem and identifies a realistic solution to solving the problem.
- Labeled print-out of 3D design highlighting the unique features that will solve the identified problem
- Written report detailing: cost of materials per unit product; how product would be used;how it would be beneficial; and description of intended audience / user of the product

Additional Judging Will Be Based On The Following:

- Sequential steps in the design process identified, including any problems encountered, and their solutions
- Research evidence provided that no similar process or product exists
- The invention uses unique or innovative methodologies in solving the problem or need
- Drawings or descriptive text clearly describes construction process.
- Explanation on how 3D printing is the best solution for creating the products versus using traditional building materials and methods
- Target audience or users of the product are identified and have a valid need for the product
- The product is structurally sound and can be used for the intended purpose
- The product addresses a real world problem or need

Rubric

Please review the judging rubric for this category.

Sample Title Page

HOW CAN I DO AN OUTSTANDING PROJECT FOR THE SCIENCE FAIR?

Grade, Science

Project Category

Your Name

Date

Period

School Name

Teacher Name

Sample Table of Contents for all projects

TABLE OF CONTENTS

Format for the Science Fair

Research Paper

This is a report in which you summarize everything you have read about the topic for your science project. Choose any topic that involves your current grade level **Next Generation Science Standards (NGSS)** http://www.nextgenscience.org/overview-topics**. See your teacher if you have additional questions about the standards for your grade level.**

Rough draft needs to be typed and turned in by the deadline. Please make sure that you save your file in a few different places. You need to refine it several times before the final due date. The size of the font should be no larger than **size 12** in **Times New Roman or Arial**. The entire research paper should contain about **5 to 16 pages** depending on the category of your project. Present the report stapled with your **full name and science period number** neatly typed, and not in plastic sheet covers or any type of folder. Please check the LA County website to follow the County guidelines as well. http://lascifair.org/

The Order of the Required Sections of your Research Paper

1. **Title Page:** Type the title of your report in the center of the page, 4-6 inches from the top of the page. Include relevant pictures to interest the reader. Type your full name, date, school, teacher and period in the lower right-hand corner of this page. **All project categories should have this section.**
2. **Table of Contents:** Write "Table of Contents" in the center at the top of this page. Below list reading materials that appear on each page. This should be the last part to be completed. Eventually, you will organize each page of the report and put the page number to the far right. **All project categories should have this section.**

3. **Abstract:** This is a shortened version of the main ideas of your research paper. See page 4 for detailed instructions. **All project categories should have this section.**
4. **Body of the Paper:** Ideally the body of your report should be 3-16 pages with double-spaced typed lines depending on your project category. **All projects should have a body of paper. See requirements and additional requirements for chosen project category.**

   Scientific inquiry projects should contain the following for this section:

   a) Describe some important past research conducted by other people;
   b) State general information you gathered from periodicals, i.e. magazines, newspapers, interviews, information from the Internet, or any other appropriate source;
   c) Include any other interesting, updated information. All information should be in your own words. Copies of information or print outs are not acceptable.

5. **Three-Panel Display Board Information**- (Include the following from your display board-required only for scientific inquiry projects):
   - **a)** Purpose
   - **b)** Hypothesis
   - **c)** Variables- discuss control, independent, and dependent variables
   - **d)** Materials- List format
   - **e)** Procedures- List format
   - **f)** Results
   - **g)** Conclusion
6. **Picture Page:** Include an illustration, diagram, or science drawing with labels and descriptive captions. **All project categories should have this section.**

7. **Bibliography:** This is a list of books, articles, pamphlets, internet, interviews and any other resources that you used for your research paper. You will need to have at least 5 sources, not exclusively internet, listed in your bibliography. The bibliographical entry should follow the MLA Bibliography format below. **All project categories should have this section.**

Single Author Book

Alverez, A. (1970). *The savage god: A study of suicide.* New York: Random House.

Garner, B. A. (2003). *Garner's Modern American Usage.* New York: Oxford University Press.

Book with Two or more Authors

Natarajan, R., & Chaturvedi, R. (2003). *Geology of the Indian Ocean Floor.* Hartford, CT: Merganser University Press.

Magazine Article

Kandel, E.R., & Squire, L.R. (2004), November 10). Neuroscience: Breaking down scientific barriers to the study of brain and mind. Science, 290, 110-1120.

Newspaper Article

Ibrahim, Y.M. (1976, September 18). Genetic soybeans alarm Europeans. *The New York Times*, p. D1.

Internet Article

Sweeney, H.L. (2004). Gender issued in computer networking. Retrieved March 21, 2002 from http:www.mit.edu:8001/people/Sorobin/women/lrs.html

* Please note that most of this packet is written in the same font size of your research paper requirement. Your final research paper should look something very similar to this packet except double-spaced and single sided.

Writing an Abstract

What is an abstract?

An abstract is a shortened version of the main ideas of your research paper.

Write a **one-page Abstract after** you have completed your research paper, since it should highlight the main ideas. It should be easy to read, saving time from reading the entire research paper, and is used by the judges to check your research and reasoning. It must provide the necessary information to understanding what the research paper and project is about. Follow these instructions when writing an abstract:

1. **Who are you?** In the first paragraph of your abstract please include information about yourself.
    - Your name
    - School you attend
    - Grade in School
    - Category of your project such as: Physics, Chemistry, etc.
2. **Purpose and Type of Project:** State the purpose of the report and write the summary of your research in three to four paragraphs. Include the summary of your results and conclusion. Be sure to define any vocabulary that is important to the understanding of your research. Start your purpose with the word “To”. Describe the type of experiment project you have selected.
3. **Acknowledgements:** Acknowledge any person(s) or organization(s) that helped in the research of this paper and project. This should include facilities such as a laboratory workshop, office, garage, nursery, computer, and other facilities, and people who had given you suggestions or proofread your paper, etc.

THREE-PANEL DISPLAY

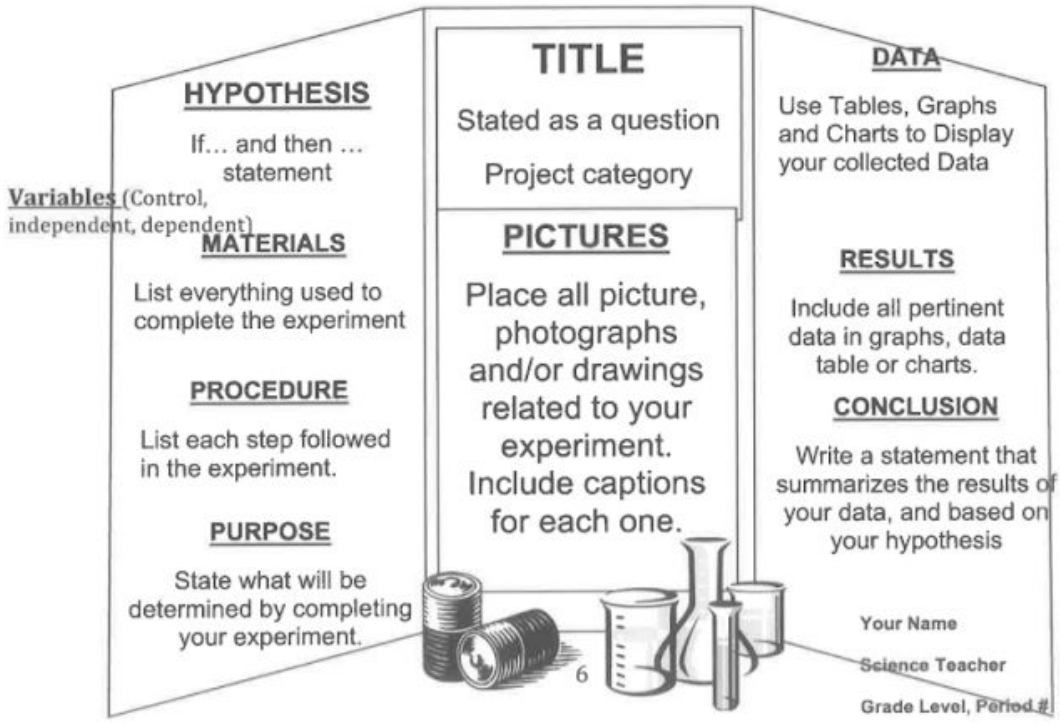
Based upon the information obtained from your research paper, conduct an experiment that is tested over period of time to determine the accuracy of a proposed hypothesis.

Use your creative skills to design a display that will catch the eye of judges and other observers. Your three-panel display poster must stand alone, and display the required components of your project. They consist of the following:

- Title (stated as a question)
- Labeled Pictures, drawings and/or photographs
- Hypothesis
- Materials
- Procedure
- Purpose (To show…)
- Data
- Results
- Conclusion
- Display

Use stencil, stick-on letters or computer printed letters to display experimental data, information and pictures. Written information should be written in your neatest handwriting, and should not be written in **PENCIL**. Information must be complete, clear and logical. Color and contrast will add to the overall creativity of your display. Each three-panel display must include an accurate experimental journal that shows all of the data observed during the experiment. Data entries should include:

Please include: Name(s), Teacher, Grade, Period & School clearly typed at the bottom right corner & back.



Scientific Inquiry

Student Name(s):_____ Grade:_____

Brief Title of Project:_____ Judge No._____

ND: Not Demonstrated , 1: Beginning, 2: Developing, 3: Average, 4: Accomplished, 5: Advanced

Scientific Method

The **purpose or question** clearly explains what is going to be experimented	ND 1 2 3 4 5
Appropriate and complete research was conducted	ND 1 2 3 4 5
The **hypothesis** addresses the purpose and shows a relationship between independent and dependent variables	ND 1 2 3 4 5
Procedure description shows what observations will be made, what data will be collected, defines the number of trials, lists variable and control items	ND 1 2 3 4 5
Procedure is sequential, replicable, provides a control and variable and was repeated for validity	
Qualitative (observations) and quantitative (recorded data) observations are used and recorded	ND 1 2 3 4 5
Record of experiment includes observations, appropriate use of terms and measurement, analysis and reflections	ND 1 2 3 4 5
C**onclusion** relates to the problem statement and incorporates results/the data supports or doesn't support the hypothesis, lists possible sources of error, and unresolved questions	ND 1 2 3 4 5
Total	**/ 40**

Display

Describes how/why the inquiry was formed and development of a hypothesis	ND 1 2 3 4 5
Investigation procedure is clearly explained	ND 1 2 3 4 5
Materials listed with units of measure (consistently), graphs, data tables etc. labeled correctly, data is summarized	ND 1 2 3 4 5
Results/Summary of data is clearly stated and addresses ALL variables	ND 1 2 3 4 5
Total	**/ 20**

Other Considerations

The idea for investigation is original or innovative	ND 1 2 3 4 5
The procedure, materials, trial length, etc. are innovative or creative in approach	ND 1 2 3 4 5
Offers advancement of understanding of scientific principles and/or the world around us	ND 1 2 3 4 5
Total	**/ 15**

Total Score

Reverse Engineering

Student Name(s):_____ Grade:_____

Brief Title of Project:_____ Judge No._____

ND: Not Demonstrated , 1: Beginning, 2: Developing, 3: Average, 4: Accomplished, 5: Advanced

Presentation Display

Product is mechanical or electrical in nature, and contains several major components, made from a variety of materials.	ND 1 2 3 4 5
Operation of assembled unit is explained.	ND 1 2 3 4 5
All disassembled components have been labeled and described accurately	ND 1 2 3 4 5
Product has been properly disassembled to represent all components.	ND 1 2 3 4 5
Components are presented appropriately to accurately show their location within the completed unit.	ND 1 2 3 4 5
Total	**/ 25**

Other Considerations

The materials of each part are described adequately and accurately.	ND 1 2 3 4 5
Project shows that the student grasps the purpose of the components and subassemblies, and how they work together.	ND 1 2 3 4 5
Component parts are located to assembled unit correctly.	ND 1 2 3 4 5
The Product has a high degree of complexity, or the disassembly process was difficult.	ND 1 2 3 4 5
Disassembly of this product will help the audience understand an unfamiliar operational concept.	ND 1 2 3 4 5
Total	**/ 25**

Display

Attractive, easy to read, and layout is in appropriate logical order	ND 1 2 3 4 5
Visual aids promote understanding	ND 1 2 3 4 5
Shows project in appropriate detail for understanding by audience	ND 1 2 3 4 5
Total	**/ 15**

Total Score

Innovation

Student Name(s):_____ Grade:_____

Brief Title of Project:_____ Judge No._____

ND: Not Demonstrated , 1: Beginning, 2: Developing, 3: Average, 4: Accomplished, 5: Advanced

Innovation and Implementation Plan

Observed or theoretical problem is identified and accurately described.	ND 1 2 3 4 5
The presented innovation appropriately identifies the need for the innovation.	ND 1 2 3 4 5
Type of innovation (construction, procedure, event, etc.) is defined and described appropriately.	ND 1 2 3 4 5
The implementation plan presents a complete description of the innovation.	ND 1 2 3 4 5
The plan for implementation includes planned budgets, timelines, etc.	ND 1 2 3 4 5
The plan includes a comparison of existing methodologies that are used to correct the problem, including research notes and sources.	ND 1 2 3 4 5
Total	**/ 30**

Other Considerations

Possible environmental concerns are addressed as part of the consideration of this innovation.	ND 1 2 3 4 5
The project considers of the tradeoffs between economics, efficiency, and sustainability.	ND 1 2 3 4 5
The project is original and/or innovative in approach or concept, or has original aspects.	ND 1 2 3 4 5
Publicity Materials have been created	ND 1 2 3 4 5
Total	**/ 20**

Display

Attractive, easy to read, and layout is in appropriate logical order	ND 1 2 3 4 5
Visual aids promote understanding	ND 1 2 3 4 5
Model shows project in appropriate detail for understanding by audience	ND 1 2 3 4 5
Total	**/ 15**

Total Score

Science Fiction

Student Name(s):_____ Grade:_____

Brief Title of Project:_____ Judge No._____

ND: Not Demonstrated , 1: Beginning, 2: Developing, 3: Average, 4: Accomplished, 5: Advanced

Project Production

Writing and/or production standards for the selected media are well done and are appropriate for the project.	ND 1 2 3 4 5
Dialogue (if used) is used well and flows appropriately	ND 1 2 3 4 5
Use of details (descriptions, adjectives, etc.) is well done and appropriate.	ND 1 2 3 4 5
"Willful suspension of disbelief" effort is almost negligible.	ND 1 2 3 4 5
Stories (and/or characters) keep the reader's attention and interest.	ND 1 2 3 4 5
Knowledge and understanding of the topic is conveyed.	ND 1 2 3 4 5
Total	**/30**

Scientific Concepts

Use of an alternative scientific idea or concept which is not currently proven is important to the storyline of the entry.	ND 1 2 3 4 5
Alternative thought process or physical rules are clearly expressed (but not necessarily described in detail).	ND 1 2 3 4 5
Alternative rules are consistent throughout the story.	ND 1 2 3 4 5
Alternative rules or thought processes are derived for existing physical laws and/or current scientific principles.	ND 1 2 3 4 5
Total	**/20**

Display

Attractive, easy to read, and layout is in appropriate logical order	ND 1 2 3 4 5
Visual aids promote understanding	ND 1 2 3 4 5
Shows project in appropriate detail for understanding by audience	ND 1 2 3 4 5
Total	**/ 15**

Total Score

Invention

Student Name(s):_____ Grade:_____

Brief Title of Project:_____ Judge No._____

ND: Not Demonstrated , 1: Beginning, 2: Developing, 3: Average, 4: Accomplished, 5: Advanced

Display and Documentation

Target users of the invention are identified and have a valid need for the invention	ND 1 2 3 4 5
The invention, its use and the benefits associated are clearly described	ND 1 2 3 4 5
Materials required to build the invention are described and specified	ND 1 2 3 4 5
Original design, development, and analysis process explained and/or documented, including descriptions of any problems encountered and their solutions	ND 1 2 3 4 5
Research into competing/similar products is presented and complete	ND 1 2 3 4 5
Total	/ 15

Prototype or Mock-up

Prototype is relevant and complete enough to show the important aspects of the invention	ND 1 2 3 4 5
Parts/components are **completely described.**	ND 1 2 3 4 5
Function of each part is identified.	ND 1 2 3 4 5
Prototype is **well designed and constructed.**	ND 1 2 3 4 5
Total	/ 20

Other Considerations

The invention addresses a real world problem or need	ND 1 2 3 4 5
The invention offers functionality that solves a problem or need efficiently and/or effectively	ND 1 2 3 4 5
The invention is practical in terms of size-cost-materials-etc. for the problem/need being solved.	ND 1 2 3 4 5
The invention uses unique or innovative methodologies in solving the problem or need	
Total	/ 15

Presentation Display

Attractive, easy to read, and layout is in appropriate logical order	ND 1 2 3 4 5
Visual aids promote understanding	ND 1 2 3 4 5
Shows project in appropriate detail for understanding by audience	ND 1 2 3 4 5
Total	/ 15

Total Score

Creativity and 3D Printing

Student Name(s):_____ Grade:_____

Brief Title of Project:_____ Judge No._____

ND: Not Demonstrated , 1: Beginning, 2: Developing, 3: Average, 4: Accomplished, 5: Advanced

Display and Documentation

Target users of the product are identified and have a valid need for the product	ND 1 2 3 4 5
The product is practical in terms of size, cost, materials, etc., for the problem being solved	ND 1 2 3 4 5
Research evidence is provided that no equivalent process or product exists.	ND 1 2 3 4 5
Total	**/15**

Prototype

Prototype is relevant and complete enough to show the important aspects of the invention.	ND 1 2 3 4 5
Parts/components are completely described.	ND 1 2 3 4 5
Function of each part is identified.d	ND 1 2 3 4 5
The product is structurally sound and can be used for the intended purpose	ND 1 2 3 4 5
Total	**/ 20**

Other Considerations

The invention uses unique or innovative methodologies in solving the problem or need	ND 1 2 3 4 5
The display contains early prototype designs 3D print-outs that did not solve the problem as intended	ND 1 2 3 4 5
Student explains on how 3D printing is the best solution for creating the products versus using traditional building materials and methods	ND 1 2 3 4 5
The product addresses a real world problem or need	ND 1 2 3 4 5
Total	**/ 20**

Display

Attractive, easy to read, and layout is in appropriate logical order	ND 1 2 3 4 5
Visual aids promote understanding	ND 1 2 3 4 5
Shows project in appropriate detail for understanding by audience	ND 1 2 3 4 5
Total	**/ 15**

Total Score

Parent and Student Agreement: Please return this page to the science teacher

The information/content and thoroughness of your research paper will be graded by your Science teacher and be reviewed by another qualified reader.

By Thursday November 15, 2018 this signed agreement (**bottom portion only**) should be returned with your project title written below. You will receive points for submitting this page on time.

The research paper, the science fair three-panel display board and the oral presentation will also be graded separately. **Only the best experiments** will be chosen by the Science department and be allowed to participate in the school-wide Science Fair. **Non-experimental projects or projects that are not related to YOUR GRADE LEVEL STANDARD will not be accepted. Top 4 projects from each grade level will be sent to the district's Innovation Exposition.**

A WORD OF CAUTION -- DO NOT WAIT UNTIL THE LAST MINUTE. A GOOD PROJECT TAKES SEVERAL WEEKS TO COMPLETE. YOU HAVE AMPLE TIME TO COME UP WITH SOMETHING BRILLIANT. ANY QUESTIONS REGARDING THIS PROJECT SHOULD BE ASKED BEFORE THE DUE DATES. EVERYTHING IS DUE AT THE BEGINNING OF YOUR SCIENCE CLASS PERIOD. PLEASE DO NOT ASK FOR EXTENSIONS AFTER ANY OF THE DUE DATES. MOST IMPORTANTLY, PLEASE UNDERSTAND THAT NOT SUBMITTING ANYTHING FOR THIS PROJECT OR NEGLECTING ALL OTHER WORK AND DOING ONLY THE SCIENCE FAIR PROJECT COULD POSSIBLY RESULT IN FAILING SCIENCE THIS YEAR!

I read the entire packet and I understand the importance of this project and of meeting the required deadlines.

I have chosen the following science topic as my Science Fair Project: _____

Write the Project Title in the form of a Question: _____

Project Category (gopusd.com/innovationexpo):

_____

_____ _____ _____

Parent/Guardian's Signature **Period #** **Student's Signature**

_____ _____

Parent/Guardian's Name **Student's Name**

Date: _____