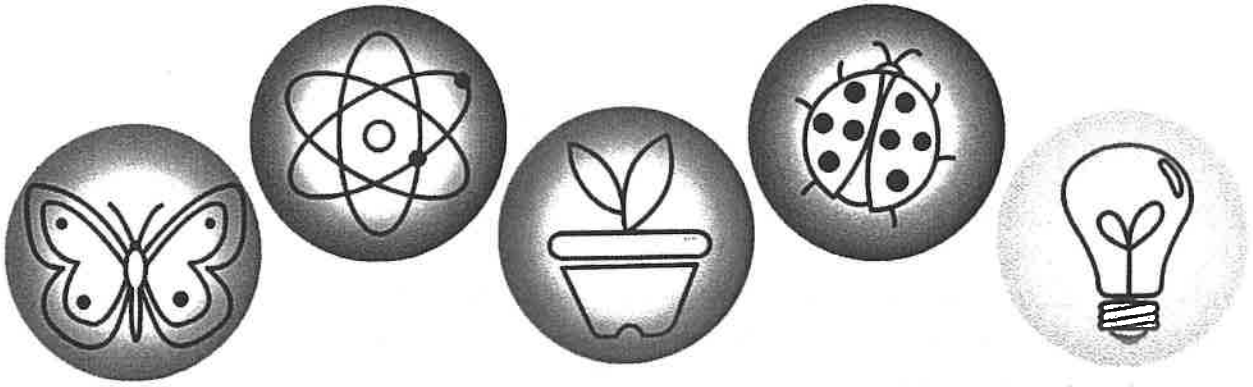

# SCIENCE FAIR

## Northwest Jackson IB Middle School

## 2019-2020 Packet

**Student Name** _____

**Parent Signature** _____

**Date Received** _____

**Due Date:** **Monday, January 13, 2020**

## ***Science Fair Topics to Avoid***

- Any topic that boils down to a simple preference or taste comparison. For example, "Which tastes better: Coke or Pepsi?"
- Consumer product testing of the "Which is best?" type. This includes comparisons of popcorn, bubble gum, make-up, detergents, cleaning products, and paper towels.
- Any topic that requires people to recall what they did in the past.
- Effect of colored light on plants
- Effect of music or talking to plants
- Effect of running, music, video games, or almost anything on blood pressure
- Effect of color on memory, emotion, mood, taste, strength, etc....
- Any topic that requires measurements that will be extremely difficult to make or repeat, given your equipment.
- Any model such as Volcanoes or Solar System
- Graphology or handwriting analysis
- Astrology or ESP
- Any topic that requires dangerous, hard to find, expensive or illegal materials.
- Any topic that creates unacceptable risk (physical or psychological) to a human subject.
- Any topic that involves collection of tissue samples from living humans or vertebrate animals.

## ***Why***

- Such experiments don't involve the kinds of numerical measurements we want in a science fair project. They are more of a survey than an experiment
- These projects only have scientific validity if the investigator fully understands the science behind why the product works and applies that understanding to the experiment. While many consumer products are easy to use, the science behind them is often at the level of a graduate student in college.
- The data tends to be unreliable.
- Several people do this project at almost every science fair. You can be more creative!!!
- Difficult to measure
- The result is either obvious (the heart beats faster when you run) or difficult to measure with proper controls (the effect of music).
- Highly subjective and difficult to measure.
- Violate the rules of virtually any science fair.
- Violate the rules of virtually any science fair.
- Violate the rules of virtually any science fair.
- Violate the rules of virtually any science fair.

**Without measurement, you can't do Science!!!!!**

# Science Fair Project Proposal Form

**Due** _____

**Name of Participate**_____

| **The question I plan to investigate for my science fair experiment is : (phrase as a question )** |
|---|
| |

## Science Fair Project Question Check List

| | |
|---|---|
| 1. Does this experiment meet the teacher's requirements for this project? | Yes/ No |
| 2. Is this topic interesting enough to work on for the next 10 weeks? | Yes/ No |
| 3. Can you easily measure the responding variable in this experiment using a number that represents a quantity such as percent, length, mass, work, speed, voltage, energy, time etc... or present/ not present | Yes/ No |
| 4. Does this experiment test one and only one variable? | Yes/ No |
| 5. Is this experiment approved by your parents/guardian(s)? | Yes/ No |
| 6. Do you have access and/or means to obtain all the materials you will need to perform this experiment? | Yes/ No |
| 7. Will you be able to perform this experiment more than once in the 10weeks before the project is due? | Yes/ No |
| 8. Are you planning to enter the school science fair? ***** You do not have to enter the science fair, but every student must do a science fair experiment! ***** | Yes/ No |
| 9. Are you willing to represent Northwest in the Regional and/ State Science Fair? | Yes/ No |

## Science Fair Project Question Check List

I have discussed the above project idea and this check list with my parent/ guardian(s) and I agree to commit to the listed partnerships and requirements throughout this project.

_____

Student Signature Date

I have discussed the above project idea and this check list with my student and I will support his/her commit to the listed partnerships and requirements throughout this project.

_____

Parent Signature Date

## SCIENCE FAIR RULES

**Aw, you mean there are rules? Of course there are, silly, this is made by adults!**

1. Number one rule... think safety first before you start. Make sure you have recruited adults to help you.
2. Never eat or drink during an experiment and always keep your work area clean.
3. Wear protective goggles when doing any experiment that could lead to eye injury.
4. Do not touch, taste, or inhale chemicals or chemical solutions.
5. Respect all life forms. Animals are not allowed to be used in experiments. Do not perform an experiment that will be harmful to a person.
6. All experiments should be supervised by an adult.
7. Always wash your hands after doing the experiment, especially if you have been handling chemicals.
8. Dispose waste properly.
9. Any project that involves animals, drugs, firearms, or explosives is NOT permitted.
10. Any project that breaks district policy, and/or local, state, or federal laws are NOT permitted.
11. Use safety on the internet! NEVER write to anyone without an adult knowing about it. Be sure to let an adult know about what websites you will be visiting, or have them help you search.
12. If there are dangerous aspects of your experiment, like using a sharp tool or experimenting with electricity, please have an adult help you or have them do the dangerous parts. That's what adults are for so use them correctly. (Besides, it makes them feel important!)

## ***Science Fair Oral Presentation***

A lot of students are afraid of speaking in public to a teacher/judge. Just imagine they are a fellow scientist who just wants you to share what you have learned.

Relax smile, and have fun. Remember, you are the expert and you had fun doing the project. But if you are a little nervous, we have listed some things that you need to do during the presentation.

Helpful Hints:

- Look sharp, feel sharp, and you will be sharp. Dress nice that day, be polite, and speak clearly. You will show that confidence. Don't forget to look at your audience.
- Introduce yourself. Point to the title of your display. Tell your audience why you chose to study this.
- State your problem that you studied (your question). Tell them about your hypothesis (what you thought might happen).
- Talk about what you learned while researching your topic.
- Talk about the sources (books, websites, and interviews) that helped you understand your topic.
- Tell about your project and explain the steps you took to conduct your experiment. Be sure to mention all the materials involved and point out the pictures that you may have taken.
- If it applies, be sure to show them that you tested your experiment at least 3 times.
- Show them all of the cool graphic organizers that you made, like your tables and charts. Remember to point out the labeled parts of your graph or table to show that you know what would happen because you studied about it.
- Make sure you sound like an expert on your topic. Always use the appropriate vocabulary especially by using words from the Scientific Method, like: Problem, Hypothesis, Procedure, Results and Conclusions.

# *Science Fair Abstract*

- Write out your hypothesis in proper IF...THEN form.

- Include all relevant background information on the subject of the experiment. (Books you read, internet research, etc.)

- Describe your project

Do:

- a page in length
- typed, double spaced
- 12 Times New Roman

Don't:

- list the method for your procedure step by step
- hand write
- turn in late (only half credit )

## Science Fair Resources

Education.com
Science News for Kids
The Archimedes Initiative
The Winning Science Fair Project
The Scientific Method
The Scientific Method: Data and Science for Kids
www.pbskids.org
http://school.discoveryeducation.com/sciencefaircentral/
http://www.sciencefair-projects.org/index.html
http://www.sciencebuddies.org/science-fair-projects/project_ideas.shtml

Projects must be at middle school level (no volcanoes, solar system models, etc.)

- Be careful with materials used (human, animal, or live)
- Must be original work (may get your ideas online, test results and writing must be original work)
- Time limits ***(January 13, 2020)***

# ***Science Fair Written Report***

The written report is a summary of everything that you did to investigate your topic. The written report provides others with vital information on what your project is about as well as its effect on your understanding of the topic. Usually the written report is 5-30pages in length. All information must be included in the written report. This report provides you with the opportunity to think about all the aspects of our project and share your ideas with others.

Reports should be neatly bound in an attractive binder. It must be typewritten.

- Typed, doubled spaced. One inch margins and 12pt Times New Roman Font.
- Remember to put headings/ titles on graphs/charts/tables
- All photographs must have captions explaining their significance
- Before you hand in your report make sure to reread, revise, and rewrite

All written reports for a science fair project should include:

- ✓ Cover Page
- ✓ Title Page: The first page in the report should include the title of the project as well as the name and grade of the student.
- ✓ Table of Contents: This page provides the reader with a list of the different parts of the project and the page number on which each section can be found.
- ✓ Statement of Purpose: State the purpose of the project in the form of a question.
- ✓ Research: This is the part of the report that contains all the background information that you collected about your topic. Any books or articles read from the internet /journal, authorities on the topic that you talked to, or outside materials collected should be summarized in this section. **This section should be written in your own words and NOT copied from your resources.**
- ✓ Hypothesis: You must have a hypothesis before you complete the project. A hypothesis is an educated guess about what you think will occur as a result from completing your experiment.
- ✓ Materials: This is a list of all the materials and supplies used in the project. Quantities and amounts of each should also be indicated.
- ✓ Procedure: YOu will list and describe the steps you took to complete the project. Usually this is listed in a numbered sequence. This part shows the stages of the project so that another person can carry out the experiment.
- ✓ Observations and Results: In this section, you will tell what you learned from the project. It is also IMPORTANT to include all graphs, charts or other visual data (pictures) that helps to show your results.
- ✓ Analysis: In this section, you will identify trends or irregularities in data.
- ✓ Conclusion: This is a brief statements explaining why your project turned out the way it did. You should explain why the events you observed occurred. Using the word "because" is a good way to turn an observation into a conclusion. The conclusion should tell whether or not your hypothesis was correct. Also give reason(s) why you chose to learn more about the subject. You could also add what you know now that you didn't know before you completed your project.
- ✓ Reference Page: The bibliography should list all the printed materials the student used to carry out the project. Items should be listed in alphabetical order in a standard format. These websites are a great place to find the proper way of writing a bibliography. http://www.bibme.org/, http://www.easybib.com or http:// www.knightcite.com.

**Check List**

**Project Poster Board**

- **Statement of Purpose- State the purpose of the project in the form of a question.**
- **Hypothesis- State the hypothesis (educated guess that answers the project question) Must be written in an If .... Then statement.**
- **Materials- List the materials used in the experiment.**
- **Procedure- Describe how the experiment was carried out. Provide a step-by-step explanation of how you conducted the experiment. Include drawings or photographs to help clarify your procedures.**
- **Data/ Results- Present data tables and graphs that show the outcome of your experiment.**
- **Analysis- Analyze your data. Identify trends and/or irregularities.**
- **Conclusion- Compare your results to your hypothesis. Did your findings support your hypothesis or not?**

| | | |
|---|---|---|
| **Purpose**<br><br>**Hypothesis**<br><br>**Materials** | **Title**<br><br>**Procedure**<br><br>**Results**<br><br>**Pictures** **Charts** | **Analysis**<br><br>**Conclusion** |

YOU MUST HAVE AT LEAST THREE RESOURCES Resource #1

Type of Resource: _____

Website: http:// _____

Author: _____

Title: _____

Publishing Company: _____

Location of the Publishing Company: _____

Date of Publication: _____

Information found in your own words:
(Must be at least a one paragraph summary)

YOU MUST HAVE AT LEAST THREE RESOURCES #2

Type of Resource: _____

Website: http:// _____

Author: _____

Title: _____

Publishing Company: _____

Location of the Publishing Company: _____

Date of Publication: _____

Information found in your own words:
(Must be at least a one paragraph summary)

**YOU MUST HAVE AT LEAST THREE RESOURCES** **RESOURCE #3**

**Type of Resource:** _____

**Website: http://** _____

**Author:** _____

**Title:** _____

**Publishing Company:** _____

**Location of the Publishing Company:** _____

**Date of Publication:** _____

**Information found in your own words:**
**(Must be at least a one paragraph summary)**

_____

_____

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_____

**PROJECT SUMMARY WORKSHEET**

**Student**_____ **Date** _____ **Block** _____

**Due Date** _____ **Topic:** _____

**Question (Statement of Purpose)** *(Written as a question)*

**Hypothesis:** *(If…., Then statement)*

**Materials I will need:**

**Procedures:** *(Detailed Steps)*

**Results:**

**Analysis:**

**Conclusion:** *(Tell if hypothesis was correct or not)*