

# Big Walnut Local Science Fair

February 7, 2019



Snow Date: February 14, 2019

## Big Walnut Local Science Fair Information Packet

Sixth grade is an exciting time to study a topic of your choice through the science project! You will have the opportunity to share what you have done at the Big Walnut Local Science Fair hosted at Big Walnut High School.

### What are the steps to science fair success?

1. Complete the Intention to Participate form and the Proposal form at the back of the packet.
2. Write a background report. The background report is a collection of information about the topic. From your research, you will be able to see what is already known in order to ask your own questions. See page 5 for details.
3. Design an experiment. This is ‘hammering out’ the details of the proposal.
4. Conduct your experiment. This will last about 3 weeks.
5. Maintain a project notebook of your experiment. See page 6 for details.
6. Complete a research report and abstract detailing your work. See pages 6 & 7 for details.
7. Construct a project display board highlighting what you have done. See page 8 & 9 for details.
8. Present your project to others.

### Helpful hints are listed below:

1. Read through the entire packet. It will give you an idea of the expectations for a good project, especially if this is your first science fair.
2. Pay attention to the checklist inside. It will help you stay on task.
3. If you do a project with living organisms (including humans), see your science teacher for extra information. Special rules apply.
4. Give your teacher the two forms, Intention to Participate and Project Proposal, as soon as possible, but no later than their respective due dates, listed on the following page.

Do your best! Have fun!  
Mr. Wright and Mr. Wion

<b>2018-2019 Science Fair Timeline</b>	
Early Nov.	<ul style="list-style-type: none"> <li>● Packets distributed</li> </ul>
Nov. 13	<ul style="list-style-type: none"> <li>● Topics chosen</li> <li>● Intent forms returned to your science teacher</li> </ul>
Nov. 16	<ul style="list-style-type: none"> <li>● Project Proposal due to your science teacher</li> </ul>
Nov. 16-20	<ul style="list-style-type: none"> <li>● Proposals returned. Rewrite if necessary; return to your teacher.</li> </ul>
Nov - Jan	<ul style="list-style-type: none"> <li>● Experiments should be completed during this time.</li> <li>● You should be taking notes in your project data book throughout your experiment.</li> <li>● Nothing is due to your teacher at this time.</li> </ul>
Jan. 11	<ul style="list-style-type: none"> <li>● Project must be completed. This includes your display board. Research paper can be by 1/25.</li> <li>● Nothing is due to your teacher at this time.</li> </ul>
Jan. 14-18	<ul style="list-style-type: none"> <li>● Classroom presentations will begin</li> </ul>
Jan. 31	<b>Science Night at BWI</b>
Feb. 7	Big Walnut Local Science Fair at Big Walnut High School
Feb. 14	Local Science Fair or Snow Make-up Day
March 16	Central Ohio District Science Fair at Columbus State University
May 11	State Science Day at OSU. Link to the website: <a href="http://www.ohiosci.org">http://www.ohiosci.org</a>

## Possible Ideas for Science Fair Project

The choice of the topic is up to you. The point of this project is to choose a subject which is interesting to you. If you enjoy what you are doing, you will be much more successful. To help you make your choice, a list of possible resources are below:

- ❖ Books in your school's library or public library
- ❖ Internet websites, such as

➤ [www.sciencebuddies.org](http://www.sciencebuddies.org)

---

### “How to form a GOOD science project question”

**Formula:**

How does/do \_\_\_\_\_ affect  
change  
determine (Action verb)

\_\_\_\_\_ of \_\_\_\_\_?  
(What you are measuring) (What you are experimenting on/with)

**Example:**

How do different colors of light affect the growth of carnation plants?

---

**Your project:**

How does/do \_\_\_\_\_ (Action verb)

\_\_\_\_\_ of \_\_\_\_\_?  
(What you are measuring) (What you are experimenting on/with)

## Background Report

Here is an example of an experimental question and how you would determine what to research for the background report:

*Does the type of music (wavelengths and amplitudes) affect the growth of a crystal?*

You need to first begin by highlighting the nouns in your experimental question and then researching those nouns, which are your topics. For this experimental question, I would be researching the music that I selected (for example: classical, country, rap, etc.) and discussing the wavelengths and amplitudes of the sound waves. I also would want to explain crystals, including how they are made, what conditions they need to grow, etc.

### Introduction paragraph

- Attention grabbing (hook) first sentence
- A good first sentence could be a quote or fact
- NEVER have a question or “My project is about...” as your first sentence
- Introduce your topics (let people know what you are going to write about)

### Topic 1 paragraph

- Describe and summarize the first topic in your own words
- Copy and paste is not allowed unless you put quotation marks around the quote and type the website name after the quote
- Example: “Widgets are used for mining coal deep underground” (www. widgets.com).
- Changing the words of someone else’s sentence is also cheating, unless you type the website or author name after the sentence or paragraph

### Topic 2 Paragraph

- Same as topic 1, but you write about topic 2

### Conclusion Paragraph

- Summary of your entire paper
- Usually you write a sentence or two about each topic
- Last sentence is called a wrap up sentence

*Keep in mind:*

1. Your background report should be at least a half page in length, but no more than two pages because the judges will not have time to read it all otherwise.

2. Make sure to use one inch margins and a normal font like Times New Roman or Arial.

### **What should be in your Project Data Book?**

All of these items in the following order:

- Accurate and detailed notes
- Data tables

Make sure you date each entry!

### **What is an Abstract?**

An abstract is a summary of the whole project. Abstracts are limited to no more than 250 words and should include the following:

- Purpose of your experiment
- Procedures used (basic methods of how you conducted your experiment)
- Data
- Conclusions

Your abstract should focus on work you did for the project THIS current year, not in past years.

## What should be included in your Research Paper?

A good paper includes the following sections:

- Title Page
- Table of Contents
- Introduction
  - Includes the purpose, your hypothesis, problem or goals, and explanation of what prompted your research, and what you hoped to achieve or learn.
- Materials and Methods
  - Describe in detail the methodology you used to collect data, make observations, design apparatus, etc. Explain the step-by-step directions for how you completed your project. Include detailed photographs or drawings of self-designed equipment.
- Results
  - Includes raw data as well as analysis (graphs, charts, etc)
- Discussion
  - Compare the results with published data, commonly held beliefs, and/or expected results. Include a discussion of possible errors. How did the data vary between repeated observations of similar events? How were your results affected by uncontrolled events? What would you do differently if you repeated this project? What other experiments should be conducted to further the knowledge we have on the topic?
- Conclusion
  - Briefly summarize your results. State your findings and support with data.
  - Mention practical applications in this section.
- References/ Bibliography
  - Your reference list should include any documentation that is not your own, such as books, journal articles, websites, etc.
  - There are several websites that can help you generate a correctly formatted bibliography including...
    - [www.easybib.com](http://www.easybib.com)
    - [www.bibme.org](http://www.bibme.org)
    - <http://www.citationmachine.net/>

## What should be on your Display Board?

**Abstract:** See abstract information for details.

**Title:** Something catchy, short and interesting that is relevant to your experiment.

**Question:** Your original, testable project question.

**Hypothesis:** The prediction that you made at the beginning of your experiment.

**Materials:** A list of everything that you used to complete your experiment,

**Procedure:** A step-by-step explanation of how you completed your project.

**Independent Variable:** The ONE thing that you changed on purpose in your experiment.

**Dependent Variable:** The thing in your experiment that was affected by your independent variable. What you measured.

**Controlled Variables:** The parts of your experiment that you kept the same for all tests and trials.

**Extraneous Variables (Optional):** The parts of your experiment that could not be controlled.

**Observations (Data):** Any observations and measurements that you have made. Tables, graphs, and charts all add to your presentation.

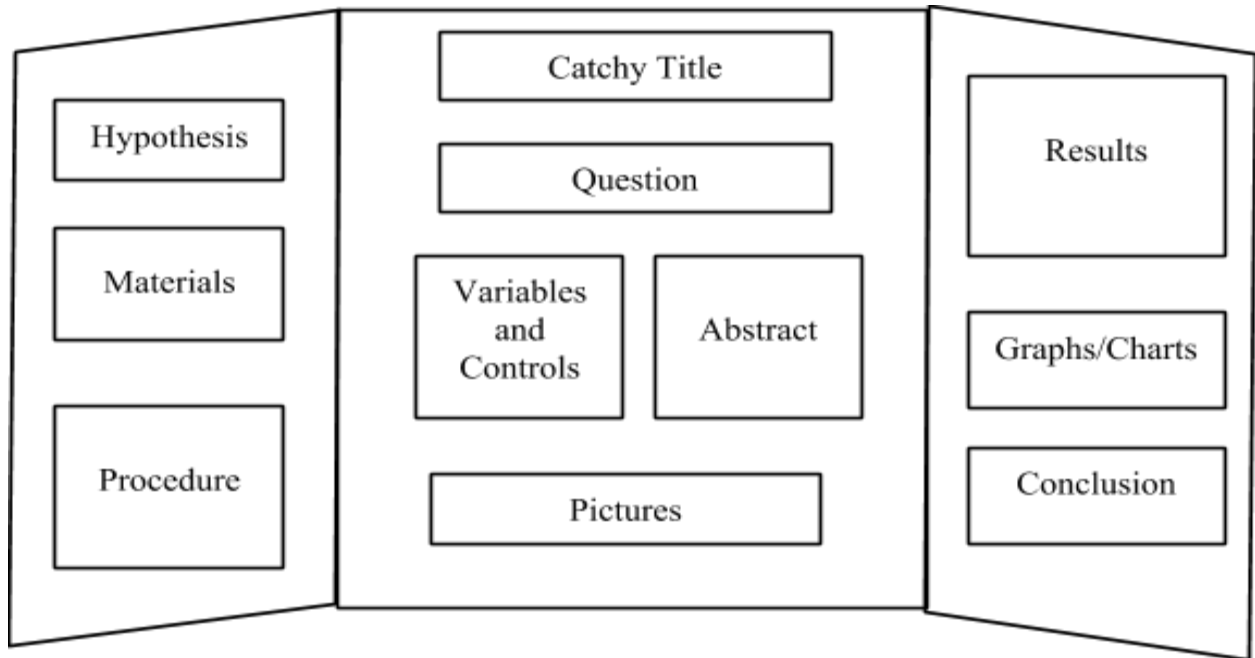
**Conclusion:** The findings of your experiment, what you have learned and what you will do next.

## Physical Requirements of Display Boards

- No more than 36 inches (3 feet) wide (about 4 feet spread out flat)
- No longer than 30 inches (2.5 feet) deep
- Cannot exceed a height of 7 feet above the floor
- Self standing
- No product names (ex: if using Pepsi, use cola #1 instead)



## Creating a Display Board for the Science Fair



**Organize your information like a newspaper** so that your audience can quickly follow the thread of your experiment by reading from top to bottom, then left to right. Include each step of your science fair project: Abstract, question, hypothesis, variables, background research, and so on.

**Use a font size of at least 16 point** for the text on your display board, so that it is easy to read from a few feet away. It's okay to use slightly smaller fonts for captions on pictures and tables.

**The title should be big and easily read from across the room.** Choose one that accurately describes your work but also grabs people's attention.

**A picture speaks a thousand words!** Use photos or draw diagrams to present non numerical data, to propose models that explain your results, or just to show your experimental setup. But, don't put text on top of photographs or images. It can be very difficult to read.

### Tips for Creating a Spectacular Display Board:

- Select no more than three basic colors for your board.
- Don't use the color yellow for the words on the board.
- Avoid multi-colored sentences or words. One color per word, one color per sentence.

- Use a computer where possible (Word/Google Docs for typing and Excel/Google Sheets for graphs).
- Use a ruler when needed.

## **Big Walnut Local Science Fair Frequently Asked Questions**

### **What is a Science Fair Project?**

A Science Fair project attempts to answer a scientific question by using the scientific method. To start a science fair project you must first decide on a question you would like to investigate. Once you have decided on a question, research your topic, form a hypothesis, then design and carry out an experiment to test your hypothesis. A good science fair project will also relate the question being investigated to a real-world application.

A science fair project is NOT making an invention or model.

### **Is Science Fair for a grade?**

While Science Fair is not required, each individual science teacher can explain how, or if, extra credit is being granted for participation in the science fair. See your science teacher for details on if, or how, your participation will impact your science grade.

### **Are there any restrictions to what my science fair project can include?**

Yes, any experiment involving live animals (including humans- even a survey) must be closely monitored and may involve additional paperwork. Your science teacher can provide you with the necessary forms. In addition, projects involving bacteria or viruses require a great deal of supervision and strict regulation. If your project involves potentially dangerous materials such as explosives or chemicals (including medicines), your project must be supervised at all times by a designated adult or in some instances a qualified scientist that is trained in the use of such materials.

### **How will I be judged?**

On the evening of the Science Fair, you will bring your display, card table, and any other necessary materials to the high school at the designated time. You will set up your display, and present your project to the judges. During your presentation, you will explain your project and answer any questions they may have.

### **What does my score mean?**

If you earn a “superior” score at the Big Walnut Local Science Fair, you are automatically qualified to participate in the District Science Fair held at Columbus State in March. The District Science Fair is similar to our local fair, except on a much larger scale. There are many awards given out and students receiving a “superior” at that level will advance to the State Science Fair competition.

**Can I work with a partner?**

Students may work individually, with a partner, or in groups of three on their project. Partners must be from BWI and from the same grade, but do not have to have the same science teacher.

Big Walnut Local Science Fair  
**Intention to Participate**

I intend to participate in the Big Walnut Local Science Fair to be held Thursday, February 7, 2019 at Big Walnut High School. I understand that by signing this form, I am merely stating my interest in participating. I may change my mind any time prior to registration for the Science Fair.

---

Student Signature

---

Student Name

---

Proposed Title of Project

PLEASE RETURN THIS BY FORM TUESDAY, NOV. 13.

I understand that my child intends to participate in the Big Walnut Local Science Fair on February 7, 2019.

---

Parent Signature

# Proposal

Due November 16

**Project Title:** \_\_\_\_\_

**I. Question** (What I want to find out)

---

---

---

---

**II. Hypothesis** (What I think the answer will be to my question)

---

---

---

---

**III. Materials** (Detailed list of everything you will need to do this experiment)

---

---

---

---

**IV. Procedure** (How I will test my hypothesis) This is written in a series of steps. **VERY SPECIFIC.** Attach notebook paper if you need more room.

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

V. **Independent Variable** (The ONE thing I am changing on purpose)

---

---

VI. **Dependent Variable** (What I measure to see if there is a change)

---

---

VII. **Control Variables** (3-5 Constants: What is kept the same)

---

---

VIII. **Data Collection** (How I will collect and present my data)

---

---

---

---

This is the investigation I would like to do for my Science Fair Project.

\_\_\_\_\_  
**Student** Signature

\_\_\_\_\_  
Date

The investigation outlined in this proposal meets the preliminary requirements for a Science Fair Project.

\_\_\_\_\_  
**Teacher** Signature

\_\_\_\_\_  
Date

I will support my child's efforts in doing this Science Fair Project.

\_\_\_\_\_  
**Parent** Signature

\_\_\_\_\_  
Date