

# **A One-Room Schoolhouse**

## **SCIENCE FAIR HANDBOOK**



Dear Parents and Students,

A One-Room Schoolhouse is proud to welcome you all to its first annual Homeschool Science Fair. It will be held on **Friday, May 7, 2021**, at the Hickory, PA Firehall (106 Main St, Hickory, PA 15340). All homeschool students and their families are invited to attend and participate.

We encourage parents and students to go through this information together.

**Why a Science Fair?**

The goal of the Homeschool Science Fair is for students to have fun with science. Students need opportunities to experience science for themselves by asking questions and discovering answers. Everyone can do science, and a science project is the best hands-on way to enjoy and learn about science.

For students to learn problem solving, the best practice called “*Scientific Method*” is used. You can see information on the Scientific Method attached to this letter. I would also highly recommend using the resources available on the [Science Buddies](#) website, especially the topic section wizard.

**What is required to participate?**

1. **Registration:** Please register by submitting the registration form (see attached) by 04/30/2021 by either mail or email attachment. Individual projects are encouraged, however, teams of a maximum of two can work on a project. **Please mention the name of your partner on the registration form.** Please consider turning in your form early.
  - **Mailing Address:** 1005 Lakeside Dr., McDonald, PA 15057
  - **Email:** [info@aoneroomschoolhouse.com](mailto:info@aoneroomschoolhouse.com)
2. **Choose a topic:** If your child/ children are interested in doing a project, help them choose an appropriate topic. A simple, well-researched question with a nice display is key to a good project. Parental help is needed for direction and encouragement. However, learning in the child will be enhanced if he/she participates fully in the project. (Using the section wizard mentioned above can be a huge benefit.)
3. **Display the project:** Please present your project on a display board with relevant information. However, we encourage student participants to include the elements of the scientific method on their board.

**The format of the science fair at A One-Room Schoolhouse is judged with awards given.** Each participant will receive a certificate of commendation at the end of the fair and a small gift. Small prizes will be awarded for 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> place in each of the following age groups: Primary Grades: K-4, Middle Grades 5-8, and High School Grades: 9-12. If fewer than three participates are in a group, the groups may be consolidated. A ten-dollar donation is suggested for non-AORSH students to cover the cost of the hall and prizes.

For further questions you may contact Genevieve Peterson or Sommer Temple at [info@aoneroomschoolhouse.com](mailto:info@aoneroomschoolhouse.com).

Sincerely,  
Genevieve Peterson and Sommer Temple  
Education Director and Science Fair Coordinator  
A One-Room Schoolhouse

# Science Fair Dates and Timeline



Date	Time	Event
4/10/2021	None	Science Fair registration opens Mailing Address: 1005 Lakeside Dr., McDonald, PA 15057 Email: <a href="mailto:info@oneroomschoolhouse.com">info@oneroomschoolhouse.com</a>
4/30/201	None	Science Fair registration closes
5/7/2021	12:00 to 1:00	Board and display set up at the Hickory firehall 106 Main St., Hickory, PA 15340
5/7/2021	1:00 to 2:00	Open viewing and judging
5/7/2021	2:00 to 2:30	Awards
5/7/2021	2:30 to 3:00	Clean-up

## Covid Notes:

- 1) Participate in this fair if you are comfortable in the environment provided.
- 2) If wearing a mask is right for your family, then wear one. If wearing a mask does not work for your family, then do not wear one.
- 3) If you are sick the day of the fair or 24 hours prior, please do not come. Someone else can bring your board and set it up. It will be judged and your certificate and/or award will be mailed to you.
- 4) Each student will set up at their own, clean table. This will provide distance between each participant.
- 5) Sanitization stations will be provided at the fair.

# Science Fair Rules

1. Each project will be classified by grade level.
2. Each student may enter only one project.
3. Individual projects are encouraged. However, students can work with a maximum of one partner on their science fair project. **Both students should register separately with the same project title. Please mention the name of your partner on your registration form.**
4. Parents and other responsible adults may *advise* the students when doing the project. However, parents should allow the students to do the actual work. The best projects are the simple ones, where students can demonstrate command of the subject matter and the experiment.
5. The three-sided display boards (no larger than 36x48) are available through many stores and online retailer. You can see an [example here on Amazon](#).
6. Electrical switches and cords needed for exhibits must be in good working condition.
7. **Please avoid display of expensive or fragile items.** Valuable items essential to the project should be simulated or photographed.
8. A One-Room Schoolhouse assumes no liability for loss or damage to exhibits. All students must agree to be careful and respectful of the work of student scientists when viewing the Fair exhibits.
9. **NO harmful animal or human experiments are ALLOWED.** Parents must carefully monitor any experiment that is performed as a part of a project.
10. Students should bring all the material required for the project.
11. A space of about 5 feet wide will be provided for the display board, experiment/model, and any record book.
12. NO OPEN FLAMES, or LIVE ANIMALS or DRY ICE are allowed to be displayed on the day of Science Fair. You may take pictures or take a video and display it at the fair.
13. We have limited electrical outlets. So please mention in the form if you need one. Also mention any other special need for the project on the form.



# Getting Started

Choose a topic that you find interesting! You should be excited about your project!!!

Start with a question related to hobby, travel, or surroundings that you have been wondering about, like.....

How does plant a grow?

How is a rainbow formed?

Why does a cut apple change color?

## Choose a Question

Choose one question that will narrow the focus of your investigation. This will be the question that you are trying to answer with your project. For example, using the topic “plant growth,” one question could be, “How does sunlight affect plant growth?”

Another question could be “Which plant food works the best?” or “Can plants grow in water?” You can choose from many questions in any topic. Below is a sample of science questions to be investigated.

- Why does the earth have seasons?
- How can you tell if a substance is an acid or a base?
- How are tides formed?
- Which laundry detergent is best?
- How does a camera work?
- How does it rain?
- What is the best conductor?
- How does an airplane fly?
- How does an electromagnet work?
- How do Air Balloons work?
- What color light is best for plant growth?
- How does blood get from the toes to the heart?
- How do muscles and bones work together in movement?

## Research

Once you have a question to work on, do some research. You can get information from books, encyclopedias, pamphlets, television, field trips, interviews, or the Internet. Look for information from several different sources. Become an expert on your topic!

## Plan Ahead

Sometimes science experiments don’t work. If you plan and conduct your experiment well in advance of the science fair and your experiment does not work, you will have an opportunity to retry or change your experiment. So, start early.

## What if my experiment fails?

This happens sometimes, but *don’t worry*, you should still present your work. Present what you did on your display board. In the conclusion section of your presentation, suggest ways to investigate *why* your experiment did not work. Experimental failure is common for scientists who usually repeat the experiment and if the experiment still does not work, they ask their question in a different way or redesign the way the experiment was conducted.



# Displaying the Project

Your project board display is a particularly important part of your project since it explains to others what you have done and learned. The quality of your work will be judged on your written display as well as your ability to explain your ideas, methods, and what you have learned.

## Displaying materials in front of your display board

If you have made a model, a demonstration, or a collection, these should be displayed in front of your poster board, unless they are fragile or valuable. In those cases, please mount photographs of your model, invention, demonstration, or collection on your board. If you must bring fragile or valuable items to the Fair, ensure that you do not leave your project unattended.



Idea to set up the presentation on the table at Science Fair

# The Scientific Method for Experiments

## 1. Identify the problem (Purpose)

This is stated in the form of a question. (What information could be found by researching the question?)

- Look in the books or websites
- Get advice
- Make observations

## 2. Develop a hypothesis (Hypothesis)

A hypothesis is an *educated* guess. Or: *What* would be the answer to the question in mind?

- Use the words “I predict if.... and the...”
- Form the hypothesis and state it clearly so that it can be tested.

## 3. Material used for experiment/investigation

Mention all the material used to complete the experiment

## 4. Plan and conduct an experiment (Procedure)

- List each step that will be done or has been done.
- Number each step in order and write down everything that has been done so that others will be able to repeat the experiment by reading the procedure.
- Control the variables.

A variable is something that can change or vary during an experiment. Remember that everything should be the same each time the test is conducted, except for the one variable being tested.

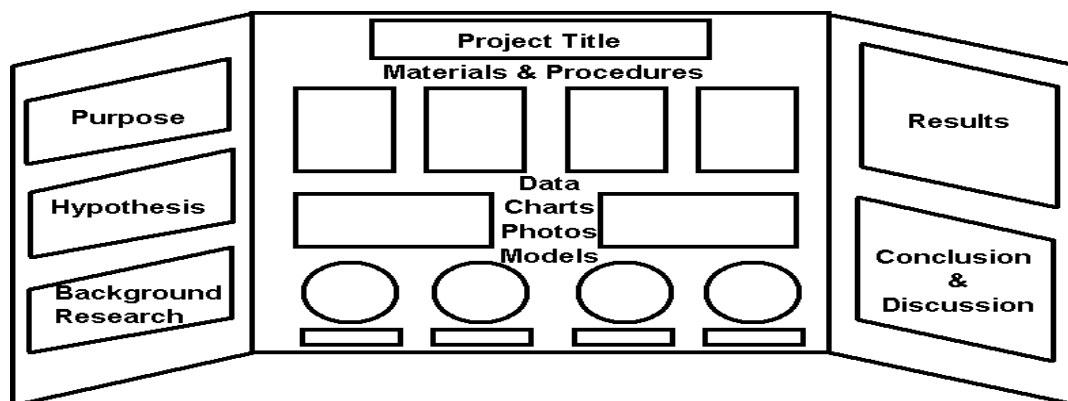
## 5. Record the results after testing the hypothesis (Results)

**Keep detailed records of methods and results**

- Make observations.
- Collect data and record it in a journal (notebook).
- Make tables, charts, or graphs.
- Write a summary of *all* the observations.
- Draw pictures/take photographs to show the results and/or procedures.

## 6. Develop a conclusion (Conclusion)

- Decide what the data tells about the hypothesis.
- Decide how different is the hypothesis based on the results.
- What new questions come up based on the results?
- Communicate the results to others.





# A One-Room Schoolhouse Fair Registration Form 2021

This form must be filled and signed by the student and parent/s and submitted to the A One-Room Schoolhouse, via email or post, no later than April 30, 2021. An email confirming your approved project will be sent at the parent's email listed below.

If you have any questions, please contact Genevieve Peterson or Sommer Temple at info@aoneroomschoolhouse.com

**A \$10 donation is suggested for non-AORSH students to cover the cost of the hall and prizes. Please make checks out to "A One-Room Schoolhouse" or find us on Venmo.**

**PLEASE PRINT:**

Student's Name (As to be printed on the certificate): \_\_\_\_\_

Grade (i.e., 5G): \_\_\_\_\_

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

Student Partner's Name (if doing the project in a pair) \_\_\_\_\_

Please briefly describe the project.

(list any hazards that may exist and what precautions will be taken to address them.)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Parental consent for your child's photo and work to be published on A One-Room Schoolhouse' website and or/social media. Names will not be used.

YES  No

Special Requirements (if any like extra space, electrical outlet) \_\_\_\_\_

Student's Signature: \_\_\_\_\_ Parent's Name: \_\_\_\_\_

Parent's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Phone: \_\_\_\_\_ Parent's Email\*: \_\_\_\_\_

(\*PLEASE PRINT required for project approval confirmation)

**FOR OFFICE USE ONLY:**

Comments \_\_\_\_\_

Table # allotted: \_\_\_\_\_

Reviewer Signature: \_\_\_\_\_