# Science Fair

## Packet

### Teacher, Parent & Student Information

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# TEACHER/ PARENT INFORMATION

Science fairs provide a unique hands-on educational experience. It offers your students a chance to be innovative and creative as they do an in-depth study on a science topic that interests them. They will enjoy sharing, explaining, and talking about their project with inquisitive visitors at the science fair exhibit. This will be a fun educational and social opportunity for students and teachers/parents as we enjoy the benefits of being part of a large homeschool community.

**THE GOAL FOR THIS SCIENCE FAIR**

1. Create a positive experience where students walk away with a sense of accomplishment.
2. Challenge students to be creative and innovative.
3. Offer accountability for parents/teachers to challenge their students to perform every step of the Scientific Method or the Report Project.
4. Give students an opportunity to communicate what they have learned to others.
5. Encourage students with recognition and rewards for their academic success.
6. To build up and strengthen our homeschool community.

**TWO APPROACHES YOUR STUDENT CAN FOCUS ON.**

1. The traditional approach is to use the Science Method which includes choosing a topic, state the purpose as a question, research the problem, form a hypothesis, conduct experiments, record data, draw conclusions, prepare titles, charts, graphs, drawings, or diagrams and construct a display board.
2. The second is the Report Project approach. This approach means your student will choose a science topic, research about it, create a display board which includes drawings, photos and interesting facts, and create a model. This approach is good for elementary age students.

Choose the approach that works best for your student's age and for their topic of interest. Your student can use my Scientific Method or Report Project Instructions to guide them. These instructions are just suggestions that can guide them in their project.

**STUDENT REGISTRATION**

Please have each child fill out the Student Registration and turn it in to the bin outside the parent room. This is required so that I can adequately plan and organize our Science Fair Exhibit. I will need to be sure we have enough tables and awards for all participants and I will need to organize them according to age groups. Students can work as a team or alone.

**TABLE SPACE AT EXHIBIT**

Each display board will be around 36 inches wide, when open with the sides angled, so, my goal is to fit four boards, back-to-back, on a six-foot table. If you need more space please be sure to communicate this to the science fair coordinator. Bring your own extension cord if you need one.

Students will need to stand by their project for a portion of the time to answer questions and talk about their project with visitors. I would also like the kids to be able to visit other kid' projects as well.

**ORAL & WRITEN REPORT**

Many science fairs require students to turn in a written report and do an oral presentation in addition to creating a display board. Even though this science fair does not require this you can still do it with your students on your own if you would like. Here is a link to some instructions and guidelines you can use:

Written Report Guidelines see page 4, see page 8 for Oral Presentation Guidelines ,https://www.phsd144.net/cms/lib3/IL01001725/Centricity/Domain/572/ScienceFairPacket.pdf
Written Report Guidelines https://www.sciencebuddies.org/science-fair-projects/science-fair/science-fair-project-final-report#checklist
Written Report Grading Rubrichttps://www.rcampus.com/rubricshowc.cfm?sp=true&code=EX7A94W&
Oral Report Grading Rubric https://www.rcampus.com/rubricshowc.cfm?code=U8C4W3&sp=yes&

**SCIENCE FAIR WEBSITES**

https://www.education.com/science-fair/

https://www.sciencebuddies.org/science-fair-projects/project-ideas

http://www.sciencefair-projects.org/

http://www.all-science-fair-projects.com/category0.html

http://www.need.org/sciencefair

https://www.sciencebuddies.org/science-fair-projects/science-fair/science-fair-project-display-boards#keyinfo

# STUDENT INFORMATION

**WHAT IS A SCIENCE FAIR?**

A science fair is a competition held at schools where participants present an innovative science project that follows the scientific method. You will share the facts from your research and the results from the experiments you perform on a display board. You may also want to create a model or experiment to share. This is a fun opportunity where you will be challenged to choose a science topic you are interested in and share what you learned with friends and family at the science fair exhibit.

In addition to the traditional Scientific Method approach, participants may also choose to do the Report Project approach instead. For this approach you can choose a science topic, research about it, create a display board which will include drawings, photos and interesting facts, and create a model to share at the Science Fair Exhibit. Your parent or teacher will tell you which approach you will be required to do.

**DIVISIONS & AWARDS**

Students will compete in the following divisions: K-3$^{rd}$, 4$^{th}$-7$^{th}$, and 8$^{th}$-12$^{th}$. There will be ribbons awarded to the first place, second place, and third place winners for each division. In addition, all first-place students from each division will receive a cash prize of $50! Your challenge is to come up with a topic that interests you, learn all about it, and present the facts in a clear yet creative way that will impress the judges.

In addition to receiving ribbons there will also be a People's Choice Award where visitors, peers, and parents can vote on their favorite project and display board. Participants can vote but only in a division they are **NOT** competing in. This award will encourage and challenge you to do your best.

**SCIENCE FAIR CATEGORIES AND TOPIC EXAMPLES**

There are 7 categories you can enter a project in. Your job as a participant is to choose a topic from one of the categories below. You will need to research and find a topic that interests you and learn everything you can about it so you can put together a project display board.

**1 Biology-** Biology is the study of living things and how they grow. This includes the human body, animals and plants.

**2 Chemistry-** Chemistry is the study of substances. It deals with reaction between substances, creating compounds, atoms, molecules, structure, and the properties of the periodic table.

**3 Earth Science-** Earth science deals with the physical constitution of the earth. It can include topics such as rocks, fossils, oceanography, weather, and volcanos.

**4 Electronics, Robotics & Computer Science-** Electronics deals with all things that use or make electricity. These projects show how electricity is conducted, created, and controlled. It can also include computers, circuit boards, robots, and batteries.

**5 Astronomy-** Astronomy is the study of the universe which includes planets, moons, stars, and meteors.

**6 Engineering-** Engineering involves designing, creating, and studying the function of machines and their processes. It can also include aviation, cars, ships, and buildings.

**7 Physics-** Physics is the study of matter and energy. This includes light, sound, magnetics and motion.

# Science Fair

## STUDENT REGISTRATION FORM

DUE NO LATER THAN _____
STUDENTS PLEASE TURN IN TO YOUR TEACHER OR THE SCIENCE FAIR COORDINATOR.

Participants Name_____

Grade Division ☐ K-3rd ☐ 4th-7th ☐ 8th-12th

Teacher's name _____

Teacher's email_____

Project Category_____

Project Topic_____

Description_____

_____

_____

# SCIENTIFIC METHOD INSTRUCTIONS

☐ 1. **Choose a Topic & Turn in Student Registration-** Due Date_____ Do some research to find a topic that interests you. Do not choose a topic based on how easy it is. Find a book about science fair projects at the library or look on the internet for topic ideas. Once you know your topic fill out the Student Registration form and turn in to your teacher or parent so it can be given to the science fair coordinator

| **Your Science Fair Topic** |
| --- |
| |

☐ 2. **Ask a Question-** Due Date_____ State your purpose in the form of a question. What do you want to find out by doing this project?

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**State Your Hypothesis-** Due Date_____ What do you think is going to happen? What do you think the results from your experiments will be?

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☐ 3. **Research Your Topic-** Due Date_____ Research about your topic in books, on a website, or by talking with a specialist. Find out as much as you can about your topic. Use a notebook to write down interesting facts you find or any ideas you think of as you research.

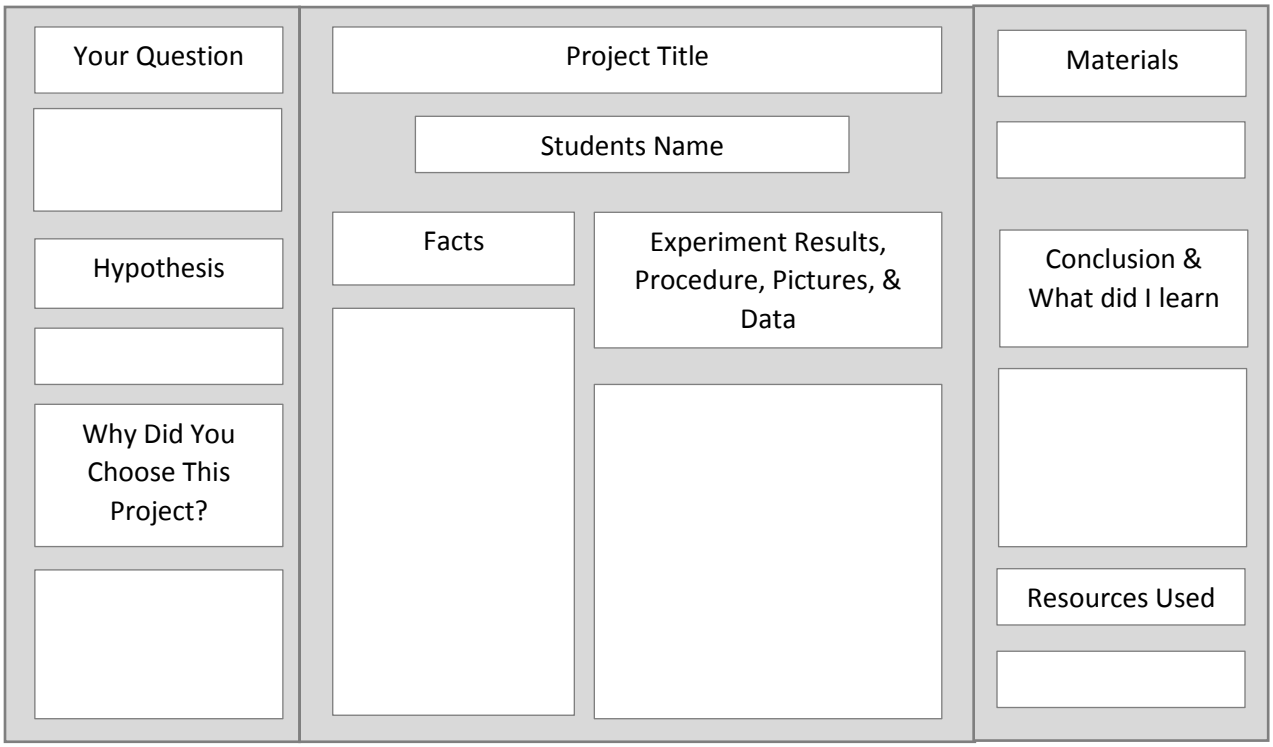
You may be required to cite your sources. If so, keep track of the books and websites you get information from. This gives credibility to your project.

☐ 4. **Conduct your Experiments-** Due Date_____ Decide what materials you will need and how you will perform experiments to test your question. Do the experiments at least 3 times and record the data. Compare the results. Take pictures and keep notes so you can use them on your display board.

☐ 5. **Draw a Conclusion-** Due Date_____ What did you learn from your research and experiments? Did you prove or disprove your hypothesis? Record dates, times, measurements, and any other useful information. If your hypothesis was wrong that's ok, this is a natural part of the process.

☐ 6. **Construct Your Science Fair Display-** Due Date_____ Is there a model you would like to display or an experiment you would like to perform at the science fair for demonstrations? Now is the time to gather materials and plan this. You will also need to put together your display board. Make titles, charts, graphs, drawings, diagrams, and photos to decorate your board with. You will want to type or write up all of your notes and facts you gathered from your research. You should also include your question and hypothesis as well. See the Display Board Sample. Make your board stand out with a creative design, borders, art, and large bold titles.

## SCIENTIFIC METHOD DISPLAY BOARD SAMPLE



# REPORT PROJECT INSTRUCTIONS

☐ 1. **Choose a Topic & Turn in Student Registration** Due Date_____ Do some research to find a topic that interests you. Do not choose a topic based on how easy it is. Find a book about science fair projects at the library or look on the internet for topic ideas. Once you know your topic fill out this form and turn it in to your teacher or parent so it can be given to the science fair coordinator.

| **Your Final Science Fair Topic** |
| --- |
| |

☐ 2. **Research Your Topic-** Due Date_____ Research about your topic in books, on a website, or by talking with a specialist. Find out as much as you can about your topic. Use a notebook to write down interesting facts you find or any ideas you think of as you research.

You may be required to cite your sources. If so, keep track of the books and websites you get information from. This gives credibility to your project.

☐ 3. **Why Did You Choose This Project? -** Due Date_____ Write a paragraph or two explaining why you chose your topic? What interests you about it? What makes it important? How can you apply knowledge of this topic to your life? Write your answers in a notebook. Later you will add it to your display board.

☐ 4. **Facts-** Due Date_____ Write out 3-4 facts about your topic. Each fact should be 1-2 paragraphs long. Print out a picture for each paragraph to use on your display board.

☐ 5. **Interview a Specialist-** Due Date_____ Interview someone who specializes on your topic. If you do not know anyone then find a story about someone who works or has had a real-life experience with your topic and write about it in your own words.

☐ 6. **Draw A Picture-** Due Date_____ Use your artistic skills by hand drawing, painting, coloring or doing a graphic design picture related to your topic to display on your board.

☐ 7. **Charts & Graphs-** Due Date_____ Create a graph or chart that represents data about your topic for your display board.

☐ 8. **Construct Your Science Fair Display-** Due Date_____ Is there a model you would like to display or an experiment you would like to perform at the science fair for demonstrations? Now is the time to gather materials and plan this. Write out a description of your model to display on your board. You will also need to put together your display board. You will want to type or write up all of your notes and facts you gathered from your research. Make your board stand out with a creative design, borders, art, and large bold titles. See the Display Board Sample

# REPORT PROJECT DISPLAY BOARD SAMPLE