JACKSON PUBLIC SCHOOLS | STEAM

Growing Proficient Readers

2024-2025 Science Fair and S.T.E.A.M EXPO Guidelines

Barack H.Obama Magnet Elementary School

750 N Congress St.

October 14th, 2024

Dear Parents/Guardians:

Our Science Fair and STEAM Expo Preparations are underway.
We are asking all of our scholars, **K through 5** to participate in the school level science fair!

This packet includes information you need to prepare for the event. Included in this packet you will find schedules & timelines, regional eligibility requirements, categories of competition, science fair terminology, project board components, science fair projects to avoid, how to write an abstract, what to include in your research report and research log, the judging rubric, what should be included in your proposal, website resources and more!

Project *proposals* are due **November 8 2024**.
Science fair *projects* are due **January 17, 2025**.

Please note, **Kindergarten** projects are not accepted at the *Regional* competition hosted by Jackson State University in March; however, they can participate in the school-level (January 2025) and district-level fairs (February 2025).

Please keep in mind that, if you choose to do an experiment involving human subjects and/or animals, additional paperwork will be required to compete at the regional level.

If you have any questions, please email them to **fsheriff@jackson.k12.ms.us or thale@jackson.k12.ms.us** . We are looking forward to an exciting science fair!

Felicia Sheriff and Tarsha Manning
Science Fair Coordinator

2024-2025 Science Fair Project Schedule

To complete your project on time, you must adhere to the schedule!

Week Of	What should you be working on?	Due Date
10/14 – 10/17	**Students will receive a thorough handout of guidelines for the Science Fair.** **Checkpoint #1 –** Think of something you enjoy well enough to want to know more about it. Can you do an experiment on it?	October 17
11/4 – 11/8	**Checkpoint #2:** Proposals are due by **November 8th.**	November 8
11/11 – 11/22	**Checkpoint #3:** Science Fair Coordinators Will Approve or Modify Proposals.	November 22
11/22/24 – 1/16/25	**Checkpoint #4:** Work on your science fair project.	January 16
2025		
1/17	**Checkpoint #5**: Turn in your science fair project. **Include Abstract and Research log.**	January 17
1/20 – 1/24	**Checkpoint #6: School Science Fair**	January 24
1/27 – 1/31	**Checkpoint #7:** School Science Fair winners will be announced. **1st Place Winners** advance to the **JPS**	January 31

	Science Fair and STEAM Expo competition on **Saturday, February 15, 2025, from 9:00 a.m. – 1:00 p.m.** **Please Note: 1st – 5th Grade** Winners who place 1st – 3rd at **School-level** Science Fair can advance to the **Regional Science Fair at Jackson State University March 18, 2025.**	
2/3 – 2/7	**Checkpoint #8: STEAM Expo/Science Fair Parent Meeting**	February 7
2/10 - 2/15	**Checkpoint #9:** JPS STEAM Expo/Science Fair (more information to come)	February 15
3/16 - 3/22	**Checkpoint #10:** Mississippi Science and Engineering Fair Region II	March 18

Website Resources to Help You Choose A Project

Science Buddies *(This website helps with the project selection. It has a "topic selection wizard").* https://www.sciencebuddies.org/science-fair-projects/science-projects

Science Fair Projects
https://www.scienceprojects.org/free-resources/

Science Fair Project Terms

Proposal	o Used to help organize the entire experiment
Ask a Question	o Ask a question to begin your experiment. o Think about a question that you can test that can benefit society or everyone's way of living. o The best questions make a comparison that will allow the scientist (you) to control changes and observe the results of those changes. o **How does_____(independent variable) affect _____ (dependent variable)?**

Research	o Look up everything surrounding your topic in your question. o **Summarize what you find in your own words**. Plagiarism is a very serious offense. o Some teachers may require a research paper, however, at least 5 sources cited using APA will be required regardless of submission of the research paper.
Hypothesis with Reason	o The hypothesis is what you think will happen in your experiment. **The hypothesis is written as an If…Then statement.** o **Your experiment is testing your hypothesis and the reason is why you think your hypothesis is going to occur.**
Materials	o A list of what you need to complete your experiment. o List all necessary materials in sufficient detail and the exact quantities for items.
Procedures	o The step-by-step method you will use to do your experiment. o Make sure someone else can follow your procedure. They should be listed in logistical order, like a recipe. o **Your procedure needs to be repeated at least 3-5 times in Grades K-6 and at least 5-10 times in Grades 7-12.**
Results with Data tables & Graphs	Record your results in a data table. **Label the title of your data table.** Average your data. Graph your results using your data table. Has the appropriate graph type been selected? Is the independent variable on the x-axis and the dependent variable on the y-axis? Is the data plotted correctly and clearly on the graph? **Does the graph have a proper scale (the correct high and low values on the axes)?**
Conclusion	o Answer the investigative question. o State whether you proved or disproved your hypothesis. o Summarize and evaluate.
Bibliography	**o Give credit to the books, Internet sites, journals, and people who helped you in your investigation by citing sources properly using APA format.**

Science Fair Topics to Avoid

Most consumer products testing, asking "Which is the best?" This includes, but not limited to, comparisons of popcorn, bubble gum, make-up, detergents, and paper towels.
Any topic that requires people to recall things they did in the past.
The effect of color on memory, emotion, mood, taste, strength, etc.

Any topic that requires dangerous, hard to find, expensive, or illegal materials.
Any topic that requires measurements that will be extremely difficult to make or repeat, given your equipment.
The lemon & potato battery project.
Volcano projects.

Science Fair Proposal

Due on November 8, 2024

Name: _____ **Teacher:**_____

Grade:_____

Title *(attention grabbing)*

_____

_____

Investigative Question *(Usually starts with: How, What, When, Who Which, Why, or Where. The question should contain one factor , or variable, that you can change in your experiment).* *Example: Does fertilizer make a plant grow bigger?*

_____

_____

Hypothesis *(An explanation for an observation, phenomenon, or scientific problem that can be tested by further investigation).* *Example: Plants need*

many types of nutrients to grow. Fertilizer adds those nutrients to the soil, thus allowing plants to grow more.

_____

_____

"If….then…" statement of the hypothesis *(prediction).*
Example: <u>If</u> I add fertilizer to the soil of some tomato seedlings, but not others, <u>then</u> the seedlings that got fertilizer will grow taller and have more leaves than the non-fertilized ones.

_____

_____

Variables Identified

Independent *(cause – what you will be changing)*

_____

Dependent *(effect- what you will be measuring or observing)*

_____

Controlled *(what stays the same)*

_____

List of Materials

_____

_____

_____

_____

Procedures *(Method - List of steps you will take to complete your project).*

_____

_____

_____

_____

_____

_____

What are some ways you present your data? (sketches? log? chart, etc?)

_____

_____

How will you graph your data? (Line graph, bar graph, etc.)

_____

Congratulations on your science fair proposal being accepted!

Your hard work and creativity have truly paid off, and this is just the beginning of an exciting journey. Best of luck as you bring your project to life!

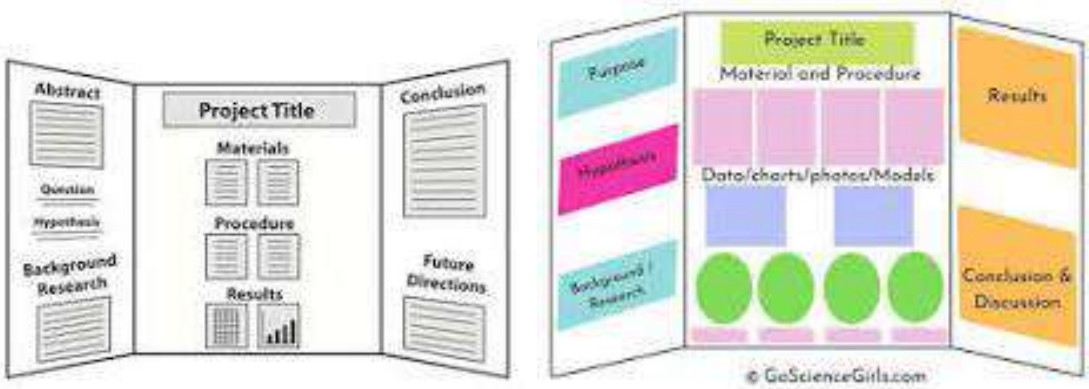
Project Board Requirements

Only standard sized tri-fold boards are allowed to be used.
Small tri-folds or oversized boards will be disqualified.

Maximum Size of Display

76 cm (30 in deep); 122 cm (48 in wide) ; 274 cm (108) in height including table

- Label X/Y Axis on Graphs
- Provide Pictures of Work but do NOT show faces



Display Board	o o o o o	The goal of the display board is to attract and inform spectators and judges. The display needs to reflect current year's work only. A good title that grabs spectators and judge's attention. **Photographs of the experiment are encouraged, however, only the sides of faces should be shown.** Organize your board in a logical order.
Project Logbook	o o	A project book is accurate and has detailed notes of your experiment from beginning to end. The more specific and detailed the better.
Abstract	o o	**The abstract should consist of a (maximum) of 250 words, one-page.** This is done after research and experimentation. Abstract needs to include 1) purpose of the experiment 2) procedures used 3) data (results) and 4) conclusions.

How can Parents help with the Science Fair Project?

1. Be supportive and encouraging to your child's efforts.
2. Review guidelines with your child.
3. Help your child be aware of due dates/timelines.

4. Help with the transportation of the project to and from school.
5. Ask questions.

A. Can your child describe his or her research project to you?

6. Help your child obtain the materials needed for the project.
7. DO NOT do your child's project yourself! Your child will not learn what he/she is supposed to learn and may be unable to handle the judging process.
8. MAKE SCIENCE COMPETITION FUN! Join with other science fair parents and plan events to assist your child in preparing and attending the science fair.

How to Write an Abstract

Steps:

1. Write an opening sentence or two that comes from your research/ introduction that overall covers your project.
2. *Briefly summarize your project from the question, hypothesis, procedure and materials, data, results, conclusion.*
3. In your conclusion, say whether or not your hypothesis was correct or not and explain why it was correct or why it was not correct.

Sample Abstract:

Advertisers are always touting more powerful and longer lasting batteries, but which batteries really do last longer, and is battery life impacted by the speed of the current drain? This project looks at which AA battery maintains its voltage for the longest period of time in low, medium, and high current drain devices. The batteries were tested in a CD player (low drain device), a flashlight (medium drain device), and a camera flash (high drain device) by measuring the battery voltage (dependent variable) at different time intervals (independent variable) for each of the battery types in each of the

devices. My hypothesis was that Energizer would last the longest in all of the devices tested. The experimental results supported my hypothesis by showing that the Energizer performs with increasing superiority, the higher the current drain of the device. The experiment also showed that the heavy-duty non-alkaline batteries do not maintain their voltage as long as either alkaline battery at any level of current drain.

*Word Count is 166*** Do not add this part in your abstract but the abstract needs to be about 160-250 words.*

Research Report

A research report should be included with your project. The research report should include the following items:

- Title
- Table of Contents
- Abstract
- Report text
- Bibliography

Research Log

Your research log, or logbook, should contain:

- Data
- Dates / times
- Observations
- You may include photographs
- You may include diagrams, tables, charts, and graphs of your results.

Your Conclusion

Use these pointers to help you write your conclusion:

- What did you learn?
- What were the possible errors that may have occurred or did occur?
- Be sure to relate your conclusion back to your hypothesis.
- Was your hypothesis right or wrong?

Congratulations on having your SCIENCE FAIR PROJECT SELECTED for the school level science fair!

Your hard work, creativity, and dedication truly shine through your project, and it's a remarkable achievement to have it recognized. This is just the beginning of an exciting journey—best of luck as you prepare to showcase your innovative ideas and inspire others! Attached you will find a judging rubric and questions judges may ask.

Questions You Should Be Able to Answer

1. Where did you get this idea?
2. What research did you do?
3. What was your hypothesis? Why did you think that would happen?
4. What were your independent and dependent variables?
5. What did you measure and how?
6. How did you calculate that result?
7. Why did you choose that amount, (or measurement, or piece of equipment, etc.)?
8. How did you replicate the experiment?
9. What does that graph tell you?
10. Why/How are your findings important?
11. What would be the next experiment you would do?

12. What was the hardest part (or most fun, or most exciting, or most surprising, etc.)?
13. Who helped you?
14. If you had to do it all over again, is there anything you would do differently?

Jackson Public Schools Scoring Rubric

Name of Project: _____

Category: _____

Grading of Science Fair Projects (Total of 100 points)

Item(s)	Point Total
Title (6 pts max) • Center of board • Largest text by far on display • Bold, attention grabbing **Question (6 pts max)** • Starts with How, What, When, Who, Which, Why, or Where. Contains one variable that you can change in your experiment. **Hypothesis (4 pts max)** • Written in the form of an "If.... then ... statement. **Materials (2 pts max)** • List all materials used **Abstract (2 pts max)** • A brief summary of your science fair project final report.	**20 points**
Procedures • Experiment Description	**20 points**
Data • What did you observe as you did your project? • Include charts, tables, graphs, and/or pictures.	**30 points**

Research Report • Title • Table of Contents • Abstract • Report text • Bibliography **Logbook** • Data • Dates / times • Observations • Photographs of your results • You may include your results diagrams. tables, charts and graphs	**20 points**
Conclusion • What did you learn? • What were the possible errors that may have occurred or did occur? • Relate your hypothesis back to your conclusion. • Was the hypothesis right or wrong?	**10 points**

For Science Fair Coordinators ONLY:

Congratulations and THANK YOU for serving as your school's Science Fair Coordinator!! Please know that I am here to guide and support you every step of the way. Dates and deadlines will be critical!

Science Fair Categories

-Behavioral & Social Science
-Biochemistry
-Inorganic Chemistry
-Organic Chemistry
-Earth & Environmental Science
-Animal Sciences
-Medicine & Health
-Microbiology
-Physics & Astronomy
-Engineering
-Computer Science & Math
-Robotics & Intelligent Design
-Botany

FRONT	BACK
COVER PAGE	Page 1: Blank
Page 2: Parent Letter	Page 3: Schedule
Page 4: Website/Terms	Page 5: Terms continued
Page 6: Proposal	Page 7: Proposal continued
Page 8: BLANK	

FRONT	BACK
Page 9. Proposal Accepted/Board Design	Page 10. Board/Logbook/Abstract
Page 11. Abstract	Page 12. Research Report/Log/Conclusion

FRONT	BACK
Page 13. Going to Science Fair. YAY!	Page 14. Blank
Page 15. Rubric	Page 16. Rubric

Week Of	What should you be working on?	Due Date
9/20– 9/27	Administrators select JPS Science Fair Coordinators	September 27
9/30 - 10/4	The Mississippi Science and Engineering Fair Region II will be face-to-face attendance. **If your school plans to participate, please send an email confirming your participation to msef2@jsums.edu**	September 29
9/30 – 10/4	JPS Science Fair Coordinators Meeting	October 3
10/14 - 10/17	**Disseminate Science Fair Guidelines Cover Page + pages 1-7**	October 17 (10/21 if you plan to pass out at PTC)
10/21 – 10/25	**(*OPTIONAL*) Parent Meeting** (Science Fair Coordinators will set a date and time if they choose.)	**Note:** October 21 is PTC
11/4 – 11/8	Proposals are due by **November 8th.**	November 8
11/11 – 11/22	Science Fair Coordinators Will Approve or Modify Proposals. **Give Pages 9-12 (2 pages front and back) when Proposal is APPROVED. Disseminate by 11/22.**	November 22
11/25 - 11/29	**Complete a 2025 MSEF School Information & SRC/IRB Committee Form.** Dr. McInnis will provide a model.	November 30
1/6 - 1/10	**JPS Curriculum/Coaches Meeting on 1/8/2025 (2:00-3:00pm-Zoom)** **Discussing: Science Fair, Winner Letters, & Registrations**	January 8
1/6 - 1/10	**Coordinators Meeting on 1/9/2025 (2:30-3:30pm-Zoom)** **Discussing: Science Fair, Winner Letters, & Registrations**	January 9
11/22/24 – 1/16/25	Students work on science fair projects. **Projects due January 17th! They should include Abstract and Research log.**	January 16
1/20 - 1/24	After science fair projects are submitted, choose which projects will attend the school-level science fair. You can determine your own selection criteria. **THOSE SELECTED AS SCHOOL-LEVEL SCIENCE FAIR PARTICIPANTS should receive Pages 13-16 (2 pages front and back) between 1/17-1/21.**Try to give this at least 2-3 days BEFORE the school science fair.	January 21
1/20 – 1/24	**School Science Fair**: Judges will evaluate projects utilizing the appropriate rubric and submit results to the **Science Fair School Coordinator (YOU)** for final tabulation.	January 24
1/27 – 1/31	School Science Fair winners should be announced by January 31st. **Ideally, knowing/announcing by January**	January 28

	28th can give you a few days to submit information for the District AND Regional Science Fair. Dr. McInnis will provide templates for Science Fair Winner' Parent Letters—there will be two: 1. Regional and 2. District Expo.	
1/27 - 1/31	1. **Complete online registration for each participant going to the Regional Science Fair.** We will utilize Zfairs for all registrations (https://msef2.zfairs.com/). a. **ONLY 1st – 5th Grade** Winners who place 1st – 3rd 2. **Schools must ensure all students have completed their online registration with all necessary signatures by January 31, 2025.**	January 31
2/3 – 2/7	**Submit Names for JPS District Science Fair/STEAM Expo**	February 3
2/3 – 2/7	STEAM Expo/Science Fair Parent Meeting	February 6
2/10 - 2/15	**1st Place Winners will** advance to the **JPS Science Fair and STEAM Expo** competition on **Saturday, February 15, 2025, from 9:00 a.m. – 1:00 p.m.**	February 15
1/17 - 1/21	Each school must submit ONE CHECK, MONEY ORDER OR CASHIER'S CHECK for all registration fees ($20 per student participant). *PERSONAL CHECKS OR CASH WILL NOT BE ACCEPTED.* All monies should be received by February 21, 2025.	February 21
3/17 - 3/21	Mississippi Science and Engineering Fair Region II **Please Note: 1st – 5th Grade** Winners who place 1st – 3rd will advance to the Regional Science Fair at Jackson State University March 18, 2025.	March 18

Regional Science Fair Information

Please note that every school should have a local Scientific Review Committee/Institutional Review Board (SRC/IRB). Information on all committee and board members should be provided if required. MSEF rules require that each of these committees be pre-approved by MSEF before they begin to function.

Failure to submit an SRC/IRB committee form by the November 30, 2024, deadline will serve as an indication that your school does not plan to participate in the 2024 Mississippi Science & Engineering Fair. Schools submitting incomplete forms (i.e., excluding the complete list of committee members) will be disqualified. Grades 1-6 are not required to provide SRC/IRB committee information IF *students will not be conducting experiments involving humans and /or animals.* Confirmation of all school registrations will be posted to the website approximately 15 school days immediately following the expiration of the deadline.