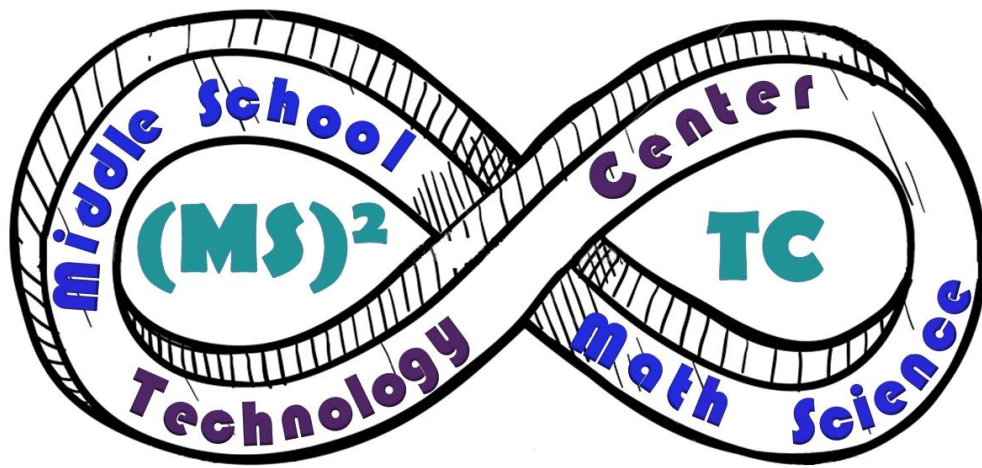


# (MS)<sup>2</sup>TC Science Fair Project Packet

## 7<sup>th</sup> Grade



Name: \_\_\_\_\_

Teacher: \_\_\_\_\_

Dear Students and Parents/Guardian,

All students at (MS)<sup>2</sup>TC are required to complete a Science Fair project to turn in to their science teacher. From there, the best projects will be chosen by the Science departments at Butcher Educational Center to compete in the 58<sup>th</sup> Annual Science and Engineering Fair of Metropolitan Detroit (SEFMD).

A completed Science Fair project consists of five things: an abstract, a display board, a written project report, an oral presentation and a project log notebook. We will review all of the components of the project in class, **however it will be up to you to perform your experiment as well as complete the components of the project at home.**

Enclosed is a schedule outlining due dates and important information regarding your student's project. Ample time has been scheduled and work has been spread out, so students can complete the work at a comfortable pace. The 7<sup>th</sup> grade Science Fair projects will be due on **Monday, January 26, 2015.**

This is a **major** project and will be reflected in your child's grades in Science and ELA. The primary objective of this project is to have students approach a problem scientifically. This includes:

1. Asking questions and forming hypotheses
2. Creating experiments to test those hypotheses
3. Organizing data and drawing conclusions
4. Writing about scientific research

The project must be **experimental** in nature as opposed to research oriented. In other words, students must do a test or experiment (**cannot be a model**) to determine the answer to their question instead of just looking it up in a book. We encourage students to pick topics that they are genuinely interested in, since they will be working on these projects for the next several months. Topics must be within the **Life Science** genre. Topics must also be "**original**" - something students do not already know and must be on **grade level**.

Project guidelines state that all work must be done by the students; however, assistance may be provided by teachers, parents, etc. It is very difficult to work alone without the exchange of ideas, so we encourage you to brainstorm with your student on different ideas and possible topics your student may want to pursue. Attached is a list of Guidelines and Project Ideas. Please take a moment to review these with your student in order to generate topic ideas. Be advised that all components will be graded by rubric. Rubrics will be distributed as necessary in the appropriate subject class.

**Preliminary Science Fair Proposals** are due on **Wednesday, October 15, 2014.**

Please contact us with any questions you might have. We look forward to working with you to make this a valuable learning experience for your student.

Sincerely,

Mrs. Duddles, Mr. Davis, Mr. Bullis and Mrs. Toy

## (MS)<sup>2</sup>TC Timeline for 7<sup>th</sup> Grade Science Fair Project 2014 - 2015

### INITIAL DRAFT

(Preliminary proposal must be approved  
by Science teacher)

Wednesday - October 15

Initial draft due

### Turn In To:

Science

### FINAL DRAFT

Monday- October 27 (on or before)

Final (correct) proposal due

Science

### LOG NOTEBOOKS

Wednesday - November 12

First log check

Science

Wednesday - December 10

Second log check

Science

Wednesday - January 07

Third log check

Science

### PROJECT

Monday - January 26

Final project paper and Abstract due

ELA

Monday - January 26

Project display board due

Science

### PRESENTATION

Week of February 9

Multimedia oral presentation due

ELA

7<sup>th</sup> Grade Project Display Board Exhibit will be Thursday, January 29, 2015  
@ Butcher Educational Center

58<sup>th</sup> Annual Science and Engineering Fair of Metropolitan Detroit is March 10 - 13, 2015  
@ Cobo Center

Dear Parent/Guardian:

Please review the requirements for the Science Fair Proposal and help your child to ensure that those requirements have been met, before they turn in their proposal.

- All measurements must be in METRIC UNITS (Ex. 2.5 cm paper)
- The **PROBLEM** must be stated in the form of a question (Ex. Will plants grow taller in blue or green light?)
- The **HYPOTHESIS** must be an "If... then" statement. (Ex. If I add more salt to the water then the water temperature will rise.)
- The **MATERIALS** must be in a list and must be very specific (Ex. NOT "water" but "3 liters of tap water.")
- The **PROCEDURE** must be in numbered steps (NOT in paragraph form). Be very specific.

All students have signed for receipt of the Science Fair Packet and have agreed to share these with you.

----- (Detach Here) -----

### PARENT ACKNOWLEDGEMENT

I have seen the timeline and will assist my child in meeting the requirements and due dates for the project. I have reviewed the requirements for this proposal with my child.

My Child,

\_\_\_\_\_ Section \_\_\_\_\_

Parent Name \_\_\_\_\_ Signature \_\_\_\_\_

Student Name \_\_\_\_\_ Signature \_\_\_\_\_

Home phone number \_\_\_\_\_ E-mail \_\_\_\_\_

# Helpful Ideas and Websites

## Helpful Ideas and Websites

### Project Ideas

- Does the presence of smoke in the air affect plant transpiration?
- What methods of preventing soil erosion work best? For example, what is effective at preventing erosion in your yard?
- Seed viability - Is there a test you can perform to predict whether or not a seed will germinate? What factors can you measure that might be used to construct a test?
- Does an external magnetic field have any noticeable effect on animals such as brine shrimp, cockroaches, or fruit flies? You could use a strip magnet and containers of sample organisms and make observations to address this question.
- Can you affect vitamin C (or another measureable vitamin) levels in juice (or another food) by adding a preservative to the juice?
- How does the concentration of chlorine in water affect the rate or percentage of seed germination?
  
- What is the effect of watering schedules on the germination (or growth rate) of seeds from a certain plant?
  
- How much plant food is too much?
- What soils best support structures, such as buildings?
- Does the presence of detergent in water affect plant growth?
- Does magnetism affect the growth of plants?
- How do different factors affect seed germination? Factors that you could test include the intensity, duration, or type of light, the temperature, the amount of water, the presence/absence of certain chemicals, or the presence/absence of soil. You can look at the percentage of seeds that germinate or the rate at which seeds germinate.
- Is a seed affected by its size? Do different size seeds have different germination rates or percentages? Does seed size affect the growth rate or final size of a plant?
- How does cold storage affect the germination of seeds? Factors you can control include the type of seeds, length of storage, temperature of storage, and other variables, such as light and humidity.
- What conditions affect the ripening of fruit? Look at ethylene and enclosing a fruit in a sealed bag, temperature, light, or nearness to other pieces of fruit.
- How are different soils affected by erosion? You can make your own wind or water and evaluate the effects on soil. If you have access to a very cold freezer, you can look at the effects of freeze and thaw cycles.
- How does the pH of soil relate to the pH of the water around the soil? You can [make your own pH paper](#), test the pH of the soil, add water, then test the pH of the water. Are the two values the same? If not, is there a relationship between them?
- How close does a plant have to be to a pesticide for it to work? What factors influence the effectiveness of a pesticide (rain? light? wind?)? How much can you dilute a pesticide while retaining its effectiveness? How effective are natural pest deterrents?
  
- Can you tell how much biodiversity is in a water sample by how murky the water is?
- Determine whether ethanol really does burn more cleanly than gasoline.
- Examine the effect of growing one plant species near another.
- Which types of produce induce ripening or premature rotting in other produce?

# Helpful Websites

<http://www.societyforscience.org/ISEF/primer/index.asp>

<http://nces.ed.gov/nceskids/graphing/Classic/> - Graphing

<http://scienceclub.org/scifair.html>

<http://www.accessexcellence.org/RC/scifair.php>

[http://www.sciencebuddies.org/science-fair-projects/project\\_finding\\_information.shtml](http://www.sciencebuddies.org/science-fair-projects/project_finding_information.shtml) - Research Paper

<http://www.sciencebuddies.org/>

Use the [Topic Selection Wizard](#) tool:

- Answer a short questionnaire about your interests & hobbies
- It uses your responses to recommend ideas you will enjoy
- [http://www.sciencebuddies.org/science-fair-projects/project\\_ideas.shtml](http://www.sciencebuddies.org/science-fair-projects/project_ideas.shtml)

<http://www.all-science-fair-projects.com/>

<http://school.discoveryeducation.com/sciencefaircentral/>

<http://www.bibme.org/> - Creating a Works Cited page

# Final Project Paper Outline

Title Page: Must include the title of your paper (should be related to your topic), your name, grade level, school name [(MS)<sup>2</sup>TC], name of your Science and ELA teachers and date (**all centered aligned**).

Table of Contents: List of the parts of your paper and the page number for each part.

Abstract: The Abstract is a short summary of the project and includes the key highlights of your experiment: purpose, procedure, and conclusions. Following are some tips on writing your abstract from the SEFMD:

- The abstract is the first part of judging at the SEFMD and may determine whether your project will be accepted for further judging or not.
- Approximately 250 words.
- An abstract should include the (a) purpose of the experiment, (b) procedures used, (c) data, and (d) conclusions.
- Indicate if your results supported your hypothesis or enabled you to attain your objective. May also include any possible research application.

Research: **500 – 750 words**

Introduction: What is the chief reason you are writing the paper? State also how you plan to approach your topic. Explain briefly the major points you plan to cover in your paper. State your thesis and the purpose of your research paper clearly.

Body: This is where you present your information to support your thesis statement. Background information that reflects the knowledge you have acquired, through your research, on the topic of your experiment. You should be providing the reader with useful background information for your project. Information that is not your own must be cited.

Conclusion: A summary of your interpretation of the information acquired through research.

Acknowledgments: This is your opportunity to thank anyone who helped you with your project, from a single individual to a company or government agency.

Works Cited: This is a list of citations to books, articles, and documents used for the research paper. **MINIMUM OF 5 sources (Online sources are permitted but avoid unsourced websites such as wikipedia, Ask.com, or yahoo Answers)**. The sources should include books, journals, encyclopedias, professional magazines, and reputable websites.

***Please note that this is a sample project paper outline. Your student will be given time in ELA class to learn how to write a project paper and to write the project paper.***

## **Specific Requirements for All Projects** *(as dictated by SEFMD rules & guidelines)*

- The main theme for all projects must be a Life Science topic/concept.
- The project **MUST be an experiment in Life Science**- something that can be tested repeatedly, and has MEASURABLE RESULTS that can be recorded and analyzed.
- **NO** biological specimens, human and animal testing/subjects/tissue, pathogenic agents, recombinant DNA, or controlled substances.
- **All work** completed on the project must be **recorded in the log notebook** (log notebook must be a bound composition book).
- All measurements **MUST** be in METRIC units.
- The proposal **must be approved before any work begins.**
- You cannot use the words "better" or "best" in your problem because they are not measurable.
- The Science project has 5 major parts: the display board showing the experimental proof (photos with captions or actual apparatus), the log notebook, the abstract, the final project paper, and the oral presentation.
- A grading rubric will be provided for each of the parts.
- STUDENTS ARE **NOT** ALLOWED TO WORK IN GROUPS. Each student must turn in their own project.
- Project display board must stand on its own (tri-fold project boards only).
- Project display board must **NOT** exceed size restrictions set by the SEFMD. Junior Division display boards must **NOT** exceed these dimensions: 36" wide x 108" high x 24" depth.
- Display boards **CANNOT** include:
  - live material
  - cultures, fungi
  - chemicals, dry ice
  - food (human or animal)
  - valuable equipment (make use of photographs instead)
  - no electricity will be available
  - anything potentially hazardous to the public is prohibited



7<sup>th</sup> Grade SCIENCE FAIR PRELIMINARY PROPOSAL:  
Initial DRAFT

NAME: \_\_\_\_\_ SECTION \_\_\_\_\_

DUE DATE: \_\_\_\_\_

APPROVED

REJECTED

\_\_\_\_\_  
(TEACHER INITIALS)

**PROBLEM:** (Written in the form of a question. Do not use the words better or best!)

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**HYPOTHESIS:** (Begins with "If.. then" statement – an educated guess about what you think the outcome/results will be).

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**WHAT WILL I MEASURE:**

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**UNITS I WILL MEASURE:** [Seconds (s), grams (g), Liters (L), centimeters (cm), kilometers (km), kilometers per hour (km/h), heart beats per minutes, number of objects remembered in one minute, etc.]

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Parent Signature \_\_\_\_\_ Date \_\_\_\_\_

Work Phone # \_\_\_\_\_ Cell Phone # \_\_\_\_\_

Student Signature \_\_\_\_\_ E-mail \_\_\_\_\_

7<sup>th</sup> Grade SCIENCE FAIR PROPOSAL:  
FINAL DRAFT

NAME: \_\_\_\_\_ SECTION \_\_\_\_\_

DUE DATE: \_\_\_\_\_

APPROVED

REJECTED

\_\_\_\_\_  
(TEACHER INITIALS)

PROBLEM: (Written in the form of a question. Do not use the words better or best!)

---

---

HYPOTHESIS: (Begins with "If... then" – an educated guess about what you think the outcome/ results will be.)

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WHAT WILL I MEASURE:

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Parent Signature \_\_\_\_\_ Date \_\_\_\_\_

Work Phone # \_\_\_\_\_ Cell Phone # \_\_\_\_\_

Student Signature \_\_\_\_\_ E-mail: \_\_\_\_\_