Liza Jackson Preparatory School

Science Fair Process Journal

Task	Format	Description	Due Date	Criterion	Score
Brainstorm	**Hand-written** in process journal	Mind mapping of Science Fair ideas, started in class… completed at home			
3 purposes (questions)	**Hand-written in process journal**	Students will develop 3 possible questions they would be interested in pursuing for project			
Variables	**Rough Draft and-written** in process journal variables worksheet (in this packet). **Final Draft Typed and added to board**	Students will complete the worksheet as a rough draft. After teacher has returned graded assignment, students should type for final draft on project			
Research/ Bibliography	**Grade level teachers will give specific guidelines for research**	Students will complete research notecards following grade level guidelines.			
Hypothesis	Students **complete sheet in process journal** for rough draft. **Final draft typed and added to board**	Students will develop a testable hypothesis based on their research and explain the reasoning			
Materials and Procedures	Rough draft hand-written in **process journal.** **Final Draft Typed and added to board,** double-spaced, black ink, following guidelines in packet.	Students develop a list of materials and procedures for completing experiment…. this is the plan that will be used during experimentation. It is expected that many changes will be made during the experiment.			
Risk Assessment	Rough draft: in **process journal.** Typed "Safety procedures" will be included on the final draft as part of materials and procedures	Students will evaluate safety and complete a risk assessment of the project before experimenting.			
Data Collection and Table	Rough draft: Table **hand-written in process journal.** Final Draft - Table and Graph template **printed from MS Excel and added to board**	Students must develop a data table and describe how they will collect and analyze their data before experimentation can be done			
EXPERIMENT	All observations and data gathered during experiment should be recorded in the process journal	Students should use their planned materials and procedures as a guide, and write the steps EXACTLY as completed during experimentation. Students should also record observations, data			
Graphs	Rough Draft: sketch the graph in your **process journal.** Finial Draft: graph will be **computer generated and added to board.**	Data from the tables will be transformed into a graphical representation. The requirements for statistical analysis will be provided by each grade level teacher			
Conclusion	Rough draft **handwritten** in process journal Final draft **typed and added to board**	Students analyze data and develop a conclusion that answers their original question			
Application	Rough draft **hand-written** in process journal Final Draft **Typed and added to board**	Students write 1-2 complete paragraphs explaining how the outcome of their science fair project could impact an individual, the scientific community, or society in general			
Abstract	Rough draft **hand-written** in process journal State Abstract form **typed and signed in blue ink**	A summary of the project from beginning to end in 250 words or less. Students must use the State Science Fair form.			

BRAINSTORMING SHEETS

Create a mind map starting with the following main branches: 1) my hobbies/interests, 2) science I find interesting, 3) things I would like to make better in the world, 4) things I wonder about

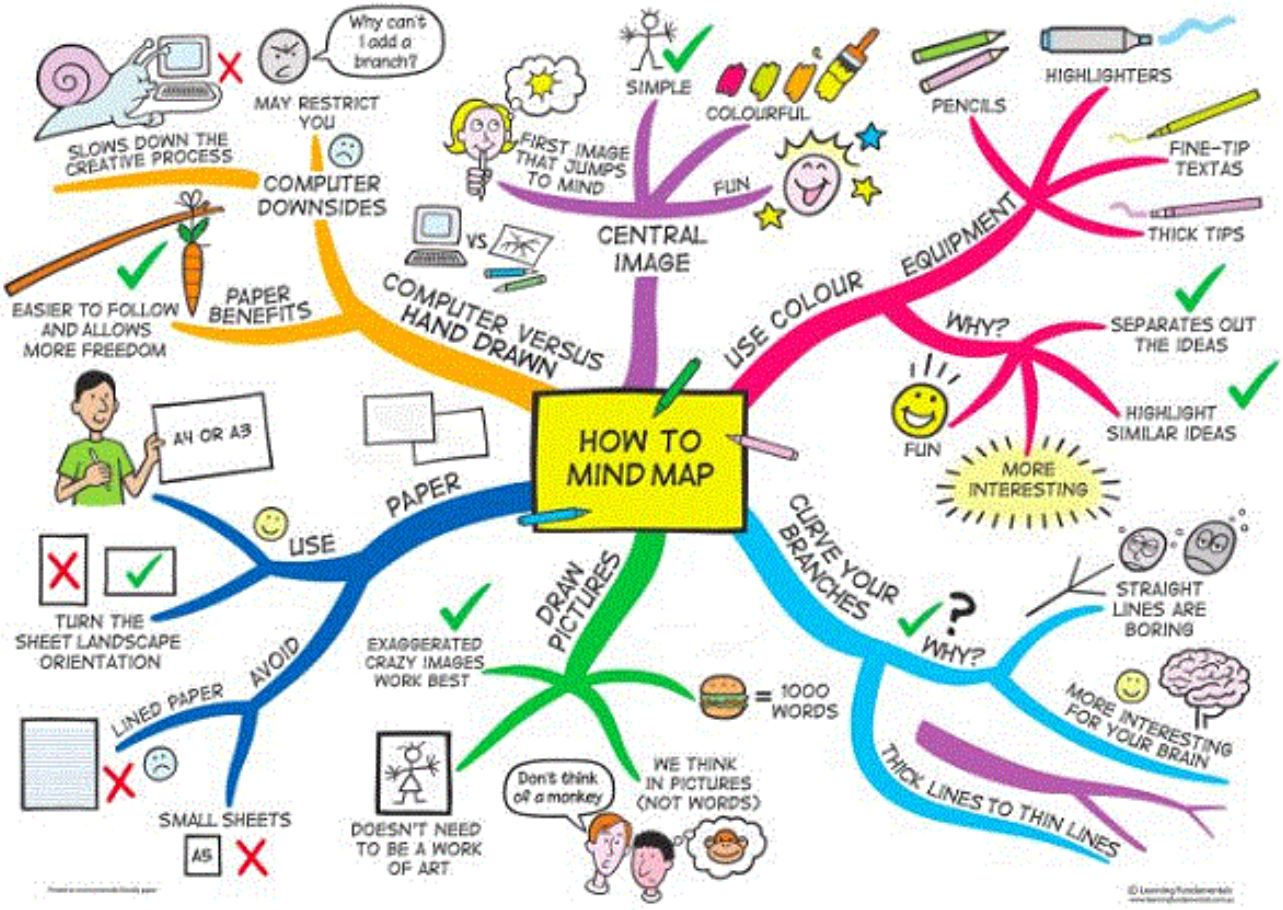

Image from mindmapart.com

Creative Workspace for developing questions

Use this space to illustrate your ideas, jot down your thoughts, and plan your project.

Three Questions

Write your three proposed Science Fair questions here, following the guidelines on the "three questions" handout. Be sure to circle the one that you to have scored for your IB grade.

1)

_____

_____

_____

_____

2)

_____

_____

_____

_____

3)

_____

_____

_____

_____

RESEARCH!

These pages are reserved for jotting down any interesting facts, questions, or information you discover while reading about your topic. Remember to write down where you found the information so you can properly cite your source later.

Creative Workspace for describing variables

Use this space to illustrate your ideas, jot down your thoughts, and plan your project.

Variables

Use the guidelines outlined on the Variables handout to complete the table below

Independent Variable	
Dependent Variable	
Constants	
Control Group	

Creative Workspace for planning data collection

Use this space to plan how you will collect your data

Experimental Design - Planning Data Collection

Describe how you will collect your data using the guidelines outlined on the Planning for Data Collection Handout.

Creative Workspace for Planning Data Tables

Draw out a few tables on this page before you make your final copy on the next page.

Data Tables

Use the guidelines outlined on the Planning for Data Collection Handout to create a table to use for data collection during your experiment

Risk Assessment

Use this space to list any safety precautions you will need to take during experimentation. This can include, adult supervision, washing hands with warm water and soap, safety glasses, using scissors or blades carefully, using an oven mitt or gloves, etc. Think through any reasonable scenario that could potentially happen, so that you will be well prepared to conduct a safe experiment. You will include this as part of your "Materials and Procedures".

Creative workspace for planning "Materials and Procedures"

Use this space to plan before typing your materials and procedures.

How much time I need:

When I am going to start my experiment:

Materials I will need:

Equipment/Tools/Measuring Devices

Resources for materials (Parents/guardians/teacher):

Steps I need to take to prepare:

What my experiment will look like:

Other Ideas/Notes about my experiment:

Experimental Notes

Use your "Materials and Procedures" plan as a guide during experimentation. Note any changes that you make here. If you have completely changed from your original plan, write down step-by-step what you actually do during your experiment. If you only have a few modifications, jot them down here, and explain why you needed to change them.

Observations

Use these pages to record any additional observations you make during your experiments.

Graphs

Use your data to transform your data into a graphical representation. Sketch your graph below before entering your data into MS Excel so you have an idea what it should look like.

Conclusion

Brainstorm your thoughts about your conclusion here, then use the next page to write a rough draft.

Hypothesis	
Data Analysis • What does it show? • How reliable was it? • Was there much of a difference • What patterns did you see? • Is your data valid?	
Validity of Hypothesis • Did your data support your hypothesis or reject it? • Is your hypothesis inconclusive? • What is the scientific reasoning for your outcome?	
Method • Were your procedures successful? • What worked or did not work? • Were your methods valid?	
Improvements and extensions • What could you do to improve this experiment • What other experiments could you do as an extension of this project • What new inquiries have come up?	

Conclusion

Creative Workspace for planning the Application

It is also important to think of who would want to know the results of the experiment and why the results are important for people to know. This is called the application. You want to apply what you learned from the experiment to a real-life situation. How could the information you learned be used? Think of the moral, ethical, social, economic, political, cultural or environmental implications of your project. Answering these questions validates the experiment.

Brainstorm below and write your rough draft on the next page. Your application should be at least one strong paragraph.

Application

Abstract

The **abstract is a 250-word (or less) summary** about your entire project from beginning to end. A practice (rough draft) abstract should be written on the next page, but the final copy of the abstract is a form found from the Northeast Florida Regional Science and Engineering Fair web-site. Go to: **http://www.nefrsef.org**

Use the pre-writing tool below to jot down your ideas for each section. Then when you are ready to create your final draft, you will type the words into the blank form and print it out from the website. YOU CAN NOT save the form and should have someone else proofread the abstract before you print it.

The abstract should include 1-2 sentences summarizing each of the following:

- ☐ *Purpose of the experiment (your question)*
- ☐ *Your Hypothesis*
- ☐ *A SUMMARY of your project.*
- ☐ *Data- the averages, not the raw data*
- ☐ *Conclusion*
- ☐ *A short application*
- ☐ ***DO NOT include acknowledgements or the bibliography***
- ☐ ***DO NOT permanently attached the abstract to the exhibit board***

Purpose	
Hypothesis	
Procedures	
Observations/Data/ Results	
Conclusion	
Application	