

Name

Date

Period

Science Fair Time Line:

September 9th:

Problem, Plan, and Hypothesis:

Statement of problem and plan to solve the problem (must identify need for this research)

Hypothesis is clearly stated (must show cause and effect)

September 16th

Research Notebook:

Must have a bibliography with 6 references and 1 page of research from 5 different references

Research Plan -Instructions can be found at:

<https://student.societyforscience.org/forms> (This web site is a reference on your bibliography. You don't need a page of research from this reference.)

September 23rd

Procedure and Materials:

All steps of your procedure are clearly stated (number and list every step necessary to complete your science fair project)

Materials used are listed - list everything you used and be specific (must be written in metric. ex: 2 mL of H₂O)

October 3rd

Variables and Safety:

Constants (the part of the experiment that stayed the same)

Variables correctly identified and manipulated (Dependent, Independent, and Controlled Variables)

Safety procedures (these are written procedures to ensure that this experiment was conducted in a safe manner ex: gloves, goggles, parental supervision)

October 14th

Project Notebook:

This is a log (or notebook) that you keep detailed notes of every experiment, measurement, observation, and result. (This notebook is a working copy or sloppy copy and includes all your data.)

October 21st

Data and Results:

Data- charts, and graphs are shown correctly (Minimum of 5 Trials)

Results- examine and organize your findings (Did your experiments give you the expected results? Why or why not? Were there errors? Analyze your data to explain your results.)

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October 28th

Conclusion:

Summarize the results utilizing the data and relate it to the hypothesis

Identifies experimental flaws

Identifies ways to improve

Identifies possible expansion of the project

November 11th

Abstract:

This is a summary of your project and must include:

purpose of the experiment

procedures used

data (use quantitative data, no graphs)

conclusion

(Abstract must be on the ISEF form and on the lower left hand corner of the board. It can be typed on line at the ISEF site.)

November 18th

Completed Board and Project Notebook with Research Plan are due:

Board must display at least these key components:

(Plan, Hypothesis, Experimentation, Procedures, Data, Results, Conclusion, Abstract) It must be neat, organized, spelled correctly, and grammatically correct.

The Project Log is a separate notebook that you kept your detailed notes and data in. Your research, bibliography, Research Plan, and any other papers or photos you would like to include.

*All forms and rules can be accessed at: www.floridassef.net/student/student-forms/

Science Fair Family Nights

Science Fair 101 September 7th 6-7pm in Media

Make-N-Take November 1st 6-8pm in Cafeteria

CHMS Science Fair Family Science Fair Viewing Night December 8th 6-7pm in Media

Name

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Science Fair Project Main Topic/Idea (2 questions to investigate for each)

Topic/Idea 1. _____

1. _____

2. _____

Topic/Idea 2. _____

1. _____

2. _____

Topic/Idea 3. _____

1. _____

2. _____

Experiment Materials

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

Experiment Procedures

1. Gather Materials

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

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14. _____

15. _____

Formal Hypothesis Form

Write the one question you have chosen as a basis for your hypothesis and experiment:

Now...

Write your hypothesis below:

If... _____

then... _____

I think this because: _____

Complete this checklist to make sure it has everything correct:

_____ My hypothesis is related to the original question I have written above

_____ My hypothesis starts with an "if"

_____ My hypothesis has a "then" part

_____ My hypothesis ends with an "I think this because" statement

Once you have completed all of these steps and checked them off, show to science teacher for final approval.

Science Teacher's signature: _____

Once you have a signature, put this in your science interactive notebook. Then, copy this sheet into your science project logbook.

Name _____

Date _____

Period _____

Science Fair Research/Bibliography

Resource One _____

Fact 1. _____

Fact 2. _____

Fact 3. _____

Fact 4. _____

Fact 5. _____

Resource Two _____

Fact 1. _____

Fact 2. _____

Fact 3. _____

Fact 4. _____

Fact 5. _____

Resource Three _____

Fact 1. _____

Fact 2. _____

Fact 3. _____

Fact 4. _____

Fact 5. _____

Resource Four _____

Fact 1. _____

Fact 2. _____

Fact 3. _____

Fact 4. _____

Fact 5. _____

Resource Five _____

Fact 1. _____

Fact 2. _____

Fact 3. _____

Fact 4. _____

Fact 5. _____

Resource Six _____

Fact 1. _____

Fact 2. _____

Fact 3. _____

Fact 4. _____

Fact 5. _____

Name

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*Science Investigation
Research Plan*

Paragraph 1

Write out your question/problem in a complete sentence. Tell me why you need to research/solve this problem.

Paragraph 2

Write out your hypothesis...

If I ... (tell me what you are doing)

Then... (what you expect to happen.)

Based on my research, I expect this to happen because...

Paragraph 3

Describe procedure:

What am I doing? How am I going to find an answer to my question?

Step by step: details, details, and more details

1.

2.

3.

Detail exactly what you will do. (If you have to build something- give me the steps you are using)

Paragraph 4

Risk and Safety

(Parent supervision, proper safety equipment used)

tell me what safety procedures you are using.

Paragraph 5

Data Analysis:

How will I analyze the data that I collect? What will I do with the data I collect?

(Maybe you will create a graph, chart, etc.)

Name

Date

Period

Science Investigation
Research Report Requirements
(Possibly 8th Grade Requirement)

Name _____

1. Write an introductory paragraph telling why your investigation is important and how it relates to the real world.
2. Write at least a two-paged report (double spaced) about your independent and dependent variables. For example: tell what ocean currents are and relate it to the temperature and density of the water, tell what types of insects are found in Florida and what attracts them, tell how skateboards and professional ramps are designed. Research can include statistics and photographs.
3. Create a bibliography of at least five sources you used to gain research information such as books, websites, encyclopedias, interviews or journals. Use a variety of types of resources and organize them in alphabetical order using any standard method.
4. Bibliography must also include the website www.sciserv.org/isef/rules.asp (Showing that you have read the International Science Fair rules)
5. If you used any chemicals, the MSDS (Material Safety Data Sheet) must be included in the bibliography (you can get them online at www.flinnsci.com/search_MSDS.asp)
6. Report must be presented in final draft format. It may be written neatly in ink or typed. Spelling and grammar should be correct.

Grading Rubric:

- 10 pts – Page #1 Your Name and Topic Statement
- 25 pts – Page #2 Introductory paragraph
- 50 pts – Page #3 & 4 Research material
- 10 pts – Page #5 Bibliography of at least five sources and science fair rules
- 5 pts - Neatness and spelling
- 100 pts Total (Project/Test Grade)**

Name

Date

Period

Science Investigation
Abstract Guidelines

Name _____

1. An abstract is a **brief summary** of your entire project. This is one of the most important things the judges will use to understand your project. **Do not begin writing the abstract until your experiment is complete and you know your results and conclusions.**
2. The abstract should be a **one page typed description of the project** (less than 250 words).
3. Must include a final draft three paragraph summary:
 - a. 1st paragraph – tell **what you did and why** in your own words (this is a summary of your problem, purpose and hypothesis)
 - b. 2nd paragraph – brief narrative description of **how you did your experiment** (paragraph explanation of basic procedures)
 - c. 3rd paragraph – description of **what happened in the experiment, why it happened, how it related to your hypothesis, and what you learned** (summary of your results and conclusions)
4. Abstract must be written in the correct format with the following information in the top left corner:
 - a. **TITLE** (name of your experiment written in all capital letters)
 - b. Name: your last name, first name, and middle initial (if you worked with a partner list name on next line)
 - c. School: Chasco Middle School
5. Final draft of the abstract must be presented on your backboard.

Name _____

Date _____

Period _____

***Science Investigation
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(Possibly 8th Grade Requirement)***

Name _____

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3. Create a bibliography of at least five sources you used to gain research information such as books, websites, encyclopedias, interviews or journals. Use a variety of types of resources and organize them in alphabetical order using any standard method.
4. Bibliography must also include the website **www.sciserv.org/iseif/rules.asp** (Showing that you have read the International Science Fair rules)
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10 pts – Page #1 Your Name and Topic Statement

25 pts – Page #2 Introductory paragraph

50 pts – Page #3 & 4 Research material

10 pts – Page #5 Bibliography of at least five sources and science fair rules

5 pts - Neatness and spelling

100 pts Total (Project/Test Grade)

Checklist for Adult Sponsor (1)

This completed form is required for ALL projects.

To be completed by the Adult Sponsor in collaboration with the student researcher(s):

Student's Name(s): _____

Project Title: _____

1. I have reviewed the Intel ISEF Rules and Guidelines.
 2. I have reviewed the student's completed Student Checklist (1A) and Research Plan/Project Summary.
 3. I have worked with the student and we have discussed the possible risks involved in the project.
 4. The project involves one or more of the following and requires prior approval by an SRC, IRB, IACUC or IBC:
 - Humans Potentially Hazardous Biological Agents
 - Vertebrate Animals Microorganisms rDNA Tissues
 5. Items to be completed for **ALL PROJECTS**
 - Adult Sponsor Checklist (1) Research Plan/Project Summary
 - Student Checklist (1A) Approval Form (1B)
 - Regulated Research Institutional/Industrial Setting Form (1C) (when applicable; after completed experiment)
 - Continuation/Research Progression Form (7) (when applicable)
-
6. **Additional forms required if the project includes the use of one or more of the following** (check all that apply):
- Humans** (Requires prior approval by an Institutional Review Board (IRB); see full text of the rules.)
 - Testing student designed invention/prototype**
 - Human Participants Form (4) or appropriate Institutional IRB documentation
 - Sample of Informed Consent Form (when applicable and/or required by the IRB)
 - Qualified Scientist Form (2) (when applicable and/or required by the IRB)
 - Vertebrate Animals** (Requires prior approval, see full text of the rules.)
 - Vertebrate Animal Form (5A)-for projects conducted in a school/home/field research site (SRC prior approval required.)
 - Vertebrate Animal Form (5B)-for projects conducted at a Regulated Research Institution. (Institutional Animal Care and Use Committee (IACUC) approval required prior experimentation.)
 - Qualified Scientist Form (2) (Required for all vertebrate animal projects at a regulated research site or when applicable)
 - Potentially Hazardous Biological Agents** (Requires prior approval by SRC, IACUC or Institutional Biosafety Committee (IBC), see full text of the rules.)
 - Potentially Hazardous Biological Agents Risk Assessment Form (6A)
 - Human and Vertebrate Animal Tissue Form (6B)- to be completed in addition to Form 6A when project involves the use of fresh or frozen tissue, primary cell cultures, blood, blood products and body fluids.
 - Qualified Scientist Form (2) (when applicable)
 - Hazardous Chemicals, Activities and Devices** (No SRC prior approval required, see full text of the rules.)
 - Risk Assessment Form (3)
 - Qualified Scientist Form (2) (required for projects involving DEA-controlled substances or when applicable)

Note: The following are exempt from prior review but require a Risk Assessment Form 3: projects involving protists, archae and similar microorganisms, for projects using manure for composting, fuel production or other non-culturing experiments, for projects using color change coliform water test kits, microbial fuel cells, and for projects involving decomposing vertebrate organisms.

Adult Sponsor's Printed Name	Signature	Date of Review
Phone	Email	

Student Checklist (1A)

This form is required for ALL projects.

1. a. Student/Team Leader: _____ Grade: _____
Email: _____ Phone: _____
b. Team Member: _____ c. Team Member: _____

2. Title of Project: _____

3. School: _____ School Phone: _____
School Address: _____

4. Adult Sponsor: _____ Phone/Email: _____

5. Does this project need SRC/IRB/IACUC or other pre-approval? Yes No Tentative start date: _____

6. Is this a continuation/progression from a previous year? Yes No

If Yes:

a. Attach the previous year's Abstract **and** Research Plan/Project Summary

b. Explain how this project is new and different from previous years on Continuation/Research Progression Form (7)

7. This year's laboratory experiment/data collection:

_____ Actual Start Date: (mm/dd/yy)

_____ End Date: (mm/dd/yy)

8. Where will you conduct your experimentation? (check all that apply)

Research Institution School Field Home Other: _____

9. List name and address of all non-school work site(s):

Name: _____

Address: _____

Phone: _____

10. Complete a Research Plan/Project Summary following the Research Plan/Project Summary instructions and attach to this form.

11. An abstract is required for all projects after experimentation.

Research Plan/Project Summary Instructions

A complete Research Plan/Project Summary is required for ALL projects and must accompany Student Checklist (1A).

1. All projects must have a Research Plan/Project Summary written prior to experimentation following the instructions below to detail the rationale, research question(s), methodology, and risk assessment of the proposed research.
 - a. If changes are made during the research, such changes can be added to the original research plan as an addendum, recognizing that some changes may require returning to the IRB or SRC for appropriate review and approvals. If no additional approvals are required, this addendum serves as a project summary to explain research that was conducted.
 - b. If no changes are made from the original research plan, no project summary is required.
2. Some studies, such as an engineering design or mathematics projects, will be less detailed in the initial project plan and will change through the course of research. If such changes occur, a project summary that explains what was done is required and can be appended to the original research plan.
3. The Research Plan/Project Summary should include the following:
 - a. **RATIONALE:** Include a brief synopsis of the background that supports your research problem and explain why this research is important and if applicable, explain any societal impact of your research.
 - b. **RESEARCH QUESTION(S), HYPOTHESIS(ES), ENGINEERING GOAL(S), EXPECTED OUTCOMES:** How is this based on the rationale described above?
 - c. Describe the following in detail:
 - **Procedures:** Detail all procedures and experimental design including methods for data collection. Describe only your project. Do not include work done by mentor or others.
 - **Risk and Safety:** Identify any potential risks and safety precautions needed.
 - **Data Analysis:** Describe the procedures you will use to analyze the data/results.
 - d. **BIBLIOGRAPHY:** List major references (e.g. science journal articles, books, internet sites) from your literature review. If you plan to use vertebrate animals, one of these references must be an animal care reference.

Items 1–4 below are subject-specific guidelines for additional items to be included in your research plan/project summary as applicable.

1. Human participants research:

- a. **Participants:** Describe age range, gender, racial/ethnic composition of participants. Identify vulnerable populations (minors, pregnant women, prisoners, mentally disabled or economically disadvantaged).
- b. **Recruitment:** Where will you find your participants? How will they be invited to participate?
- c. **Methods:** What will participants be asked to do? Will you use any surveys, questionnaires or tests? What is the frequency and length of time involved for each subject?
- d. **Risk Assessment:** What are the risks or potential discomforts (physical, psychological, time involved, social, legal, etc.) to participants? How will you minimize risks? List any benefits to society or participants.
- e. **Protection of Privacy:** Will identifiable information (e.g., names, telephone numbers, birth dates, email addresses) be collected? Will data be confidential/anonymous? If anonymous, describe how the data will be collected. If not anonymous, what procedures are in place for safeguarding confidentiality? Where will data be stored? Who will have access to the data? What will you do with the data after the study?
- f. **Informed Consent Process:** Describe how you will inform participants about the purpose of the study, what they will be asked to do, that their participation is voluntary and they have the right to stop at any time.

2. Vertebrate animal research:

- a. Discuss potential ALTERNATIVES to vertebrate animal use and present justification for use of vertebrates.
- b. Explain potential impact or contribution of this research.
- c. Detail all procedures to be used, including methods used to minimize potential discomfort, distress, pain and injury to the animals and detailed chemical concentrations and drug dosages.
- d. Detail animal numbers, species, strain, sex, age, source, etc., include justification of the numbers planned.
- e. Describe housing and oversight of daily care
- f. Discuss disposition of the animals at the termination of the study.

3. Potentially hazardous biological agents research:

- a. Give source of the organism and describe BSL assessment process and BSL determination.
- b. Detail safety precautions and discuss methods of disposal.

4. Hazardous chemicals, activities & devices:

- Describe Risk Assessment process, supervision, safety precautions and methods of disposal.

Approval Form (1B)

A completed form is required for each student, including all team members.

1. To Be Completed by Student and Parent

a. Student Acknowledgment:

- I understand the risks and possible dangers to me of the proposed research plan.
- I have read the Intel ISEF Rules and Guidelines and will adhere to all International Rules when conducting this research.
- I have read and will abide by the following Ethics statement

Scientific fraud and misconduct are not condoned at any level of research or competition. Such practices include but are not limited to plagiarism, forgery, use or presentation of other researcher's work as one's own, and fabrication of data. Fraudulent projects will fail to qualify for competition in affiliated fairs and the Intel ISEF.

Student's Printed Name

Signature

Date Acknowledged (mm/dd/yy)
(Must be prior to experimentation.)

b. Parent/Guardian Approval: I have read and understand the risks and possible dangers involved in the **Research Plan/Project Summary**. I consent to my child participating in this research.

Parent/Guardian's Printed Name

Signature

Date Acknowledged (mm/dd/yy)
(Must be prior to experimentation.)

2. To be completed by the local or affiliated Fair SRC

(Required for projects requiring prior SRC/IRB APPROVAL. Sign 2a or 2b as appropriate.)

a. Required for projects that need prior SRC/IRB approval BEFORE experimentation (humans, vertebrates or potentially hazardous biological agents).

The SRC/IRB has carefully studied this project's **Research Plan/Project Summary** and all the required forms are included. My signature indicates approval of the **Research Plan/Project Summary** before the student begins experimentation.

SRC/IRB Chair's Printed Name

Signature

Date of Approval (mm/dd/yy)
(Must be prior to experimentation.)

OR

b. Required for research conducted at all Regulated Research Institutions with no prior fair SRC/IRB approval.

This project was conducted at a regulated research institution (not home or high school, etc.), was reviewed and approved by the proper institutional board before experimentation and complies with the Intel ISEF Rules. **Attach (1C) and any required institutional approvals (e.g. IACUC, IRB).**

SRC Chair's Printed Name

Signature

Date of Approval (mm/dd/yy)

3. Final Intel ISEF Affiliated Fair SRC Approval (Required for ALL Projects)

SRC Approval After Experimentation and Before Competition at Regional/State/National Fair

I certify that this project adheres to the approved **Research Plan/Project Summary** and complies with all Intel ISEF Rules.

Regional SRC Chair's Printed Name

Signature

Date of Approval

State/National SRC Chair's Printed Name
(where applicable)

Signature

Date of Approval

Risk Assessment Form (3)

Required for projects using hazardous chemicals, activities or devices and microorganisms which are exempt from pre-approval. Must be completed before experimentation.

Student's Name(s) _____

Title of Project _____

To be completed by the Student Researcher(s) in collaboration with Designated Supervisor/Qualified Scientist: (All questions must be answered; additional page(s) may be attached.)

1. List all hazardous chemicals, activities, or devices that will be used; identify microorganisms exempt from pre-approval (see Potentially Hazardous Biological Agent rules).
2. Identify and assess the risks involved in this project.
3. Describe the safety precautions and procedures that will be used to reduce the risks.
4. Describe the disposal procedures that will be used (when applicable).
5. List the source(s) of safety information.

To be completed and signed by the Designated Supervisor (or Qualified Scientist, when applicable):

I agree with the risk assessment and safety precautions and procedures described above. I certify that I have reviewed the Research Plan/Project Summary and will provide direct supervision.

Designated Supervisor's Printed Name

Signature

Date of Review (mm/dd/yy)

Position & Institution

Phone or email contact information

Experience/Training as relates to the student's area of research