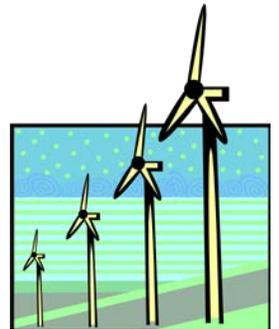
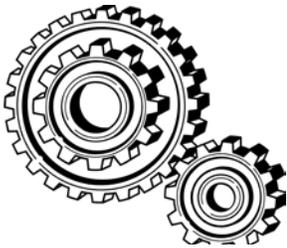
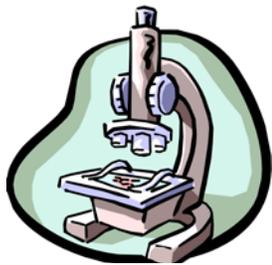


COLLECTION PROJECT

KINDERGARTEN and 1st GRADE



Student Information Packet





ELEMENTARY

SCIENCE & ENGINEERING FAIR STUDENT INFORMATION PACKET

Revised 2009, 2011, 2016



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COLLECTION PROJECT

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SCIENCE & ENGINEERING FAIR

STUDENT INFORMATION PACKET

INTRODUCTION



You are surrounded by science. Everything uses some form of science to make it work. The chair you sit on was made by some person. All the tools used to build it are because of knowledge from science and technology. Someone had to know what shape to make the saw and how sharp the teeth are to cut wood, right? How did they know to make one saw for wood and a different one for metal? Why does the wood saw have big teeth and the metal saw have small teeth?

Science is asking questions and finding answers. A science project, simply put, is the process of asking a question you have about something you are interested in, hypothesizing (best-guessing) what the answer might be, researching for information on that topic, experimenting, inventing, collecting or doing in-depth research, analyzing your results, and coming to a conclusion!

What your accomplishment will mean for you:

- ★ Gaining self confidence
- ★ Proving you can do it
- ★ Learning new things
- ★ Being recognized by your school and community
- ★ Knowing what the scientific method is and how it can help you.

Everything you need to know about doing a great science project is inside this packet. You'll be discussing the contents with your teacher and also your parents. Approximately every two weeks between now and your school science fair, your teacher will give you a **Student Timeline for Science & Engineering Fair Project** sheet to check your project's progress. The timeline sheet is designed to keep you, your parents and your teacher on target.

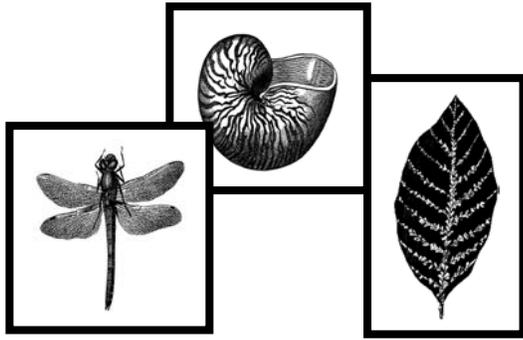
You must keep this packet, timeline sheets, letters home to parents, and all other information in a separate folder. Your science fair folder should be kept at home unless your teacher asks you to bring it to school.

You will find the science fair to be an exciting and rewarding experience. Let's make this year's fair the best ever!

Helpful Hints for Students



- ⌚ Start EARLY; don't wait until the last two weeks before it is due.
- ⌚ Plan it out. It will be much more fun if you spread the time out over several days per week or several weekends, and you won't have to race to get it done! It might look like this:
 - Week 1 – Decide on your PROBLEM (QUESTION) – what you want to find out.
 - Week 2 – Collect and gather materials about your topic.
 - Week 3 – Work the steps of your project – Sort, observe, record data.
 - Week 4 – Think about the results and what they tell you.
 - Week 5 – Write your report.
 - Week 6 – Make your display.
- ⌚ Check with your parent or teacher if you want to use a web site for research. Not all web sites give correct information.
- ⌚ Students in Kindergarten and 1st grade will need help for most of the project.
- ⌚ This is to be a fun process. “Success” is a completed project where you had fun and learned a lot.
- ⌚ Enjoy the fun!



COLLECTION

PUTTING TOGETHER

A SCIENCE & ENGINEERING FAIR

COLLECTION PROJECT

For Kindergarten and 1st Grade ONLY

Collect and organize something of interest, answering questions related to observations made while exploring your world.

I. PROBLEM (YOUR QUESTION)

Choose a topic that you are interested in learning more about. Ask a one sentence **question** that you will find the answer to by collecting something.

Examples: What kinds of insects live in my backyard? What kinds of leaves grow in my neighborhood? What different twigs grow on trees in the park by my house?

II. HYPOTHESIS

A **hypothesis** is what you think will be the answer to your question. It is your “best guess” before you actually go and collect your evidence. It is written as one sentence. *Example: In the park near my house, there are these kinds of twigs:*

_____.

III. COLLECTION (EXPERIMENT)

- A. Materials:** Think about all the materials you will need to gather and sort your collection.
- B. Collect and Sort:** Time to have fun collecting! Once you’ve gotten your collection together, sort it in two or more different ways.
- C. Observe and record data:** Take pictures, do drawings, charts and graphs of all the ways you sort your collection. See what it looks like.
- D. Results:** Compare and evaluate the different pictures, drawings, charts and graphs you did for your collection. What do they tell you? Evaluate the results.

IV. CONCLUSION

The **conclusion** answers the hypothesis. Look at the results and figure out if they prove or disprove your hypothesis, and why.

ELEMENTARY COLLECTION

WRITTEN REPORT CONTENT

Kindergarten & 1st Grade

↪ **TITLE PAGE**

See *Written Report Format* on next page.

↪ **PURPOSE**

What did you collect?
Why did you choose that to collect?
What did you want to find out?
What things will you compare?

↪ **ACKNOWLEDGEMENTS**

This is where you thank those who helped you with your collection.

↪ **PROBLEM (QUESTION)**

This is your question – this is what you want to find out.
(*Example: What kinds of leaves grow in my neighborhood?*)

↪ **HYPOTHESIS**

This is what you think the answer to your question might be.
(*Example: In my neighborhood there are these kinds of leaves: _____.*)

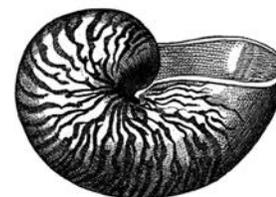
↪ **COLLECTION (EXPERIMENT)**

This is the collection that answered your question.

- List all of the materials you used.
- Sort collection in different ways.
- Record (pictures, graphs, charts, etc.) all of the ways you sorted.
- Tell why you sorted them in these ways.

↪ **CONCLUSION**

What was the answer to your problem or question?
(*Example: There are these kinds of leaves in my neighborhood: _____.*)
Tell whether it agrees or disagrees with your hypothesis.



BOXED topics are part of the rubric criteria for judging. The other parts are used only for grading the written report by the teacher.

ELEMENTARY COLLECTION WRITTEN REPORT FORMAT

Each line with a box () in front of is where you will begin a *new page* in the report.

Title page

Title in middle of page

In lower right-hand corner:

Last Name, First Name

Grade ____

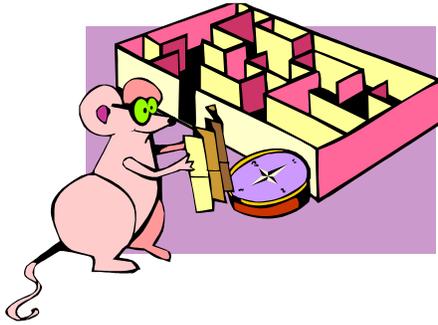
Teacher Name

School Name

Date (include year)

- Purpose
- Acknowledgements
- Problem (Question) (page numbering starts here)
- Hypothesis
- Collection (Experiment)
- Conclusion

1. The original report goes inside the report pocket on the display board.
2. A COPY should be kept at home or on the computer.



ELEMENTARY COLLECTION DISPLAY INFORMATION

BACKBOARD MATERIALS

The backboard must be sturdy and stand by itself on a table. Foam core-board and cardboard are the best materials. If you need to cut through the sides of your core-board to make “wings”, do not cut all the way through.

COLORS

If you need to paint your backboard, enamel paint works best. Do not use water-based paint. Contact paper may also be used. Use a minimum of three contrasting colors on your board.

LETTERING

Your title and subtitles may be computer-generated or cut from construction paper. Do not freehand the letters. The title letters should be 3-4 inches high. The subtitle letters should be 1-2 inches high. The subtitles, which are mandatory on the display board, are: [Problem](#), [Hypothesis](#), [Collection \(Experiment\)](#), and [Conclusion](#). All items on the display must be glued to the board. Do not use pins, tacks, staples, or tape.

DRAWINGS, PHOTOS AND GRAPHS

Drawings and photos are most useful on the display. Drawings should be drawn in pencil first and then retraced. Drawings should be in color and outlined in thin black felt tip pen.

If you have a camera, you should photograph your collection in progress. A photo of you with your collection is encouraged. All photos must be titled.

DISPLAY DIMENSIONS

1. When backboard (display portion) is flat, it should be 48 inches wide.
2. Side panels (“wings”) should be 12 to 18 inches.*
3. Height should be no more than 48 inches.

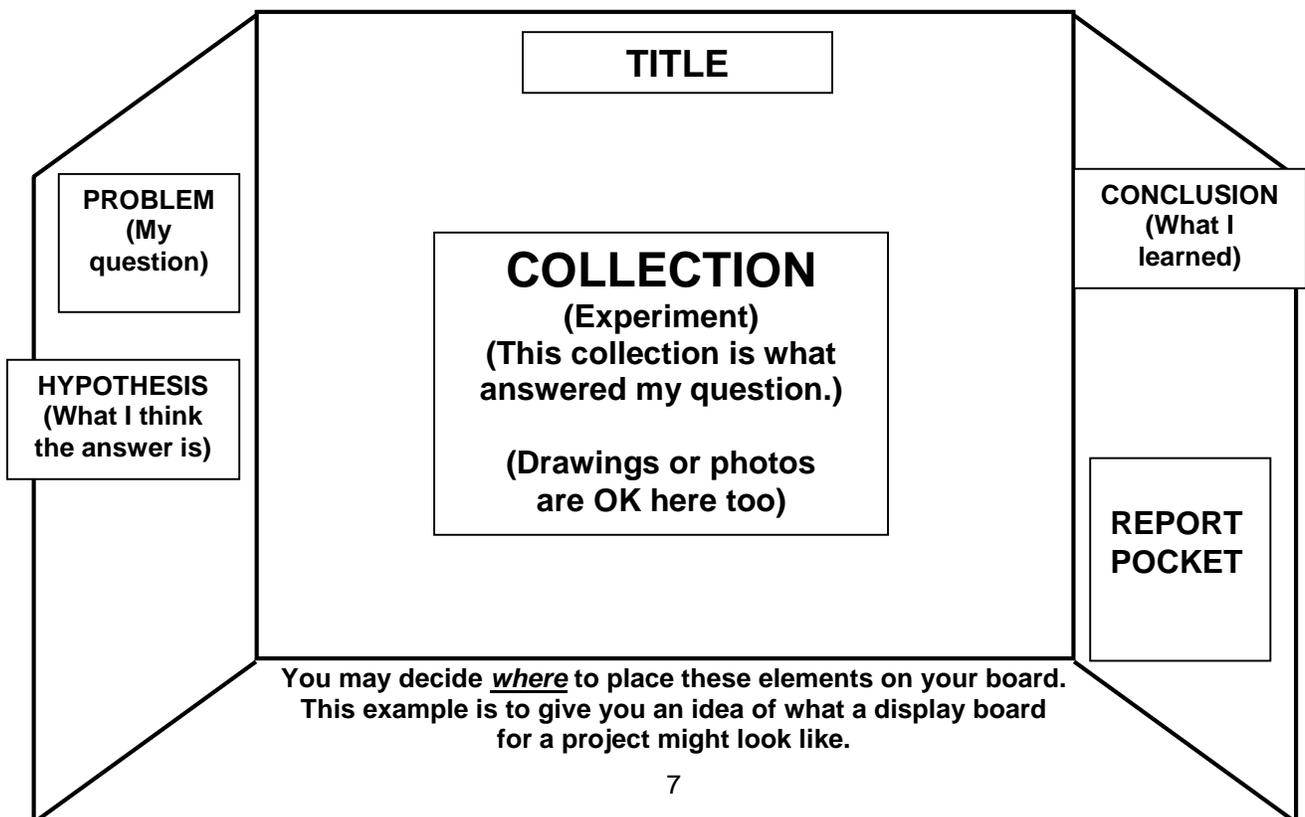
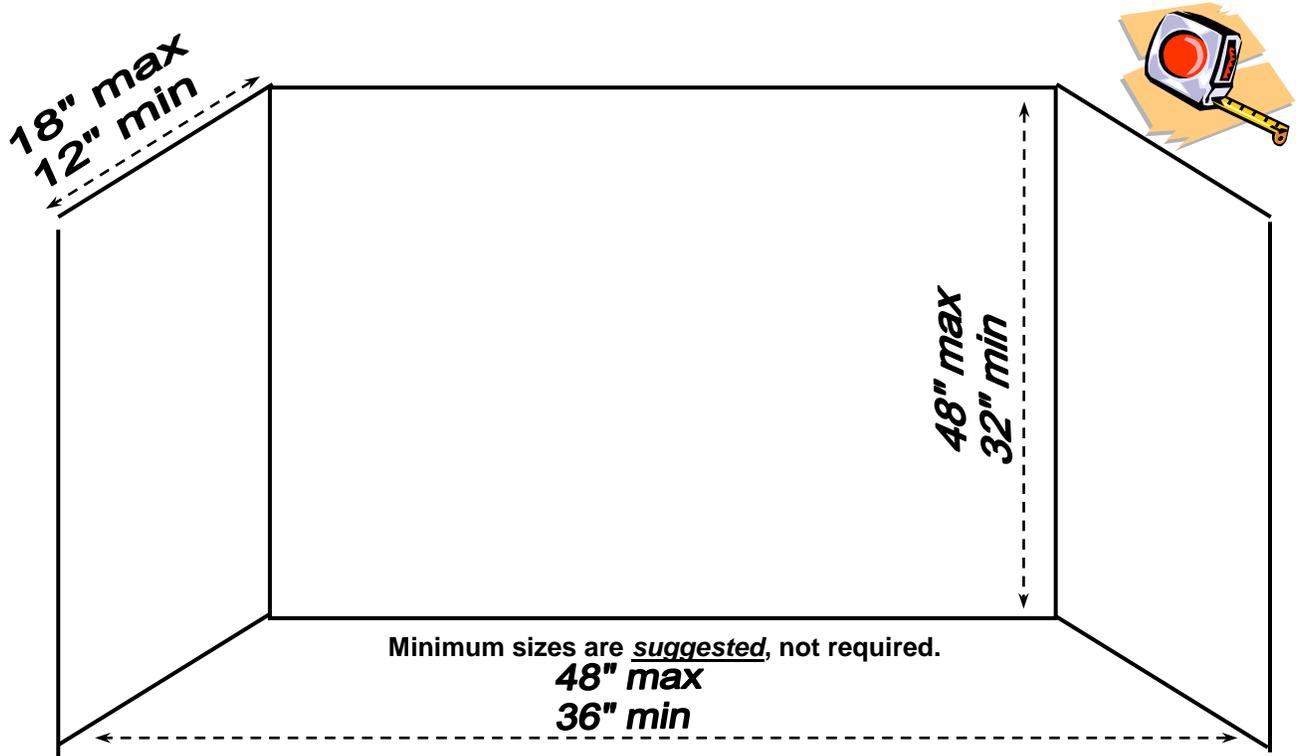
REPORT POCKET

There must be a “pocket” on the display to hold your report.

When you have decided what you are going to put on the backboard (display), lay the unglued display on the floor and look at it carefully. Have family and friends look at it and ask their opinions. Then, you should glue everything into place. Examples of displays will be shown and discussed in class.

DISPLAY SIZE & SET-UP

FOR SCHOOL SITE AND LBUSD SCIENCE & ENGINEERING FAIRS





PROBLEM
HYPOTHESIS
COLLECTION
or EXPERIMENT
CONCLUSION
REPORT

ELEMENTARY COLLECTION DISPLAY ITEMS



Your display should include your actual collection itself, or something that represents it, such as drawings, photos, or samples of what you collected. These should be placed in front of, *or on*, the display board..

Nothing you display should be a safety hazard. You may not include harmful chemicals, bacterial cultures, sharp objects, or any source of heat or flames. No live or preserved animals are allowed. This is where photos and drawings done while working on your collection project would be a great addition.



Rubric for School Site Science Fair

	Attempted 1	Proficient 3	Advanced Proficient 5
Purpose	Purpose is vague or does not express what the student desires to learn.	Purpose is clear and expresses a desire to learn something new.	Purpose is clear, expresses a desire to learn something new, and explains how the student decided what to collect.
Problem <i>(Double Points)</i> (x2)	Problem does not relate to the purpose or the objects collected.	Problem is written as a question and relates to the purpose.	Problem is a well-written question that directly relates to the purpose and the objects collected.
Hypothesis <i>(Double Points)</i> (x2)	Hypothesis is vague or not in the student's own words. Or, it may be untestable, or does not address the problem.	Hypothesis is written in the student's own words, is testable, and relates to the problem.	Hypothesis is clear and written in the student's own words. It is testable, completely addresses the problem and includes some evidence to support it.
Experiment <i>(Double Points)</i> (x2)	Collection is displayed one way, without apparent organization other than appearance.	Collection is organized in one way to show relationships between the items collected in a way that allows the student to answer the hypothesis.	Collection is organized in more than one way to show relationships between the items collected in a way that allows the student to completely answer the hypothesis.
Conclusions <i>(Double Points)</i> (x2)	Conclusion does not answer the problem, or does not refer back to the hypothesis, or contradicts the evidence collected.	Conclusion answers the problem and states if the hypothesis was supported or rejected.	Conclusion answers the problem, states if the hypothesis was supported or rejected, and explains why.
Visual Quality of Display	Project has limited eye appeal or is not easily readable at approximately two feet distance. The project has limited organization, or contains confusing visuals, or contains language or spelling errors.	Project is appealing and is readable at approximately 2 feet distance. It is organized and clear, uses understandable visuals and/or models, and has correct language and spelling.	Project is appealing and neat, and is readable at approximately 2 feet distance. It is well organized and clear, makes striking use of inventive or amusing visuals and/or models, and uses language and spelling flawlessly.

(Projects will receive between 10 and 50 points when all rubric criteria have been addressed.)



Targets for an Excellent Science Fair Project

	Advanced Proficient 5	“TRANSLATED”
Purpose	Purpose is clear, expresses a desire to learn something new, and explains how the student decided what to collect.	Tell why you want to gather the things you chose for your collection.
Problem <i>(Double Points)</i> (x2)	Problem is a well-written question that directly relates to the purpose and the objects collected.	Ask a real question where you don't know the answer.
Hypothesis <i>(Double Points)</i> (x2)	Hypothesis is clear and written in the student's own words. It is testable, completely addresses the problem and includes some evidence to support it.	Guess the answer to your question using the information you found.
Experiment <i>(Double Points)</i> (x2)	Collection is organized in more than one way to show relationships between the items collected in a way that allows the student to completely answer the hypothesis.	Find a way to organize the things you collected. Organize your collected things in another way, too.
Conclusions <i>(Double Points)</i> (x2)	Conclusion answers the problem, states if the hypothesis was supported or rejected, and explains why.	Use your data to answer your original question. Explain why your guess was right or wrong.
Visual Quality of Display	Project is appealing and neat, and is readable at approximately 2 feet distance. It is well organized and clear, makes striking use of inventive or amusing visuals and/or models, and uses language and spelling flawlessly.	Make your project fun to look at with pictures and colors. Use large, clear lettering. Check grammar and spelling.