



FAIR 2022

Dear Intermediate students and parents,

It is time for the much anticipated Science Fair projects to begin. This year the Intermediate students will have a choice of topics in any field of science. Students will conduct a project on their own or with a partner and present it in front of the class on April 11, 12, or 13 (more specifics to come).

Included in this packet is:

1. - planning and approval sheet
2. - weekly assignments and due dates. Items in bold must be turned into your skills group teacher. Items in plain text should be done at home as part of the process.
3. - example of a tri-fold display.
4. - check off list for tri-fold display and binder/folder.

TIP! Make a copy of everything you turn in (except the planning sheet) because one copy will go on your tri-fold board and one copy will go in your binder/folder.

Science Fair Project Weekly Assignments:

3/17/22: turn in - **Planning & Approval Sheet**. Have a solid driving question and hypothesis. Your teacher must sign-off on the approval sheet.

3/24: turn in- **Materials List and List of Procedures and/or steps**.

But at home:

- Write down the books or websites that you used to get information.
- Start your experiment while journaling and recording your observations into a graph.
- Take pictures of the steps in your experiment.
- Keep writing about your observations.
- Start creating your graph based on the data you collected

3/31 turn in - **Outcome Data Chart/Graph** and explain what the data on your graph shows.

4/7: turn in - **PICTURES** of your experiment, the **Conclusion paragraph & bibliography**. Your **conclusion paragraph** tells us- What is your interpretation of the data/results? Tell WHY it happened and what you learned.

4/11 - 4/13 **Presentations in Classroom**

**** Spring Break 4/18-22

4/28- **Binders due**

Science Fair Project Steps

Step 1 – Choose a project idea – what interests you? Students can investigate anything, not just what we have studied this year. Choose a project type – investigate with an experiment, or invent something new? There are lots of books and internet resources for finding science fair projects.

Step 2 – Choose whether to do an investigation or an invention type of project. Follow the procedure for the project type.

In an investigation science fair project, students:

- a. Ask a testable question (can be answered with a hands-on investigation).
- b. Research the topic.
- c. Make a hypothesis about the outcome based on the research or their own knowledge.
- d. Design the investigation.
- e. Conduct the investigation.
- f. Collect Data.
- g. Make sense of the data and draw a conclusion.
- h. Present their findings.

In a model/invention science fair project, students:

- a. Find a local problem or something that needs to be improved.
- b. Research it to find out what others know.
- c. Suggest a solution and explain why it should work.
- d. Design the solution and the method for testing to see if it works.
- e. Build and test the solution.
- f. Collect data to be sure your solution made a change.
- g. Make sense of the data – how do you know it worked, or didn't work? Develop a report.

Step 3 – present your project on a display board and in a binder.

TRIFOLD PRESENTATION BOARD CHECKLIST:

Your project should have the following pieces displayed on the tri-fold board or wall. The tri-fold is important because YOU WILL POINT TO THE ITEMS ON YOUR DISPLAY WHILE YOU GIVE YOUR PRESENTATION.

- ☐ Title: the general topic or catchy name for your project plus your name.
- ☐ Research: a paragraph or more telling us what you know about the subject based on research. Tell us the name of any publications or websites that you used.
- ☐ Purpose: State your purpose as a question or a statement. What is it that you want to find out by doing this project? This should be something testable; a question that can be answered.
- ☐ Hypothesis: What do you think the answer to your question is? What do you think will happen? Based on your research/knowledge, what do you think the results of your experiment will be? After the experiment, it may turn out that your guess was wrong. It's okay if this happens.
- ☐ Steps or procedures in your experiment/investigation: How did you do it? List and describe each step in chronological order. If you need to run several trials within your experiment, you will have 1 independent variable and 2-3 dependent variables.. The one thing that you CHANGE each time is called your independent variable. The 2-3 things that you DON'T CHANGE are called dependent variables. A dependent variable is the variable being tested and measured in a scientific experiment.
- ☐ Pictures: photos are best in most cases but clear drawings are acceptable.
- ☐ Materials List: all materials needed for the experiment/investigation. Include exact quantities for each item used.
- ☐ Outcome/data: What happened during the 1st, 2nd, 3rd try etc.. ? Present it in an organized way such as a chart or list. Were there measurements?
- ☐ Summary/Conclusion: What conclusion did you come to based on your experiment? Make sense of the data. Did it work or not? What is the answer to your purpose or driving question?
What would you try next time?

Every experiment will be unique. You may need to add more pieces like a control group and an experimental group; use your lifeskill of common sense. You should be creative with how to display it. It DOES NOT have to look like the example that is attached.

BINDER CHECKLIST

Turn in a binder or folder containing all the paper parts of the experiment including pictures and conclusion.

- ☐ Title Page: The first page in the report should include a catchy title of the project as well as the name and grade of the student.
- ☐ Research: All gathered information should be summarized and presented in this section . It should be written in the student's own words and not copied from the source. Tell us the name of any publications or websites that you used.
- ☐ Purpose: State your purpose as a question or a statement. What is it that you want to find out by doing this project? This should be something testable; a question that can be answered.
- ☐ Hypothesis: State your hypothesis. What do you think is going to happen? Based on what you know, what do you think the results of your experiment will be?
- ☐ Materials: List all materials that were used in our experiment. Include exact quantities for each item used.
- ☐ Procedures of Investigation: List and describe each step in chronological order. If you need to run several trials within your experiment, you will have 1 independent variable and 2-3 dependent variables. The one thing that you CHANGE each time is called your independent variable. The 2-3 things that you DON'T CHANGE are called dependent variables. A dependent variable is the variable being tested and measured in a scientific experiment.
- ☐ Pictures: Show pictures of the experiment in its different stages.
- ☐ Results: outcome/data- What happened during the 1st, 2nd, 3rd try etc.. ? Present it in an organized way such as a chart or list. Were there measurements? Tell me what happened when you did the experiment . Show what happened by making a chart, graph, or table. Include the date, the time and any other useful information. Write all measurements clearly.
- ☐ Conclusion: This is a brief statement explaining why a projet turn out the way it did. Students should explain why the events they observed occurred. The conclusion should tell whether the hypothesis was proven or not proven. It should offer an answer to the student's original purpose.
- ☐ Reference Page: In alphabetical order, list all the resources that you

Experimental Investigation Planning and Approval Sheet

Turn this into Mrs. Gonzalez by 2/17

Name: _____ Date: _____

Project Title:

1. Identify a testable question or problem:

2. Research the topic: what do you already know before starting your project/experiment?) On the "My sources" lines, list any books or websites that provided you with information.

My sources:

1. _____
2. _____

3. Write a hypothesis:

"What I think will happen is

This is why I think so:

4. Design a Procedure:

- What I will change (independent variable):

- What will stay the same (dependent variables):

1) _____

2) _____

3) _____

4) _____

- What I will measure (dependent variable(s):

5) Steps in my procedure:

6) Materialslist:

7) How will you know if the change you made had an effect?
(What data will you collect and what will you look for?)

8) Validation:

- ☐ My project is safe.
- ☐ I can get the materials.
- ☐ I have enough time to build, test, and report the project.
- ☐ My project will not harm organisms.
- ☐ My project will not harm or bother other people.

9) Project Approval:

Parent: _____ Teacher: _____

Notes from teacher or parent:
