2010

Science Fair

Student Logbook

Student Name: _____

Class: _____

Dear Parents and Students,

Here we go! You are about to embark on an adventure that will be filled with opportunity to learn and to explore the world of Science.

Preparing and displaying a Science Fair project is a wonderful way for children to express their creativity, learn how to plan, meet deadlines, and learn to set goals in order to meet each deadline. It is important to know that there will be no classroom time set aside to prepare for this project. All projects should be completed at home with parental assistance.

Each teacher will require the science project as part of the total grade for the 4th quarter. Requirements and weight of this grade will vary according to classroom. Any questions may be directed to your child's teacher.

All projects will be judged on Monday and Tuesday, May 24th and 25th, and they will be on display during our spring program the evening of the 25th.

Pastor Carol Morley,
Administrator

SIGN-OFF PAGE

Item Description	Date	Student Initials	Parent Initials	Teacher Initials
Project Proposal				
Planning Page				
Research and Materials				
Bibliography				
Procedures				
Graphs and Data				
Conclusion				
Abstract				

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TIMELINE

Wednesday, February 24	Science Fair or Inventor's Fair letter sent home
Friday, March 5	Science Fair or Inventor's Fair commitment **DUE**
Monday, March 15	Science/Inventor Fair Logbooks sent home
Wednesday, March 24	Project Proposal **DUE**
Wednesday, April 7	Planning Page **DUE**
Wednesday, April 14	Research and Materials Pages **DUE**
Wednesday, April 21	Bibliography **DUE**
Wednesday, April 28	Procedures **DUE**
Wednesday, May 5	Graphs and Data **DUE**
Wednesday, May 12	Conclusion **DUE**
Wednesday, May 19	Abstract **DUE**
Monday, May 24	Projects and completed Logbooks **DUE**
Tuesday, May 25	Judging

TOPIC IDEAS

A Bell System
Types of Fuels
Air Currents
How Electricity is Made
Electric Eye
A Projector
Functions of a Camera
Glass and its Uses
Molding
Manufacturing Machinery
Parts of an Electric Motor
A String Pump in Action
Our Solar System
Phases of the Moon
Salt and Its Uses
Simple Machines
Sound
Fingerprinting
Man's Natural Resources
The Telephone
Light
Space Travel is Coming
An Electromagnetic Crane
Parts of a Sail Boat
Parts of a Windmill
Principles of a Transformer
A Reed Basket
Astronomy
Chlorophyll
Contour Mapping
Minerals
Rocks
What Causes Erosion
History of Shells
A Crystal Radio Set
Fire Must Have Air to Burn
Heat Can Produce Electricity
An Electronic Map of Canada
Weaving and Sewing Techniques
Measuring the Ocean Depths
How to Develop a Picture
How Traffic Signals Work
Operation of a Doorbell
Minerals: Origin, Distribution
Our Community Planning
Printing and its Value to Man
Cross Section of a Volcano
Cross Section of an Oil Well
Cross Section of the Earth
Power and Food from the Sea
Expansion and Contracting of Liquids
Which Metals Conduct Heat
Sending Messages by Electricity
Water finds its Own Level
Water Supports Heavy Weights
Space Problems in Gravity
The Fulcrum and the Lever
Polar Constellations
A Gasoline engine
Working of a Telegraph
Birth of a Balloon
Causes of the Seasons
Topogrraphic Mapping
Weather Instruments and Forecast
Mining – Coal, Iron ore, etc,
How Can Erosion be Prevented
A Chemical Change
Action of a Solenoid
A Door Chime
Climate
Electro Magnetism
Fluorescent Lights
Measuring Outer Space
Model Airplanes
Inside a Cave
Mercury
The Arc Light
A Weather Station
A Cotton Gin
A Wheat Elevator
Weather and Man
Distillation of Water
Sulfur
The Telegraph Key
Rotation of Planets
Train Signal
Snowflakes
Machines and Tools
Steam Propulsion
Steam Turbines
Products of Oil
The Quartz Family
Television
The Blinker Light
Canals and Locks
Using a Compass
Water Cycle
Petroleum and Oil
Water Pollution

PROJECT PROPOSAL

What will your project be like and what scientific question will it answer? Will your project involve performing experiments? What do you want to learn about?

THE TOPIC OF MY SCIENCE FAIR PROJECT:

_____

_____

(This may change as you dive deeper into your project, but that's okay,)

A BRIEF IDEA OF WHAT I'M GOING TO DO:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

PLANNING PAGE

Developing a plan is an important step in solving a problem. Scientists use a problem solving plan known as the Scientific Method. In the plan you need to work through the following steps:

1.What do I want to find out? (state the problem)

_____

_____

_____

2.What do I think will happen or how can I solve my problem? (Hypothesis: If this…, then that…)

_____

_____

_____

3. How can I test my hypothesis? (Experiment)

_____

_____

_____

4.What type of data can I collect? How will I collect and display the data?

_____

_____

_____

5.What will I do with the data and results that I collect?

_____

_____

RESEARCH

Gather information that relates to the topic area of your project by reading and referring to different resources.

QUESTIONS TO GUIDE YOUR INVESTIGATION:

1.What field of science is related to your project? (human body, physical science, consumer science, plants, animals, earth science, etc.)

_____

_____

_____

2.Do you know anyone who works in the field of science you are researching?

_____

_____

3.Where can you begin looking for information related to your project? (List some internet sites, books, videos…..)

_____

_____

_____

_____

_____

_____

_____

_____

BIBLIOGRAPHY

LIST THE RESOURCES THAT YOU USED FOR YOUR RESEARCH.

MATERIALS TO CONDUCT EXPERIMENTS

List the materials you might need to perform the experiments for your project. Even if you have some of the materials around your home, find the cost of the materials you would need. You might try finding the cost of materials in home supply stores, etc.

Material/ Item Needed	How many of each	Cost per item	Total for each item

Total cost of project: _____

Is it practical to perform the experiments as planned? Do I need to modify anything to make it more affordable?

PROCEDURE I USED
TO TEST MY HYPOTHESIS

It is very important that you are very detailed in your descriptions so that others can repeat your experiments for themselves. You may attach additional pages if needed.

THE STEPS I FOLLOWED IN CONDUCTING MY EXPERIMENT WERE:

GRAPHS AND DATA

An experiment should give you information to compare. Repeating an experiment more than once helps to confirm your results and gives you even more information to compare. Graph or record your results in detail.

CONCLUSION

Think about the scientific processes you used to work on your project. Answer the questions below to extend your thinking about your experience.

1.How has your final project changed from your original plan? Why?

_____

_____

_____

_____

_____

2.Did the outcome of experiments prove your hypotheses> YES or NO

3.Identify and explain the types of data you used to prove or disprove your hypotheses?

_____

_____

_____

_____

_____

4.What types of problems did you encounter throughout your scientific investigation as you worked on your project?

_____

_____

_____

_____

5.If you developed this idea again, what would you do differently?

6.How is the information you learned through the scientific processes relevant to experiences in your real life?

7.What other ideas did you think of while working on this project?

ABSTRACT DIRECTIONS

The abstract is a brief summary of your project. Your abstract should answer the following questions:

1. **What was the problem I was trying to solve or the purpose of my project?**
2. **What was my hypothesis?**
3. **What were my procedures?**
4. **What were my results?**

The abstract must fit in the space provided on the next page and should be written in paragraph form. An example has been provided below.

ABSTRACT EXAMPLE:

<table>
<tr><th>This would not actually appear on your written page. It is just here to help show you what to do,</th><th>Actual Abstract</th></tr>
<tr><td>Problem

Hypothesis

Procedure

Results</td><td>I wanted to find out if plants will grow just as well in artificial light as they will in sunlight.
Plants need light, water, and nutrients from the soil to grow. My hypothesis was that with plenty of water and nutrients, a plant should be able to grow almost as well in artificial light as in sunlight.
I bought two young starter plants and a package of seeds. I prepared four small pots with the same soil and then planted the starter plants in two of the pots and seeds in the other two. I put one pot with a starter plant and one pot with seed outside in a sunny location. I put the other starter plant and seed pot inside near a bright light. I watered all four pots on the same schedule. I fertilized all four pots the same. I recorded new leaf growth and measured the height of all plants each week for four weeks.
After four weeks, the results were pretty obvious. My potted plants that stayed inside all the time and out of real sunlight looked a lot different than the pots that sat outside in the sun. The starter plant that was outside was much fuller and had blossoms on it. The inside starter plant was not as nice and full and had no blossoms on it. The outside seed pot grew to be about as big as the starter plant used to be, but not the inside pot.</td></tr>
</table>

ABSTRACT

Please provide a brief summary of your project.

DISPLAYING YOUR PROJECT

We recommend you purchase a display board that you can find at Walmart or Office Max locally. It is made of a sturdy cardboard and is divided into three sections so it will stand up for easy display. The layout does NOT have to be exactly like the diagram below. This is just an example of how your display might look.

Procedure **(What you did)** **(Pictures and drawings)** **Credits** **(List anybody who helped you)**	**Project Title** **Student name and class** **Purpose** **(What you wanted to find out)** **Hypothesis** **(What you thought would happen)**	**Results** **(What happened)** **(Charts and tables)** **Conclusion** **(What you learned)**

In addition to the display board, you will need to bring in your completed Logbook and your experiments (Example: If your project involved growing molds, you should have items that you grew mold on to display.)

Remember, you will be graded and judged on

- **Creativity and originality**
- **Neatness**
- **Accuracy**
- **Ability to present/explain your display to the judges**
- **Timeliness**

FIELD WORK AND NOTES

The following blank pages are here for you to use to record anything and everything that you might want or need for your project. If you do an experiment, you will record field measurements for each stage. Every time you write something down on these pages, you need to date it and make sure you are explaining what you did clearly. Often times, you will be able to use the information you wrote here to complete the reports and forms in the first part of this book. If, for some reason, you write notes down on loose pieces of paper (maybe you forgot to bring this book with you when you were working on your project), just date the loose pages and tape or paste them into your logbook.

You should keep note of any interviews or phone calls you make, phone numbers and email addresses, because you never know when you will need to email a contact again.