

Science Fair

A Resource Guide

Science Fair

A Resource Guide

Milliken's Science Fair Resource Guide provides students with step-by-step instructions and suggestions, information, guidelines, and forms to take them from the earliest stage of choosing a science project to their final display at the science fair.

Authors

Patricia Lewis
Peter Watson

Cover Design

Gray Communications
and Marketing

Editor

Cindy Follman

Managing Editor

Kathleen M. Hilmes

Copyright © 1991
Milliken Publishing Company
1100 Research Blvd.
St. Louis, MO 63132
All rights reserved.

The purchase of this book entitles the individual teacher/purchaser to reproduce copies by any reproduction process for single classroom use.

The reproduction of any part of this book for use by an entire school or school system or for any commercial use is strictly prohibited.

CONTENTS

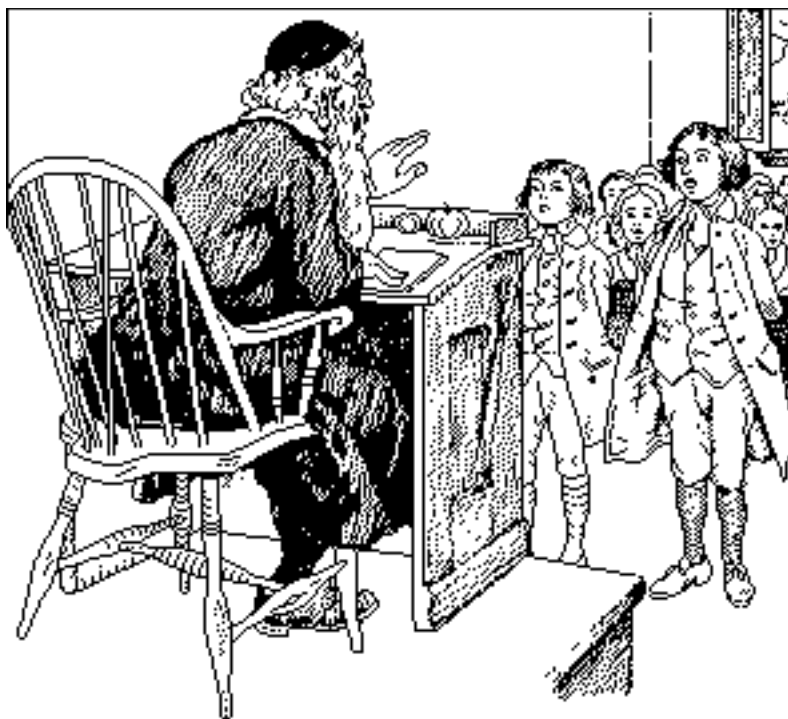
What is a Science Project?.....	1
Choosing a Science Problem.....	2
Areas of Science: Definitions.....	3
Ideas List: Over 150 Science Problems.....	4
Astronomy.....	4
Biology.....	5
Chemistry.....	7
Geology.....	8
Meteorology.....	9
Oceanography.....	10
Physics.....	11
General Science.....	12
Science Fair Project: Sign-up List.....	14
Research.....	15
Planning Your Science Project.....	16
Science Project Planning Sheet.....	17
Science Project Weekly Journal.....	19
Project Report and Display.....	21
Progress Self-Check List.....	22
Science Project Display.....	23
Self-Evaluation of Science Project.....	24
Judge's Worksheet.....	26
Award of Participation.....	28

Science Fair

An Introduction

1. Through step-by-step instructions and suggestions, this guide provides students with the information, guidelines, and forms to take them from the earliest stage of choosing a project to their final display at the science fair.
2. At the outset, students need to be provided with a clear understanding of what a science project should include. This Science Fair Resource Guide provides them with a sense of the many elements that make a successful project. As they become familiar with the process and confident with the expectations of a science project, they will be willing to take on more responsibility. This makes the teacher's role simpler and more manageable.
3. It is up to the teacher to determine how much of this guide's material to use. You may choose to give some of the material verbally rather than using handouts. You may also wish to use the forms selectively, handing them out only where you see a student needing reinforcement in a particular area. These decisions will depend upon your preference and the maturity level of your students.
4. A suggested handout schedule is provided, but it may need to be modified if plans for a science fair are not made far enough in advance.
5. It is important to direct students to think about a problem on which they can base their project well in advance of the time they will actually have to choose one. Given the time to explore various issues, they will be more likely to choose a topic they are really interested in with more satisfying results for both them and you.
6. A comprehensive and effective science project is the result of a significant amount of invested hours by each student over an extended period of time. Students should be given at least 9 to 12 weeks after they have chosen their project to complete it. If the time period is too short, projects will probably look "thrown together" at the last minute.

**May your science fair be
high in quality
and
headache-free!**



Suggested Handout Schedule

The following is offered as a suggested nine week schedule of science fair handouts and as an introduction of the material in this Science Fair Resource Guide. Ideally, you will know about your school's scheduled science fair at least nine to twelve weeks in advance. The following may be expanded to twelve weeks if necessary.

Nine Week Schedule

Title of Handout

- Week 1:** “What is a Science Project?”
“Choosing a Science Problem: Self-Check List”
“Areas of Science: Definitions”
“Ideas List: Over 150 Science Problems”
- Week 2:** “Science Fair Project: Sign-Up List”
“Research”
- Week 3:** “Planning Your Science Project”
“Science Project Planning Sheet”
- Week 4:** “Project Report and Display”
- Week 5:** “Progress Self-Check List”
- Week 6:** “Science Project Display”
- Week 7:** “Self-Evaluation of Science Project”
- Weeks 8-9:** Students should be finishing up their projects and getting them ready for the fair.

Note: During weeks three through nine the students will be working on their projects. If you adhere to the above schedule, some handouts are provided a little ahead of when they will be needed since students will be in different stages of their projects. You may not feel the need to give all of the handouts to all of your students.

Levels of Exploration

Many science problems can be tailored to meet the ability level of individual students. By narrowing the focus, a complex problem can be simplified. By expanding the scope and direction, a simple problem can be made more challenging.

For example, a project on spider webs:

Younger students may simply describe their observations.

Intermediate students might collect several webs and explain their variations.

Advanced students could do all of the above, discuss the purpose of the web designs and how they relate to the ways in which spiders catch their food.

Moving from simple observation to more involved explanations of relationships and contexts takes the problem from the **what** level to the **how** and **why** levels—from the simple to the sophisticated.