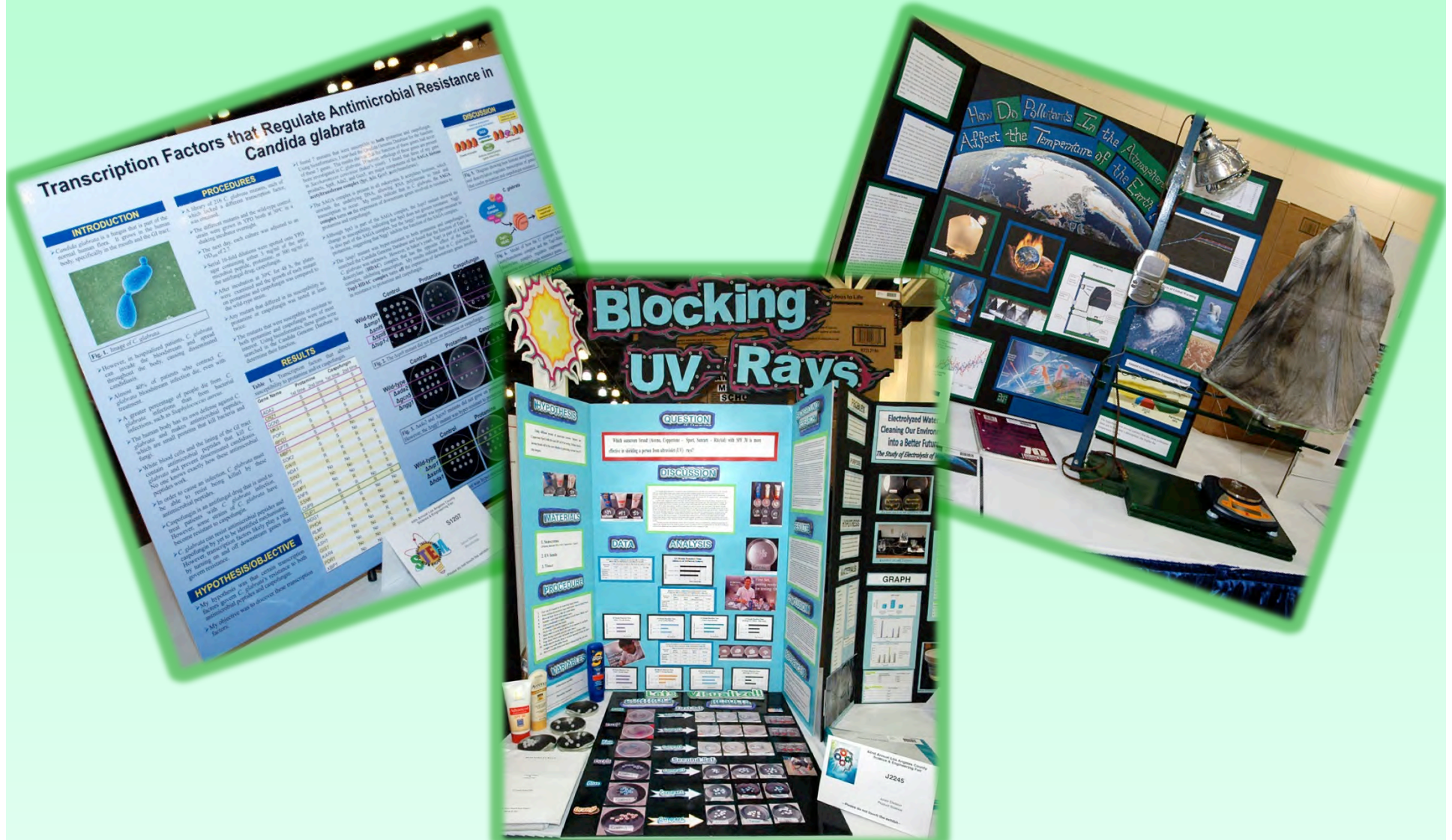
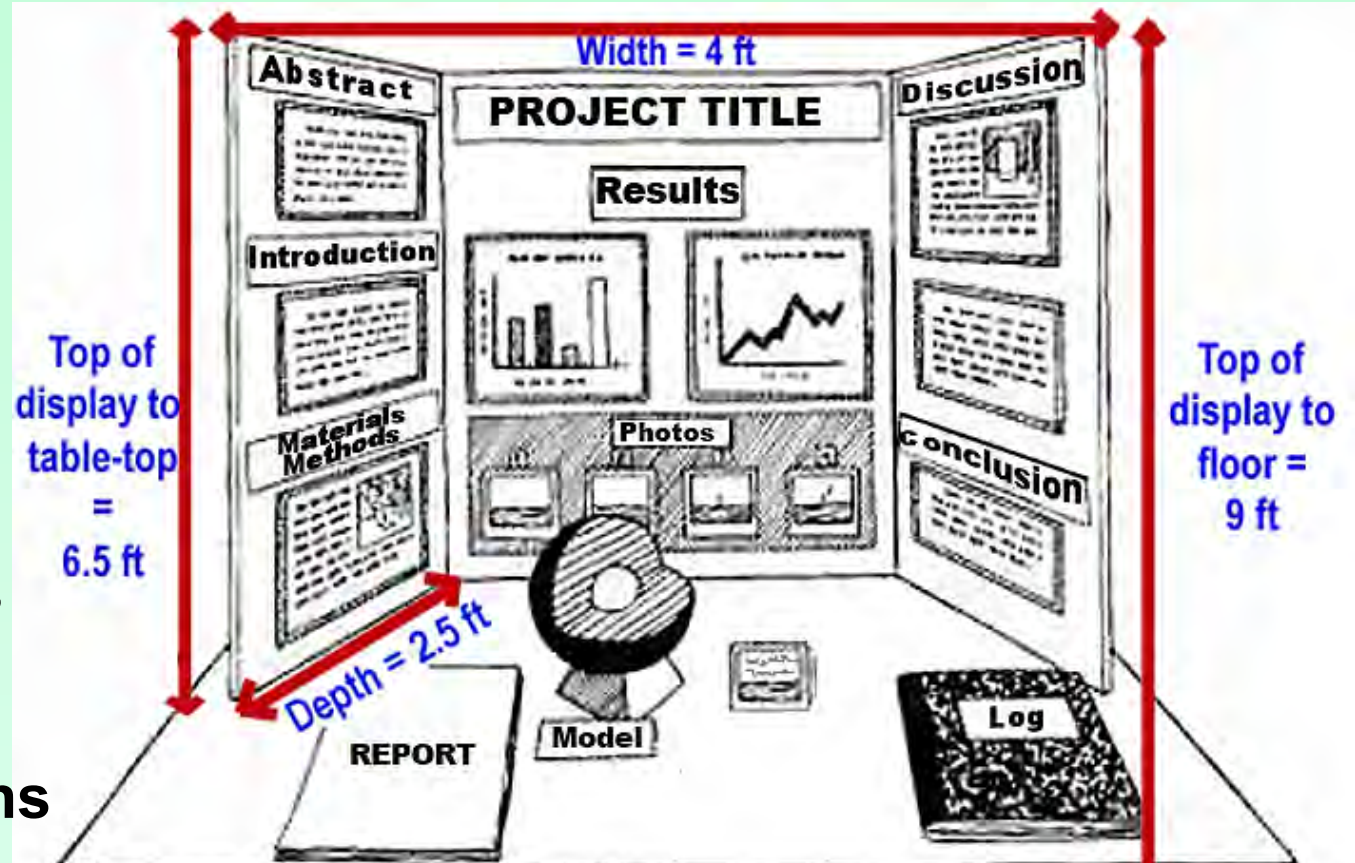


How to Create Award-Winning Displays



Mandatory Sections (Sr)

- Abstract
- Introduction
- Materials & Methods
- Results
 - Data Tables
 - Graphs
 - Observations
- Discussion
- Conclusion (*optional*)
- Name/school on back



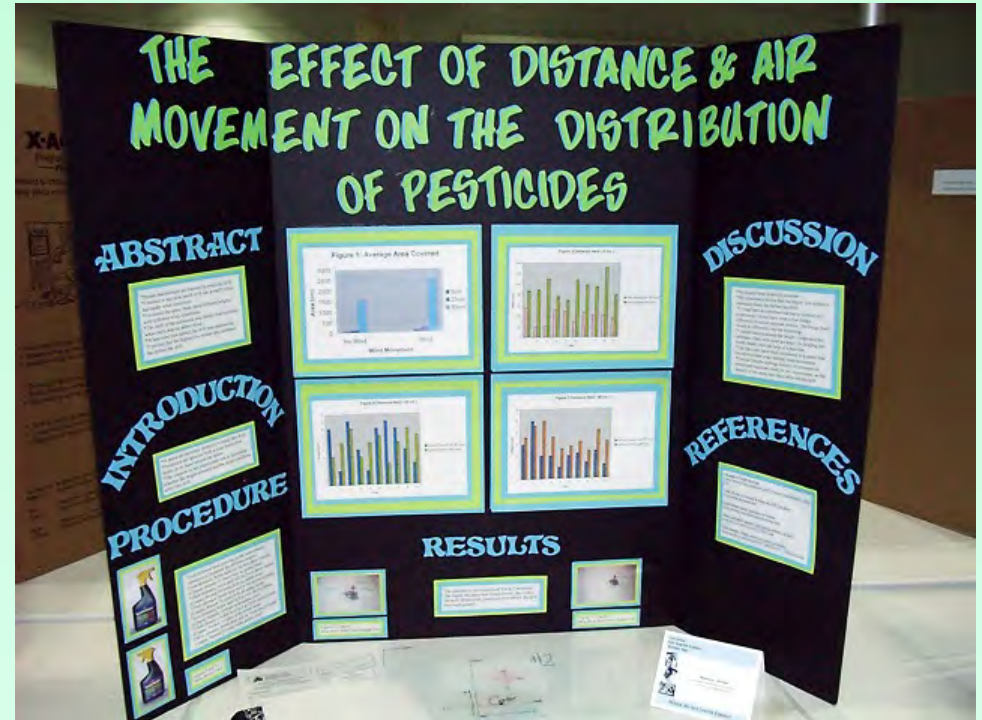
Displayed on table:

- Log Book/Journal
- Research Report w/References
- Acknowledgements (*optional*)

Mandatory Sections (Jr)

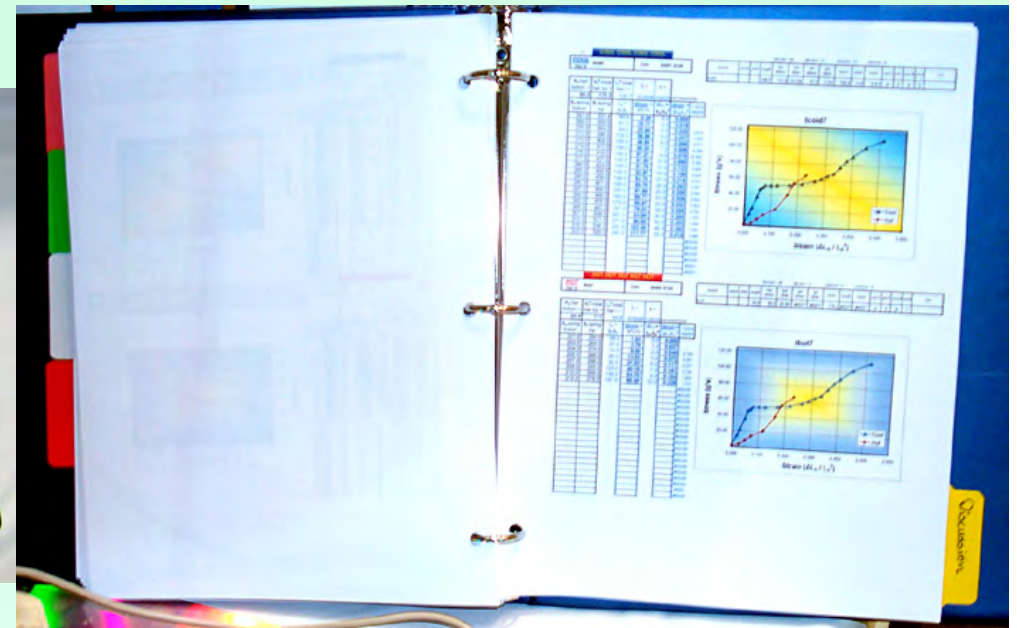
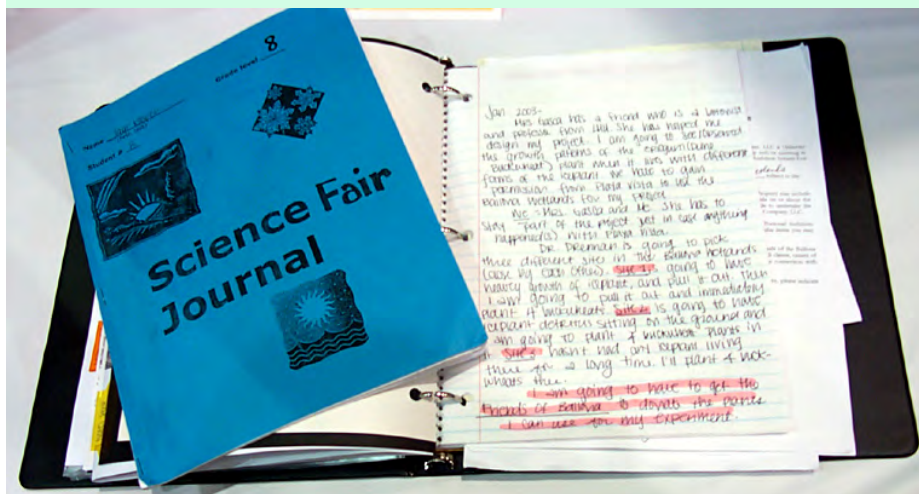
(Jr. Division has more latitude in section titles...)

- Abstract
- Problem & Hypothesis
- Introduction/Background
- Materials & Methods/Procedure)
- Results (Data)
 - Data Tables & Graphs
 - Observations
- Discussion
- Conclusion (*optional*)
- Acknowledgments (*optional*)
- Name & school on back
- **Displayed on table:** Log Book/Journal Research Report w/ references



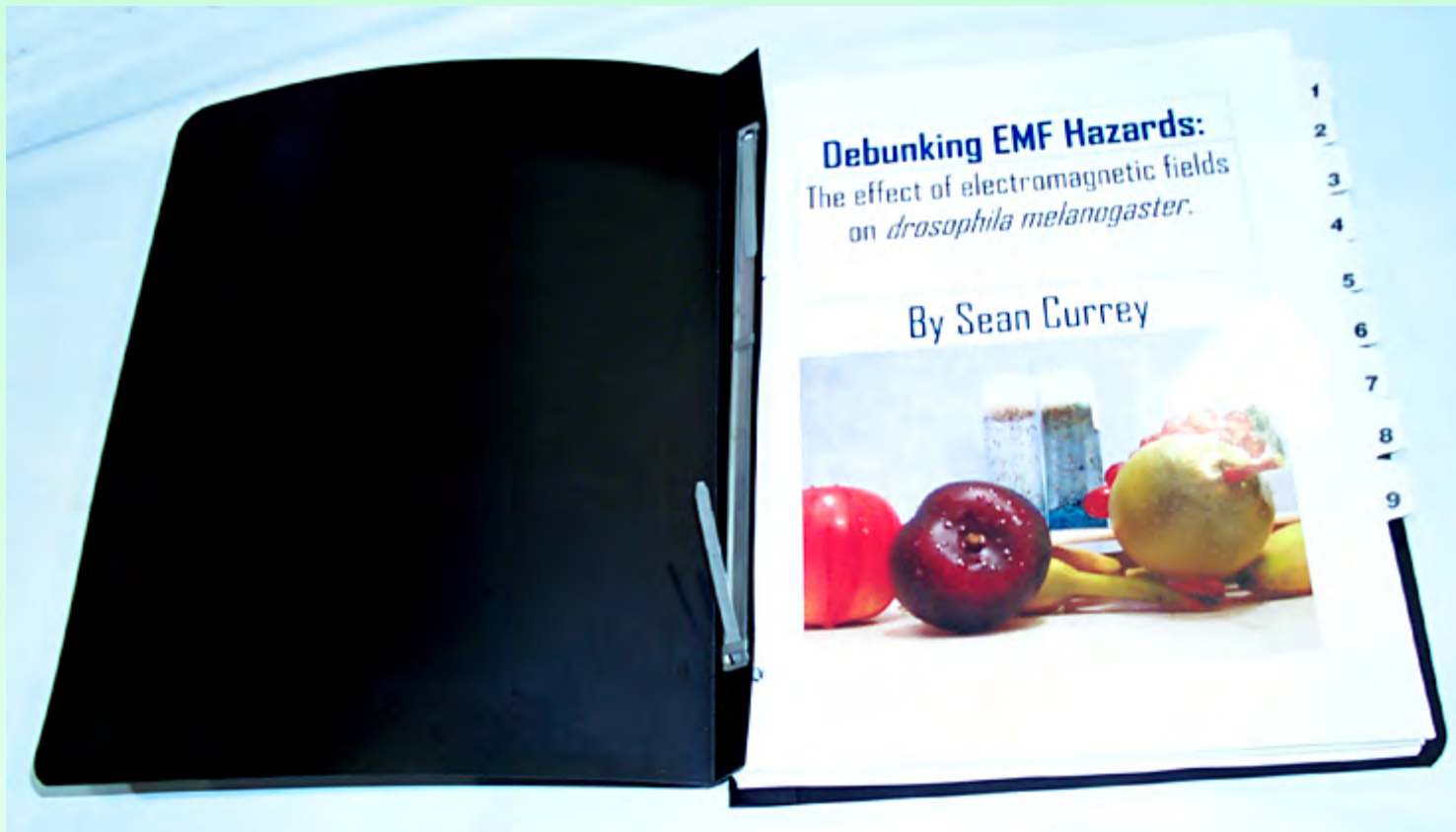
Have Your Log Book Present

- A "journal", detailing all activities
- Include actual data collected
- Additional relevant materials



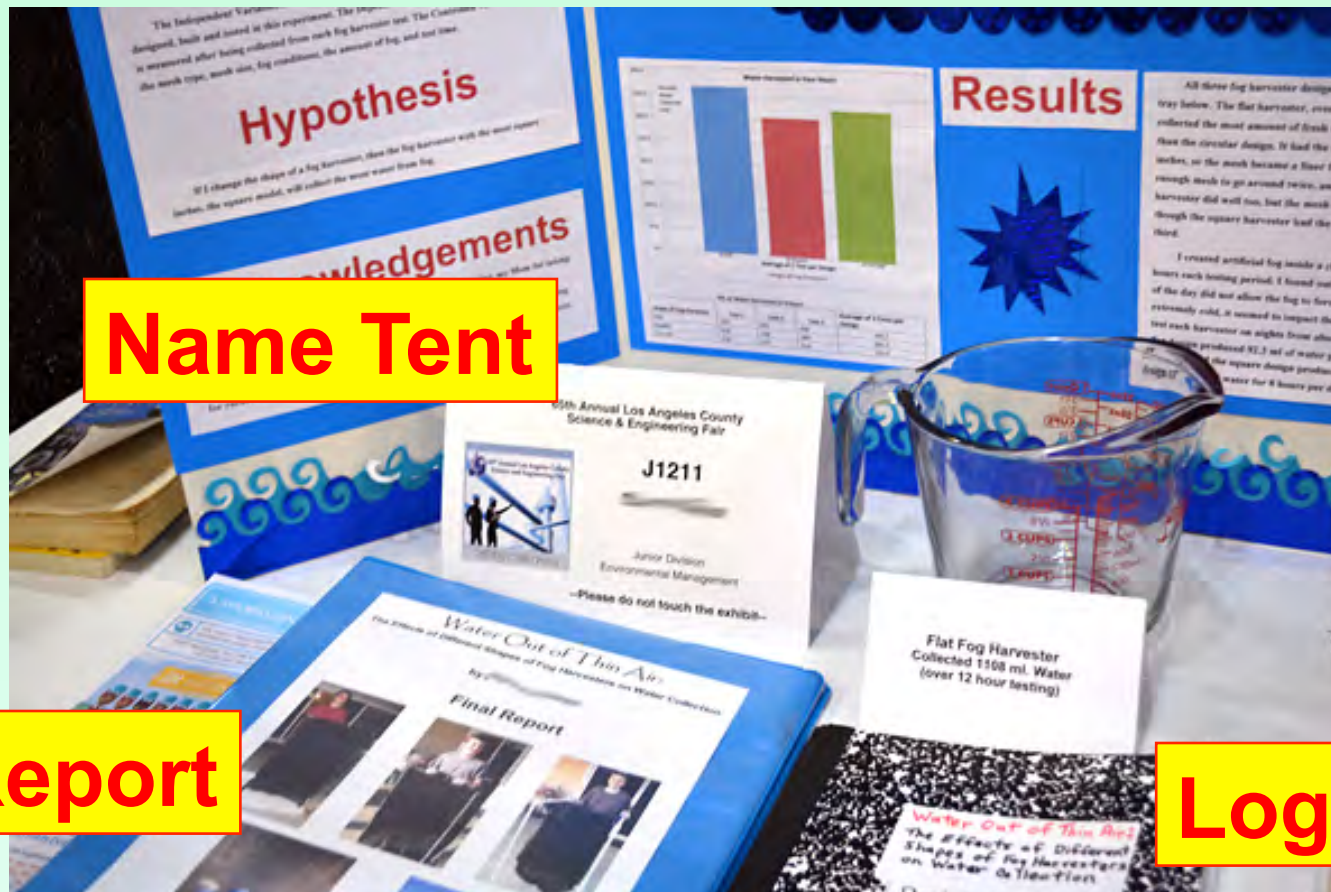
Include a Formal Report

- ALL reports should be typed
- Follow format and sequence



Display All Elements

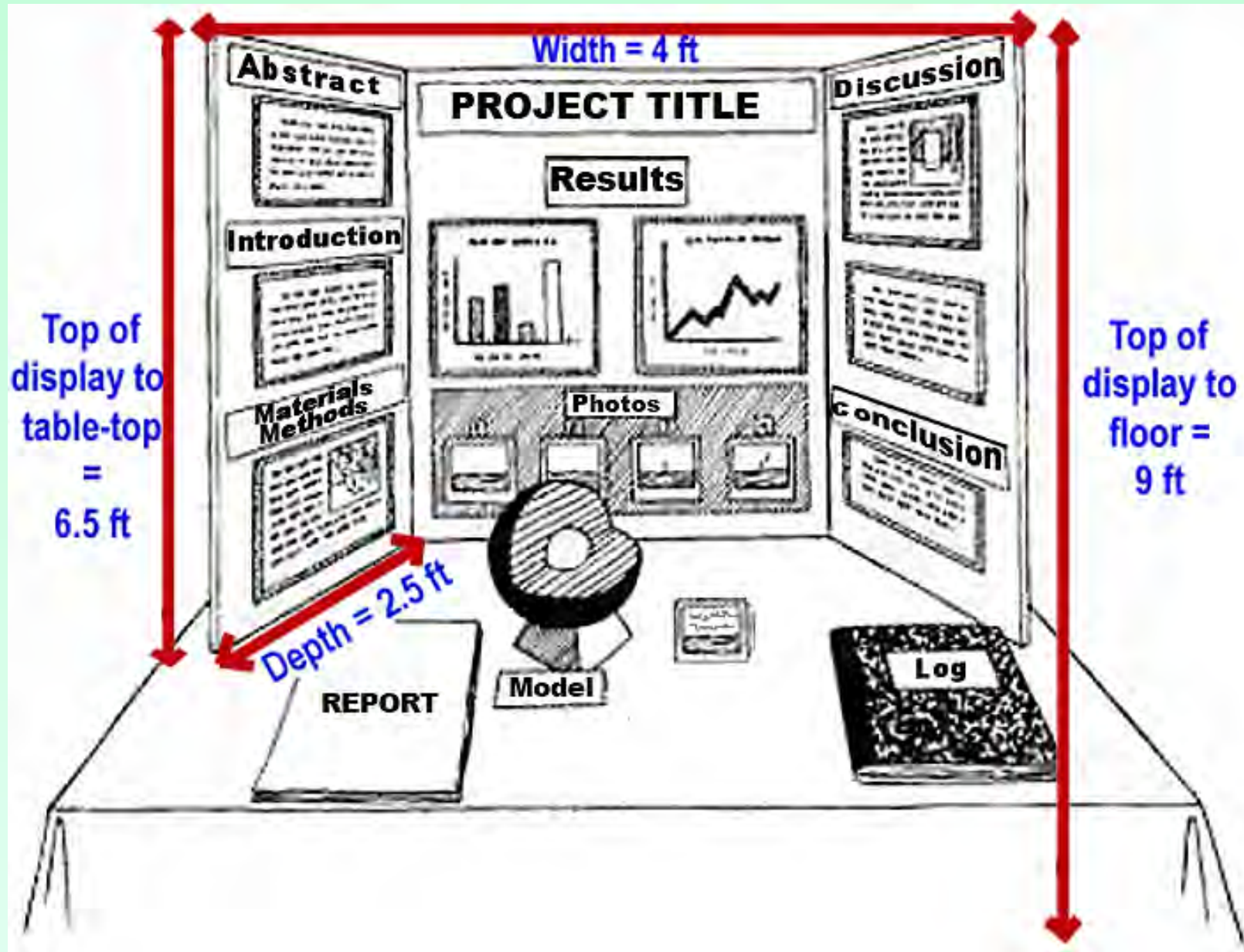
- Log Books/Journals should follow proper format and sequence



The Display Board

- **Maximum Size:**
 - **2.5 ft deep** (*front to back*),
 - **4 ft wide** (*side to side*)
 - **6.5 ft high** (*project on table*)
 - **9 ft high** (*project on floor*)
- **3-sided, hinged**
- **Must be sturdy, able to stand alone**
- **Name & School on back**

Display Board Sizes



Too Tall To Read

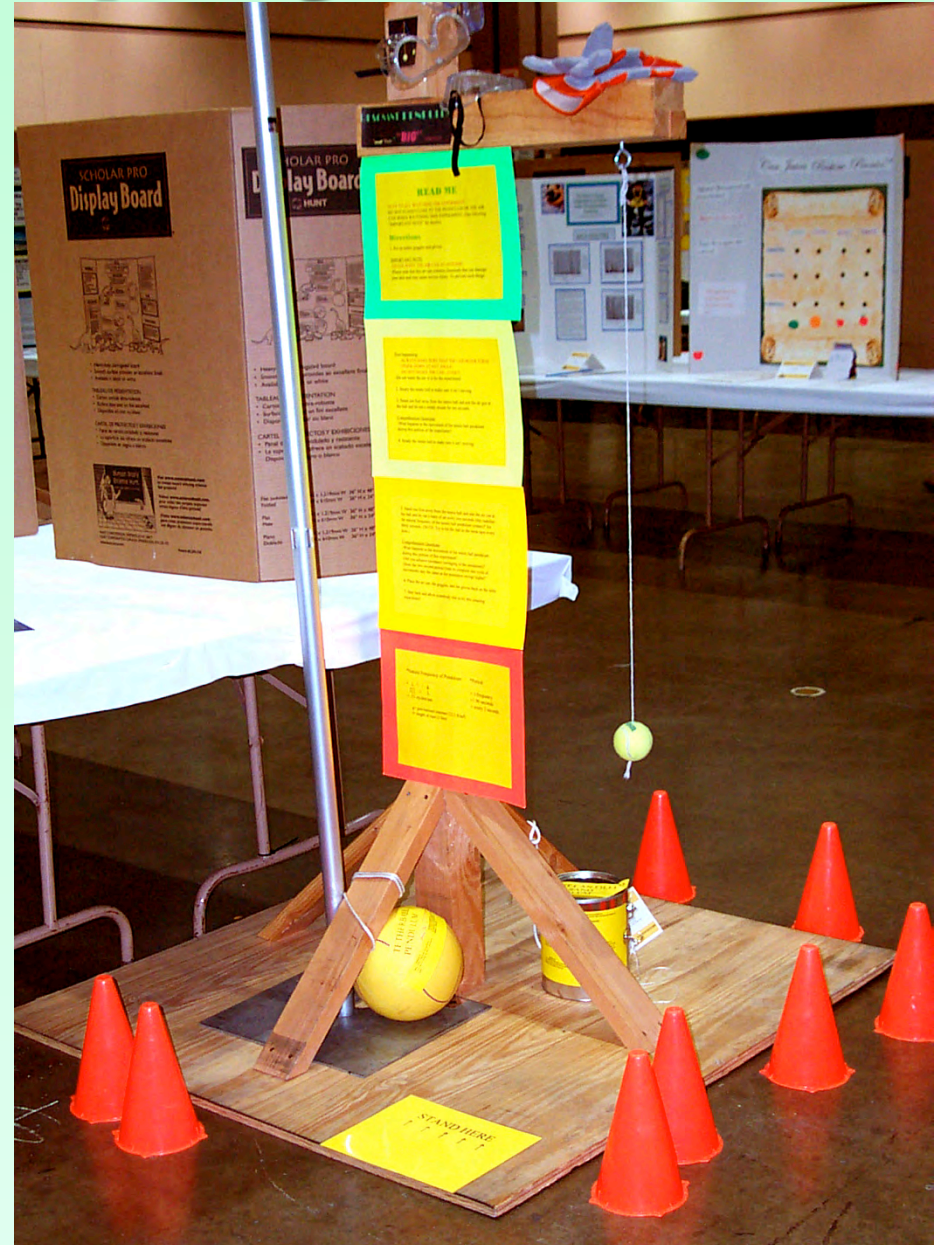


Too Small



Floor Displays

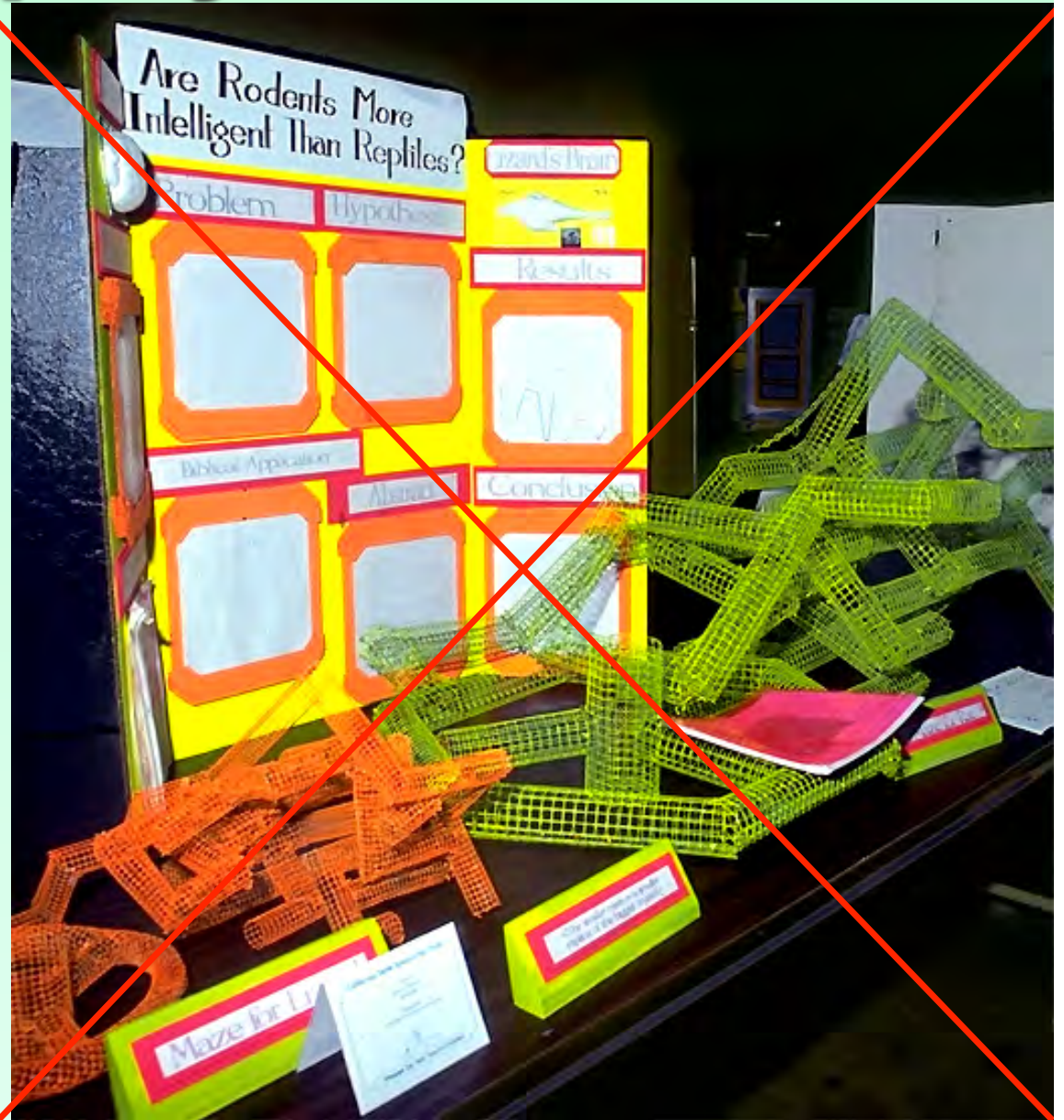
- Must be safe and keep to height requirements (9 ft)



Display Size

- Stay within fair space requirements
 - Board size
 - Table size

You cannot spill over onto another student's project area, even if they are "no shows."



Construction

- Display should **stand alone**
- Pieces should **NEVER** fall off!



Common Materials

- Foam Core Board
- Colored Cardboard
- Plywood or particle board



Uncommon Materials

- PVC Piping
- Lattice Fencing
- Peg-board
- Plastic



Titling Size & Content

- **Main Title:** 3+ *in*
- **Subtitles:** 2+ *in*
- **Text:**
 - 14+ font
 - Bold
 - Concise
 - *Understandable*

JR exhibit
example

QUESTION

How will atmospheres with carbon dioxide concentrations of 700ppm and 1400ppm affect *Mentha piperita*?

HYPOTHESIS

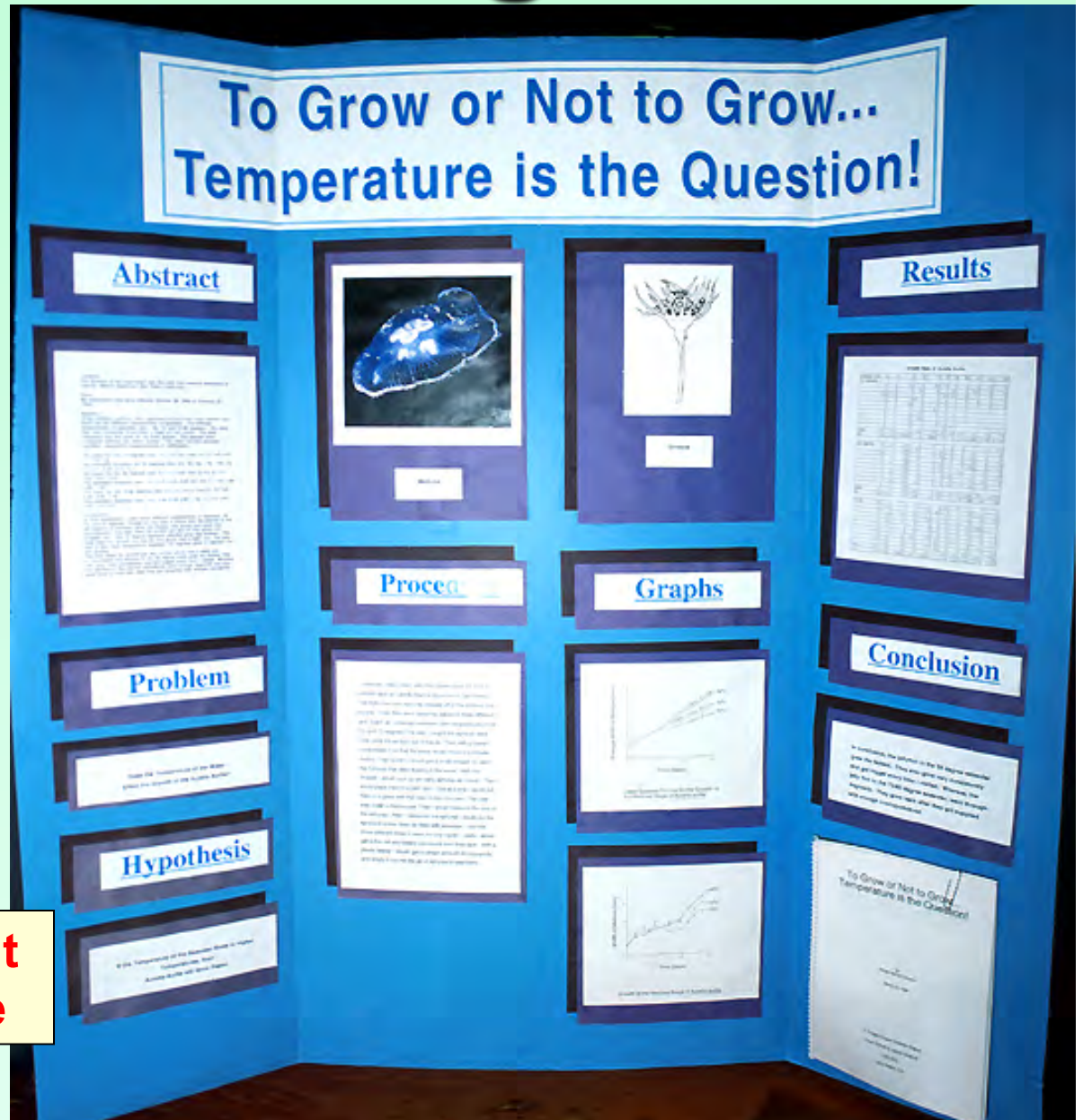
I think that due to the higher amount of carbon dioxide in the atmosphere, the plants will perform photosynthesis at a faster rate thus increasing their growth rates. This, in turn, will make them larger and more plentiful.

Formatting

- Make sure all sections are neatly & clearly displayed

- Be concise

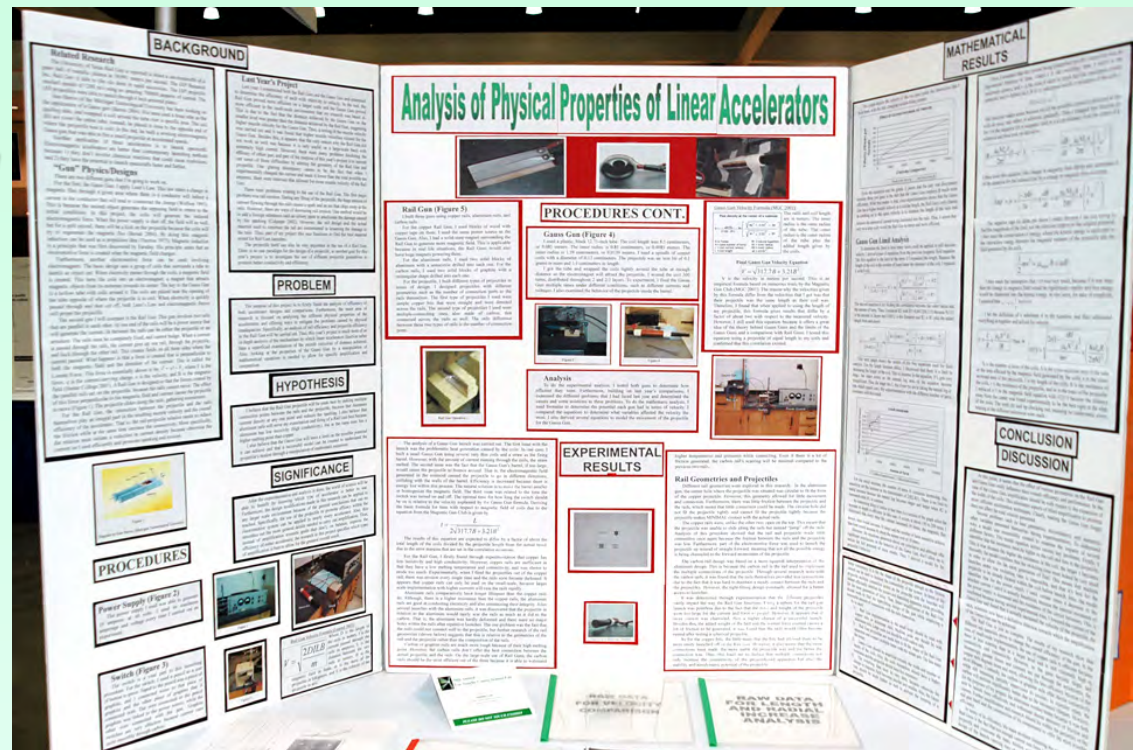
JR exhibit example



Be Selective

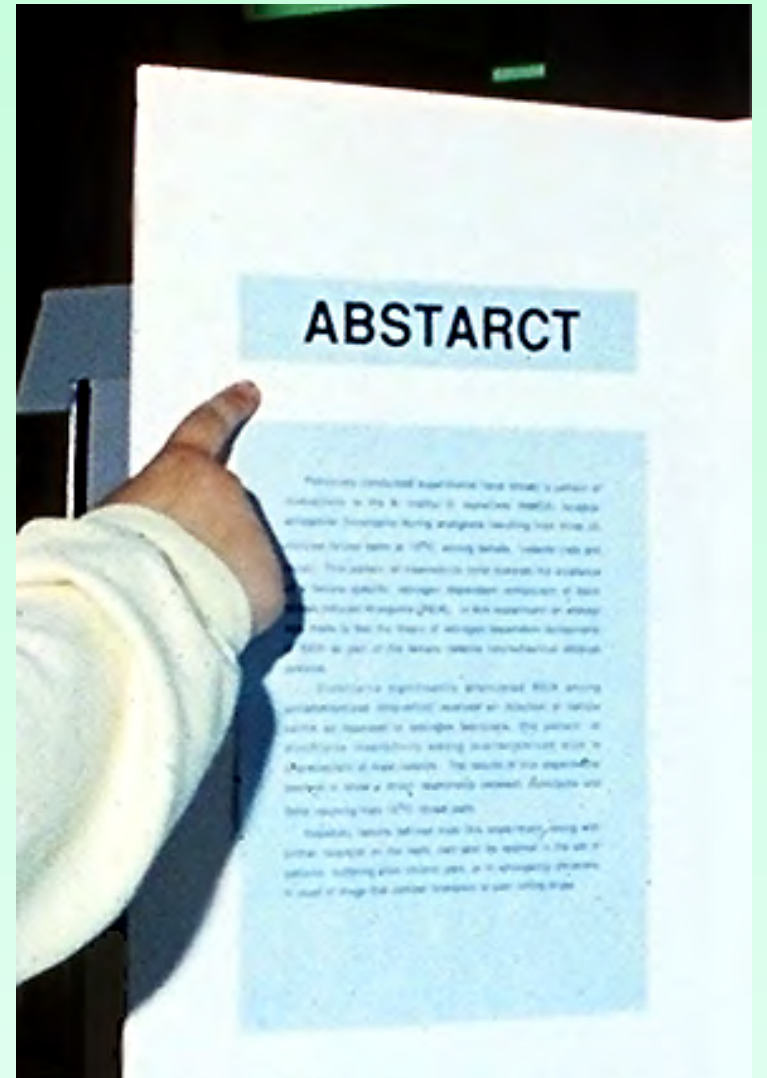
- *Don't put EVERYTHING* from your report on to the display
- The report is there to read...

Don't overkill



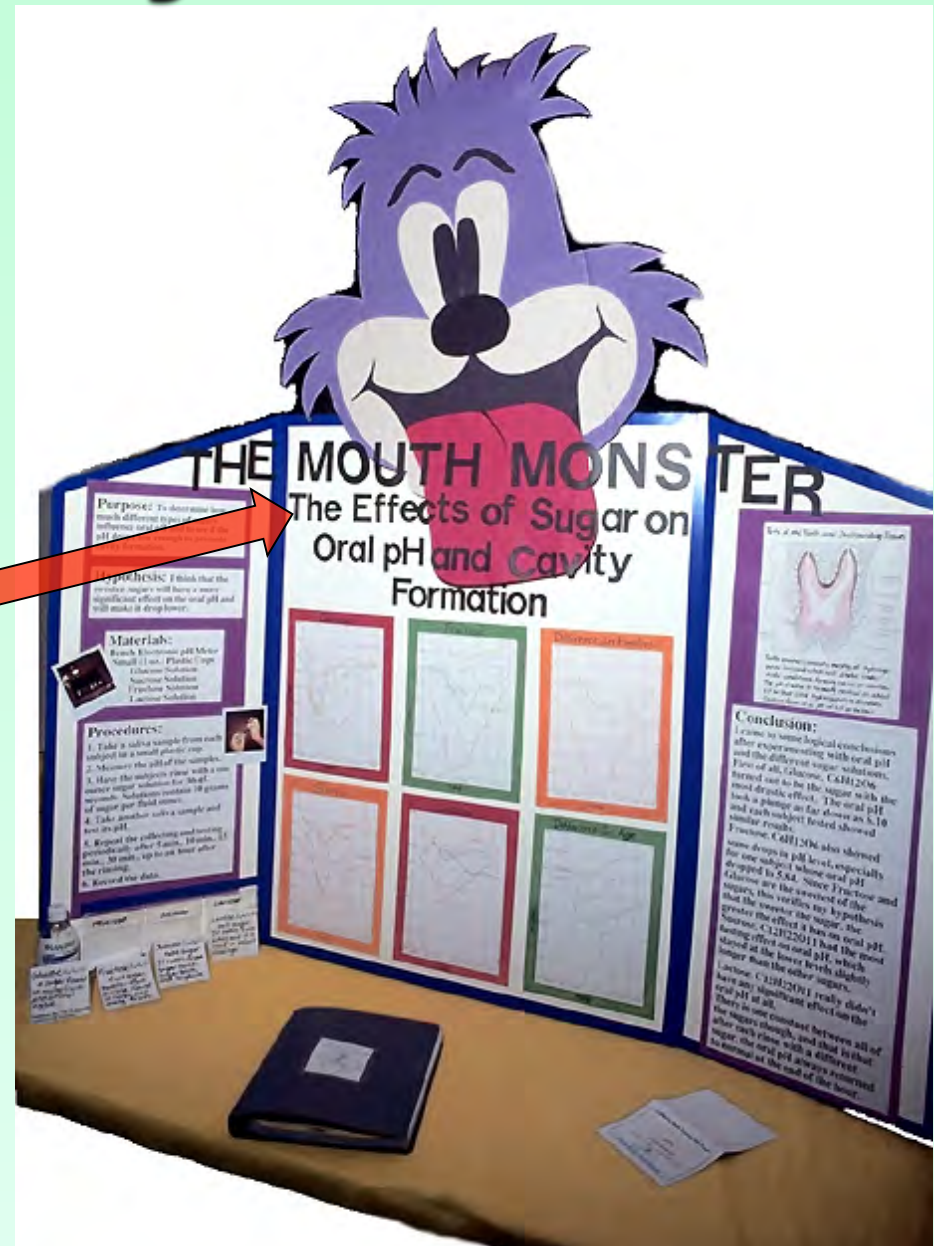
Titling and Text

- **TYPED & PROOFREAD!!**
 - *Spelling counts...*
 - *Neatness counts*



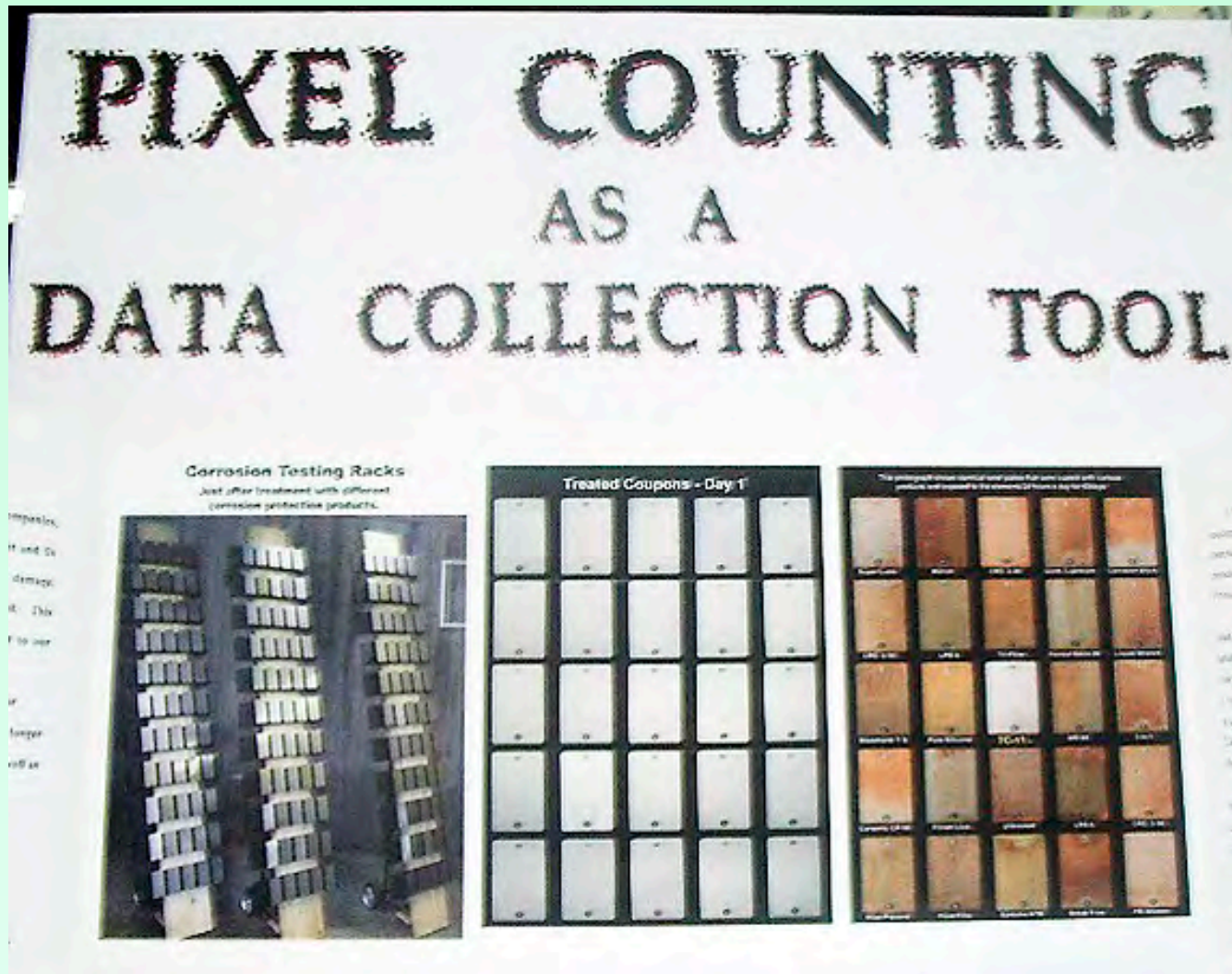
Explanatory Title

- Make sure your title is not confusing
- If necessary, use a **sub-title** for a clear explanation



Titling Enhancement

- Use novel way to make titles “pop”



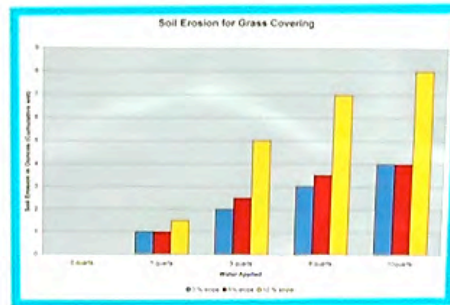
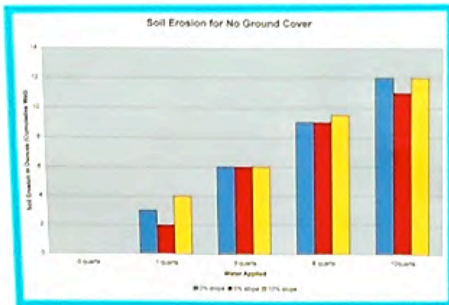
Extra Foam Core Board & Computer Graphics



Graphs and Figures

- Keep Graphs
 - Large
 - Interesting
- Keep data increments comparable
 - Readable
 - Properly labeled

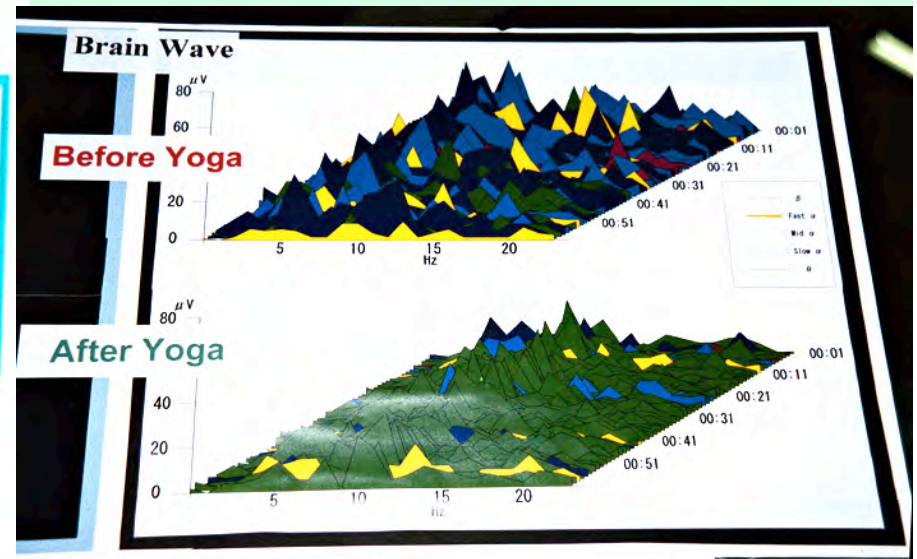
DATA



Water Applied	1% Slope	2% Slope	3% Slope
0 quarts	0	0	0
1 quart	0	0	0
2 quarts	0	0	0
3 quarts	0	0	0
4 quarts	0	0	0



Water Applied	1% Slope	2% Slope	3% Slope
0 quarts	0	0	0
1 quart	0	0	0
2 quarts	0	0	0
3 quarts	0	0	0
4 quarts	0	0	0



Use Drawings to Explain Difficult Concepts



How viruses attack



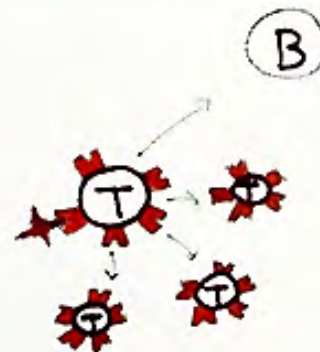
Virus enters through receptor



Cell begins manufacturing new viruses



How the body fights back



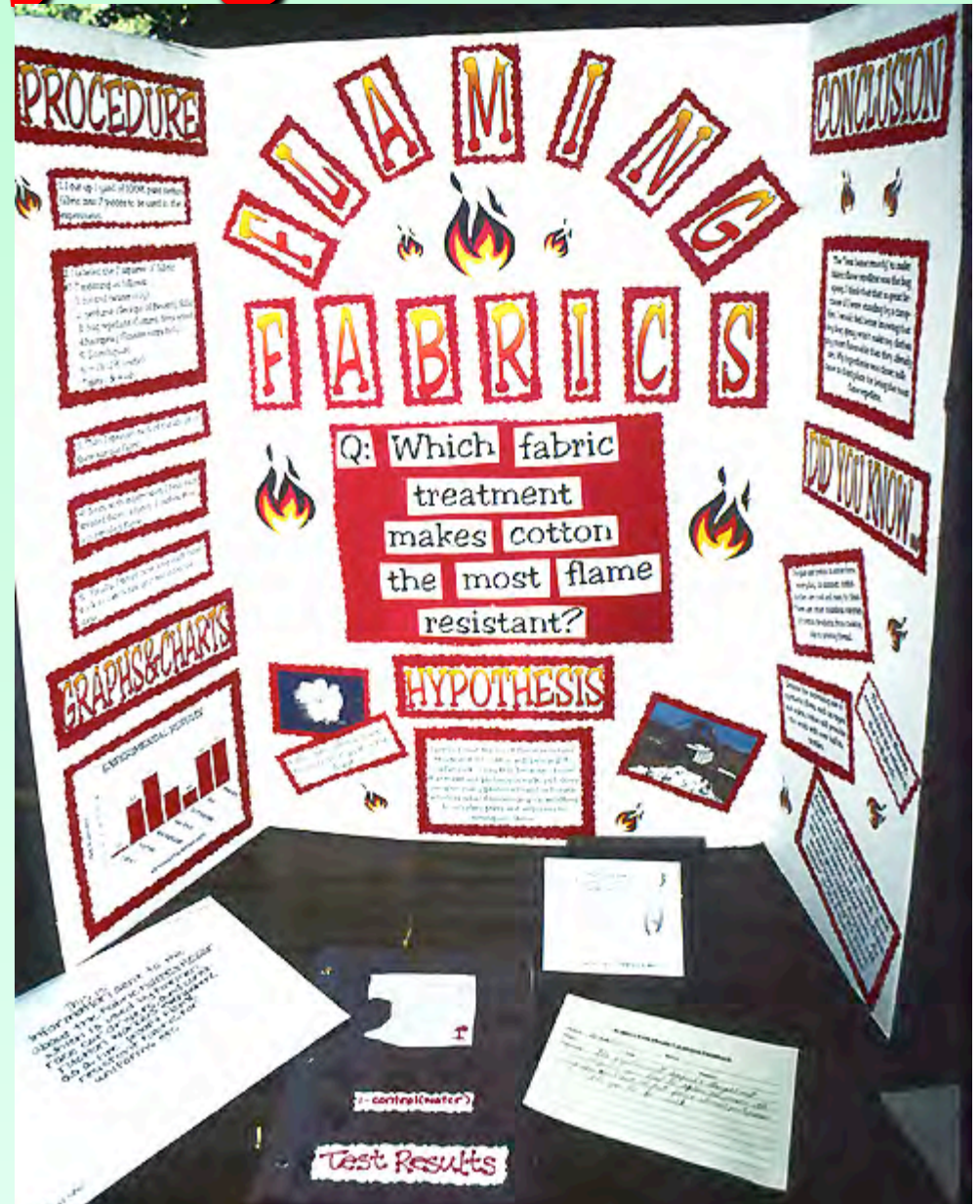
T cells are produced
B cells are activated



B cells produce antibodies

Pick a Unifying Theme

- Fonts, background and/or graphics that go with the **theme** of your project



Picking a Font

- Don't use *extra fancy* fonts
- You want judges to be able to read & focus on your *information*

Project Title

Project

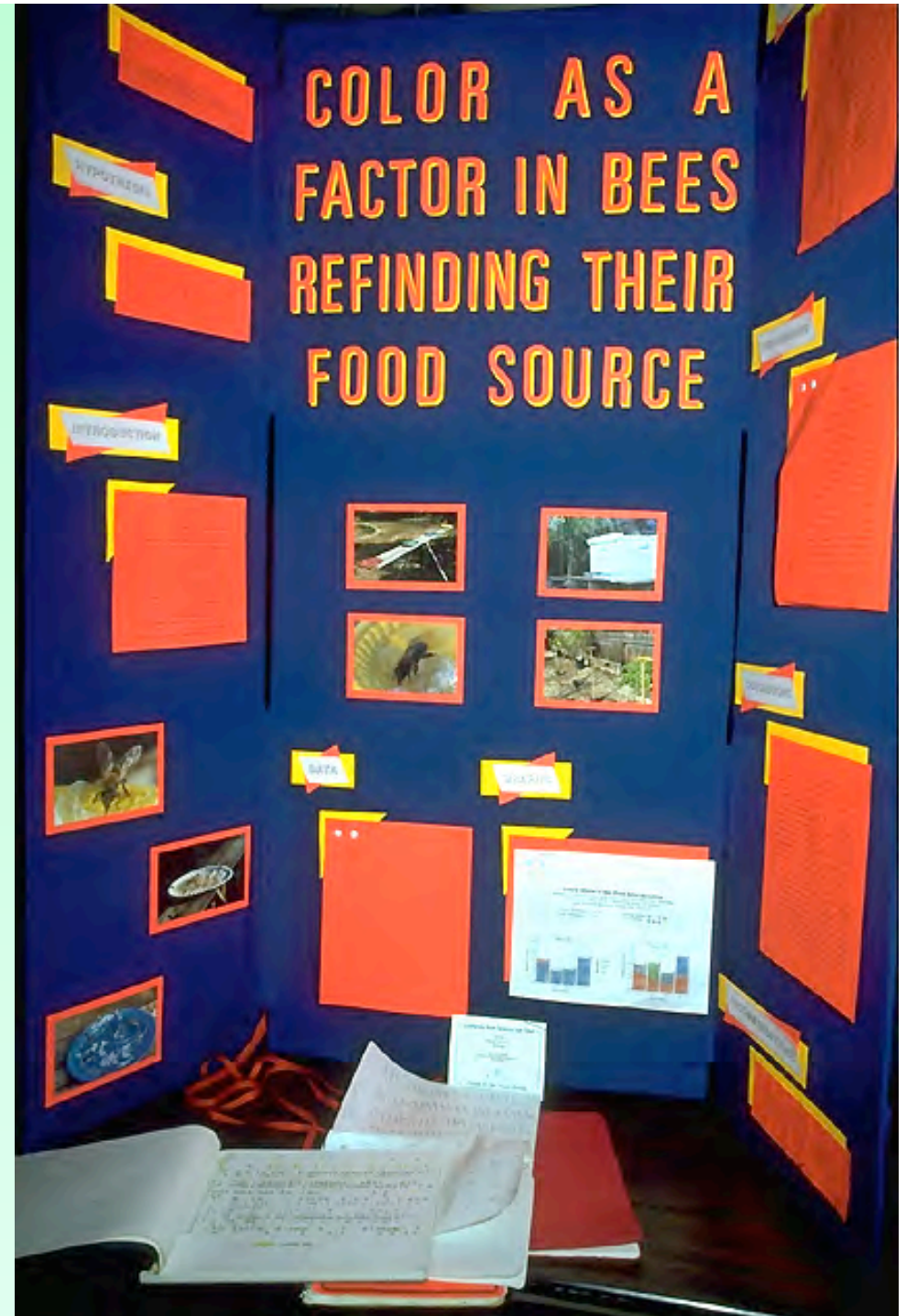
Project Title

Project Title

PROJECT TITLE

Color

- Color use tied to the project
- Recommended:
 - No more than 3 colors
 - *Dominant*
 - *Accent*
 - *Background*



Use of Color

- Can tie a display together
- Act as a **unifying theme**



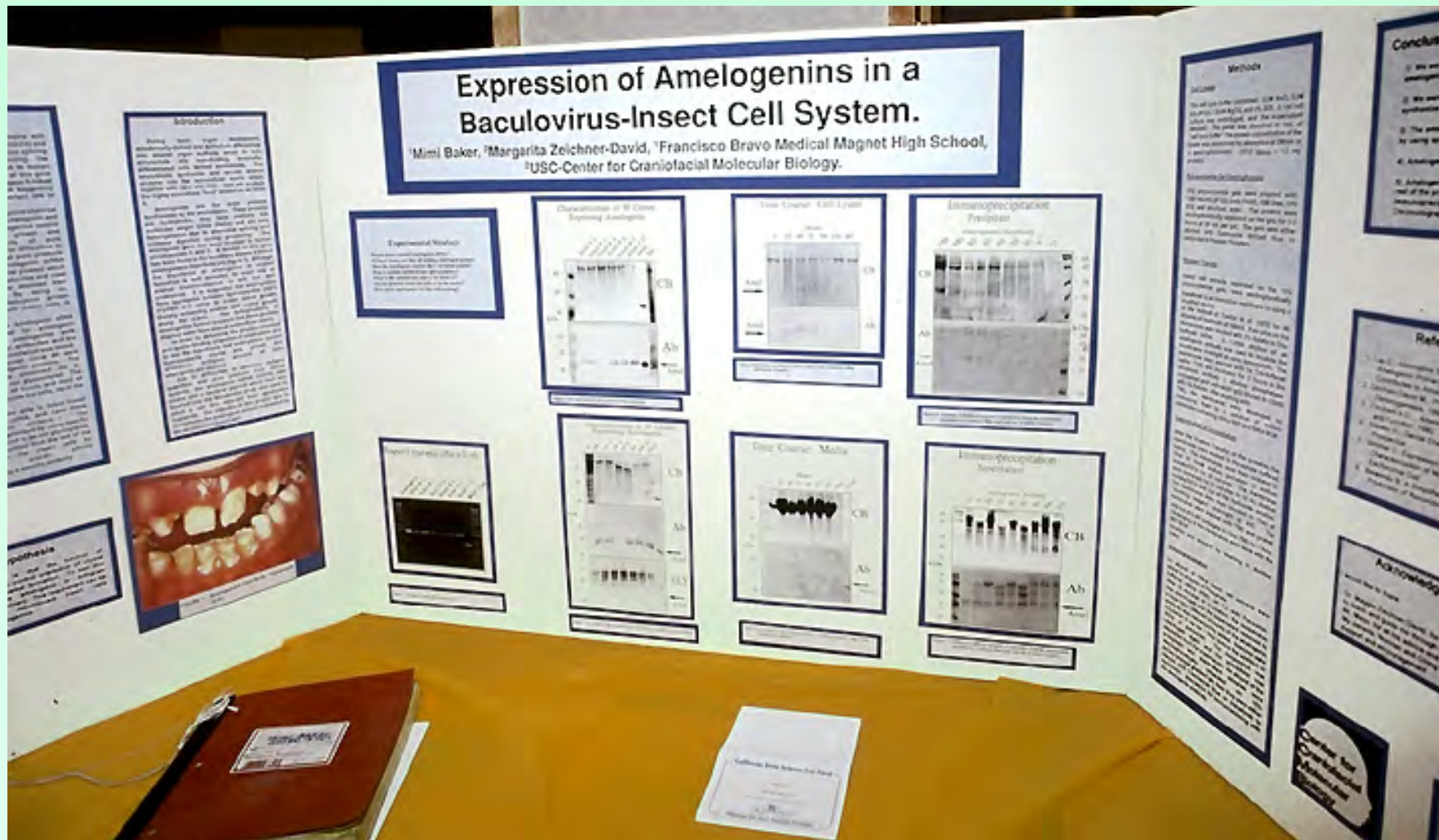
Too *MUCH* Color!

- Your eye doesn't know where to land
- No focal point
- Disturbing



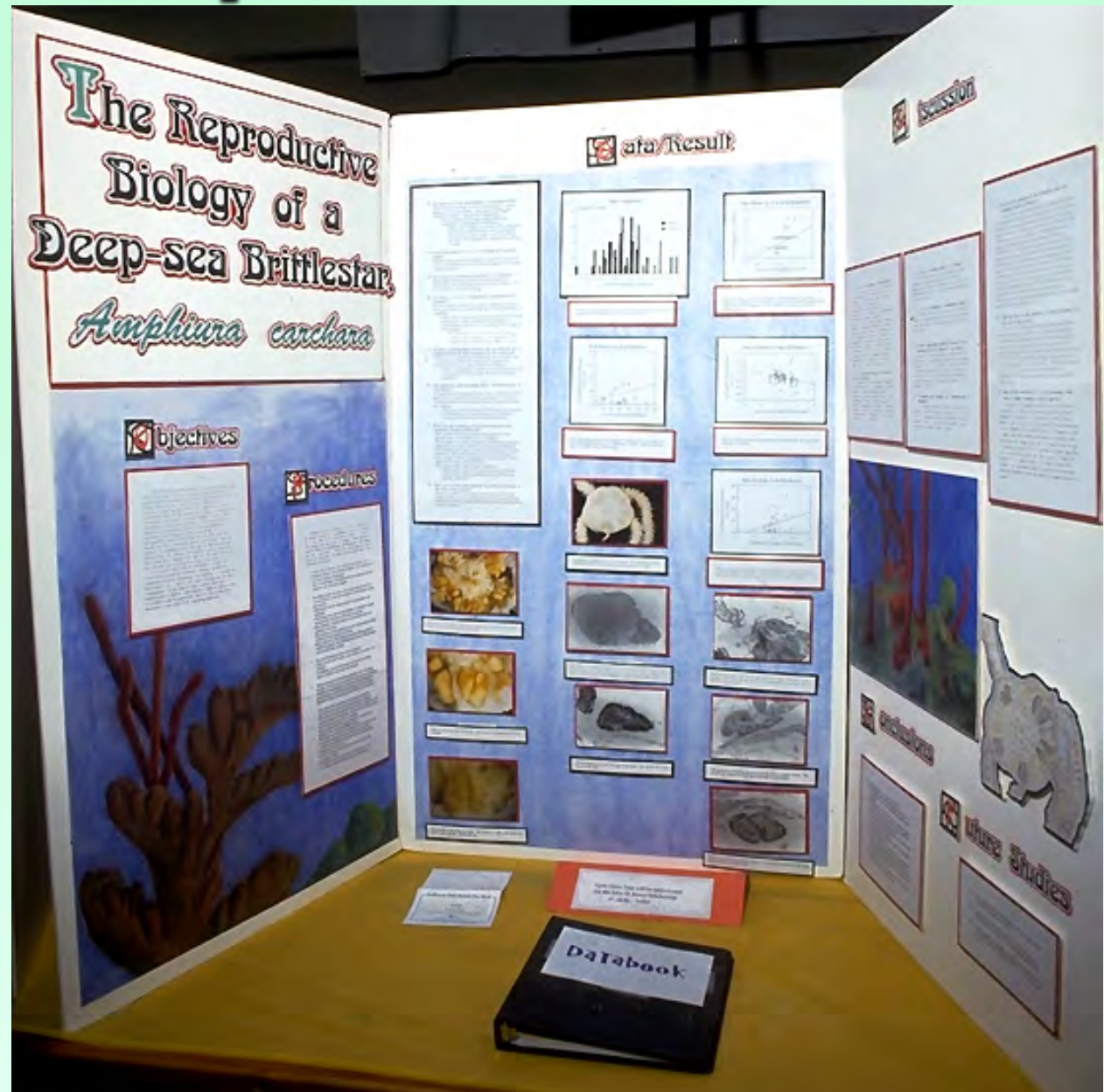
Graphics

- Liven up a presentation



Graphics

- Make the display board represent a study site



Photos

- Can visually demonstrate procedures

PROCEDURES :

* Step 1: Purchase & unwrap 6 regular or plain hamburgers (2 each)



* Step 2: Weigh each hamburger patty



* Step 3: Cut the burger into small cubes



* Step 4: Boil one and a half cups of water in a pot



* Step 5: Put the cubed-burger meat in the pot



* Step 6: Boil the burgers thoroughly - 2 minutes from the boiling point



* Step 7: Pour the boiled water and burger meat in the styrofoam cup



* Step 8: To cool the meat faster put the cup in the refrigerator (Reject steps 1-8 to the remaining 3 burgers!)



* Step 9: When time elapsed burger's are completely cold, remove the Styrofoam cup by using a spoon and place the Fat in a microwaveable cup

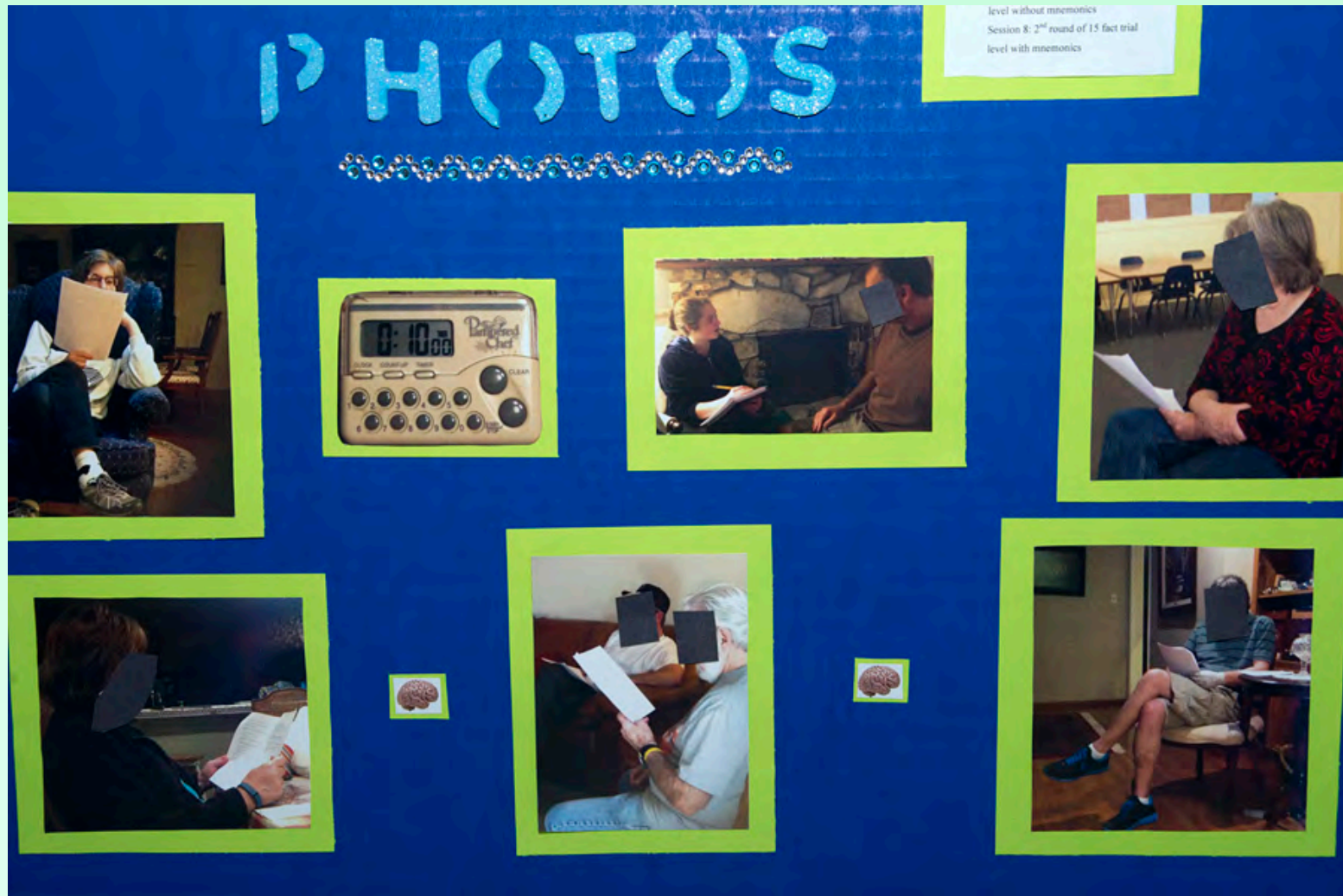


* Step 10: Dump the water out of the cup (use a spoon to get the leftover bits of fat)



Photos

- Must protect the identity of participants



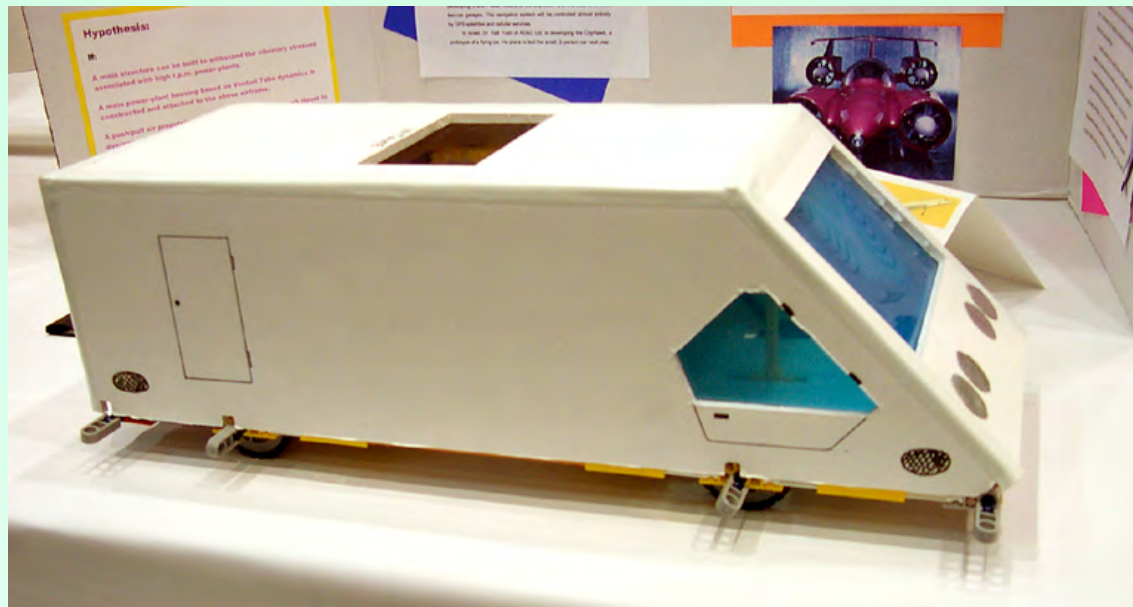
3-D Displays

- 3-D Displays are encouraged
- *If you can, display the **actual equipment** you used to test your hypothesis.*



3-D Displays

- Should be **student-designed**
- Directly tied to the project
- **Follow rules** on what may be displayed



Scientific Naming

- When living organisms are the subject of the study, their **SCIENTIFIC NAME** should be displayed on the board at least once (within text); ***italicized*** or **underlined**

The poster is titled "The Neurological Effect of *Ginkgo biloba* on the Mouse Hippocampus". It is divided into several sections: Introduction, Method, Results, Discussion, Hypothesis, Abstract, Further Research, and Acknowledgments. The poster features a bar graph in the Results section showing the percentage of neurons that are significantly different between the control and Ginkgo biloba groups. The student, ALEXA BRAND, is standing to the right of the poster, wearing a blue shirt and a black jacket. A red arrow points to the title of the poster.

Introduction

Extracts of the leaves of the *Ginkgo biloba* have been used in traditional Chinese medicine for various health conditions including memory and dementia (Shen and Luo 2006). G. biloba extracts are commonly used to treat memory and concentration problems, anxiety, depression, anxiety, dizziness, dizziness and headache (Wu et al. 2005).

Therapeutic studies with aging models have been published since the 1970s (Wu et al. 2005). In 2005, a study conducted with aged mice with cognitive deficits, G. biloba leaf extract reduced and improved the cognitive and motor performance (Barnes et al. 2007). However, age-related cognitive deficits are not purely a function of aging but also a result of neurodegeneration (Barnes et al. 2007). The hippocampus is a key region of the brain that is affected by aging and plays a significant role in long-term memory and spatial navigation. The hippocampus is a part of the limbic system and is one of the most important structures in the brain for learning and memory (Marrucci and Medina 2005).

The hippocampus is also highly involved in long-term potentiation (LTP) and long-term depression (LTD) of synaptic transmission. LTP and LTD are important processes in the brain that are involved in learning and memory (Marrucci and Medina 2005). The hippocampus is also highly involved in long-term potentiation (LTP) and long-term depression (LTD) of synaptic transmission. LTP and LTD are important processes in the brain that are involved in learning and memory (Marrucci and Medina 2005).

Hypothesis

Ginkgo biloba leaf extracts have long been presumed to improve cognitive ability by increasing levels of cholinergic, serotonergic and dopaminergic neurotransmission in the mouse hippocampus.

Abstract

Ginkgo biloba leaf extracts have been used for nearly 5,000 years in traditional Chinese and Japanese medicine. G. biloba extracts are commonly used to treat memory and concentration problems, anxiety, depression, anxiety, dizziness, dizziness and headache (Wu et al. 2005). However, age-related cognitive deficits are not purely a function of aging but also a result of neurodegeneration (Barnes et al. 2007). The hippocampus is a key region of the brain that is affected by aging and plays a significant role in long-term memory and spatial navigation. The hippocampus is a part of the limbic system and is one of the most important structures in the brain for learning and memory (Marrucci and Medina 2005).

Method

Western Blot with Full Brain Homogenate

Western blot analysis was performed to determine the levels of p75^{NTR} and p75^{NCAM} in the hippocampus of control and G. biloba-treated mice. The hippocampus was homogenized in RNeasy lysis buffer and total RNA was extracted using RNeasy spin columns. Total RNA (20 µg/lane) was reverse transcribed into cDNA using Superscript II reverse transcriptase. The cDNA was amplified by PCR using specific primers for p75^{NTR} and p75^{NCAM}. The PCR products were electrophoresed on 1% agarose gels and stained with ethidium bromide. The bands were visualized under UV light. The intensity of the bands was quantified using ImageJ software.

Immunostaining of Hippocampal Cultures

Hippocampal cultures were prepared from E18 mouse embryos. The hippocampus was dissected and cultured in Neurobasal medium supplemented with B27. The cultures were treated with G. biloba extract for 24 hours. A control group was treated with vehicle. The cultures were fixed and stained with anti-p75^{NTR} and anti-p75^{NCAM} antibodies. The cultures were visualized using confocal microscopy. The intensity of the staining was quantified using ImageJ software.

Western Blot with Acute Hippocampal Slices

Western blot analysis was performed to determine the levels of p75^{NTR} and p75^{NCAM} in the hippocampus of control and G. biloba-treated mice. The hippocampus was dissected and cultured in Neurobasal medium supplemented with B27. The cultures were treated with G. biloba extract for 24 hours. A control group was treated with vehicle. The cultures were fixed and stained with anti-p75^{NTR} and anti-p75^{NCAM} antibodies. The cultures were visualized using confocal microscopy. The intensity of the staining was quantified using ImageJ software.

Results

The graph shows that the percentage of neurons that are significantly different between the control and G. biloba groups is significantly higher in the G. biloba group.

Discussion

The present study shows that G. biloba extracts have a significant effect on the mouse hippocampus. The results of the Western blot analysis and immunostaining of hippocampal cultures show that G. biloba extracts increase the levels of p75^{NTR} and p75^{NCAM} in the hippocampus. This suggests that G. biloba extracts may have a neuroprotective effect on the hippocampus. Further research is needed to determine the exact mechanism of action of G. biloba extracts.

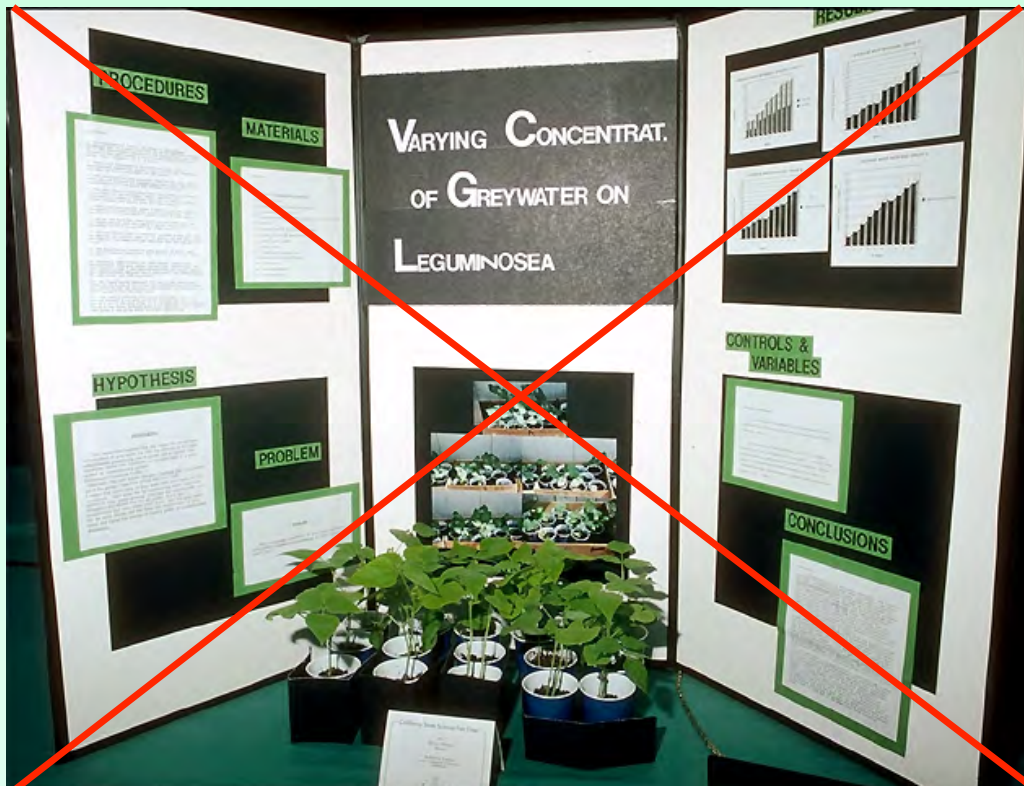
Further Research

In the future, it will be important to determine the exact mechanism of action of G. biloba extracts. This will involve studying the effects of G. biloba extracts on the expression of p75^{NTR} and p75^{NCAM} in the hippocampus. It will also be important to study the effects of G. biloba extracts on the cognitive and motor performance of aged mice.

Acknowledgments

NO Live Organisms

- As of 2002, **NO living organisms** (including plants) can be displayed: *use a substitute*



DON'TS

- Don't include **living or dead bacteria, viruses or fungi** in your display
 - *Use photos or models instead*



Display “DON’ TS”

- **NO LASERS...period**
- **NO un-insulated electrical devices *above 12 Volts***
- **NO LIQUIDS (as part of the display)**
- **NO FOOD (as part of the display)**



NO Hazardous Materials

- **No toxic materials**
- **No drugs** (of any kind)
- **No radioactive materials**
- **No caustic materials** (acids, bases)



DON'TS

- Don't include **highly expensive pieces** unless you are willing to *remove them immediately after the interview*



Mechanical Devices

- **Bolt down** any devices that could injure someone if it fell or was mishandled.



Be Aware...!

- We cannot be responsible for small, easily stolen items you leave at your own risk
- We cannot be responsible for easily broken items you leave at your own risk.
- ***Photos/drawings are excellent options!!***



Remember...

- No matter how fancy & eye-catching the display...
- ★ *It can't take the place of solid, well-documented and analyzed research*



Designed & Photographed by

Anne F. Maben

Science Consultant, UCLA Science Project

for the

**Los Angeles County Science & Engineering
Fair**

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