



SCIENCE FAIR 2012

Harbins Elementary School

How do you begin?

- Find a topic that interests you
- Look at the categories for ideas
- Use TV commercials, advertisements in magazines or books
- Think about problems at your house
- Test household items

Examples

- My pen is always running out of ink, which type of pen lasts longer?
- I am trying to find the best kind of bait to use when I go fishing. Is live bait better than a lure?
- Every time I have popcorn there are too many old maids, and not enough popped corn to eat?
- Does studying with music help me to learn better?

Using the Scientific Method

Steps

- Choose a Problem and Ask a Question
- Research a Problem
- Develop a Hypothesis
- Write Procedures, Materials and Variables
- Test Your Hypothesis by Doing an Experiment
- Analyze and Organize Your Data
- State Your Conclusion

Step One: Choose a Topic

- Write your problem as a question
- Does temperature affect the number of popcorn kernels that will pop?



Step Two: Research Your Topic

- Research
- Find facts about your problem
- Find key science words in the research and define them
- Write your source and your notes on your Experiment Planning Form

Step Three: Develop a Hypothesis

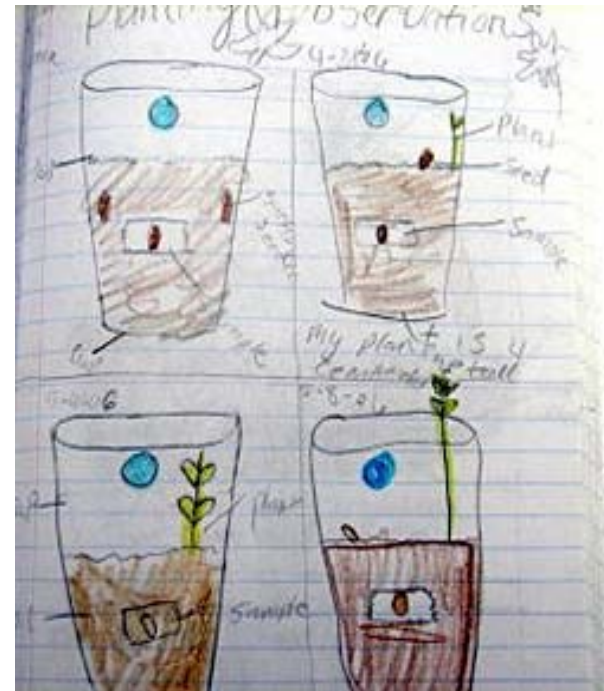
- The scientist thinks that _____ will happen if _____

or

- The scientist predicts when _____ then, _____ will occur.

Step Four: Write Your Procedures

- Write the steps for the experiments
- Include all materials needed
- Plan to repeat the experiment three to five times
- Make Data Charts or Survey Forms
- If you survey people, ask 20 people to do the same survey



Variables

- Only test one thing: *Manipulated Variable*
- Your results are the *Responding Variable (Dependent)*
- Control all other materials
- Use science tools such as a timer, ruler, or scale
- Example:
 - Distance - Paper Airplane
 - Distance and Speed - Toy Car

Remember

You *MUST* have a testable experiment!

Step Five: Test Your Hypothesis

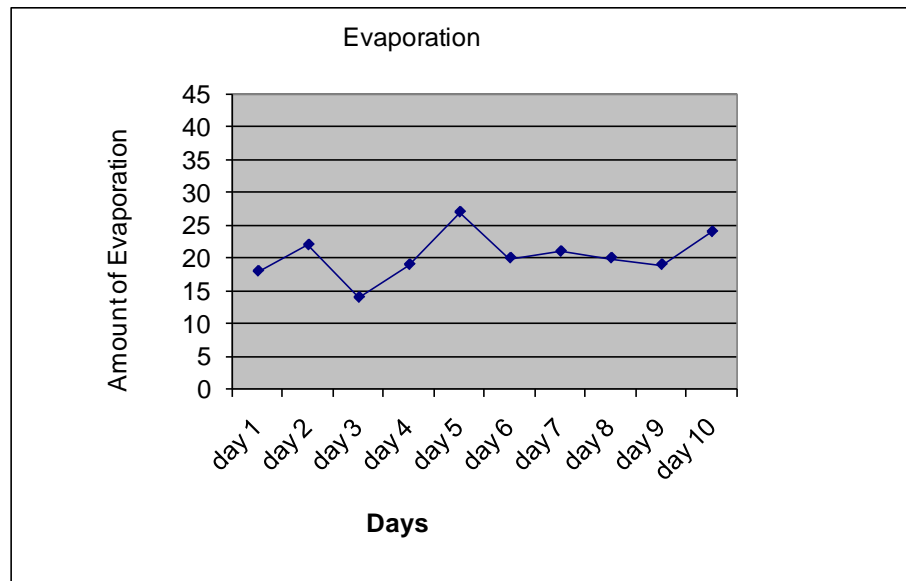
- Have materials ready
- Follow your procedures
- Collect and record data on your experiment form
- Take photos (no head shots)
- Repeat the experiment at least **THREE** times

Step Six: Organize Your Data

- Make tables, charts or graphs
- Write a summary
- Remember the five parts of a graph: Title, label the horizontal axis, label the vertical axis, intervals, and key
- Be neat
- Write or type labels

Organize and Analyze Your Data

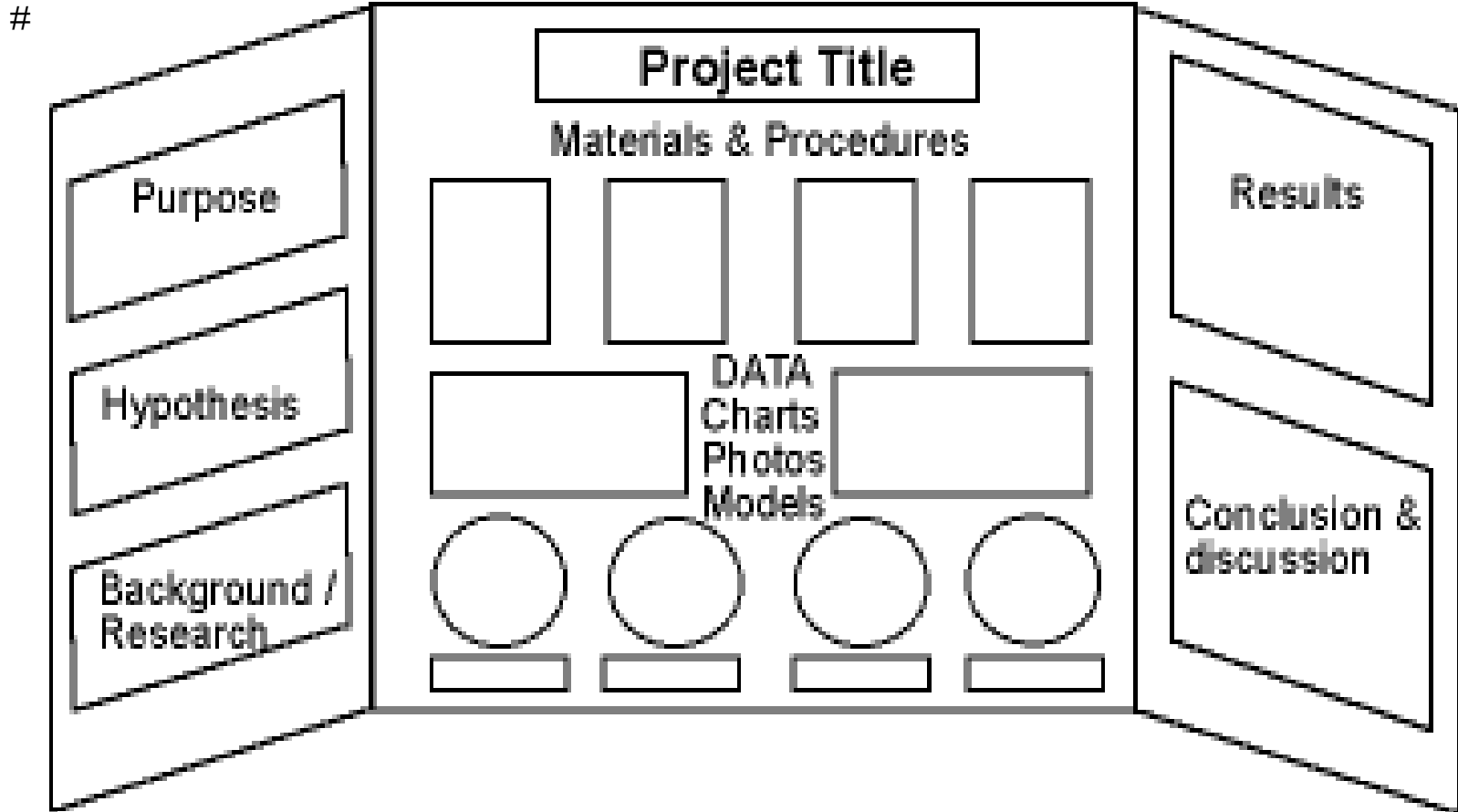
- Look at your graph.
- Did it have a pattern?
- Do you see the same results?
- Is there an increase or decrease?
- Why do you predict that may have happened?



Step Seven: State Your Conclusion

- Tell if your hypothesis was correct, incorrect, or partially correct.
- Example: The hypothesis was correct. Glad Sandwich bags held more weight than Ziplock brand bags. The average number of pennies held by Glad was five more than Ziplock brand bags.

Display



Please remember to place your project number in the upper left hand corner!

Display Hints

- Use a tri-board (may be purchased from school store)
- Mount all graphs, photos, and experiment steps on colored paper
- Use no more than three colors
- Use a ruler to keep your display straight

More Hints

- Before you glue your items to the board, lay them out and temporarily tape them
- No tape should show
- Do not have cross-outs, or eraser marks that show
- Use a strong glue, or double sided tape
- Reserve heavy items for display table

Display Table

- It is required to show your log notes and rough data in a folder or notebook.
- Items used should be available on the display table, with the exception of glass, liquids, and sharp objects.
- No Live Animals
- Science Fair officials will remove any items that are breakable.

Safety Issues

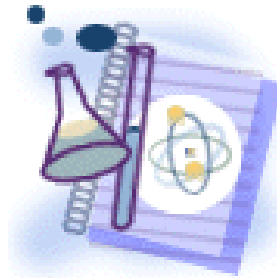
- Have all projects approved by your classroom teacher
- Have a parent supervise you during each experiment
- Remember visitors to the fair might touch your materials, do not bring valuables
- **NO Glass, Liquids, or Sharp Objects**

Words of WISDOM

- Have Fun!
- Challenge yourself, but don't stress
- Don't wait until the last minute
- Follow the Time Table Guide
- **If you are absent, arrange to have your project brought to school**

Hints for Success

- Keep up with the time line in packet
- Research early
- Keep sketches or photos as you go
- Do NOT change your hypothesis; is okay to be incorrect
- Display information neatly



Internet Support

- National Student Research Center
E-Database of Student Research: Science Index
<http://youth.net/nsrc/sci/sci.index.html>
- Science Fair Internet Resources
http://www.lib.lsu.edu/sci/chem/internet/science_fairs.html
- Science Fair Projects: A Resource for Students and Teachers
<http://www4.umdj.edu/camlbweb/scifair.html>
- The Ultimate Science Fair Resource
<http://www.scifair.org>
- All Science Fair Projects: <http://www.all-science-fair-projects.com/>
- Create a Graph: <http://nces.ed.gov/nceskids/createagraph/default.aspx>

Internet Support

- DragonflyTV (PBS Kids): <http://pbskids.org/dragonflytv/scifair/index.html>
- Eastern Newfoundland Science Fairs Council: <http://www.cdli.ca/sciencefairs/>
- Elmer's: <http://www.elmers.com/sciencefair/index.asp>
- Energy Quest Science Projects: <http://www.energyquest.ca.gov/projects/>
- Internet Public Library: <http://www.ipl.org/youth/projectguide/>
- Science Buddies: <http://www.sciencebuddies.org/>
- Science Fair Central: <http://school.discovery.com/sciencefaircentral/>