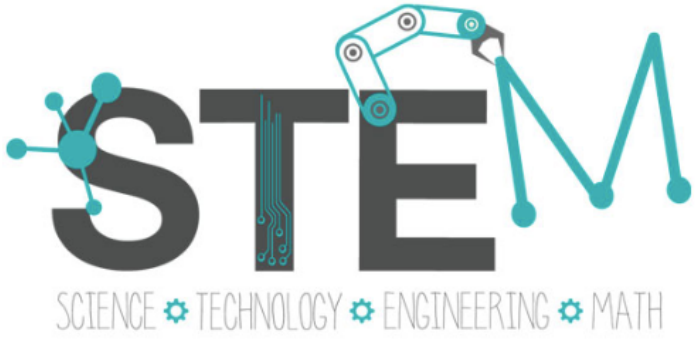
Science Fair Project:

How do Scientists and Engineers use data to draw conclusions and inform their next step?



Scientist's Name _____

Experiment:

Step 1: Choose a Topic

Task/Requirements: Choose a topic to research. Be sure it interests you. Don't pick one because you think it will be easy. Talk it over with your teacher and when you have decided, do not ask to change your topic later. Below is a list of topics. You do NOT have to choose something on the list if you wish to research something else. Write you topic in the box provided on this page.

Chemistry

Acids/Bases
Rusting
Tarnishing
Chemical Reactions
Battery Science

Biology

Population Growth (of different organisms)
Ecosystems
Human Health
Anatomy
Beauty Products
Memory
Algae blooms
Composting
Fertilizers

Environmental Science

Air Quality
Pollution
Climate Change Causes
Climate Change Effects
Water Quality
Weather
Beach erosion
Oil spill

Physics

Energy/Electricity
Speed
Acceleration
Force

My topic is: _____

Step 3: Experimental Question

Overview:

An experimental question states your purpose as a question. What is it that you want to find out by doing this project?

Helpful Information:

The key difference between a research and an experimental (testable) question is that experimental questions are always about changing one variable (independent variable) to see what the effect is on another variable (dependent variable). These questions are measurable, use specific terminology (words), and may include a specific timeframe.

*Remember, these should be cause and effect questions…if I do this, what will it do to that?

For example:

- Topic: Plant growth
- Experimental Question: How does water affect plant growth?
- I know this is a good question because: If I change the amount of water a plant gets (independent variable) then it will affect plant growth (dependent variable)

Task/ Requirements:

In the box below, write at least 6 different experimental questions for your topic using the guidelines above. From this list, you will choose 1 and write it in the box at the very bottom of the page.

Work Area: Possible Experimental Questions:

My Final Experimental Question is _____

Step 4: Background Research

Overview:
Research your question. Look at any books/websites that might help you. Make observations by simply looking at things, talk to people, and find out as much as possible about your topic. Write down any ideas you have and where you got them. Also, keep note of all information needed for citing your resources.

Helpful Information:
In order for your research to be credible, **you must use reliable sources**. Reliable sources are sources that are trustworthy and contain legitimate information. It can be difficult to determine if a source is reliable but below are a few questions you can ask yourself about a source in order to determine if it is reliable.

- **Who wrote this source?** The answer here should be a scientist, government organization, or news reporters from well known news sources like BBC, New York Times, or science daily.
- **What kind of source is it?** The answer here should be a research article/website, government website, news website, newspaper or book. It SHOULD NOT BE a blog, wikipedia, an individually created website, or social media.
- **What other sources does this source reference?** Your source should reference other sources and people of importance. If it does not, make sure it is not a website the posts opinions or self-help (like bogs).
- **Does this source say the same things as other sources?** If 10 sources say the same thing and one source says the opposite, check to make sure that 1 source is not an opinion based website. If multiple sources say the same thing about a topic, its probably true (but not always).
- **Does this source echo what I know from personal experience?** If a source says the sky is purple, you know that is incorrect from your own experiences. Chances are, if a source's claims don't make logical sense or don't follow sound reasoning, then it's not a good source.

Task/Requirements:
The next several pages are for you to track your research. If you would rather complete research on your own lined paper, you can staple the lined paper into this section of your packet. We will go over how to create a works cited at the end of the project. For now, be sure to track your sources as you go- you must use at least 4 reliable sources.

Information from Source #1:

Citation Info:

Author: _____

Title of website: _____

_____

Title of article or journal:

_____

_____

Date published: _____

_____

Website URL: _____

_____

_____

_____

Information from Source #2:

Citation Info:

Author: _____

Title of website: _____

_____

Title of article or journal:

_____

_____

Date published: _____

_____

Website URL: _____

_____

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Information from Source #3:

Citation Info:

Author: _____

Title of website: _____

_____

Title of article or journal:

_____

_____

Date published: _____

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Website URL: _____

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Information from Source #4:

Citation Info:

Author: _____

Title of website: _____

_____

Title of article or journal:

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_____

Date published: _____

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Website URL: _____

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Information from Source #5:

Citation Info:

Author: _____

Title of website: _____

_____

Title of article or journal:

_____

_____

Date published: _____

_____

Website URL: _____

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Information from Source #6:

Citation Info:

Author: _____

Title of website: _____

_____

Title of article or journal:

_____

_____

Date published: _____

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Website URL: _____

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Information from Source #7:

Citation Info:

Author: _____

Title of website: _____

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Title of article or journal:

_____

_____

Date published: _____

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Website URL: _____

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Step 4: Form a hypothesis

Overview:
Form a hypothesis. What do you think is going to happen? Based on what you know or found out from step #3, what do you think the results of your experiments will be? After doing the experiments, it may turn out that your guess was wrong. It is okay if this happens.

Helpful Information:
A hypothesis is an educated guess. A good hypothesis is written in the IF- THEN- BECAUSE format (IF this happens THEN this is the effect BECAUSE…). For example, if I am researching the question, "what happens when you increase the amount of salt in soil", then my hypothesis could be: IF you increase the amount of salt in soil, THEN you decrease the plant's growth because plants need sugar, not salt to grow.

Task/ Requirements:
In the work area below, try to write a testable hypothesis. Once you have a final hypothesis, write it in the box at the very bottom of the page.

Work Area: Possible Hypothesis

Final Hypothesis: _____

_____

_____

_____

Step 5: Plan your Experiment

Overview:
Plan your project. How will you test your hypothesis? What experiments will you do? What are your variables? How will you measure the results? Where will you keep your information? Be sure to keep notes and write down everything you do and what happens. The more information you have to start with, the easier the rest of the project will be.

Task/Requirements:
After giving your experiment some thought, complete the information below. You will track your variables, procedural steps, materials list, and data collection in this section.

- Variables:

- Independent Variable: _____
- Dependent Variable: _____
- Constants: _____

  _____
- How will you use repeated trials*:* _____

  _____

  _____

- Procedure Draft #1: *Design a detailed procedure that will test your experimental question. Don't forget to include AMOUNTS, UNITS, REPEATED TRIALS, and SCIENTIFIC VOCABULARY where appropriate.*

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3. _____

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14. _____

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15. _____

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- Procedure Draft #2: *you do not need to have a second draft. This is here if you need to add more detail to your first set of steps or if you need more room.*

1. _____

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12. _____

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13. _____

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14. _____

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15. _____

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- **List of Materials:** *Based on the procedure you decided on, write a complete list of materials below. Do not forget to be detailed. Include amou*nts of each material and descriptive words when possible.

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- **Data collection**: *Use the space below to help you plan how to collect the data for your experiment. You must sketch a data table in the space below where you will record information from your experiment.*

Think about: how will you measure your results, your independent variable, your dependent variable, and what information you need to record.

Step 6: Conduct your Experiment

Task/Requirements:

1. Collect all your materials. Find a place to keep things where others won't bother them. Let other family members know what you are doing so they don not throw your materials away by mistake.

2. Conduct your experiments. Remember, the more times you do an experiment the more reliable and accurate the results will be. Do each experiment at least three times and get an **average** of the results for your graph. Use something to measure your experiments: a ruler or yardstick if you are measuring distance, a clock to measure time, etc. Check the measurements to be sure you are correct.

3. Record and track your data on the data table on page 16/17. Write your measurements clearly and DON'T FORGET UNITS. As you do your experiments, make any changes to your written procedure on page 12-15 that you might have made during experimentation.

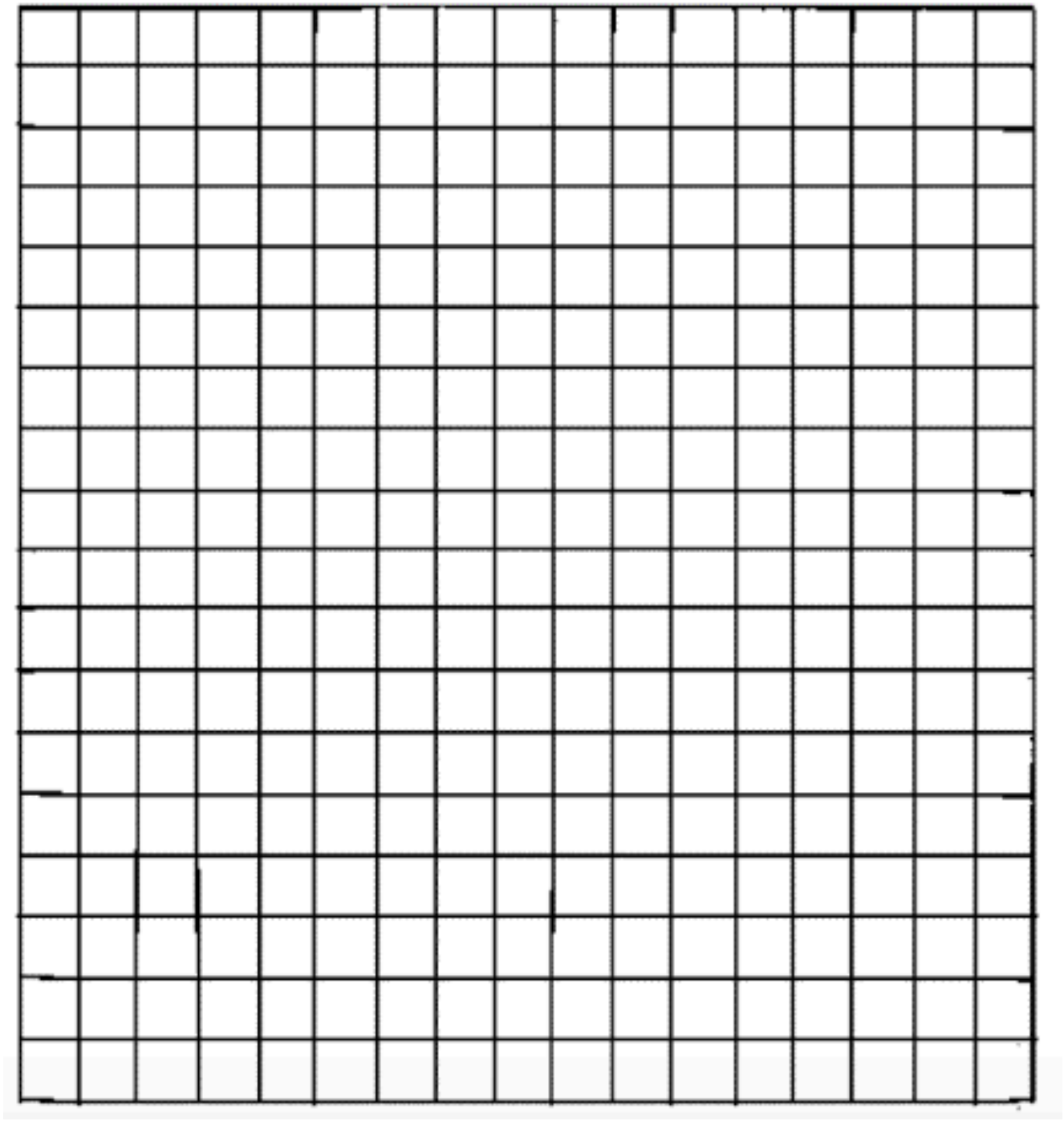
Step 7: Organize your Data

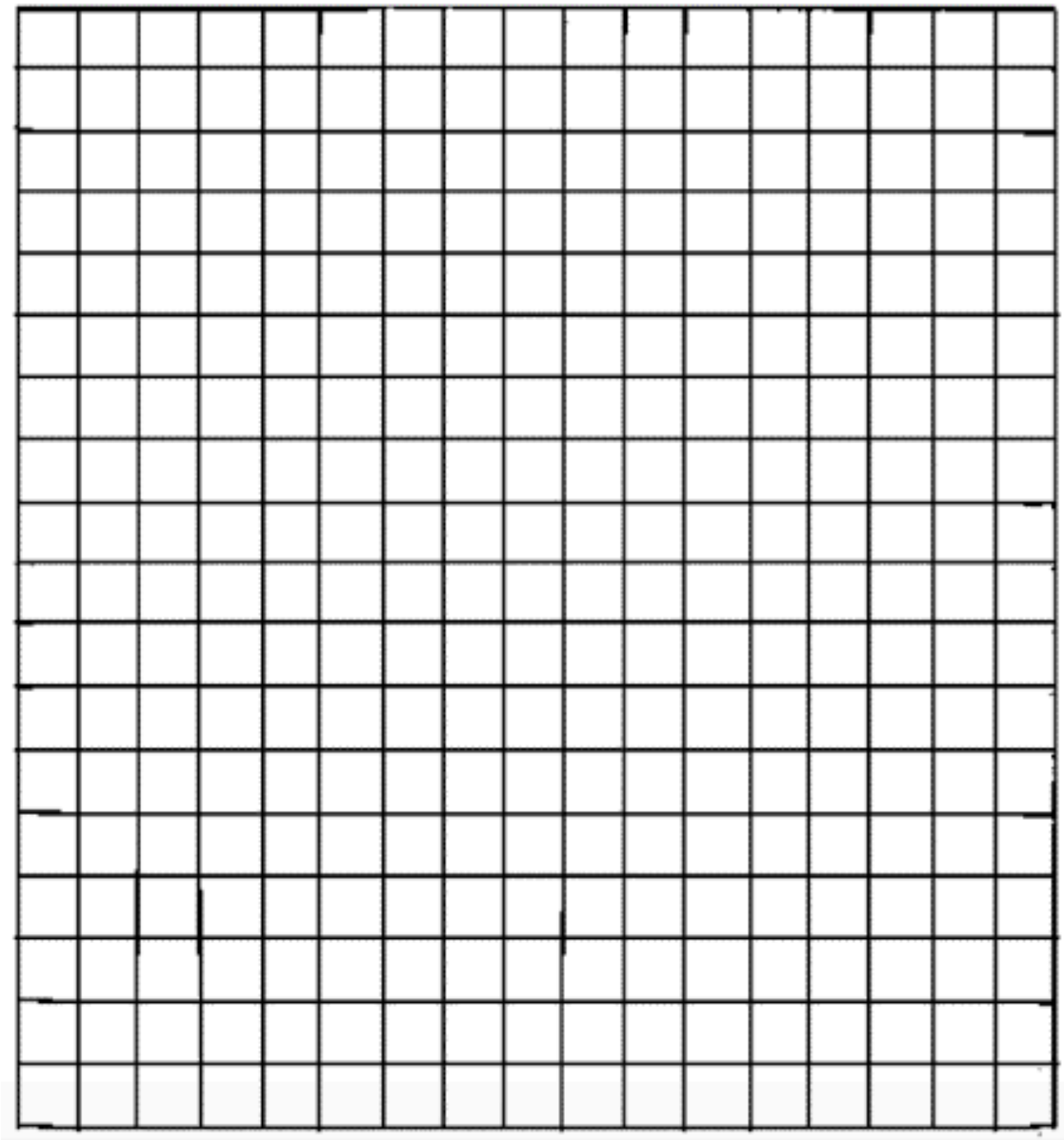
Overview:
Prepare your titles, charts, and graphs. Make them neat. DON'T FORGET LABELS OR UNITS.

Helpful information:
Types of graphs and when to use them..

- **Line Graph**: Line graphs are used to track changes over time.
- **Bar Graph**: Bar graphs are used to compare things between different groups.
- **Pie Chart:** Pie charts are best to compare parts of whole

Task/ Requirements:
Depending on the type of data you collected you will complete at least one of the following: a line graph, a bar graph, or a pie chart. Below is space for you to create the rough drafts of your graphs or diagrams. You do not need to fill in both graphs- you only need to complete one (the extra is there if you need it). THEN you will write a paragraph on page 22. This paragraph will be copied onto your display board at the science fair so be sure to be specific, detailed, and write with correct grammar.





Results:

In one paragraph, answer the following prompt:

- Write exactly what you did during your experiment and what happened. Be specific, using numbers for your data. Describe each test and its results. Refer to your data table and graph when explaining what happened.
- Include any observations you made during the experiment.
- IMPORTANT NOTE: This is not where you ANALYZE your results. You are simply explaining your data in this paragraph.

Step 8: Draw a Conclusion

Overview:
Using your data, you will draw a conclusion to answer your experimental question.

Helpful information:
Look back at your experimental question on page 6 and you hypothesis on page 11. You will need to remember the question you asked as this is where you will be answer it.

You will be asked to explain possible experimental errors. Experimental errors can be mistakes you made..

1. **In the way you collected data.** For example, maybe you figured out once the experiment was complete that the timer you used was not accurate or maybe you used centimeters when you should have use millimeters to measure something really tiny. Perhaps you even read and recorded the reading on your thermometer incorrectly or gave a plant double the amount of water you were supposed to.
2. **In the way you designed the experiment**. For example, maybe the material you thought was steel was actually iron. Maybe you changed too many variables at one time. Perhaps you could have measured something a different way, which would have made the results more accurate.
3. **In random environmental changes.** For example: let's say you were seeing how temperature effects plant growth and both plants were to get the same amount of sun but it rained for a week straight and neither plant grew without sun. You can't control the sun even if you try!

Task/Requirements:
Answer the following prompt:

- Conclusion:
    - Summarize your results in a sentence or two. Be specific.
    - Give your thoughts on what the results mean.
    - Restate your hypothesis
    - Is your hypothesis accepted (correct) or rejected (incorrect)? Tell why, supporting your statements with your data.
    - Discuss any errors and explain how they might have affected your results.
    - What is the importance of this experiment? What impact could the results have?

Answer the following prompt:

- Future Research:
    - What improvements could have been done?
    - How would you change your experiment? What would you have done differently?
    - You might also address any research you might want to conduct in the future.

Step 9: Works Cited Page

Overview:
List all sources used in alphabetical order by author's last name or first word of the title. Be sure to include all of the

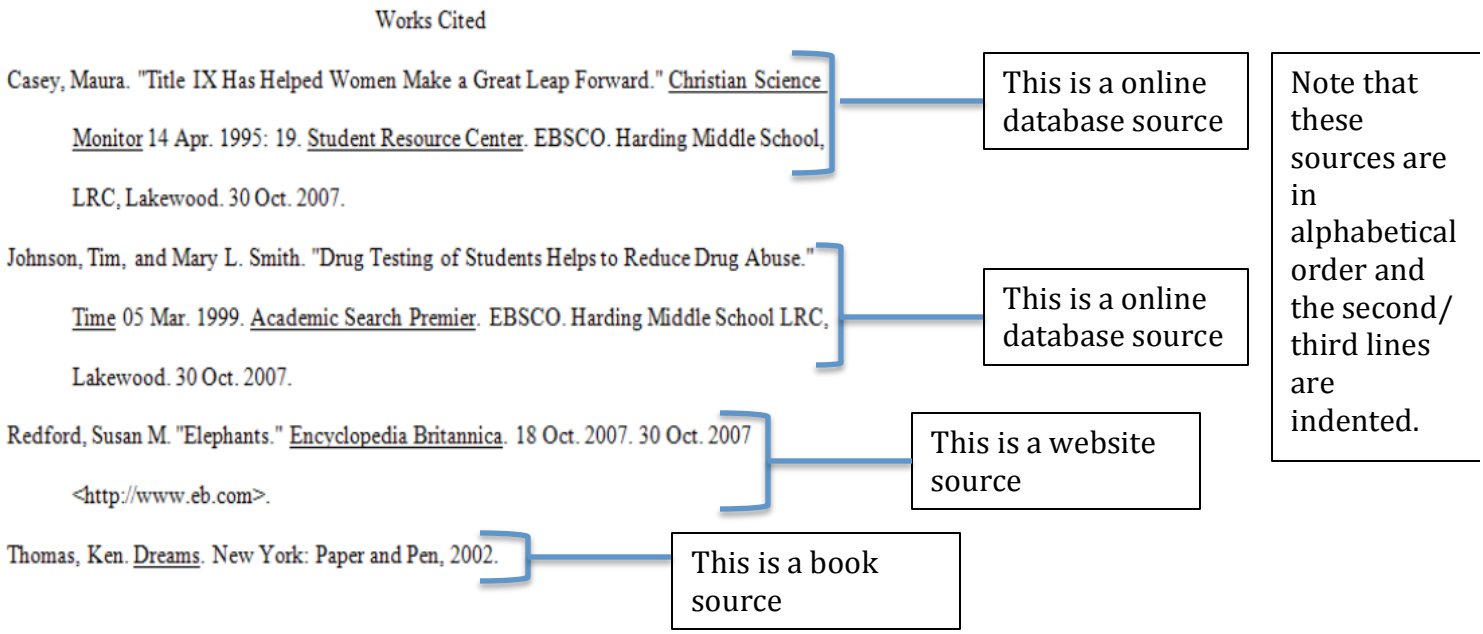
Helpful information:
When citing, use the formats provided below. Your sources MUST be cited in alphabetical order.

- **What is plagiarism?**
  If you have not given proper credit to your sources, you have committed plagiarism. Essentially, it is like you are lying to your reader. You have used someone else's ideas without telling your reader where you took it from. Whether you have intentionally tried to pass off someone else's ideas as your own or, through careless research, you unintentionally "forgot" to cite a source, the charge is plagiarism.

- **How can I avoid plagiarism?**
  Basically, any idea or fact that you received from a source needs to be cited. Any idea or fact that is common knowledge does not need to be cited. For example, facts like the earth rotates around the sun or Abraham Lincoln was assassinated while in office are common knowledge and would not have to be cited.

- **Formats:**
  - **Book by One Author:**
    - Last Name, First Name. Title. Place of publication: Publisher, Copyright Date.
    - Example: Jameson, George P. Ellis Island. New York: Icon Press, 2006
  - **Newspaper Article**
    - Last Name, First Name. "Title of Article." Newspaper Name Date: page(s).
    - Example: Blake, Terry. "Attack in Bagdad: Two Marines Dead." The Plain Dealer 20 July 2006: A1.
  - **Online Database—Research articles provided online**
    - Last Name, First Name. "Title of Article." Original Print Source Title. Date. Online source name. Date accessed <URL link>.
    - Example: Freeman, Gregory A. "Code Alpha: The President is Coming!" American History.October 2006. Academic Search Premier. 6 October 2006 <http://web.ebscohost.com/ehost/detail?vid=7&hid=1&sid=13275eeb-239a-4ec6-a998-d2dda6dc9f66%40sessionmgr101>.
  - **Internet Website**
    - Last Name, First Name. Title of Website. Date last updated. Author (if given). Name of organization that sponsors the site. Date accessed <URL link>.
    - Examples: Flannery O'Connor Collection. 7 July 2006. Georgia College and State University. 31 August 2006. <http://library.gcsu.edu/~sc/foc.html>.

- **See Example on Next Page:**



Task/Requirements:

- List all the sources you used to complete your project including those used for background research and for the design of the experiment.
- As stated before, you must have at least 6 RELIABLE sources (go back to page 7 if you are unsure)
- Use the format described above (you should have tracked most of this information on page 7-9)
- Plagiarism will not be tolerated so be sure to cite EVERYTHING you used.

Step 10: Science Fair Display Board

Overview:
Construct your science fair display. Your teacher will provide you with a display board so you can show all your work and give your presentation to passing community members at the science fair

Helpful Information:

- You only get one board from your teacher so plan ahead before you start writing/gluing on your board.
- Organize your information like a newspaper so that your audience can quickly follow your experiment by reading from top to bottom and left to right.
- COLOR and creativity are a must!
- Use a font size of at least 16 point to make it easy to read.
- The title should be big and easily read from across the room
- Pictures are eye grabbing and tell the viewer a lot about your experiment
- See pictures of example displays at the end of this section on pages

Requirements/task
You must complete a display board for the science fair with the following information:

- Title, Name, Date
  - Font size = 36 or larger

- Question:
  - Font size = 24-36
  - Experimental question

- Hypothesis:
  - Font size = 14-22
  - Write your hypothesis (IF… THEN…BECAUSE..)

- Background Research:
  - Font size = 14-22
  - Summarize your research so that the important facts fit on one page.

- Materials:
  - Font size = 14-22
  - List all materials
  - Be specific to amount and types (i.e. 50 ml of tap water; 100 ml graduated cylinder). Use brand names where appropriate.

- Variables:
  - Font size = 14-22
  - Independent variable is what you are changing
  - Dependent variable is what you are measuring or observing as a result of the change.

- Procedures:
  - Font size = 14-22 (be sure to fit on 1 page)
  - Write your procedure in detail.
  - Number steps.
  - Metric units should be used (grams, meters, liters, etc.)
  - Another person should be able to follow your procedure without having to talk to you.
  - Do not copy procedures from another experiment. They must be in your own words and in complete sentences.

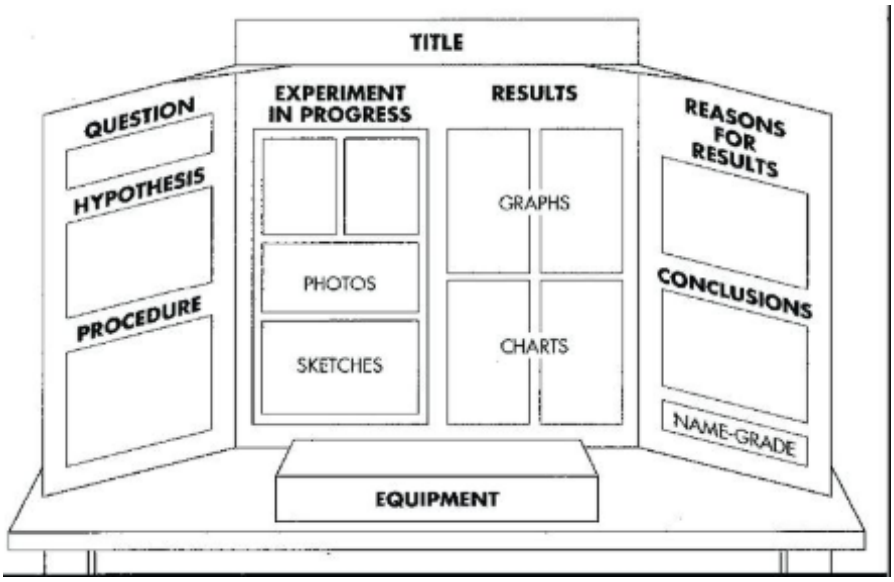
- Data:
  - Font size = 14-22
  - Each graph, table, or chart should have a title.

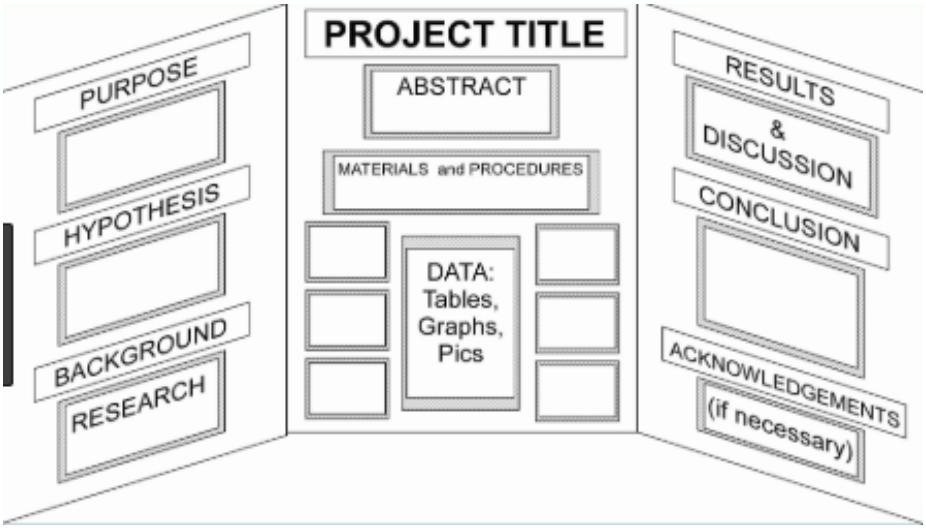
- Results:
  - Font size = 14-22
  - Write exactly what you did during your experiment and what happened. Be specific, using numbers for your data. Describe each test or test object and its results.
  - Include any observations.
  - This is written in paragraph form.

- Conclusion:
  - Font size = 14-22
  - Summarize your results in a sentence or two. Be specific.
  - Give your thoughts on what the results mean.
  - Restate your hypothesis
  - Is your hypothesis accepted (correct) or rejected (incorrect)? Tell why, supporting your statements with your data.
  - Discuss any errors and explain how they might have affected your results.
  - What is the importance of this experiment? What impact could the results have?

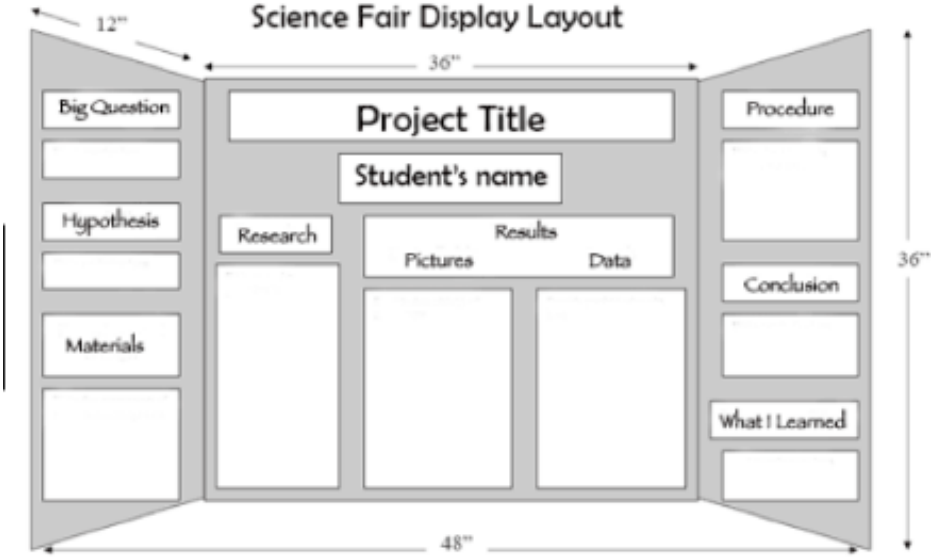
- Future Research:
  - Font size = 14-22
  - What improvements could have been done?
  - How would you change your experiment? What would you have done differently?
  - You might also address any research you might want to conduct in the future.
- Pictures
  - Should include at least 2 pictures
  - One picture should show the experimental set up
  - One picture should show the experiment in progress

- Bibliography:
  - Font size = 14-22
  - List all sources used in alphabetical order by author's last name or first word of the title.





SCIENCE FAIR PROJECT BOARD



Step 11: Experimental Set-Up

Overview:
Bring in your experimental set up and place it in front of your display board for everyone to see.

Helpful Information:

- Please let your teacher know at least 2 weeks ahead of time if you will need an electrical outlet, safety equipment, or any other special requirements for the day of the science fair.

Requirements/task
Bring your experiment to school the day before the science fair for display set-up.

Step 12: Presentation Preparation

Requirement/task:
During the science fair, your teacher, judges and guests will circulate around the room to take a look at every project. When guests arrive at your table, you must present your experiment, data, and conclusion; therefore you should prepare and practice a presentation for the science fair. Know it well enough that you don't have to read it from the display.

Experimental Design Rubric

	1	2	3	4
Background Research	Student attempts to identify and appropriately use 1 reliable source but either incorrectly uses the source or does not attempt to use it.	With teacher assistance, student is able to identify and appropriately use 2 reliable sources to either develop a hypothesis or explain their data.	With teacher assistance, student is able to identify and appropriately use 3 reliable sources to develop a hypothesis and explain their data.	Without teacher assistance, student is able to identify and appropriately use 4 reliable sources to develop a hypothesis and explain their data.
Question	Student does not ask a testable question	Student asks a testable question but needs a lot of teacher support	Student asks a testable and original question that is formed with little teacher support	Student asks a testable and original question that is formed independently
Hypothesis	Student does not use "If..then.. because" format and does not appropriately explain their expected answer to the question	Student uses "If..then.. because" format but does not appropriately explain their expected answer to the question.	Student uses "If..then.. because" format and appropriately explains their expected answer to the question.	Student uses "If..then.. because" format and expertly explains their expected answer to the question using background knowledge and research
Procedure	Procedure.. • Is not numbered • Lacks most details that would make it clear and repeatable	Procedure.. • Numbered • Lacks some details that would make it clear and repeatable • Is copied from a previously completed experiment but is put into the experimenter's own words • Created with teacher support	Procedure is.. • Numbered • Detailed and clear (references appropriate units/tools) • Copied from a previously completed experiment but is put into the experimenter's own words • Created with teacher support	Procedure is.. • Numbered • Expertly detailed and clear (references appropriate units/tools) • Repeatable • Original and not copied from internet • Created independently
Variables	Information from the following list is either incorrect, missing, or inappropriately defined: • 1 controlled variable • 1 dependent variable • 1 independent variable	Variables are accurately defined but one item is missing from the following list: • At least 2 controlled variables • 1 dependent variable • 1 independent variable	All variables are accurately defined with teacher support. This consists of at least • 3 controlled variables • 1 independent variable • 1 dependent variable	All variables are accurately and appropriately defined without teacher support. This consists of at least • 4 controlled variables • 1 independent variable • 1 dependent variable
Trials	Only 1 trial was conducted. No averages were calculated.	• At least 2 trials were conducted for each independent variable tested. • Averages for the trials were accurately calculated (where appropriate) with teacher support	• At least 3 trials were conducted for each independent variable tested. • Averages for the trials were accurately calculated (where appropriate) with teacher support.	• At least 3 trials were conducted for each independent variable tested. • Averages for the trials were accurately calculated (where appropriate) without teacher support.
Use of Tools	• Tools are not used appropriately or show significant errors • Units are inappropriately chosen and are not accurately used.	• Tools are used but there are errors in collection. • Units are not appropriately chosen OR accurately used.	• Tools are used to accurately collect data WITH teacher prompting. • Units are appropriately chosen and are accurately used.	• Tools are expertly used to accurately collect data WITHOUT teacher assistance • Units are expertly chosen and are accurately used.

Data Table	Data table is completed with teacher assistance and but is missing more than one of the following requirements: • Appropriate title • Appropriate column labels • Correct units • Averages	Data table is completed with teacher assistance and but is missing one of the following requirements: • Appropriate title • Appropriate column labels • Correct units • Averages	Data table is expertly completed with teacher assistance and meets the following requirements: • Appropriate title • Appropriate column labels • Correct units • Averages	Data table is expertly completed without teacher assistance and meets the following requirements: • Appropriate title • Appropriate column labels • Correct units • Averages
Graphing	Graph is completed with or without teacher assistance but is missing more than one of the following requirements: • Appropriate title • Axis labels • Appropriately labeled intervals • Plotted data • Line of best fit (if applicable)	Graph is completed with or without teacher assistance but is missing one of the following requirements: • Appropriate title • Axis labels • Appropriately labeled intervals • Plotted data • Line of best fit (if applicable)	Graph is completed with teacher assistance and meets the following requirements: • Appropriate title • Axis labels • Appropriately labeled intervals • Plotted data • Line of best fit (if applicable)	Graph is expertly completed without teacher assistance and meets the following requirements: • Appropriate title • Axis labels • Appropriately labeled intervals • Plotted data • Line of best fit (if applicable)
Results	With or without teacher assistance, the student is missing two or more of the following requirements: • Describes what was done during experiment • Describes what happened using data and observations • Describes each test and its results • Refers to data table and/or graph when explaining what happened	With or without teacher assistance, the student is missing one of the following requirements: • Describes what was done during experiment • Describes what happened using data and observations • Describes each test and its results • Refers to data table and/or graph when explaining what happened	With teacher assistance, the student.. • Describes what was done during experiment • Describes what happened using data and observations • Describes each test and its results • Refers to data table and/or graph when explaining what happened	Without teacher assistance, the student.. • Expertly describes what was done during experiment • Expertly describes what happened using data and observations. • Describes each test and its results including trails and averages • Refers to data table and/or graph when explaining what happened

Conclusion	Student provides an incorrect claim and no data or analysis.	Student provides a correct claim but is missing data, analysis, and discussion of possible errors. It does include: • A claim referencing experimenter's hypothesis • Explanation of importance of experiment • Explanation of improvements or future research	With support, student provides an answer that includes a claim and data OR analysis. It includes: • A claim referencing experimenter's hypothesis • Supporting quantitative details OR analysis using background knowledge • Explanation of possible errors • Explanation of importance of experiment • Explanation of improvements or future research	Student Independently provides a correct answer that includes a claim, pertinent data and accurate analysis. It must have: • A claim referencing experimenter's hypothesis • Supporting quantitative details • Expert analysis using research and background knowledge • Explanation of possible errors • Explanation of importance of experiment • Explanation of improvements or future research
Works Cited/ Bibliography	• Less than 2 reliable OR relevant sources are used in the discussion of results or conclusion. • Sources are tracked in a works cited page with no effort to apply correct formatting of all pertinent information (with or without teacher assistance)	• At least 2 reliable OR relevant sources are used in the discussion of results or conclusion. • Sources are tracked in a works cited page with some effort to apply correct formatting of all pertinent information (with or without teacher assistance)	• At least 3 reliable and relevant sources are used in the discussion of results or conclusion. • Sources are tracked in a works cited page with significant effort to apply correct formatting of all pertinent information (with or without teacher assistance)	• At least 4 reliable and relevant sources are expertly used in the discussion of results or conclusion. • Sources are tracked in a works cited page with significant effort to apply correct formatting of all pertinent information (without teacher assistance)

_____/ 50 = _____%

Poster Display Checklist

TITLE
- ☐ Appropriate Title Present (1pt)
- ☐ Informative (1pt)
- ☐ Relevant (1pt)

STUDENT INFORMATION
- ☐ Student Name (1pt)
- ☐ Date completed (1pt)

EXPERIMENTAL QUESTION
- ☐ Experimental question present (1 pt)
- ☐ Testable (1 pt)

HYPOTHESIS
- ☐ Hypothesis Present (1 pt)
- ☐ If… then… because format (1 pts)

BACKGROUND RESEARCH
- ☐ Background research summarized (1pt)
- ☐ Explanation of significance (4pts)
- ☐ Sources Cited/Quoted (1pt)

MATERIALS
- ☐ Lists all materials (1pt)
- ☐ Specific (1 pts)
- ☐ Appropriate units (1 pts)

VARIABLES
- ☐ Independent variable (1pt)
- ☐ Dependent variable (1 pt)
- ☐ Constants (1 pt)

PROCEDURE
- ☐ Procedure Present (1pt)
- ☐ Number steps (1pt)
- ☐ Metric units (1 pt)
- ☐ Repeatable (1 pt)

DATA TABLE
- ☐ Data table Present (1 pt)
- ☐ Title (1 pt)
- ☐ Column headings (1 pt)
- ☐ Data organized (1 pt)
- ☐ Average calculated/included (2 pts)

GRAPH
- ☐ Graph Present (1 pt)
- ☐ Appropriate Title (1 pt)
- ☐ X and Y Axis Labeled (1 pt)
- ☐ Intervals Identified/labeled (1 pt)
- ☐ Data Plotted (1 pt)
- ☐ Line of Best Fit if Appropriate (1 pt)

RESULTS
- ☐ Results paragraph written (1 pt)
- ☐ Proper grammar (1pts)
- ☐ Explains experiment (1pts)
- ☐ Uses quantitative data (2pts)
- ☐ Uses qualitative data (2pts)
- ☐ References graph or data table (2pts)
- ☐ References background research (2pts)

CONCLUSION
- ☐ Conclusion Paragraphs written (1pt)
- ☐ Summarizes results (2pts)
- ☐ Acceptance or rejection of hypothesis (1pts)
- ☐ Quantitative evidence (2 pts)
- ☐ Qualitative evidence (2pts)
- ☐ Analysis of results (4 pts)
- ☐ Identifies errors (1pts)
- ☐ Explains errors (2pts)
- ☐ Discusses importance (2pts)
- ☐ References background research (2pts)

FUTURE RESEARCH
- ☐ Future Research identified (1pts)
- ☐ Improvements discussed (2pts)
- ☐ Future research discussed (1pts)

APPEARANCE
- ☐ One picture to show the experimental set up (2 pts)
- ☐ One picture to show the experiment in progress (2 pts)
- ☐ Colorful/Eye Catching (4 pts)
- ☐ Neat (2 pts)
- ☐ Organized (2 pts)
- ☐ Creativity (2 pts)
- ☐ Originality (2 pts)

WORKS CITED
- ☐ List all sources (1pt)
- ☐ Listed in alphabetical order (1pt)
- ☐ Properly formatted (1pt)

EXPERIMENTAL SET-UP
- ☐ Experimental set-up present (6 pts)
- ☐ Functions properly (4 pts)

Score: _____/ 100