Name _____

Intro. to Agriscience SAE Project

Choosing a research topic that relates to science & agriculture:

The project needs to fit into one of the following agricultural categories:

1) Animal Systems; 2) Environmental Services/Natural Resource Systems; 3) Food Products and Processing Systems; 4) Plant Systems; 5) Power, Structural and Technical Systems; and 6) Social Science.

Identify: What do you want to investigate? Pose a research question/statement:

Relation: How does this relate to science & agriculture? See above, explain your rationale

Research: Educate yourself on that subject. You will be doing background research on your question. You will need two sources for each of the 2 sub-topics. **List the sources here under each sub-topic and make notes from each of your sources below Identify:** What do you want to investigate? Pose a research question/statement:

Sub-topic 1:

Source 1:

Source 2:

Sub-topic 1 Notes:

Sub-topic 2:

Sub-topic 1: Source 1: Source 2:

Sub-topic 2 Notes:

Hypothesis: State your hypothesis. Remember, a hypothesis is an **educated** guess, so the research you did should support the hypothesis you have stated. Also remember, a hypothesis does not start with “I think” but “if, then, because”. Use your independent and dependent variable to write a statement that will describe what happens to the dependent variable as you change the independent variable. Remember to include the direction of change for both variables.

Design your experimental procedure

Identify the independent variable and the changes being made to that independent variable

Identifying the dependent variable and how that dependent variable will be measured to get quantitative data

How many experimental groups will you have? What are they? How many times will you test each group?

Does your experiment require a control group? If no, why not? If yes, what will your control group be (what condition)?

What conditions do you have to maintain exactly the same throughout the experiment in both the experimental groups and control group to be sure you have reliable data?

What materials will you need and how will you get them?

What steps will you take to perform the experiment? Step by step directions of *preliminary* procedures:

Plan for data collection

What data are you collecting? Sketch a table into which you will record your data. Remember your data table should include your experimental (independent variable) groups and where you will record dependent variable measurements. Have me OK this data table.

Run your experiment

You are responsible for safe laboratory procedures.

The experiment must be performed with all experimental groups and control group in the manner described in preliminary procedures with minor changes as adjustments need to be made.

Record any changes you make to the steps or measurements that you changed while doing this experiment on your list of preliminary procedures *using a different color pen/pencil.*

Plan for analyzing data

Once you've started collecting data, during your experiment, start formulating ideas about what you will do with the data. What ideas do you have about how you are going to analyze the data? Will you be performing any mathematical calculations? Will you be graphing your results? Write out what you plan to do. Include example sketches of graphs with axis titles.

Post Experiment: You will be creating all the presentation slide sections.