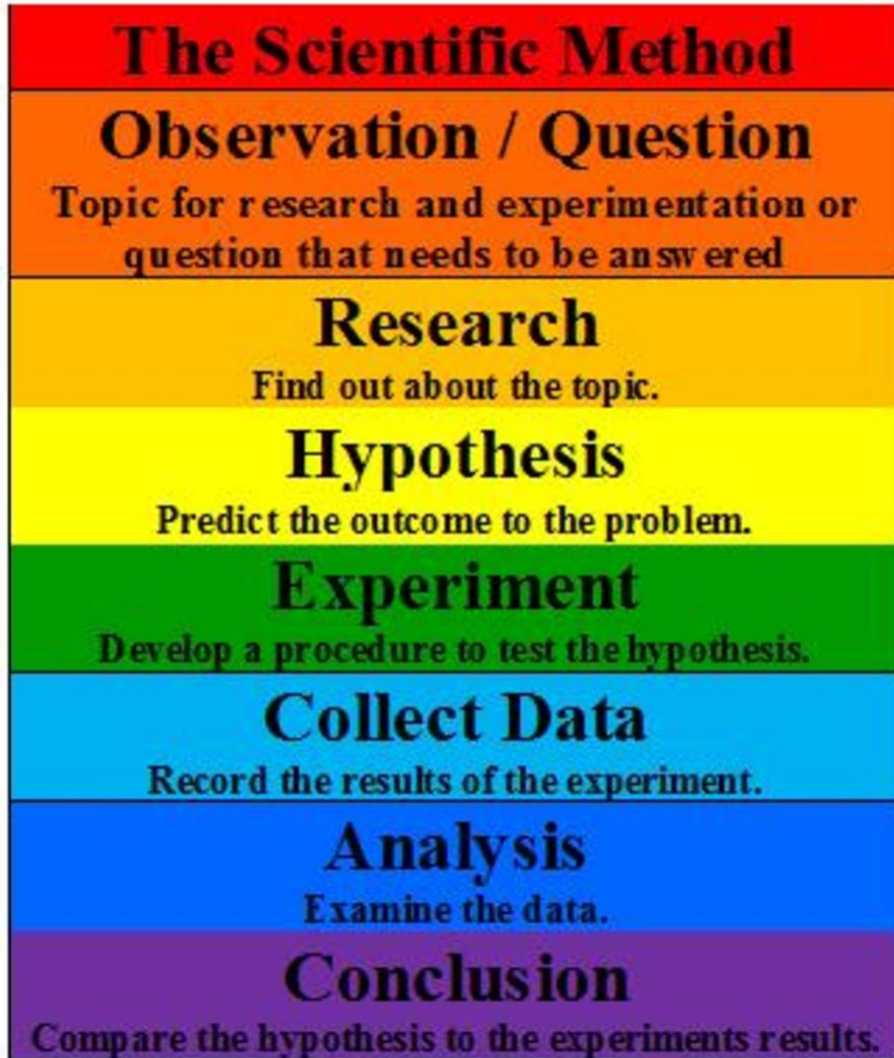




Agriscience Fair Projects

What is an agriscience fair project?



Categories:

- Plant Systems
- Animal Systems
- Social Systems
- Power, Structure & Technology
- Environmental Systems
- Food Products and Processing



Sample Project

What is an agriscience fair project?

Using the SCIENTIFIC METHOD students will conduct and experiment in an effort to prove their hypothesis.

STEP 1: OBSERVATION & QUESTION

OBSERVATION: YOU NOTICE ANTS DRINKING WATER AND WONDER TO YOURSELF

QUESTION: “WHAT WOULD HAPPEN IF ANTS DRANK SODA?
WOULD THE CARBONATION MAKE THEM PRODUCE MORE GAS?”

What is an agriscience fair project?

Using the SCIENTIFIC METHOD students will conduct an experiment in an effort to prove their hypothesis.

STEP 2: RESEARCH

WHAT HAPPENS IF ANTS DRINK SODA?

DO DIFFERENT BRANDS OF SODA AFFECT ANTS DIFFERENTLY?

What is an agriscience fair project?

Using the SCIENTIFIC METHOD students will conduct and experiment in an effort to prove their hypothesis.

STEP 3: HYPOTHESIS

If Ants are given different brands of soda (Dr.Pepper and Cocacola)
THEN The ants given Dr.Pepper will produce more gas
BECAUSE Dr.Pepper makes their soda with a higher level of carbonation.

CAN ONLY TEST 1 VARIABLE

MUST HAVE 3 GROUPS & 3 TRIALS

	Group #1 Control Group (H2O)	Group #2 Dr.Pepper	Group #3 Coca cola
TRIAL 1	Ant 1	Ant 4	Ant 7
TRIAL 2	Ant 2	Ant 5	Ant 8
TRIAL 3	Ant 3	Ant 6	Ant 9

COLLECT DATA & ANALYSIS

	Group #1 Control Group (H2O)	Group #2 Dr. Pepper	Group #3 Coca cola
TRIAL 1	Ant 1 1 CM	Ant 4 2.3 CM	Ant 7 1.67 CM
TRIAL 2	Ant 2 1.2 CM	Ant 5 2.5 CM	Ant 8 1.8 CM
TRIAL 3	Ant 3 0.9 CM	Ant 6 2.8 CM	Ant 9 1.4 CM

CONCLUSION:

WHEN TESTING THE EFFECTS OF

DR.PEPPER VS COCA COLA

ON

ANTS,

ANTS WHO DRANK DR.PEPPER PRODUCED A LARGER BALLOON BECAUSE

DR.PEPPER CONTAINS MORE CARBONATION WHICH CAUSED THE ANTS TO PRODUCE

MORE GAS, INFLATING THE BALLOON LARGER THAN THE ANTS WHO DRANK COCA COLA

The background of the slide is a photograph of a rural landscape. In the foreground and middle ground, there are several large, round hay bales scattered across a vibrant green field. In the background, a dense line of green trees stretches across the horizon under a sky filled with soft, grey clouds. The overall scene is peaceful and agricultural.

Do's and Don'ts: Frequently Asked Questions/Problems

INDEPENDENT VARIABLE

VARIABLE THAT IS CHANGED

Amount of Water



DEPENDENT VARIABLE

VARIABLE AFFECTED BY THE CHANGE

Size of Plant
Number of Leaves
Living or Dead?



You MAY
ONLY change
ONE
INDEPENDENT
VARIABLE !

**[Dependent
Variables
will be your
results]**

INDEPENDENT VARIABLE

VARIABLE THAT IS CHANGED

Amount of Water












DEPENDENT VARIABLE

VARIABLE AFFECTED BY THE CHANGE

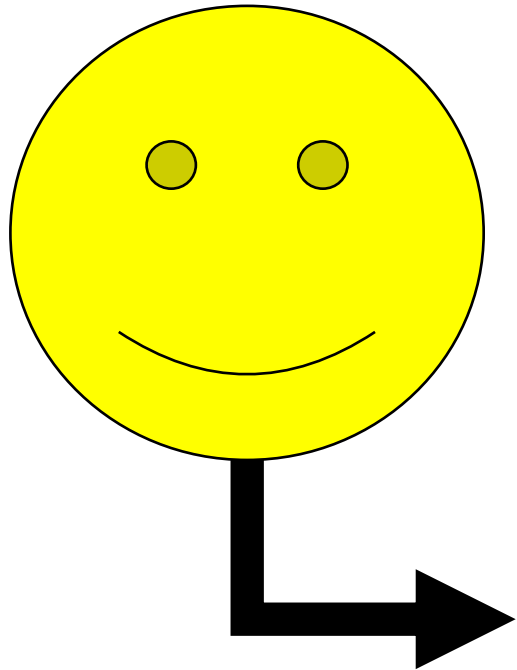
Size of Plant
Number of Leaves
Living or Dead?



- You need a **MINIMUM** of 3 “groups”
- Each group must be tested a **minimum** of 3 times (this is called a trial)
- Therefore, 3 groups tested 3 times = **need 9 test subjects**

	GROUP 1	GROUP 2	GROUP 3
TRIAL 1	GROUP 1 TRIAL 1 	GROUP 2 TRIAL 1 	GROUP 3 TRIAL 1 
TRIAL 2	GROUP 1 TRIAL 2 	GROUP 2 TRIAL 2 	GROUP 3 TRIAL 2 
TRIAL 3	GROUP 1 TRIAL 3 	GROUP 2 TRIAL 3 	GROUP 3 TRIAL 3 

You must be able to **measure** your results/observations (Quantitative Data)



Quantitative Data

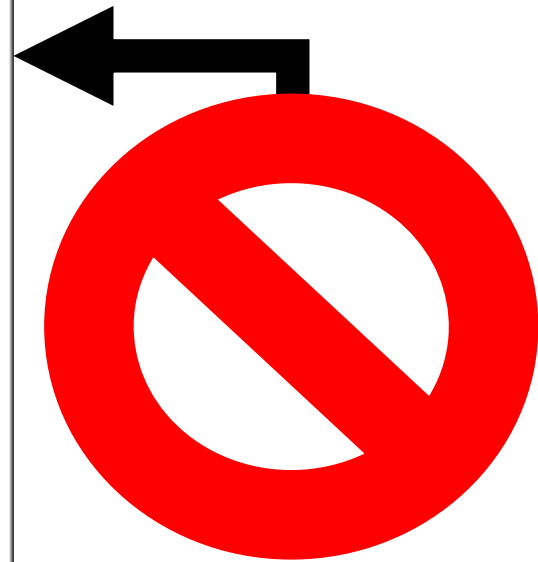
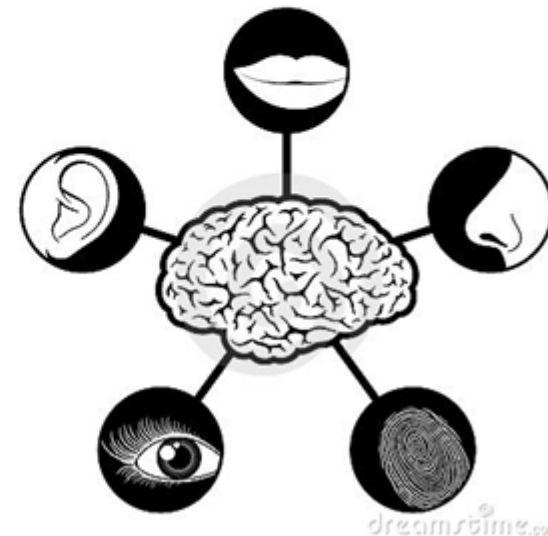
are made with instruments such as rulers, balances, graduated cylinders, beakers, and thermometers. These results are measurable.

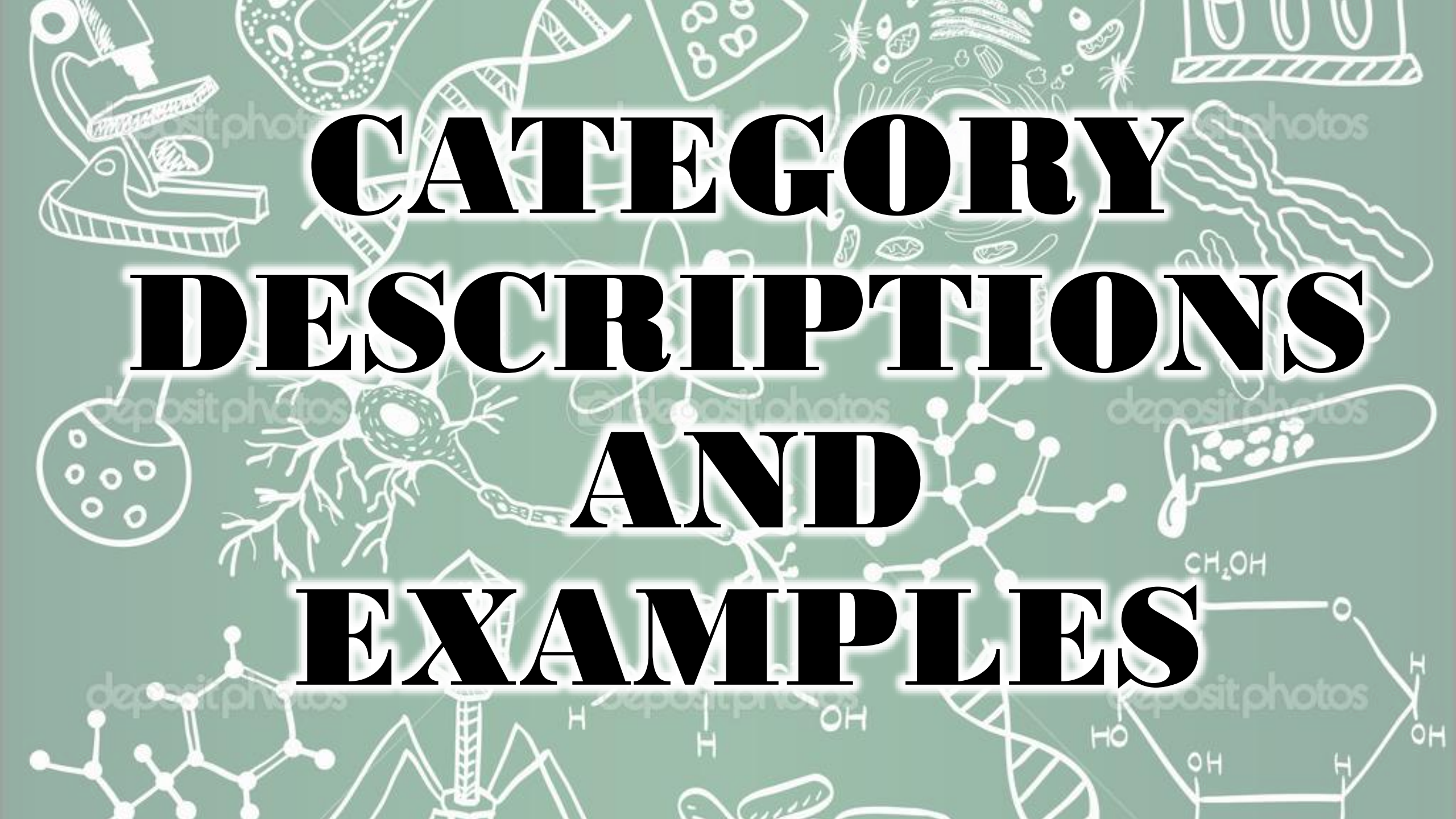
(numbers)



Qualitative Data

use your senses to observe the results.





CATEGORY DESCRIPTIONS AND EXAMPLES

ANIMAL SYSTEMS (AS)

The study of animal systems, including life processes, health, nutrition, genetics, management and processing, through the study of small animals, aquaculture, livestock, dairy, horses and/or poultry.

Examples:

- Compare nutrient levels on animal growth
- Research new disease control mechanisms
- Effects of estrous synchronization on ovulation
- Compare effects of thawing temperatures on livestock semen
- Effects of growth hormone on meat/milk production

Environmental Service Systems: The study of systems, instruments and technology used to monitor and minimize the impact of human activity on environmental systems.

Natural Resource Systems: The study of the management, protection, enhancement and improvement of soil, water, wildlife, forests and air as natural resources.

Examples:

- Effect of agricultural chemicals on water quality
- Effects of cropping practices on wildlife populations
- Compare water movements through different soil types

FOOD PRODUCTS AND PROCESSING SYSTEMS (FPP)

The study of product development, quality assurance, food safety, production, regulation and compliance and food service within the food science industry.

Examples:

- Effects of packaging techniques on food spoilage rates
- Resistance of organic fruits to common diseases
- Determining chemical energy stored in foods
- Control of molds on bakery products
- Effects of the amount of sucrose used in baked goods
- Use of a triangle test in sensory science

PLANT SYSTEMS (PS)

The study of plant life cycles, classifications, functions, structures, reproduction, media and nutrients, as well as growth and cultural practices, through the study of crops, turf grass, trees and shrubs and/or ornamental plants.

Examples:

- Determine rates of transpiration in plants
- Effects of heavy metals such as cadmium on edible plants
- Compare GMO and conventional seed/plant growth under various conditions
- Effects of lunar climate and soil condition on plant growth
- Compare plant growth of hydroponics and conventional methods

POWER, STRUCTURAL AND TECHNICAL SYSTEMS (PST)

The study of agricultural equipment, power systems, alternative fuel

sources and precision technology, as well as woodworking, metalworking, welding and project planning for agricultural structures.

Examples:

- Develop alternate energy source engines
- Create minimum energy use structures
- Compare properties of various alternative insulation products
- Investigation of light/wind/water energy sources

SOCIAL SCIENCE (SS)

The study of agricultural areas including agricultural education, agribusiness, agricultural communication, agricultural leadership and sales in agriculture, food and natural resources.

Examples:

- Investigate perceptions of community members toward alternative agricultural practices
- Determine the impact of local/state/national safety programs upon accident rates in agricultural/natural resource occupations
- Comparison of profitability of various agricultural/natural resource practices
- Investigate the impact of significant historical figures on a local community
- Determine the economic effects of local/state/national legislation impacting agricultural/natural resources
- Consumer confidence and understanding of food labels
- Economic effect of employment rate and meat consumption

RESOURCES

<http://bsffa.theaet.com/default.aspx?ID=34715>

<https://www.ffa.org/participate/awards/agriscience-fair/>

<https://www.sciencebuddies.org/science-fair-projects/science-projects>

Area	
Abstract	Abstract is brief and concisely describes the purpose, methods, results and conclusions. Abstract does not include cited references. Abstract is no longer than one page. Arrangement makes the purpose, procedure, results and conclusions clear.
Introduction	Introduction answers the question "Why was the work done?" It clearly states the problem that justifies conducting the research, the purpose of the research, its impact on agriculture, the findings of earlier work and the general approach and objectives.
Literature Review	The literature review details what information currently exists concerning the research project. The information includes materials used in the research and material cited such as articles about similar studies, similar research methods, history of the research area and other items that support the current knowledge base for the topic and how the project might complement existing information.
Materials and Methods	Clearly written to enable others to replicate the study and results. Section is written in third person, encompasses all materials required, states the hypothesis/research questions and explains the study design. If used, the statistical procedures are included.
Results	Written results of the project are summarized. Trends and relationships are clearly addressed. No conclusions are made in this section. Data that can stand alone in the form of tables and/or figures are included.
Discussion and Conclusions	Brief recap of the results is included and shows how they were the foundation of the study. Sound reasoning is shown that conclusions are based on results, incorporates previous literature, and relates directly to the hypothesis. Discussion refers/ references to facts and figures in results section and provides recommendations for practice, future research and the impact on the agriculture industry.
Acknowledgements	Detailed list or paragraph is included acknowledging anyone who assisted with any aspect of the project and how they helped.
References	References contain significant, published and relevant sources.
Skill Development	All five competencies (three from primary pathway, two from any other pathway) demonstrate skills that are appropriate for the scope of the research project. The project demonstrates application of skill attainment with significant measurable impact on the overall project.
APA Style/Spelling	APA citation style writing is used throughout the written report. No spelling or grammar errors are present.