

Name: _____

Aligned to the following standards: AG2; AG5; CS.02 CS.05; FFA.PL-A; FFA.PL-C; FFA.PL-D; FFA.PL-E; FFA.PL-F; FFA.PG-G.; FFA.PG-I; FFA.CS-M; FFA.CS-N; FFA.CS-O; FFA.CS-P; CCSS.ELA.RI.9-10.2; CCSS.ELA.RI.9-10.4; CCSS.W.9-10.2; CCSS.W.9-10.4; CCSS.ELA.W.9-10.8; CCSS.SL.9-10.2; CCSS.SL.9-10.4; CRP.02; CRP.04; CRP.08; CRP.09

Appendix 7: From CDE to a Successful Business

Part 1

Directions:

Read the article "From CDE to a Successful Business" in the spring 2023 issue of *FFA New Horizons* and answer the questions below.

1. Who is this article about? _____

2. In the box to the right, draw the state where this person was an FFA member.

3. What state does Banner currently live in? _____

4. The name of the company he started is:

5. What is the purpose of the company?

6. He got the idea for one of his company's products more than _____ years ago when he was an FFA member.

- a. 15
- b. 10
- c. 20
- d. 5

7. Describe the idea, referenced in Question 6, that he had for one of his company's products.

8. What did he do after he graduated from high school?

Name: _____

9. What did Banner major in during college?

	and	
--	-----	--

10. What two products did he create, and what is the purpose of those products?

Product and Purpose:

Product and Purpose:

11. Explain how he manages his business, and explain how he credits his SAE:

--

12. What is his advice for developing successful new products?

--



13. After reading this article and answering the questions, how can you apply what you learned to your current SAE or to starting an SAE?

--

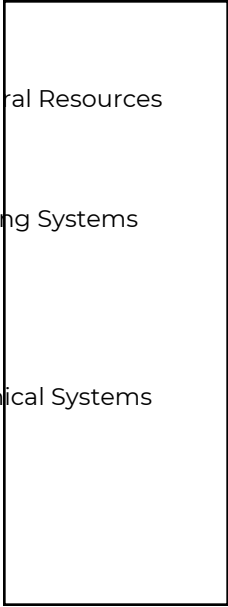
Name: _____

Part 2

Directions:

Todd Banner used scientific methods to help create and develop products for his business. Using the agriscience research information page (following this page), complete the following activities to learn about agriscience research.

Draw a line to match the agriscience research category with the correct project opportunity. Hint: There could be more than one match for each category.

- | | | |
|--|--|---|
| 1. Animal Systems |  | Consumer confidence and understanding of food labels |
| 2. Environmental Service/Natural Resources Systems | | Compare plant growth of hydroponics and conventional methods |
| 3. Food Products and Processing Systems | | Effect of agricultural chemicals on water quality |
| 4. Plant Systems | | Research new disease-control mechanisms |
| 5. Power, Structural and Technical Systems | | Control of molds on bakery products |
| 6. Social Science | | Create minimum energy use structures |
| | | Comparison of profitability of various agricultural/natural resources practices |
| | | Effects of lunar climate and soil conditions on plant growth |
| | | Resistance of organic fruits to common diseases |
| | | Effects of growth hormone on meat/milk production |
| | | Compare water movement through different soil types |

Why is agricultural research important?

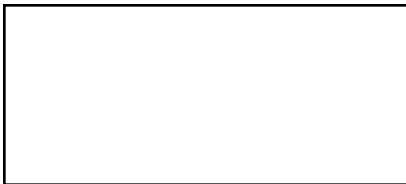


Which research category interests you the most?

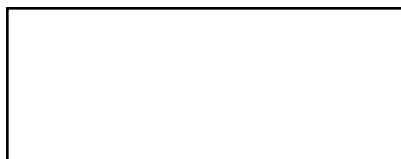


Icons can be a great way for people to gain familiarity with something. Create an icon for each of the agriscience research categories. The icon should be strong enough that someone who is unfamiliar with the categories could gain a basic understanding by seeing the icon you create.

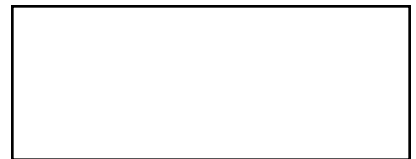
Animal Systems



Environmental Service/Natural Resources Systems



Food Products and Processing Systems



Plant Systems



Power, Structural and Technical Systems



Social Science



Agriscience Research

Skills

-
- A photograph showing a person in a dark lab coat pouring a liquid from a bottle into a white bucket. On the table in front of them are several other bottles, some labeled with numbers like '2' and '3'. The scene appears to be a laboratory or a chemical processing area.

- Animal Systems
 - 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
- Environmental Service/Natural Resources Systems
 - Environmental Service: The study of systems, instruments of technology used to monitor and minimize the impact of human activity on environmental systems
 - Natural Resources: The study of the management, protection, enhancement and improvement of soil, water, wildlife, forests and air as natural resources
- Food Products and Processing Systems
 - The study of product development, quality assurance, food safety, production, regulation and compliance and food service within the food service industry
- Plant Systems
 - 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
- Power, Structural and Technical Systems
 - 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
- Social Science
 - The study of agricultural areas including agricultural education, agribusiness, agricultural communication, agricultural leadership and sales in agriculture, food and natural resources

Introduction

The purpose in this experiment was to determine if B-12 and other B-vitamins which are sought for in Cornish Cross chickens.

Objectives

The objectives of this experiment were:
 1. The independent variable is the amount of B-12 supplement added to the water.
 2. The dependent variable is the price of weight gain of the Cornish-Cross chicken.
 3. The control group is the amount of B-12 supplement, high, low, and none.

Background

If Cornish-Cross chickens are given B-12 supplements then the chicks will grow at a faster rate than those not given B-12 supplements, which consumed regular water.

Materials

- CHICKENS (20)
- CHICKEN FEEDING TUBING
- WATER
- CHICKEN COVERS
- FEED AND WATER CONTAINERS (10 each)
- VITAMIN B-12
- WATER
- SCALE
- STOVE

Experimental Procedures

Preparation Procedure
 1. Put a 1000-gram (2.2 lb) scale in each pen.
 2. Put one 1000-gram (2.2 lb) scale in each pen.
 3. Put one 1000-gram (2.2 lb) scale in each pen.
 4. Put one 1000-gram (2.2 lb) scale in each pen.
 5. Put one 1000-gram (2.2 lb) scale in each pen.
 6. Put one 1000-gram (2.2 lb) scale in each pen.
 7. Put one 1000-gram (2.2 lb) scale in each pen.
 8. Put one 1000-gram (2.2 lb) scale in each pen.
 9. Put one 1000-gram (2.2 lb) scale in each pen.
 10. Put one 1000-gram (2.2 lb) scale in each pen.

Preparation Procedure
 1. Put a 1000-gram (2.2 lb) scale in each pen.
 2. Put one 1000-gram (2.2 lb) scale in each pen.
 3. Put one 1000-gram (2.2 lb) scale in each pen.
 4. Put one 1000-gram (2.2 lb) scale in each pen.
 5. Put one 1000-gram (2.2 lb) scale in each pen.
 6. Put one 1000-gram (2.2 lb) scale in each pen.
 7. Put one 1000-gram (2.2 lb) scale in each pen.
 8. Put one 1000-gram (2.2 lb) scale in each pen.
 9. Put one 1000-gram (2.2 lb) scale in each pen.
 10. Put one 1000-gram (2.2 lb) scale in each pen.

The Effect of Vitamin B-12 Supplements on the Growth of Cornish Cross Chicks

Results

Average Weekly Growth Rate of Cornish Cross Chicks using a Vitamin B-12 Supplement

Group	High	Low	Control	High	Low	Control
Weight (g)	100	100	100	100	100	100
Weight (g)	100	100	100	100	100	100
Weight (g)	100	100	100	100	100	100
Weight (g)	100	100	100	100	100	100
Weight (g)	100	100	100	100	100	100
Weight (g)	100	100	100	100	100	100
Weight (g)	100	100	100	100	100	100
Weight (g)	100	100	100	100	100	100
Weight (g)	100	100	100	100	100	100
Weight (g)	100	100	100	100	100	100

Average Weekly Growth Rate of Cornish Cross Chicks using a Vitamin B-12 Supplement

Figure 1: The average weekly growth rate of Cornish Cross chicks using a B-12 supplement.

Figure 2: The average weekly growth rate of Cornish Cross chicks using a B-12 supplement.

Conclusion

The hypothesis, if Cornish Cross chicks are given a Vitamin B-12 supplement then the chicks will grow at a faster rate than those not given a Vitamin B-12 supplement, which consumed regular water was supported by the data in the experiment, but did not show a significant difference using the t-test.

Understanding the experimental results, the researcher understands that more than one method can be conducted to get better data to draw conclusions.

In order to further improve the experiment, the researcher should be conducted on a larger scale to get more extensive results and compare the experiment to the other groups to see how well the full grown chicks grow.



NATIONAL
FFA ORGANIZATION

Name: _____

DIRECTIONS:

For agriscience research to be worthwhile, it is important to carefully plan to ensure an effective study. Follow the outline below to begin planning an agriscience research project of your own!

Step 1: Circle the agriscience research category you would like to research.

- ☐ • Animal Systems
- ☐ • Environmental Service/Natural Resources Systems
- ☐ • Food Products and Processing Systems
- ☐ • Plant Systems
- ☐ • Power, Structural and Technical Systems
- ☐ • Social Science



Step 2: What is your research question? What question will you try to answer?

2.

Step 3: What are three resources that you could use to help you gain some knowledge on your topic? Ex. United States Department of Agriculture, Purdue University, etc.

- 1.
- 2.
- 3.

3.

Step 4: Brainstorm a list of materials you may need to complete your research. Ex. feed, soil, etc.

4.

Why did you select this topic? What about it interests you?

How could this research help with a current problem in the agriculture industry?

What skills could you gain from completing an agriscience research project?