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Appendix 3: Engineering and Agriculture

Created: Summer 2019 by the National FFA Organization
Part 1

DIRECTIONS:

Begin by answering the following questions:



How do you act when you are happy? Give two examples.

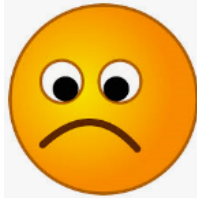
1. _____
2. _____



What do animals do when they are happy, sad and bored?

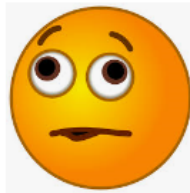
How do you act when you are sad? Give two examples.

1. _____
2. _____



How do you act when you are bored? Give two examples.

1. _____
2. _____



What makes humans and animals act this way?

DIRECTIONS:

Read the article "Engineering Elephants" in the Summer 2019 issue of *FFA New Horizons*. Complete the following activities once you have finished reading.

- (1) Visit the SeaWorld Parks and Entertainment website, <https://seaworld.org/animals/all-about/training/animal-behavior-and-learning/>, and answer the following questions.

What is animal behavior?

What is a specific example of a behavior shown by a dog?



What is the scientific study of animal behavior called?

What are the four basic reasons why animals behave the way they do?

1. _____
2. _____
3. _____
4. _____

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- (2) Now that we have a basic understanding of what behavior is, let's explore different behaviors. Using the website <https://sciencing.com/innate-learned-animal-behavior-6668264.html>, define each of the different types of animal behavior and draw a picture that represents that type of behavior. Your drawing must be an example **not** used on the website. Think about the animals you own, come into contact with every day or have seen in videos (ex. dogs, cats, sheep, rabbits, etc.) to complete this activity.

<u>Innate Behavior</u>		<u>Learned Behavior</u>
Definition:	Vs.	Definition:
Picture:		Picture:



- (3) We now have an understanding of behaviors in animals. Let's look at behaviors that are exhibited and what they could mean.
- Five dog behaviors are listed. Using the [Hill's Science Diet website](#), identify why the dog is exhibiting that behavior and a corrective action that can be taken.
 - Select an animal (other than a dog). Identify 5 behaviors that animal exhibits. Thinking about the behavior, what is a corrective action (for negative behaviors) or reinforcement of the action (for good behaviors) that can be taken to address each behavior?

Dog Behaviors:

- Biting
 - Why?
 - Corrective action:
- Yawning
 - Why?
 - Corrective action:
- Circling
 - Why?
 - Corrective action:
- Panting
 - Why?
 - Corrective action:

Your Selected Animal: _____

- Why?
 - Corrective action or reinforcement of action:
- Why?
 - Corrective action or reinforcement of action:
- Why?
 - Corrective action or reinforcement of action:
- Why?
 - Corrective action or reinforcement of action:

In the article, they talk about how the elephants sway. Why did the elephants do this? How can the caretakers correct the behavior?



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Part 2

DIRECTIONS:

Within the article, students had to apply the skills they learned in their agricultural mechanics class. Now, we will walk through some of the most common welding joints used in the industry, which would have been used to create the elephant feeder. Using the website <http://www.theweldingmaster.com/types-welding-joints/>, examine each of the different types of welding joint and the variations in each weld. After you learn about each weld, you will create the weld using graham crackers and icing. Draw or take a picture and place it next to each weld below. If you are not performing this lab, draw a picture of each joint weld.

Butt Joint

Description:

Variations:

Picture:

Example: Bevel groove weld

Corner Joint

Description:

Variations:

Picture:

T Joint

Description:

Variations:

Picture:



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Lap Joint

Description:

Variations:

Picture:

Edge Joint

Description:

Variations:

Picture:



Find a weld that you have in your classroom! Describe it.

What role do welders play in our everyday lives?
(Hint: Think about your day-to-day tasks).



What classes could you take to prepare for a career in welding?

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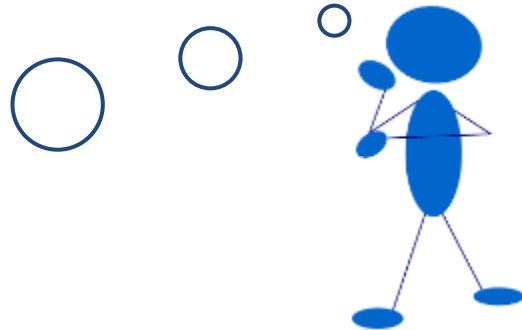
Part 3

DIRECTIONS:

You have now learned about animal behavior and welding. How do they fit together? Read the scenario below. Thinking about what you have learned, construct a solution to the problem.

Scenario:

Your friend has six rabbits of varying breeds. The rabbits are cared for daily. These rabbits are not only for meat purposes, but also serve as pets. The rabbits have been consistently hopping back and forth in front of the door to their enclosure and flipping their feed dishes. This behavior has caused sore hocks and a loss of feed.



- (1) Identify the behaviors exhibited by the rabbits.
- (2) Why do you think they are exhibiting these behaviors?
- (3) Design a hutch (rabbit house) that will fix the issues your friend is having with the rabbits. Draw a picture of the hutch below. Be sure to label any welding joints that may be used and describe why your design will solve the problem.

Design

Explanation