The Training Game
Virtual Classroom Extension

Grade Level
Grades 5-8

Objectives
This activity is designed to start your at-home students in recognizing themselves as scientists and thinking critically about problem-solving. The goal is to instill concepts through discovery and to encourage using scientific thought processes.

Procedures
1. Begin this lesson by explaining to your at-home students that they are going to explore how changes to animal keeper duties over the past several decades have improved the quality of animal care provided in zoos.

How has animal care in zoos improved by including behavioral training into a keeper's duties?

2. Brainstorm and record ideas to the above question and engage in a discussion of what your at-home students predict the answer to this question to be. More importantly, why do they think this?
3. You can help support the discussion with questions such as: What would a zoo need to train an animal, such as an elephant or rhino, to do? Why might it be beneficial to the animal to have it trained to do something important? Remind them to think back to the Training Game video (https://resourcelibrary.clemetzoo.com/Area/21)
4. Explain that they can research this question using the resources on the Zoo's Online Resource Library at http://resourcelibrary.clemetzoo.com/. Here you can find information regarding animal training, animal behavior, and animal careers that will give them more detail to answer the question.
5. Ask your at-home students to reflect on what they have learned and review their ideas of how to get the information they would need to answer the original research question. What are the steps in training an animal to do a task? Why might we need to train an animal to do something?
6. Next, explain that you have a fun activity that might give them some additional insight into training animals at a zoo.
7. Use the below instructions for The Training Game activity.

a. Pick one participant to be the “trainer” and 1-2 participants to be the “animals.”
b. Have the “trainer” write down a behavior (example: jump up, jumping jack, turn around, sit, lay down, pick up an object, etc.) that they will train the “animals” to do. Keep it a natural human behavior. The behavior should only be shared with the activity leader, and no one else.
c. Remind the “trainer” and the “animals” that they do not speak the same language, so there should be no talking during the training session.
d. Explain that the methods used by trainers involve positive reinforcement . This is the process of following an action with something that the “animal” wants (you can even use M&Ms or Skittles for this game), thereby causing an increase in the frequency of the behavior.
e. If possible, have one observer use a stopwatch to measure the time it takes to train the full behavior.
f. If the “animals” are having trouble learning the behavior, explain to the “trainer” that they can use approximations, or small steps that will build towards the final behavior, to let the “animals” know they are getting close to the desired behavior. These approximations can be rewarded to guide the “animals” towards the desired end result.
g. How much time did it take the “animal” to learn the behavior? Try another behavior with another “trainer” and group of “animals.”
h. Repeat procedure one or two more times. What behavior was the quickest to teach? Which one took the longest?

8. Have your at-home students refer back to their notes on what a zoo might need to train an animal to do. Have them create a step by step guide for that task. How are the steps to training an animal to do something different from the steps for a person? Can you train any kind of animal to do anything? What restrictions might there be depending on the task and type of animal?
9. Was the outcome the same as what they had predicted? Is it beneficial to the animal if they are trained to do a task?

Standards

Ohio Academic Technology Standards
Grade 3-5 Design and Technology Topic: Analyze the impact of communication and collaboration in both digital and physical environments. 3-5.ST.2.a. Create a plan and select collaboration and/or communication tools to complete a given task. Grade 3-5 Design and Technology Topic: Identify a problem and use an engineering design process to solve the problem 3-5.DT.2.b. Plan and implement a design process: identify a problem, think about ways to solve the problem, develop possible solutions, test and evaluate solution(s), present a possible solution, and redesign to improve the solution.

Next Generation Science Standards
Engineering Design MS-ETS1-2 Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.