CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY

Name(s)
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Project Number
J2404

Project Title
Did You Bite Off More Than You Can Chew?

Abstract

Objectives/Goals
Does the sharpness and size of a beak affect how hard a bird can bite or puncture?

Methods/Materials
First I will gather the different birds I will use. My project is designed to inform first time pet bird owners. I will collect different birds, then I will perform two different tests. In the first test, I will provide different objects for the bird to break. The easiest thing in this group will be the toothpick and the most difficult will be the wooden dowel. I will use the leather glove to hold the bird before securing my grip on their stomachs. After recording my results in the journal and camera I will host the second test. The next experiment will test how many layers the same birds can pierce. The thinnest item in this group will be three layers of cardstock and the thickest will be fifteen layers of cardstock. I then record the facts in my journal and take pictures of the evidence to put in my report and on my board.

Results
Pierce Break
African Grey 15 4
Parrotlet 6 3
Love Bird 6 3.5
Parakeet 4 3
Cockatoo 10 4

Conclusions/Discussion
After my experiment and research I have to conclude that my hypothesis was partially correct. Due to prior knowledge on the topic of birds I hypothesized that the largest of all the birds I tested will pierce the most items and crush the most objects. The African Grey Parrot did pierce the most layers of cardstock; however it failed to break the wooden dowel placing it at the same level, strength wise, as the cockatoo. In my research I learned that the structure of a beak is similar for every bird, the only thing that differs is the size and sharpness. Piercing is where the African Grey excelled because of its long curved beak and how sharp it was. The parrotlet most likely had the ability to pierce more of the cardstock, but because its beak was so small it didn't. As for crushing items and breaking them, the birds had a difficult time. It was because none of the birds I chose to test were strong enough to break a wooden dowel. So in that area of my experiment my hypothesis was correct, but not completely. I had said that the largest of birds would crush the most, but both the largest and second largest birds tied in that part of the test. Based on all of that I conclude saying, yes the size and shape of a bird#s beak play key roles in the number of objects they

Summary Statement
My project is designed to tell whether the size and shape of a bird's beak affect how hard the bird can bite and pierce.

Help Received
I would like to thank my uncle for letting me use a few birds from his bird farm.