



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Sarah K. Beard	Project Number J1105
Project Title Sound Bytes	
Abstract Objectives/Goals To understand if various animals react to high and low frequency sounds differently. Methods/Materials Procedure: 1. Observed each animal with a hidden video camera for two hours. Afterwards, replay the video and note behavior in their natural state. 2. The following day, set up a speaker ten feet away from the animal being observed. 3. Hook up a signal generator to a laptop computer, and set up the amplifier and speaker. 4. Next, set up a hidden video camera and record the reactions of the animal tested. 5. In another location, hide and wait until the animal is calm (if they had gotten excited). 6. Play each sound (303, 242, 104, 104, 18, and 11 Hertz) separately by playing one and then waiting three minutes. 7. Once tests are finished on all the animals, watch the videos and note different animal behaviors when the sound was played, such as looking toward the sound, running away from the sound or running toward the sound. 8. Repeat the procedures 2-7 the following day for each of the animals being tested. Materials: Laptop, oscilloscope, signal generator, animals (dog, pigs, chickens, and goats), speaker, amplifier, video camera, tripod, T.V Results High frequencies, such as 303Hz made most of the animals scared and agitated. Low frequencies, such as 11Hz, made the animals seem calm. The most reactive animals were the pigs, the least reactive were the goats. Conclusions/Discussion My hypothesis was correct. When the highest frequency of 303 Hz played, the animals on average were alert and scared. When the lowest frequency was played, the reaction was to be calm-or not change what they were doing. I believe they were scared of the 303Hz because it was high pitched, which could make them scared since it may have hurt their ears. The low sound could have made them calm because they were similar in frequency to the sounds that the animals use to communicate to each other in.	
Summary Statement Animals react to different sounds in different ways.	
Help Received My dad helped me set up the equipment.	