

# ANIMALS INSIDE & OUT

Interactive Animals Science Education Activities



### WHY ANIMALS INSIDE & OUT?

A Needs Assessment was conducted in Nebraska to determine the Nebraska 4-H Strategic Plan for 2012-2017 which found the following as program priorities:

- Develop science interests, skills and abilities in the areas of
  - Agriculture
  - Energy
  - Environmental Stewardship
  - Technology
- Helping youth think and problem solve within a scientific framework and encouraging an excitement for science."
- Animal Science is a focus area important to 4-H.



## RESEARCH BASE

The "Animals Inside & Out program, was designed so each activity includes hands on/active learning of participants based on research material from the following:

- 4-H Set Abilities Science, Engineering, and Technology (SET), Programming in the context of 4-H Youth Development National 4-H Council, The Ohio State University, 2007.
- Animal Project Content Grid House, Horton, Ohio State University Extension, 2008.
- Positive youth development is operationalized by the Five Cs of competence confidence, character, connection, and caring, leading to youth contributions, the "sixth C" of PYD. (Bowers et al., 2010; Jelicic et al., 2007; Lerner et al., 2005; Phelps et al., 2009).
- Central and Western Region Committees for Agricultural Literacy July 1999 Summaries of Research and Development in Agricultural Literacy Page 34 Frick, M. J., Birkenholz, R. J., & Machtmes, K. (1995).
- From the 8 Essential Elements Research Base The program incorporates the following "Best Practices"
  - Provide a Safe Emotional & Physical Environment
  - Engagement in Learning
  - Opportunity for Mastery
  - Opportunity to See Oneself as an Active Participant in the Future
- Kolbs Learning Model (1984) 5 steps of the Experiential Learning Model of Experience, Share, Process, Generalize and Apply.



### **OBJECTIVES**

- Youth will gain knowledge and understanding of the livestock industry.
- Youth will develop science skills and abilities to help solve everyday situations.
- Youth will become aware of careers related to animal science.

### PRIMARY AUDIENCE

- 3 5<sup>th</sup> Grades
- Presented to youth with animal projects as well as youth with no animal experience in a wide variety of delivery modes



### **CURRICULUM TOPICS**

- Introduction to Animal Science
- Animal Management
- Digestive System
- By-Products
- Skeletal System
- Muscular System
- Respiratory & Circulatory Systems
- Feeds & Nutrition
- Animal Science Careers
- Reproductive System
- Animals Close-up



## MODES OF DELIVERY

- School Enrichment Programs
- After School/Out of School Programs
- Field Days
- Day Camps
- Summer Camps
- Fairs



## INTRODUCTORY SESSION





## ANIMAL MANAGEMENT





## **DIGESTIVE SYSTEM**





## **BY-PRODUCTS**





# SKELETAL SYSTEM





## **MUSCULAR SYSTEM**





# CIRCULATORY & RESPIRATORY SYSTEM





## FEEDS & NUTRITION





## ANIMAL SCIENCE CAREERS





## REPRODUCTIVE SYSTEM





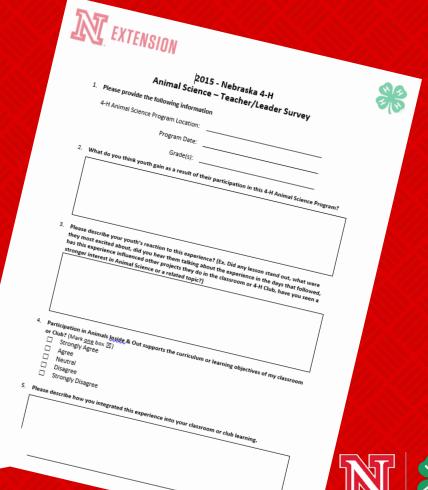
# ANIMALS CLOSE - UP





## **EVALUATIONS**

		(A) (B)	
<b>T</b> EXTENSION	2015 - Nebraska 4-H Animal Science Survey		
Please select one response in As a result of participal program.  Think Animal Science  The program of or more	section I: interest  In each row by marking the appropriate box Soling in this 4-H Animal Science  Is cool  Animal Science programs in the future  Imal Science would be interesting  Imal Science would be interesting  In Animal Science	No	
l am more intereste	Section II: Knowledge  Soonse to the following questions  Soonse to the following and the milk I drink come from?		
Answer:	to the store, where does hamburger meat come from?  To the store, where does hamburger meat come from?  The store, where does hamburger meat come from?		
Byproduct 3			
Career Caree 6. Pleas	select gne response in each row by marking the appropriate be select gne response in each row by marking the appropriate be select gne response in each row by marking the appropriate because of participating in this 4.H Animal Science	Yes	No 🗆
A	a select one resure to a result of participating in this 4411.  a result of participating in this 4411.  will talk to my friends and family about Animal Science results are someone in a career related to Animal Science related to someone in a career related to Animal Science related to someone in a career related to Animal Science related to the someone who works in an Animal Science and the internet to learn more about Animal Science and the internet to learn more about Animal Science and the internet to learn more about Animal Science and the internet to learn more about Animal Science and the internet to learn more about Animal Science and the internet to learn more about Animal Science and the internet to learn more about Animal Science and the science		





### IMPACT – YOUTH POST EVALUATIONS

- 98% strongly agreed or agreed it's important to keep good records and that good records can help keep animals healthy.
- 89% can group animals into meat and dairy groups.
- 75% were more interested in Animal Science after completing the program.
- 75% could list 3 careers related to Animal Science.
- 70% could name 2 animal by-products.



### IMPACT – TEACHER POST EVALUATIONS

- "My students have made reference to the activities and knowledge gained many times. We have been able to expand on specific topics as we have integrated information into our existing curriculum. Topics such as the heart and how it works goes with our health unit. Animal products and byproducts also work with our health, occupations, and communities units. It was absolutely amazing to see the fetus of a pig and cow (AND get to actually touch them). We live in a rural community, yet many students don't understand what that means. They came away from 'Animals Inside & Out' with new curiosities about science as a whole. I learned a great deal also. THANK YOU!!!"
- "Lots of great learning opportunities we wouldn't have in the classroom!"
- "It hit home about how animals produce the products we have."
- "Great opportunity to get students hands-on experiences with the science of animals."



## **CURRICULUM RESOURCES**

- Curriculum is located at <u>http://extension.unl.edu/statewide/kearney/animals-inside-out-0/</u>
- We are currently developing curriculum for:
  - K 2<sup>nd</sup> grades
  - 6th 8th grades



## **QUESTIONS**

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Extension is a Division of the Institute of Agriculture and Natural Resources at the University of Nebraska–Lincoln cooperating with the Counties and the United States Department of Agriculture.