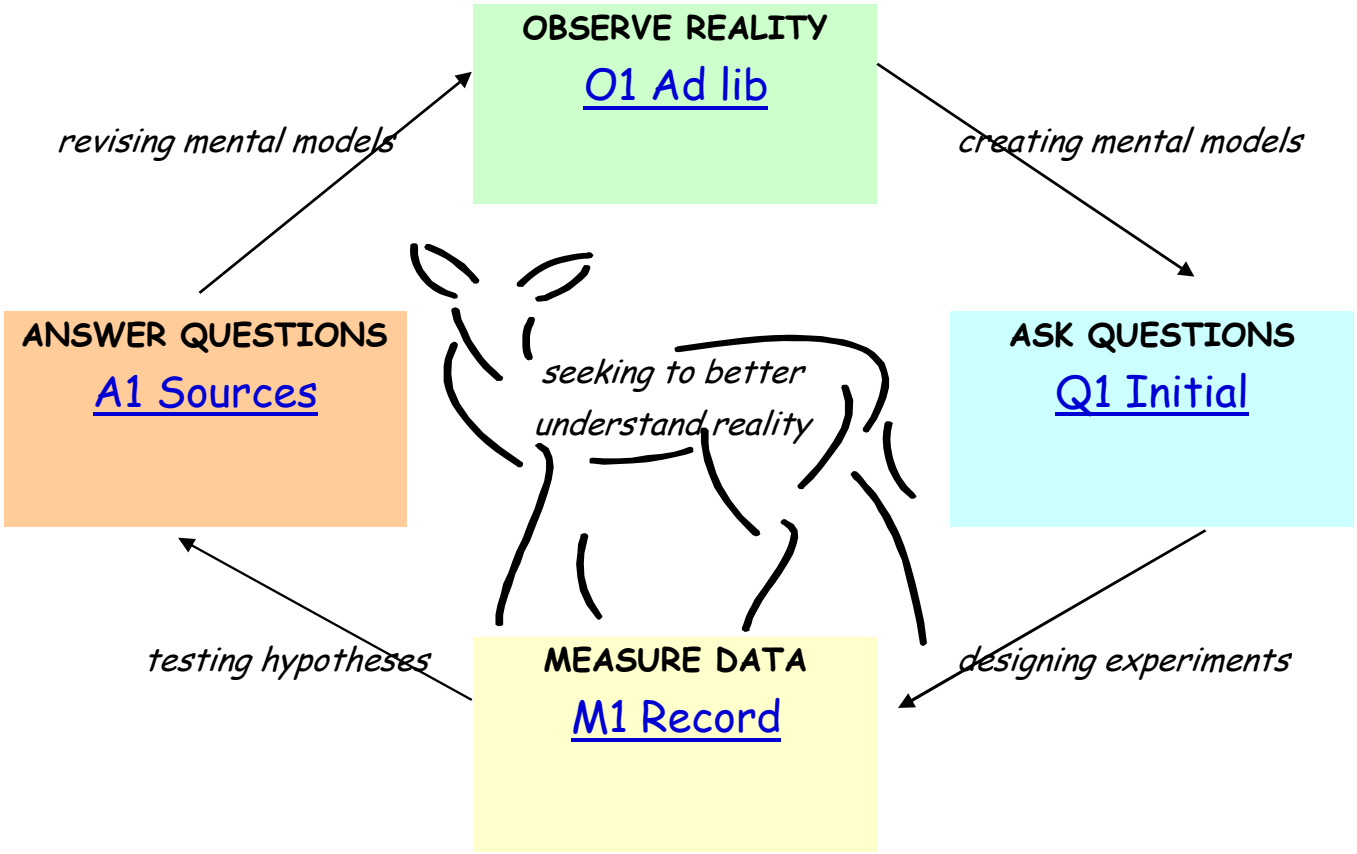
SCIENCE IN ACTION!

Nature's Partners: predators, prey & you

Module 1. Scouting Deer Behavior



GENERAL LEARNING GOAL: Experience the nature of scientific inquiry (observation, measurements, asking and answering questions), as an alternative to folk psychology. Explain how each of these steps in the inquiry cycle relates to the others and helps us understand the science behind the myths of animal behavior. Explain how all inquiry involves these four steps; however, each person may choose to enter the cycle at a different place.

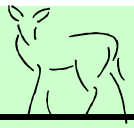
SPECIFIC OBJECTIVES FOR EACH MODULE IN THIS INQUIRY CYCLE

Module 1. Scouting for deer

1.1 Distinguish between observation, inference, and questions that arise from freestyle (ad libitum) notes about deer communication

1.2 Use video technology to record the body language of deer for further detailed analysis.

1.3 Practice critical thinking in distinguishing between reliable (scientific) and unreliable sources of information about deer



Name:
Date(s):
Duration (min):

O1 Ad Lib (freestyle) Observations

STEP 1 Find a place to watch deer and video the behavior (see M1), or choose video clip(s) you find on the web (e.g. "Red Deer Roaring") or provided by your instructor (clip 1). Write the source information in the box provided and refer to it by code in the column on the left (VIDEO). Empty your mind of preconceptions and try to absorb the environment as if you were inside the skin of the deer. Note what you observe about the place, habitat, clues about the season, other animals, etc. Write your general observations in the top box.

STEP 2 Replay the video clip, and choose one communication display to analyze in more detail in terms of sender/receiver. Write your observations about the behavior of the deer in the box marked "sender". Observe how other members of the same species respond ("ignore" is also a response), and write your notes in the box marked "receiver".

STEP 3 Choose another video of the same display behavior (may be another scene or individual in the same clip). Repeat STEP 2 to fill in the next sender/receiver boxes. Note any similarities and differences between the behaviors, compared to your first observations. .

STEP 4 Read the analysis categories in the box at the bottom of this page . In the far right column, write the code(s) that apply to what you wrote in the center column.

SPECIFIC INFORMATION ABOUT THE SOURCE VIDEO(S), AND MY CODE FOR IT:

VIDEO CODE	AD LIBITUM NOTES ON WHAT I OBSERVED	ANALYSIS CODE
	general notes about location, species, behavior & context:	

	sender:	
	receiver:	
	sender:	
	receiver:	

CODE	CATEGORY	DEFINITION	EXAMPLE
OBS	Observation	what I actually saw, heard, smelled, or otherwise sensed about the animal and its environment	in the forest, lone male raises nose in line with back, opens mouth and bugles
INF	Inference	what I (or others) think about what I observed; my underlying mental model	I think this is a young male because his antlers are small, and his call is relatively high pitched
Q	Question	what I'm curious to learn more about, to better understand what I observed; my hypothesis about cause/effect	I wonder if the presence of other males makes a difference in how often he calls
O	Other:	define:	

Name:	
Date(s):	
Duration (min):	

Q1 Brainstorming Initial Questions

STEP 1 Review your notes in O1. Think about what you do and do not know about this behavior. OPTION: Discuss your thoughts with others.

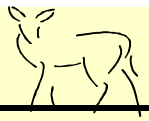
STEP 2 Brainstorm and write down as many questions as come to mind.

STEP 3 Read the categories at the bottom; in the far right column, write the code(s) that apply to what you wrote in the center column.

#	WHAT I AM CURIOUS ABOUT LEARNING	CODE
1		
2		
3		
4		
5		

CODE	CATEGORY	DEFINITION	EXAMPLE
FP	Folk Psychology	Questions about beliefs, emotions, desires of the animal	Does he want to impress the females to stay with him?
HOW?	Proximate	Questions about the cause and development of behavior	How does the bull make that sound? Do young bulls sound the same as older bulls?
WHY?	Ultimate	Questions about the function and evolution of behavior	Why don't white-tailed deer bugle like elk? Are the females more likely to mate with a male that has a lower pitch bugle?

O	Other:	define:



Name:
Date(s):
Duration (min):

M1 Record Data (video/tape)

STEP 1 Find a place where you can watch deer and use a video cam to record behavior of a focal individual. This means keep the camera focused on one individual and follow it with the camera wherever it goes, for 3 minutes. OPTION: work with a partner who can write while you are using the video; check off behaviors you see on an ethogram list provided by the instructor.

STEP 2 Before starting, record information about your video by answering Q1- Q5.

STEP 3 Fill out the video log below. Use a new line for each clip.

Q1	What species will you watch (scientific & common name)?	
Q2	Where will you do observations (eg. Location, blind, vehicle)?	
Q3	When (date and time)?	
Q4	How (camera & partner)?	
Q5	What label will be used to identify these clips in the video archive that you will later analyze?	video clip #1:
		video clip #2:

VIDEO LOG

#	START	GROUPS OF ANIMALS	NOTES ON BEHAVIORS AND CONTEXT
1			
2			

Name:
Date(s):
Duration (min):

A1 Finding Scientific Sources

STEP 1 To answer your questions in Q1, use Google Scholar to search sources available to the general public; write the keyword you used for the search, and the reference of the source you found (e.g. web address, title, author, organization, publisher, date)

STEP 2 Search scientific sources using a library database (i.e. Web of Science); write the keyword and the complete reference (author, date, title, journal, volume, pages)

STEP 3 Categorize your sources in terms of reliability. Read the categories at the bottom; in the far right column, write the code(s) that apply.

Keyword	SOURCES I FOUND	Reliability Category

CODE	CATEGORY	DESCRIPTION	EXAMPLE
1 *	unreliable	Tabloids designed to sell many copies to a mass audience interested in sensational stories	People magazine, National Enquirer
2 **	less than average	Popular magazines, books and videos marketing to a large market of the informed public	Whitecap Books, Penguin Books, Reader's Digest,
3 ***	intermediate	Science magazine articles written by journalists who specialize in interpretation of scientific information	Discovery, National Geographic, Smithsonian
4 ****	more than average	Invited books, textbooks and articles written by scientists but not peer reviewed	Scientific American, American Scientist, Voyageur Press
5 *****	most reliable	Peer reviewed scientific journal published by a society of professionals; peer-reviewed book	Animal Behaviour, Behaviour, Science, University of Chicago Press, Oxford Press

EVALUATION/FEEDBACK (optional to earn participation points)

1. What worked?

2. What did not work?

3. Suggestions?