

APPENDIX E. TEACHERS MANUAL

From: **DEVELOPMENT AND IMPLEMENTATION OF
THE WOLF WORKBOOK AS A SCIENCE
EDUCATION TOOL FOR STUDENTS AND
TEACHERS**

A Professional Paper

by

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In learning to navigate through the wolf workbook, follow figures 1 through 5 below which shows a sample of the pages for reference. The front sheet is the map of the workbook and is arranged around the central scientific process. You can move between sheets by clicking on a tab at the bottom of the document and each individual spreadsheet can be printed for hard copy use. The process follows four steps including observations, asking questions, measurements, and answering questions. Each step is assigned a color and depending on learning goals you can either work within one color at a time or one number at a time. For example if you want to work specifically on observations then you can do all of the green worksheets. The inquiry worksheets (asking questions) are all blue and focus on asking questions about structure and function from a scientific perspective as well as differentiating between folk psychology and science. Measurement pages are in yellow and these pages find the answers to questions about structure and function. These answers found are then applied on the orange pages of the answering questions section. On the other hand if you want to experience the entire inquiry cycle you can do O1 (Observation worksheet #1), Q1 (Question worksheet #1), M1 (Measurement worksheet #1), and A1 (Answer worksheet #1).

There are three numbered cycles within this workbook which are graded from simple to a more complex level. The first cycle (worksheets O1, Q1, M1, A1) focuses on dog packs and will be most relevant to elementary students or as an introduction. The second cycle (worksheets O2, Q2, M2, A2) focuses on captive wolf packs and is geared toward middle school students or as an intermediate level experience. Lastly, the third cycle (worksheets O3, Q3, M3, A3) is wolf families, or wild wolf packs. This cycle will be most appropriate for high school students or as a more advanced study of wolves and the scientific process.

Once on a study page there is a space for your name, the date and duration at the top. The duration time is a useful tool for teachers to not only check on the progress of their students but also to use as a planning guide to allow proper time for completion. Next you will see a series of steps to guide the students through each page. Having each step defined really builds the confidence of the students at every level. Since this is a method of teaching the scientific process, the students can be overwhelmed until they learn to navigate their way around. The steps include various activities such as watching video clips, group discussion of experiences, connecting to outside links for additional reading and developing hypothesis among others. Page A1 guides the

writing process with directions for how to express observations, inferences and questions along with definitions and examples of each. Each subsequent page is also just as user-friendly with examples in each text box. A history of wolf conservation and an introduction to wolf behavior is included as Appendix B as a resource for teachers. This section can be used to further educate those using the workbook in the behaviors that they will see in the video clips and assist them in leading relevant discussions in the classroom.

Figure 1 – Workbook Map

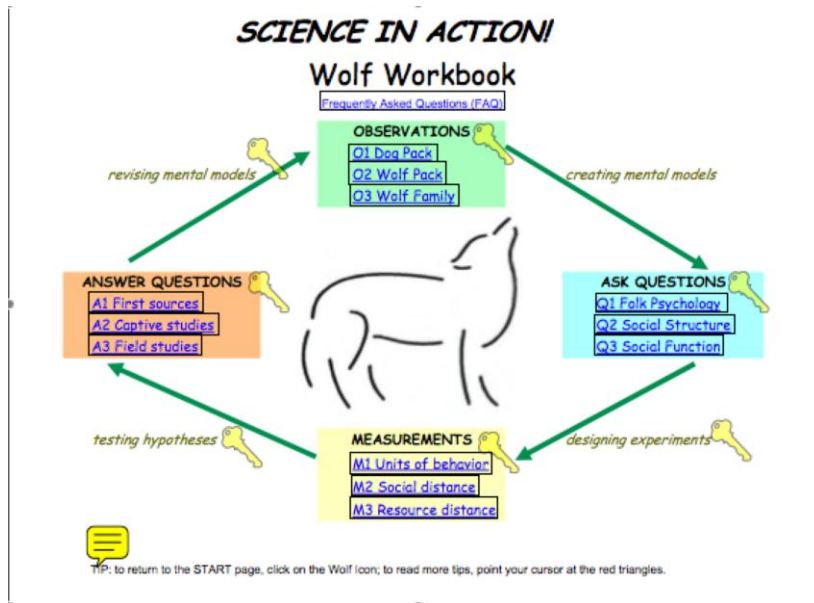


Figure 2 – Workbook page O1

Name: _____
Date(s): _____
Time (hours): _____

O1 Dog pack

STEP 1 Watch a video clip about dogs, carefully observing the behavior. Then, write notes on what you observed and learned. **SAVE. OPTION:** Listen to the voice in the video to help understand what you saw.

STEP 2 Learn to tell the difference between observations, "inference" and questions (I), by using the categories at the bottom of the page. Discuss with your classmates and teacher. **OPTION:** Show your teacher that you understand these words: underline your observations; place quotes around phrases that are inferences; add question marks. You may replay the clip to find evidence to support your opinion.

STEP 3 Repeat for the second clip. Remember to save your notes by clicking on the "Save" icon that looks like a diskette. Be sure that all the white boxes are filled in before you hand in your worksheet. **OPTIONS:** Take your own video of dogs and watch it.

VIDEO **GENERAL NOTES ON WHAT HAPPENED**

Type your notes here!

CODE	CATEGORY	DEFINITION	EXAMPLE
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 dog at the front of the pack is a female in heat?
under, I/IS	Observation (direct evidence)	what I actually saw, heard, smelled, or otherwise sensed about the animal and its environment	I saw individual dogs from separate packs jumped over fences and joined the group of dogs roaming the neighborhood
"quotes"	Inference (indirect evidence)	what I (or others) think about what I observed; my underlying mental model	"I think many dog packs are made up of males that are attracted to a female in heat"

Figure 3 – Workbook page Q1

Name: _____
Date(s): _____
Time (hours): _____

Q1 Folk Psychology

STEP 1 Discuss what the words "Folk Psychology" mean to you, and how we sometimes talk as if dogs think and feel like ourselves. Type your ideas in answer to questions #1 & #2. **SAVE. OPTION:** To find what scientists think about these words, click on the wolf icon and follow the links to "Information" and "Folk Psychology"

STEP 2 Think of some groups of which you are a member, for example: family, church, team, club, class. Discuss how people get along in these groups. Answer questions #3 and #4. **SAVE. OPTION:** Draw boxes on a chart to illustrate how people are close or far apart in one group. Draw thick arrows between people who talk frequently and thin arrows between people who don't talk much.

STEP 3 Think of a group of dogs that you have watched. Discuss how the dogs get along in their group. Answer questions #5 & #6. **SAVE. OPTION:** Draw a chart to illustrate how the dogs interact, learning from what you did for people in STEP 2.

Question 1: What is Folk Psychology? How do we use it to think of hypotheses about behavior?
My answer: _____

Question 2: Do dogs really think and feel like humans?
My answer: _____

Question 3: What are some social groups to which you belong?
My answer: _____

Question 4: Compare and contrast the structure of your social groups?
My answer: _____

Question 5: What are some groups of dogs that you have watched?
My answer: _____

Question 6: Compare and contrast the structure of dog groups you have watched?
My answer: _____

Figure 4 – Workbook page M1

Name: _____
Date(s): _____
Time (hours): _____

M1 Units of behavior

STEP 1 Discuss what actions you would consider to be friendly and unfriendly behavior in groups of people & dogs; write your ideas in the top 4 boxes below. **SAVE.**

STEP 2 Discuss dominant and submissive behavior in people and dogs, then write examples of actions you believe would fit in each category (use the bottom 4 boxes). **SAVE.**

STEP 3 View as many of the video clips as you have time. Add to your lists in each of the 8 boxes. **SAVE. OPTION:** Watch (or videotape) a group of real dogs and add to your list.

clip.3 clip.4 clip.5 clip.6 clip.7 clip.8

Type of behavior: My ideas about examples of body language for this type of behavior in:

	PEOPLE	DOGS
Friendly		
Unfriendly		
Dominant		
Submissive		

TYPE	MEANING	EXAMPLE
Friendly	Actions that bring individuals closer together	smile, laughter, gentle touch, backslap
Unfriendly	Actions that make individuals more distant	growl, yelling, hit, slap in face, shaking the fist
Dominant	Assertive actions that control the access of others to something they might want (resources)	cutting in line, taking another's food, sitting in another's chair
Submissive	Appeasing actions that reduce the probability of conflict	hunched shoulders, turning away, sad face, closing the eyes, looking down.

Figure 5 – Workbook page A1