

DEPTH STUDIES WITH TARONGA ZOO - OBSERVING ANIMAL BEHAVIOUR

Year 11 Investigating Science Student Booklet

OBSERVATION BEGINS WITH A KEEN EYE

Welcome to depth studies at Taronga Zoo. During this fieldtrip you will develop an understanding of how important observation is to the work of scientists. You will also make qualitative and quantitative observations about animals in Taronga's care. Throughout the course of the day the following key inquiry questions and outcomes will be addressed:

Key Inquiry Questions:

- How does observation instigate scientific investigation?
- What are the benefits and drawbacks of quantitative and qualitative observations?
- How does primary data provide evidence for further investigation?
- How does the collection and presentation of primary data affect the outcome of scientific investigation?

Outcomes

Knowledge and Understanding:

INS11-8 identifies that the collection of primary and secondary data initiates scientific investigations

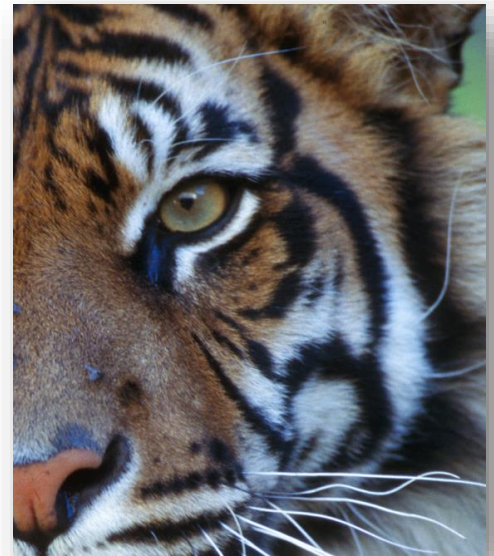
Working Scientifically:

INS11/12-1 develops and evaluates questions and hypotheses for scientific investigation

INS11/12-2 designs and evaluates investigations in order to obtain primary and secondary data and information

INS11/12-3 conducts investigations to collect valid and reliable primary and secondary data and information

INS11/12-7 communicates scientific understanding using suitable language and terminology for a specific audience or purpose





Name of Observers:	Date:
Animal/species Observed:	
Weather Conditions:	
Identifying features of individual animal selected for focal sampling tasks:	

[illegible]

TASK 1 – INSTANTANEOUS SAMPLING (OPTIONAL)

THIS ACTIVITY IS OPTIONAL AND CAN BE COMPLETED IF TIME PERMITS



For this observation you will record the behaviour of an individual animal every 15 seconds for a period of 5 minutes. This task is best done in pairs so that you can capture all the behaviours as well as keep an eye on the time.

Name of Observers:	Date:
Start time:	End time:
Identifying features of individual animal selected for focal sampling tasks:	

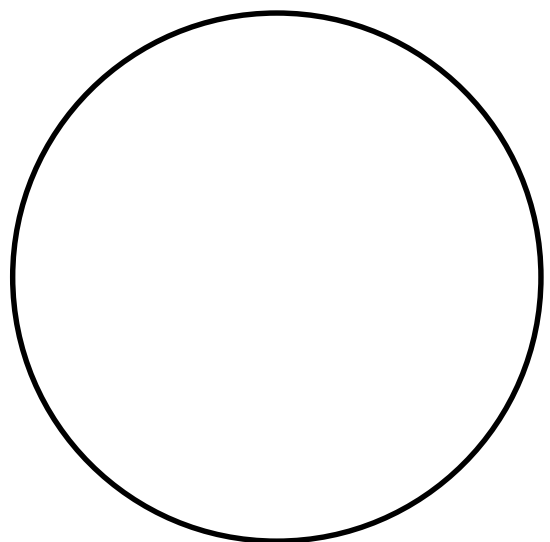
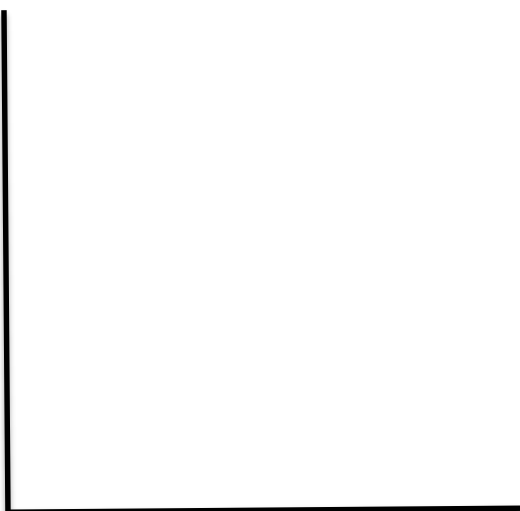
Time	Behaviour
0	
15s	
30s	
45s	
1m	
1m 15s	
1m 30s	
1m 45s	
2m	
2m 15s	
2m 30s	
2m 45s	
3m	
3m 15s	
3m 30s	
3m 45s	
4m	
4m 15s	
4m 30s	
4m 45s	
5m	

TASK 1 - QUESTIONS

1. Group the behaviours you observed during your sampling, remember to be objective and avoid inferring the meaning of behaviours observed e.g. locomotion?

2. The sampling methods used to collect your data are both qualitative and quantitative. Which sampling method is qualitative and which is quantitative? Describe some advantages and disadvantages for each method.

3a. Graph the data you have collected from the Time Sampling ethogram using two different methods (see suggestions below).



TASK 1



3b. Compare the different graphing methods and discuss the advantages and disadvantages for each method.

4. There are many different types of ethograms that vary in their function and purpose. What sampling methods could you use to further develop your investigations?

5. Scientific investigation starts with observation, what sort of investigations could be developed from the observations you have made today?

1. Complete the table for each of the proposed hypotheses below.

Proposed Hypothesis	Scientific (yes/no)	Testable (yes/no)
Are otters in danger?		
Why do meerkats stand up?		
Are chimps closely related to humans?		
Why do honeybees like flowers?		
If an anaconda and a lion fought, who would win?		
Do lorikeets interact with other lorikeets in the aviary?		
Are storks social?		
Do naked mole-rats like to eat carrot?		

2. What is anthropomorphism and how can it lead to misinterpretation of observations?

3. Would you use an ethogram and a sampling method to study this animals' behaviour?
What type of sampling method is most appropriate. Why?

Animal	Ethogram? (yes/no)	Which sampling method? Why?
Hawksbill Turtle Hatchlings		
Army Ant		
Cheetah		

TASK 2 – ANIMAL ETHOGRAM USING CONTINUOUS SAMPLING

In this task you can choose to test the Brush Turkey Hypothesis OR develop a hypothesis of your own.

BRUSH TURKEY

Background

Novel or changing environments expose animals to diverse stimuli and stressors that likely require behavioural adaptations. Predicted adaptations to urban environments include bolder exploratory behaviours, and changes in foraging demand.

Aim

To investigate whether turkeys are adapting their behaviour following colonisation of a novel urban environment (i.e. the zoo).

Brush Turkey Hypothesis

Brush turkeys will forage more from ‘unnatural sources’ (manufactured food for human consumption, e.g. hot chips, sandwiches, fruit, etc.), than from ‘natural’ sources (insects, seeds, etc.), as unnatural sources are more readily available, require less effort and therefore energy, are potentially higher in nutritional value and easier to obtain.

Method – Continuous Sampling

Follow one turkey and record everything that it eats or investigates for a period of 30 minutes, using the ethogram provided on the following page. This method is simply a tally of every item eaten or investigated.



FOR THIS TASK CHOOSE ONLY ONE OF THE FOLLOWING ACTIVITIES



Brush Turkey ethogram using continuous sampling

Date	tag number (if applicable)	location	time start	time finish

Consume		Investigate	
natural	unnatural	natural	unnatural
Total =	Total =	Total =	Total =

What conclusions can you draw from this data?

OR

Animal ethogram of your choice

For an animal of your choice, decide on what you would like to investigate.

What is question would you like to investigate?

What is your hypothesis?

Decide on a sampling method and record your results on the table provided on the following page. Think about what column headings you will need to conduct your ethogram. Use as many or as few columns as you required





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Weather Conditions:	
Identifying features of individual animal selected for focal sampling tasks:	

[illegible]