

LESSON 3 EXIT CARD

“These are troubles I observed”,

“These are treasures I observed”,

These are my ideas to fix the troubles

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LESSON 4 PLACEMAT**WHAT WE KNOW ABOUT BIRDS****GROUP MEMBERS**

What are some things you know about birds in this community

In what ways might we improve habitat in this community for birds?

Would improving bird habitat improve our habitat too?

Whose responsibility is it to make improvements? Why care?

LESSON 4 EXIT CARD

"I learned that ,

I was surprised by "

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LESSON 6 How Trees Help Regulate Temperature

Student Worksheet 1

GROUP NAMES: _____

FROM: Central Arizona-Phoenix Long-Term Ecological Research Project

https://d3dqsm2futmewz.cloudfront.net/docs/explorers/lesson_plans/3_temp_experiment.pdf

Name: _____ group number: _____

THINK: How will evaporating water affect the air temperature inside the pot?

RECORD: initial air temperature: A = _____ B = _____

PREDICT: temperatures: 5 min: A= _____ B = _____

10 min: A= _____ B = _____

Time (min)	Pot A (Dry)	Pot B (Wet)
	Temp (C°)	Temp(C°)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

CALCULATE average air temperature for group: A = _____ B = _____

LESSON 6 How Trees Help Regulate Temperature

Student Worksheet 2

Name: _____

Evapotranspiration Data Analysis

Class Data Group #	Average Temperature °C Pot A (Dry)	Average Temperature °C Pot B (Wet)
1		
2		
3		
4		
5		
6		
7		
8		

CALCULATE the average of all replicates A = _____ B= _____

DETERMINE the range for the average A= _____ B= _____

Name: _____

LESSON 7: Where Are the Birds on the School Grounds

Worksheet 1

ADAPTED FROM: Central Arizona-Phoenix Long-Term Ecological Research Project

Sites:

Site 1 Name: _____

Location: Write a brief description of where your site is located. (i.e. SW corner of playground):

Description: Write a description of your site so that a visitor to your school would be able to find your point count site.

Site 2 Name: _____

Location: Write a brief description of where your site is located:

Description: Write a description of your site so that a visitor to your school would be able to find your point count site.

Scientific Question:

Predictions:

Factors to consider when collecting data:

Time(s) of survey:

Morning: _____ Afternoon: _____

Name: _____

LESSON 7: Where Are the Birds on the School Grounds

Worksheet (# 2)

FROM: Central Arizona-Phoenix Long-Term Ecological Research Project

Data Table for Describing Land Cover in your Point Count Circle

Quadrant Of Circle	0-0.15m				0.15-1.5m	> 1.5m
	Lawn	Gravel or Soil	Pavement or Building	Other Vegetation	Shrubs	Tree Canopy
1						
2						
3						
4						

[illegible]

Site ID: _____ Observer's Name: _____
Date of Survey: _____

End Time: ____:____ AM PM

[illegible]

LESSON 7: Where Are the Birds on the School Grounds Worksheet (#3)

Site ID: _____ Observer's Name: _____

Date of Survey: _____

Comments/Observations:

Cloud Cover: none /scattered /overcast

Temperature: _____ °C

Start Time: ____:____ AM PM

End Time: ____:____ AM PM

[illegible]

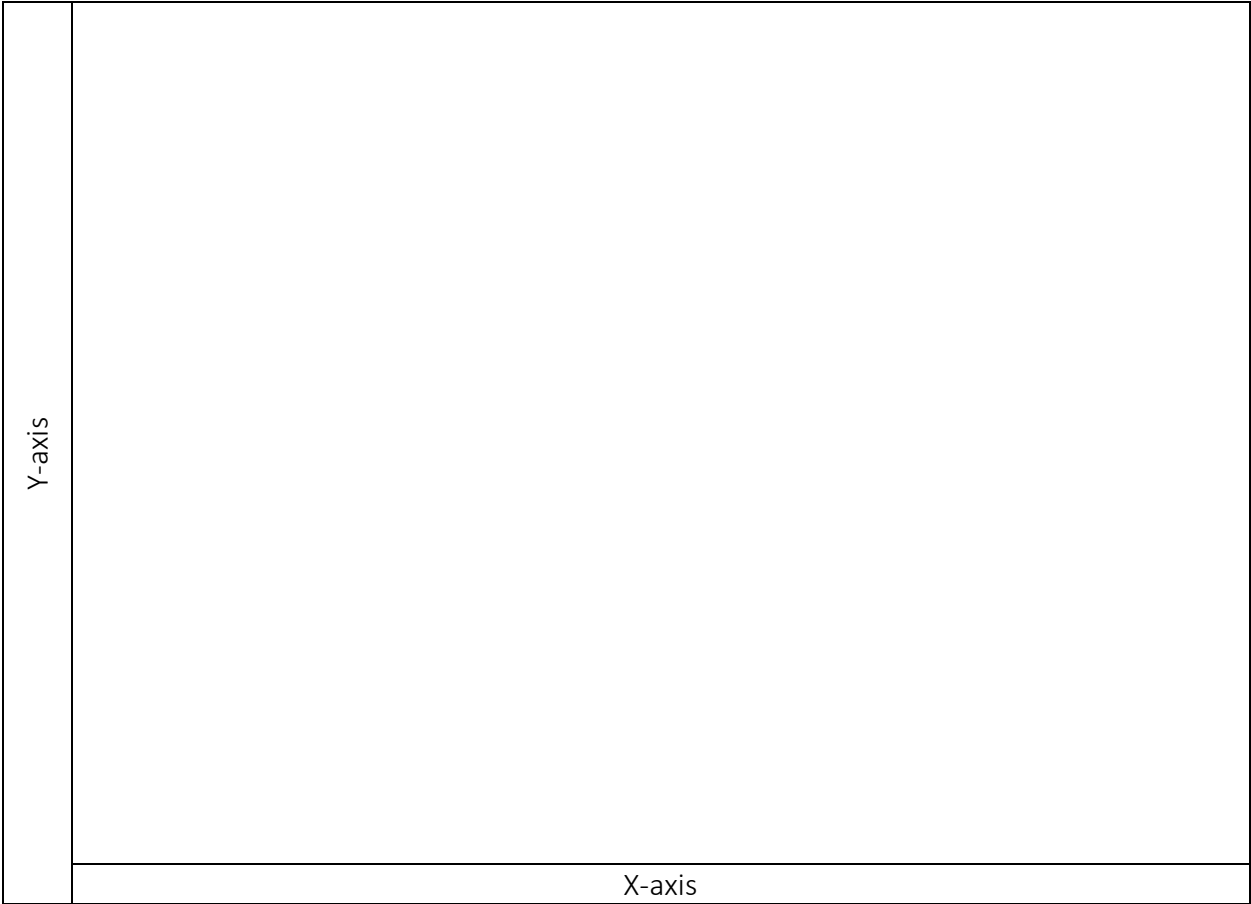
Site ID: _____ Observer's Name: _____
Date of Survey: _____

End Time: ____:____ AM PM

[illegible]

Student Worksheet Graphs

= _____
= _____



LESSON 7: Where Are the Birds on the School Grounds Worksheet 5

FROM: Central Arizona-Phoenix Long-Term Ecological Research Project

Species Name	Site	Time of Day	Total Number

Average Temperatures (°C)

Site 1 _____ Time of Day 1 _____

Site 2 _____ Time of Day 2 _____

Conclusions (write answer on back) •

Were some birds more abundant at one site than another? Why might this be?

Was it warmer at one site than another? Was this difference the same at different times of day? Explain.

LESSON 8

Name _____

EXIT CARD

Describe how beaks are specialized for certain foods and provide examples.

How do adaptations in beaks help a bird to be a successful eater?

How does adaptation lead to evolution of bird beaks?

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NAME: _____

LESSON 9

OWL PELLET DISSECTION

- 1) Unwrap the aluminum foil from each pellet. Observe the outer surface of the pellet. Record your observations.
- 2) Mass the pellet and record.
- 3) Measure height, length and depth of pellet
- 4) Place each unwrapped pellet on a Styrofoam plate. Using your fingers or a probe, very gently break the pellet in half. You must be very careful when teasing out the bones from each pellet; the bones are easily broken.
- 5) Continue to separate small sections of each pellet and remove fur/hair to uncover the bones. Remember: the bones are small and delicate, so you must be very slow and careful in extracting any bones from the pellet. Also, if your pellet has a skull, you will need to pick away all the fur/hair in order to expose the entire skull. You can then try to identify which type of animal the skull came from using your Owl Pellet Bone Chart which shows skulls from four different animals.
- 6) Gently rub small pieces of each pellet between your fingers until you have completely taken apart and examined the entire pellet and removed all the bones. There are many tiny ribs and vertebrae that should not be overlooked. You have to be very focused so that you do not miss any bones. Set aside any other materials you find in each pellet that are not bones or fur/hair.
- 7) Organize the bones and determine how many individual animals are in the pellet. Justify your estimate with evidence from your pellet.

Can you determine if the owl ate a varied diet or relied on one type of food?

What do your findings suggest about the health of the ecosystem in which the owl lived?

Why might one source of food be more plentiful? What factors could contribute to such a situation?

How are the bones alike? Different?

Do any characteristics of this group of bones provide clues about the animal from which they originated? Look at the evidence.

To what animal might these bones belong? What evidence supports your idea?

Based on animals you identified from the bones in the owl pellet, do you think that there would be enough prey on our school grounds to feed an owl? Give reasons for your answer.