

Lesson: Activity 76: People, Birds, and Bats

Teacher:	Kaylan Duthie
Unit Theme/Course:	SEPUP Ecology
Date:	
Timing:	1 Day

Challenge Question:

What kinds of evidence can you use to classify vertebrates?

Overview:

Students will take on the role of a taxonomist as they apply characteristics of the five major vertebrate classes to a set of mystery organisms. Students will review a classification chart working from kingdom down to class, specifically outlining characteristics of the major vertebrate classes. They will then read a series of letters from travelers addressed to a zookeeper and identify which class the animal belongs to. They will discuss with a group, and then write down individual answers

Learning Objectives [cognitive, academic, language, socio-cultural]	Assessment Criteria
Students communicate scientific procedures and explanations about classification systems	Students will work as groups of 4 to discuss the set of animals and where they fit into the classification system, as well as writing down personal explanations
Students develop descriptions, explanations, predictions, and models using evidence about classification	Using the evidence from the travel letters and the class descriptions, students will assign the mystery animals to a class, providing their evidence
Scientists formulate and test their explanations of nature using observations	Students use their observations and information from the travel letters as evidence for why an animal should fit into a particular class.

Standard/EALR:

6-8 SYSA	Any <i>system</i> may be thought of as containing <i>subsystems</i> and as being a <i>subsystem</i> of a larger <i>system</i> .	Given a <i>system</i> , identify <i>subsystems</i> and a larger encompassing <i>system</i> (e.g., the heart is a <i>system</i> made up of tissues and cells, and is part of the larger circulatory <i>system</i>).
6-8 INQC Investigate	Collecting, analyzing, and displaying data are essential aspects of all <i>investigations</i> .	<i>Communicate</i> results using pictures, tables, charts, diagrams, graphic displays, and text that are clear, accurate, and informative.
6-8 LS1E	In classifying <i>organisms</i> , scientists consider both internal and external structures and behaviors.	Use a classification key to identify <i>organisms</i> , noting use of both internal and external structures as well as behaviors.

6-8 LS3G	<i>Evidence for evolution</i> includes similarities among anatomical and cell structures, and <i>patterns</i> of development make it possible to <i>infer</i> degree of relatedness among organisms.	<i>Infer</i> the degree of relatedness of two <i>species</i> , given diagrams of <i>anatomical features</i> of the two <i>species</i> (e.g., chicken wing, whale flipper, human hand, bee leg).
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Preparation Time:

n/a

Materials:

- Books for students

Instructional Sequence:

1. Have students read the introductory paragraph.
 - a. Set up a new piece of entry paper with the title and challenge question
2. Review the relationship of vertebrates to the other levels of classification
 - a. Use the chart in the book to remind students about the different phyla they observed in classifying animals
 - b. Explain that students will be looking at different classes in this phylum.
 - c. Go over the different characteristics for each class
3. Have students move to their lab groups.
 - a. The group should read each letter together
 - b. They should then discuss what class they think the animal belongs in
 - c. Students should individually record which class an animal belongs to and why
4. As a class, go over the correct answers
 - a. Make it apparent that physical appearance is not always enough to distinguish an organism
5. Have students complete the analysis questions on their own

Assessment

- Students will be assessed on their ability to work as a group
- Students will be assessed on their input to group discussions
- Students will be assessed on answers to the analysis questions