



«Science Lesson Plans

The Mystery of the Classy Vertebrates

Published on January 16, 2009 by Cindy Clark, Gina Oles, Michele Seigler, Amy Torgerson

Description

Learners explore the characteristics of each of the five classes of vertebrates. Learners also explore experiments investigating the differences in eggs of reptiles and amphibians.

Grade Level

2nd grade, 3rd grade, 4th grade, 5th grade

Lesson Objective

Student will explore the characteristics of each of the five classes of vertebrates. Student will also explore experiments investigating the differences in eggs of reptiles and amphibians.

GLEs

Grade 2-5: Characteristics and Interactions of Living Organisms. Animals have different structures that serve necessary for the survival of the organism. Classification of Animals. Compare structures (e.g., wings vs. fins; lungs; feathers vs. hair vs. scales) that serve similar functions for animals belonging to different vertebrate classes. (LO.1.D.5.a.)

Grade 2-5: Characteristics and Interactions of Living Organisms. Biological classifications are based on how related. Explain how similarities are the basis for classification. Classify vertebrate animals into classes (amphibians, mammals, fish) based on their characteristics. (Strand 3 LO.1.E.5.a.d.)

Grade 2-5: Science Inquiry. Science understanding is developed through the use of science process skills, scientific investigation, reasoning, and critical thinking. Scientific inquiry includes the ability of students to formulate questions and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the question. Formulate testable questions and explanations (hypotheses). Recognize the characteristics of a fair and unbiased test to answer a question. Make suggestions for reasonable improvements or extensions of a fair test. (Strand 7 IN.1.D.a.)

Grade 2-5: Science Inquiry. Science understanding is developed through the use of science process skills, scientific investigation, reasoning, and critical thinking. The nature of science relies upon communication of results of explanations. Communicate procedures and results of investigations and explanations through: oral presentations, maps, data tables, graphs (bar, single line, pictograph), writings (Strand 7 IN.1.D.a.)

Depth of Knowledge

Level 2

Instructional Strategies

Identifying similarities and differences
Summarizing and note-taking

Nonlinguistic representation
Cooperative learning
Setting objectives and providing feedback
Generating and testing hypotheses
Cues, questions, and advanced organizers

Time Needed

5 Days

Materials

Manila Envelope – one per group
Chart paper
Goggles – one per student
Eggs – two for class investigation, one for pair of students (lab will work with raw or hard-boiled)
White Vinegar
Clear Containers - two for class investigation, one for pair of students
Graduated Cylinder
Plastic Spoons
Paper Towels
Construction Paper
Markers, Crayons, or Colored Pencils
Scissors
Copies of teacher and student pages:

*Scientist Case File - one per group

*Pictures of vertebrate animals (amphibians, birds, fish, mammals, reptiles) - two sets per group (20 pictures) with magnets (optional)

*Vertebrate Class Labels – one teacher set with magnets (optional)

*Clipboard Worksheet – one per student

*Suspect List Worksheet – one per group

*Egg Shell Investigation Worksheet - one per student

*Vertebrates by the Alphabet – one for teacher

*Four Door Diorama Instructions – one per group

*Scientist Case Detective Report – one per student

*Performance Event – page 4-5, grade 4, Unit A Test, MO Map Science Test Prep

Academic Vocabulary

amphibian, bird, classification, fish, mammal, reptile, vertebrate

Lesson Plan

 [Lesson Plan Power Point Part 1](#)

 [Lesson Plan Power Point Part 2](#)

 [Lesson Plan Power Point Part 2 Anchor Chart](#)

 [Lesson Plan Power Point Part 3](#)

 [Lesson Plan Power Point Part 4](#)

Resources

 [Scientist Case File](#)

 [Pictures of Vertebrate Animals \(picture cards\)](#)

 [Vertebrate Class Labels](#)

 [Clipboard Worksheet](#)

 [Checkpoint Lab: Eggshell Investigation Worksheet](#)

 [Vertebrate Line-Up Instructions](#)

 [Suspect List Worksheet](#)

 [Vertebrates by the Alphabet](#)

 [Four-Door Diorama Instructions](#)

 [Scientist Case Detective Report](#)

 [Performance Event](#)

 [Answer Keys](#)

 [Websites](#)

 [More Books to Read](#)

<http://www.learn360.com/ShowVideo.aspx?Subject=345&ID=1848&autostart=1>

Literature links

Stellaluna. Janell Cannon. Harcourt (1993).

Animals with Backbones. Elaine Pascoe. PowerKids Press (2003).

Text book link(s)

Scott Foresman Level Readers:

Animal Eggs. Molly Fleck. Pearson Education, Inc. (2nd Grade)

Reptile or Amphibian. Laura Crawford. Pearson Education, Inc. (4th Grade)

MAP Science Test Prep. Missouri Grade 4. Scott Foresman Science. Pearson Education, Inc.

Key concepts: [amphibian](#) [bird](#) [chemical change](#) [classification](#) [fish](#) [mammal](#) [reptile](#) [vertebrates](#)

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