



**EXPLORING ANIMALS WITH  
EXPERIENCE-BASED ACTIVITIES  
TEACHING ELEMENTARY SCIENCE USING CONCRETE MATERIALS  
TO EXPLORE ABSRACT CONCEPTS**

**EDUO9525 (1-3 units)**

**Instructors: Anthony Flores and Ron Kremer**

**COURSE DESCRIPTION**

“Exploring Animals with Experience-Based Activities” emphasizes student interaction with concrete materials, encouraging hands-on exploration of concepts, constructing meaning and understanding. The students will be behaving as scientists: Exploring, comparing, observing, identifying, recording data, etc. The emphasis at the elementary level is on *observing*. (Science protocols require the humane treatment of animals. Care needs to be taken for animals brought into the classroom for observation.) Students will be engaged in field and classroom observations, model building, and art projects that reinforce the concepts. These interactive activities are consistent with common core standards and can be easily adapted to the needs of all students. (Many of the activities have starred suggestions at the end for further study, particularly for older students.) The course is structured so that the teacher can choose the assignments they want to accomplish depending on the number of units (1, 2, or 3) they are taking, or select the assignments most appropriate for the students they are teaching.

**OBJECTIVES**

The teacher will:

1. Collect materials needed for interactive activities (observations, model building, and art projects)
2. Provide opportunities for students to engage in concrete, hands-on explorations
3. Ask interactive questions that engage students in the higher level thinking skills
4. Lead an open-ended brainstorming session

**GRADING RUBRIC**

<b>A to A-</b>	<b>B+ to B-</b>	<b>Unacceptable/Resubmit</b>
All assignments completed with good evidence of presented lessons(s)	Assignments completed	Assignments missing and/or incomplete
Followed directions for organization of assignment submissions	Poor organization of submissions	Unorganized submission-did not follow directions
Clear, relevant, detailed, and thoughtful reflections	Relevant reflections, but lacking detail and insight	Irrelevant or unclear reflections

## ASSIGNMENTS/REQUIREMENTS

There are three kinds of assignments: Staff Training, Applications, Major Activities and Extensions

Staff Training Assignments:

- Levels of Difficulty in Thinking Skills: Read the illustrated summary of Bloom’s Taxonomy and fill in columns A and B on the chart, *Levels of Difficulty in Thinking Skills*.
- Levels of Difficulty in Questioning: Read the illustrated summary of Muskingum’s learning strategy for questioning and fill in column C on the chart, *Levels of Difficulty in Thinking Skills*.
- Identifying Leveled Questions: Use the examples of questions, statements, and activities from the two illustrated summaries to construct a list showing the progression from the simplest to the most complex thinking skills.

Applications: Major Activities

- In response to the newspaper article, *A New Animal is Discovered*, the students will be writing descriptive questions about a new animal on strips of paper and posting them on a bulletin board.
- Brainstorming/Research: Identifying Animal Characteristics (Writing a report): The students will be using the descriptive questions from the first activity to begin constructing a “generic” word-web that can be used to organize research data. (Students will be going through the process of research, data collection, and organizations of data to write a report.)
- Using the descriptive questions from the first activity students will be looking for answers in a variety of reference books that describe a frog (or another animal of the teacher’s choosing). Then the students will use the collected data to write a paragraph that describes an animal. (Write a one page reflection on your experience teaching these three lessons.)

Student Explorations with Extensions

There are eight major activities and seventeen extensions for teaching concepts related to zoology. There are more major activities and extensions provided than are needed to meet the requirements for this course. You will need to choose the extensions that are appropriate for you and your students. (Teachers are invited to contact the instructors to discuss modifications for the major activities to accommodate the particular needs of their students.)

The chart and descriptions below lists the requirements for earning one, two, or three units.

**The Staff Training Assignment and Application are to be completed regardless of how many units are taken.**

Units	One	Two	Three
Exploration Major Activities	2	4	6
Extensions	2	4	6
Reflections	2	4	6

One unit:

- Complete the staff training assignment (B1) and the applications (B2)
- Choose, prepare, and present any two of the major activities and two of the extension activities related to the major activities you chose for a total of four activities to complete this section.
- Write a paragraph for each of the 2 *major activities* reflecting on your experience in teaching the lesson.

Two units:

- Complete the staff training assignment (B1) and the applications (B2)
- Choose, prepare, and present any four of the major activities and four of the extension activities related to the major activities you chose for a total of eight activities to complete this section.
- Write a paragraph for each of the 4 *major activities* reflecting on your experience in teaching the lesson.

Three units:

- Complete the staff training assignment (B1) and the applications (B2)
- Prepare and present any six of the major activities and six of the extension activities related to the major activities for a total of twelve activities to complete this section.
- Write a paragraph for each of the six *major activities* reflecting on your experience in teaching the lesson.

## DOCUMENTATION

To document the completion of each activity submit two items:

1. A photograph showing students engaged in the activity.
2. A sample of student work.

(Include the appropriate number of reflections with the documentation.)

## Instructions for coursework submission:

When you have completed your assignments, post all coursework at one time in the Completed Coursework DropBox at the bottom of the course page. You are allowed 9 months to complete the course. If you have questions about the course, you can reach your graders by email or phone.

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For questions concerning your registration or transcripts, contact us at [info@dominicanCAonline.com](mailto:info@dominicanCAonline.com) or see <http://dominicancaonline.com/Dominican-CA-Online-FAQ> for more information.

## COURSE ASSIGNMENTS LIST

- **B1 Staff Training Assignment: Questioning Techniques**  
Readings (Illustrated articles):
  - Levels of Difficulty in Thinking Skills
  - Levels of Difficulty in Questioning Activities:
    - B1a Chart: Levels of Difficulty in Questioning
    - B1b Chart: Identifying Leveled Questions
- **B2 Applications: Major Activities**
  - B2a Brainstorming: A New Animal is Discovered! What questions come to mind? (Students writing questions)
  - B2b Brainstorming/Research: Identifying Animal Characteristics (Writing a report)
  - B2c Research: Describing a Specific Animal (Writing a descriptive paragraph)
  - B2d Teacher Reflection
- **B3 Explorations: Major Activities and Extensions**
  - B3a Major Activity – Grouping Animals by Common Characteristics
  - B3a Extensions:
    - B3a1 Dot and Line Elephant
    - B3a2 3D Bird
    - B3a3 Coil Snake
    - B3a4 Origami Jumping Frog
    - B3a5 Finish the Fish
    - B3a6 The Praying Mantis and Camouflage
    - B3a7 God’s Eye Spider Web
  - B3b Major Activity – Comparing and Identifying Sea Shells
  - B3b Extensions:
    - B3b1 Shell Concentration (game)
    - B3b2 Drawn Shell Collage
  - B3c Major Activity – Observing Small Pond Animals
  - B3c Extension:
    - B3c1 Pond Animal Diagram
  - B3d Major Activity – Observing Tubifex Worms
  - B3d Extension:
    - B3d1 Tubifex Worms (art activity)
  - B3e Major Activity – Pattern Block Butterflies
  - B3e Extension:
    - B3e1 Symmetrical Butterfly (art activity)
  - B3f Major Activity – Identifying Birds
  - B3f Extensions:
    - B3f1 Bird Track Tessellation (art activity)
    - B3f2 Fingerprint Birds (art activity)
  - B3g Major Activity – Observing Snails
  - B3g Extensions:
    - B3g1 Snails in a Box (Art Project)
    - B3g2 At a Snail’s Pace
  - B3h Major Activity – Observing Ants
  - B3h Extension:
    - B3h1 Ant Maze