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<b>Lesson Plan Title:</b> The Nile Crocodile Craze	<b>State:</b> Washington, DC
<b>Lesson Time Frame:</b> Five 45 minute classroom lessons and 2 full day fieldtrips with an extended research project & presentation	<b>Inspired by this Expedition:</b>  Crocodiles of the Okavango
<b>Student Level:</b> Elementary	

**Lesson Title:** The Nile Crocodile Craze  
{Launching of Houghton Mifflin: A Nation’s Choice Reading Curriculum of Theme 4: Animal Habitats }

**Grade Level:** Third Grade

- Day 1—Reading/Literature: Background building of the Okavango Delta and the Nile Crocodiles
- Day 2—Nile Crocodile’s anatomy, functions and food web
- Day 3—Simulation of catch, process and release
- Day 4—Analyze data and graph
- Day 5—Art: Paper mache crocodile with poem
- Independent research project conducted by student: fieldtrip to the zoo and collect information on animal of choice to present to the class; students will also volunteer with zoo docents to take care of the animals
- Participation in Earth Day
- A bulletin board will be set up with pictures and writings of teacher’s Earthwatch experience, resources and students’ work.

**Academic Standards: District of Columbia Public Schools**

Life Science—Third Grade Content Standard 2: Observe, investigate, describe and classify living things; explain life cycles, diversity, adaptations, structure and function of cells and systems reproduction, heredity, interdependence, behavior, flow of energy and matter and changes over time.

By the end of the third grade:

- The student will describe how animals eat plants or other animals for food and may use plants or other animals for shelter and nesting.
- The student will produce evidence to explain that some source of energy is needed for all organisms to stay alive and grow.

By the end of the fifth grade:

- The student will be able to identify familiar organisms as part of the food chain or food web and describe their feeding relationships within the web.
- The student will be able to explain common patterns of interdependence and interrelationships of living things.

**Abstract:**

Students will gain valuable hands on experience about the Nile Crocodiles of the Okavango Delta in Botswana, AFRICA through using teacher's Earthwatch experiences to recreate the project's research information and techniques inside the classroom. Students will learn about the history of the Okavango Delta, the Nile Crocodile and Earthwatch's role in conservation and education through teacher's journal entries, photo collage, videos, web searches, literature, local organizations and letter writing to the scientists.

**Goal:**

Students will learn about the Nile Crocodiles' anatomy and their role in the sustaining a healthy ecosystem; they will also recognize the interdependencies of our living world.

**Performance Indicators:**

Student will be able to identify characteristics of the Nile Crocodile and its role in the Okavango Delta. They will be able to create their own food web and show the interrelationships among animals and the earth. Students will be able to conduct their own research project on their animal of choice.

**Background Information:**

Students will receive background information through teacher's testimonies, personal photos and videos, expedition briefing from Dr. Alison Leslie and Sven Bourquin, web searches and literature. The library, internet, zoo fieldtrip, National Geographic, Discovery Channel, educational videos, museums, interviews with veterinarians and scientists will be used to obtain information.

**Materials:**

- Copies of the Nile Crocodile's Anatomy
- Data collection sheets
- 3-D crocodile stuffed animal or poster board cutouts of crocodiles of various sizes
- Towel
- Measuring tape

- Tweezers
- Test tubes and labels
- Plastic syringe
- Red liquid
- Thermometer
- GPS: Global Positioning System
- Graph paper
- Straws
- O ring with string
- Noose
- Duct tape
- Paper, string, markers, pencils
- Newspaper, construction paper, tissue paper, glue/mache mix

**Technology:**

- GPS: Global Positioning System
- Computer
- Photo printer
- Digital Camera
- Video Camera
- TV

**Instructional Procedure:**

I. Introduction

Teacher will begin with sharing her experiences with the students through slideshows and videos of her Earthwatch experience. She connects the activities with the Houghton Mifflin: Nation's Choice- Theme 4: Animal Habitats and develop vocabulary.

II. Activities

A. Day 1: Personal slideshow of croc photos and videos. Use information from Expedition Briefing by Dr. Alison Leslie and Sven Bourquin

Literature- The Swamp Book: Perspective and Description of the Natural Elements and Resources of the Okavango Delta by Bob Forrester

Okavango: Africa's Last Eden  
by Frans Lanting

Introduce vocabulary using sentence strips and pictures: reptile, crocodile, scute, diameter,

circumference, GPS, food chain, food web, ecosystem, habitat, conservation.

B. Day 2: Identify and label the crocodile's anatomy define its function on paper model. Students will be assigned to draw each of the following animals and plants: grass, insect, small fish, catfish, big fish, antelope, crocodile, frog... They will wear a sign around their neck and hold onto a string to show the food web interconnectedness. By eliminating the crocodile, the balance of predators to prey will be interrupted and result is in an overabundance of catfish and the ecosystem would deteriorate.

C. Day 3: Simulate a "Night Shift" of catching crocodiles, processing them and then release. Go over the procedure to secure crocodiles according to size.

Take the following data:

- 1) Number of catch
- 2) Date
- 3) GPS
- 4) ID – tag
- 5) Sex
- 6) Scutes
- 7) Blood
- 8) Urine
- 9) TL - Total Length
- 10) SVL - Snout to Vent Length
- 11) BTC - Base Tail Circumference
- 12) NC – Neck Circumference
- 13) HL – Head Length
- 14) HW – Head Width
- 15) HD – Head Depth
- 16) Mass
- 17) Body Temperature
- 18) Air Temperature
- 19) Water Temperature
- 20) Weather
- 21) Time
- 22) Comments

D. Day 4: Analyze the data and graph TL, SVL, BTC, NC, HL, HW and HD. Recapture data will be added to the students' data so that comparisons can be made. Students will make manual bar graphs as well as use the computer to plot their data.

E. Day 5: Paper Mache: Students will create crocodiles using newspaper, glue mix and decorative materials.

III. Closure

Follow-up fieldtrips to the zoo and participation in Earth Day will end the theme.

**Assessment:**

Students will work on a group research project on animal of choice and present to the class. Students will address the same components as in the crocodile activities. Students will identify the animals' physical characteristics, feeding habits, habitat, location, and role in the ecosystem and suggest ways in which the animals can be protected if it is endangered species. Students will use the library, internet, zoo fieldtrip, National Geographic, Discovery Channel, educational videos, museums, interviews with veterinarians and scientists to obtain information.

Rubric:

Project Title: \_\_\_\_\_

Group Members: \_\_\_\_\_

Date: \_\_\_\_\_

Project Criterias:	Points (Max. 10)
I. Information on animal's physical characteristics	_____
II. Animal's feeding habits	_____
III. Animal's habitat	_____
IV. Animal's location	_____
V. Animal's role in ecosystem	_____
VI. Conservation Ideas	_____
VII. Organization	_____
VIII. Visual Presentation	_____

IX. Oral Presentation

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X. Teamwork

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[ 0-69= F, 70-74= D, 75-79= C, 80-89= B-+, 90-100= A-+]