

# Bio STEM: Exploring Tennessee Wildlife

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**Room #:** 15

**Class Website/LMS:** Google Classroom

## Course Description

**Bio STEM** is an interdisciplinary, hands-on course that combines **biology**, **ecology**, and **STEM skills** to explore and identify **native wildlife of Tennessee**. Students will engage in lab- and field-based investigations using pelts, calls, tracks, scat, bones, and photographic evidence to classify species and understand their ecological roles. Emphasis is placed on observation, data collection, evidence-based reasoning, and ethical field practices.

## Course Objectives

By the end of this course, students will be able to:

- Identify and classify native Tennessee wildlife by species and category
- Use tools such as field guides, dichotomous keys, and wildlife calls
- Analyze animal evidence including tracks, pelts, bones, and scat
- Use digital tools (camera traps, call recordings, GIS mapping) for wildlife research
- Design and conduct a field-based wildlife investigation
- Understand conservation efforts and human impacts on wildlife populations

## Tools & Materials We Will Use

- \*\* You will need a sturdy composition book (I prefer spiral) \*\*
- Wildlife audio calls

- iNaturalist or Seek by iNaturalist (app)
- Tennessee Wildlife Field Guides

## Unit Outline

### Unit Topics

to field methods

#### 1. Introduction to Wildlife Biology

Classification, observation skills, intro

#### 2. Mammals of Tennessee Pelts, skulls, tracks, scat, sound ID 3. Birds of

Tennessee Songs, feathers, silhouettes, migration 4. Amphibians & Reptiles

Calls, habitat, markings, safe ID 5. Fish & Aquatic Life Rivers, lakes,

conservation challenges 6. Insects & Invertebrates Identification by

structure, role in ecosystem

#### 7. Wildlife Research Project Independent or group project using tools and field data

## Grading Policy

### Category Weight

Daily Assignments 50%

Tests/Quizzes 50%

### List of Native Tennessee Wildlife

*(Not exhaustive, but a representative sample for study—organized by category)*

#### Mammals

- White-tailed Deer

- Raccoon
- Gray Fox / Red Fox
- Bobcat
- Black Bear
- Eastern Cottontail Rabbit
- Virginia Opossum
- Eastern Gray Squirrel
- Eastern Mole
- Big Brown Bat

## **Birds**

- Northern Cardinal
- American Crow
- Barred Owl
- Eastern Bluebird
- Wild Turkey
- Red-tailed Hawk
- Carolina Chickadee
- Great Blue Heron
- Wood Duck
- Pileated Woodpecker

## **Reptiles**

- Eastern Box Turtle
- Common Garter Snake
- Northern Copperhead •
- Timber Rattlesnake •
- Five-lined Skink
- Eastern Fence Lizard •
- Mississippi Map Turtle

## **Amphibians**

- American Bullfrog
- Spring Peeper
- Eastern Newt
- Green Treefrog
- Spotted Salamander •
- Marbled Salamander

## **Fish**

- Largemouth Bass
- Bluegill
- Channel Catfish
- Rainbow Trout
- Brook Trout
- Smallmouth Bass

### **Invertebrates (Insects, Arachnids, etc.)**

- Monarch Butterfly
- Eastern Tiger Swallowtail
- Firefly (Photinus species)
- Cicada (various species)
- Orb Weaver Spider
- Praying Mantis
- Red Imported Fire Ant (invasive species discussion)

### **STEM Connections**

- GIS mapping of animal sightings
- Audio spectrum analysis of calls
- Field data collection using GPS
- Camera trap image sorting and pattern recognition •

Conservation impact models (e.g., predator-prey simulations)

### **Final Project**

Students will conduct a mini research project focusing on one category of Tennessee wildlife. They will use physical evidence, field data, and digital tools to present their findings through a report, slideshow, or digital poster