

Bio STEM: Exploring Tennessee Wildlife

Instructor: Suzanne Fultz

Email: Suzanne.fultz@trentonssd.org

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