



# Lesson Plan: **Exploring the Amphibian populations in our local areas**

**What kinds of frogs can we hear around us?**

## Alignment with STEM Framework

**Investigator**  **Conservationist** 

## Overview

This activity will explore the different species of frogs and toads that live in our local areas using identification methods (primarily by analyzing amphibian calls, but also by identifying different species on sight) to monitor frog activity, which can then be reported to frog monitoring programs - such as the NC Calling Amphibian Survey Program (CASP). Anurans (the group of amphibians that frogs and toads fall under) are very good indicators of ecosystem health, and are easy to monitor due to their loud calls. Youth will listen to and identify the sources of different calls, and report their collected data to be used in more large-scale anuran monitoring projects.

## Practice Goals

- Asking questions and defining problems
- Planning and Carrying Out Investigations
- Analyzing and Interpreting Data
- Obtaining, Evaluating, and Communicating Information

## Content Goals

- What are anurans?
- What is the anuran life cycle?
- Why are anurans important to our ecosystems?
- How do I identify an anuran by only its call?
- How do I collect frog call data?
- How can the data I collect be useful to other scientists?

# Purpose

This activity gives youth the opportunity to experience data collection in the field. Not only will they have the chance to learn about anurans, but they will also use the data they have collected and the conclusions they have drawn from it to benefit other anuran monitoring programs. Healthy anuran populations are excellent indicators of a healthy ecosystem, and monitoring them is as easy as just listening to the sounds of the natural world around us.

## Teacher Background Information

Facilitators should be familiar with anuran lifecycles, as well as the species of frogs and toads that reside in the area. In addition to being familiar with local species, facilitators should also be able to recognize and ID these species using their calls and other identifiers - species present in NC and their identifying calls and characteristics are included in the additional resources below. It may also be helpful to run through the monitoring protocol a few times without youth present.



For further information and resources see: [HERP project](#)

## Affinity Goals



I can act like an **Investigator** by working to maintain stormwater runoff into watersheds which will help people and other wildlife in your area.



I can act like a **Conservationist** by deciding where to place BMPs to maximize effectiveness and aesthetics.

## Materials

- Anuran Identification Key Frog Call
- Datasheet Timer/Stopwatch

## Time Needed

**TBD**

# Instructional Sequence

## What do we know about anurans?

- Prior to collecting field data on anurans, youth should engage in discussion about anuran life cycles, the differences between frogs and toads, and some of the reasons why frogs may call during certain seasons.

## Getting familiar with anuran calls

- Youth and facilitators should familiarize themselves with common anuran calls in their area before entering the field, so that they can identify the source of a call quickly in the field.

## Monitoring for calls in the field

- Be quiet before beginning the monitoring session for at least two minutes, preferably longer, to allow frogs and toads to acclimate to our presence. Ideally, monitoring will be conducted at night.
- Cup hands around your ears and listen quietly for precisely three minutes, using a watch to accurately time the monitoring session. You can also record the session using a recording device or mobile app.
- Listen to and identify all calls throughout the session. If the session is interrupted by a noise, restart it with the 2 minute acclimation period.

## Recording your data

- Enter the start and stop times of your session on the datasheet immediately following the session.
- List all of the species you were able to identify, as well as the intensity of the calls you were able to identify. If you are uncertain about a species or call, do not report it. If there were no calls heard during the session, be sure to report it. The absence of any calls is also very important data!

## Repeat and report

- Repeat the monitoring session and data collection as many times as you deem necessary - if youth and facilitators are amenable to extending the sampling period to five or ten minutes, this could lead to the collection of more calls.
- Once all monitoring sessions have been completed and all data has been recorded, youth and facilitators can report their data to a citizen science database such as FrogWatch USA (<https://www.aza.org/frogwatch?locale=en>), or iNaturalist.

**Identification Key to Some Common Frogs in the North Carolina Piedmont  
(Dr. Terry Tomasek, Elon University)**

1. Toe pads at end of toes..... Tree frogs, Go to number 2  
 Toe pads not at end of toes..... Go to number 3
  
2. Whitish mark under eye.....Copes Gray Tree frog  
 Dark triangle between the eyes.....Northern Cricket frog  
 Dark “X” marking on back.....Spring Peeper  
 Strips down the back.....Upland Chorus frog
  
3. Dry, warty skin..... Toads, Go to number 4  
 Moist skin..... True frogs, Go to number 5
  
4. Black spots on back contain only one or two warts.....American Toad  
 Black spots on the back contain several warts.....Fowler’s Toad
  
5. Light spot in center of eardrum..... Leopard frog  
 Two rows of dark squarish rows on back..... Pickerel frog  
 Thin fold extends down the body..... Green frog  
 Thin fold goes around the eye and eardrum..... Bullfrog