

# CUNY Science Now GK-12 Program

## ACTIVITY PLANNING SHEET

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### Activity Description/Rationale

Capture-mark-recapture field trip. This lesson is written for a field trip to a pond where students trap and mark turtles. Using the Lincoln-Peterson equation, students estimate the abundance of turtles in the pond. They also measure the length and record the sex of each turtle to figure out average size and sex ratio.

This is a hands-on field trip teaching the students about gathering data and answering a question. Most park staff/managers will not have done this type of study so the students' conclusions will be of true use to other scientists.

**Estimated Time of Activity: 4 – 8 hours (2 days in the field) + 1.5 hours in class afterward**

**Goals: Process Skills, Content Knowledge, Attitudes:** *Students will...*

- Learn how to use LP CMR to estimate the abundance of a population
- Learn how to capture, handle, identify species, and take data on turtles
- Hopefully enjoy performing an authentic field study

### Materials

- Turtle biology info sheet
- Long-handled nets (maybe basking traps, see below)
- Paint markers
- Doggie treats
- Large bucket
- Rags
- Hint handout

### Pre-Activity

Students should become familiar with the species on the info sheet and how to identify them.

**Activity Instructions (see also detailed instructions):**

- 1. Day 1: Students catch turtles in their nets, measure length and sex, dry the shell and add a numbered mark with the paint marker. If turtles cannot be reached by shore then you can use basking traps (which must be deployed near dawn and monitored all day).**
- 2. Day 2: Same as day 1 only recaptures are recorded as such.**
- 3. Analysis: Students derive LP formula via group discussion and the “hint” handout**

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4. Students calculate the number of turtles in the pond, sex ratio, and average + SD length.

**Assignments:** Students should prepare a short report to the park managers. A professional memo or reprot from another project can be given as an example. The best one is submitted as the report (which will be required as part of the legal permit you need to get beforehand)

**Assessment:** Quality of data sheets and written reports.

**Instructor's Notes:** There is a lot of prep work needed for this lesson. Read the detailed instructions included in the course.