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Student Lesson Plan

Bald Eagle

Subject : Science **Section** : Environmental Science and Ecosystems **Time** : 100 minutes	**Lesson Topic** Determining causes for change in eagle population along the James River
Curriculum Developer: Tyler Holzer	**Date:** **Location:**

Core Math Skill/Standard

- HS-LS2 Ecosystems: Interactions, Energy, and Dynamics
- HS-ESS1 Earth and Human Activity
- MS-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing human impact on the environment.

Instructional Objectives

- Students will critically analyze information presented in graphs
- Students will formulate hypotheses based on information from graphs and tables.
- Students will locate evidence from a text and apply it in their interpretation of a graph.
- Students will know how human behavior affects ecosystems.

Lesson Plan Activities

Activator (15 minutes): The teacher will lead a discussion about endangered species and conservation efforts. First, the teacher will ask students about animals that are listed as endangered, or whose population has declined. The teacher will record all student responses on the board. The teacher will then ask students for reasons why species populations have declined. The instructor should help students to see that human behavior often has an adverse effect on animal populations. The instructor will ask students to talk about efforts that have been done to increase species populations.

Mini Lesson (15 minutes): The teacher will distribute the Graph of Bald Eagle Population along the James River. Students will formulate at least five questions based on the information in the graph. The teacher should help students to ask questions about the shape of the graph, predictions for future years, and how the eagle population rebounded beginning in the late 1970s.

Sharing (10 minutes): The teacher will ask students to share their questions with the class. Each student should submit at least one question. The whole class should reflect on each question as it is submitted, focusing on the clarity of the question; that is, does the question ask what we want it to ask? The class should get at least five to eight questions listed on the board. The teacher should make sure that the following two questions are listed: 1) What will the eagle population be in the future? Will it continue to grow at the same rate? 2) What happened in the 1970s that caused the population to grow again?

Small Group Work (15 minutes): Students should work in pairs to predict the answers to the questions on the board. For example, they should consider possible causes for why the eagle population rebounded. After each pair has finished working, they will share their hypotheses with the group. The whole class will discuss the various hypotheses.

Independent Work and Sharing (25 minutes): The teacher will distribute the James River Reading. Students will read the passage and search for the answers to the questions above. When all students have finished reading, the teacher will ask for volunteers to point out where they found answers to their questions. The class will evaluate how closely their predictions matched the actual reasons for the growth in bald eagle population. The teacher will talk to the class about the scientific method.

Assessment (10 minutes)

Homework

Students will choose one of the species discussed during the activator and will research one of their choosing, focusing on the reasons for a decline in the species population. Students will present their findings in the next class.

Materials

Graph of Bald Eagle Population along the James River; The James River Reading

The TASC Transition curriculum is a collaborative project of the New York State Education Department and the Queens Borough Public Library, supported by funding from the New York State Department of Labor.