

Use data to investigate – Lesson plan

INTRODUCTION

In this lesson, students investigate data related to factors that may be contributing to the Southern Resident Orca population decline. This self-paced Excel activity engages students with important information and interactive visualizations. Students analyze data from different sources and generate new questions that may lead to improving the health of this unique orca population.

LEARNING OBJECTIVES

1. Investigate data to describe feeding relationships in an ecosystem.
2. Explore multiple sources of data to explain how toxins can influence the health of populations in an ecosystem.
3. Analyze multiple acoustic data to provide evidence for the effects of sound pollution on a population.

INSTRUCTIONS

1. Open the "Day of Data: Use data to investigate" workbook and familiarize yourself with how to use it by reading the Instructions worksheet in the workbook.
2. Complete the guided steps in the workbook for each of the worksheets prior to introducing the activity to your students.
3. Instruct your students in locating and opening the workbook. Introduce the students to the lesson using the Introduction worksheet and video link. Then show them how to navigate the workbook and earn their Orca Research badge using the Instructions worksheet.
4. With guided or independent study, have students complete each of the lesson sections in the workbook. Student reflections will auto populate in the student journal and can be saved as a PDF and submitted for credit. Use these responses to initiate a class share out and discussion.

STANDARDS

- NGSS MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.
- NGSS MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.
- ISTE 5b. Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.