

Rationale

To understand the anatomy of a condor and compare size, students will create a life-size representation of a condor.

Objectives

1. Students compare wing and body size to birds with which they are familiar.
2. Students identify the basic anatomical features of the condor.

Aligned Standards

NGSS: Using Mathematics and Communicating Information; Structure and Function
LS4.C: Adaptation: The condor's anatomic features (eg. wing size) promote survival in its native environment.
3.MD.B.4: Measuring Lengths

Time

Day 1 of two-day lesson
Teaching time: one hour (approximately)

Vocabulary

wingspan
species
adapted
molt

Materials

Butcher paper (paper must be at least 10' long)
Ruler or tape measure

Tech Integration

Condors in Flight photo library

PROCEDURE – DAY 1

IMAGES (10 minutes)

Introduce to condors in flight through images, and encourage students to guess, relative to items in images, the size and weight of the birds.

Begin by projecting a photo of a condor in flight from the Condors in Flight photo library. Have students make inferences about the bird: what it is, where it lives, what it eats, and how it behaves. As you move through the series of photos, have the students give evidence for their inferences.

DATA (10 minutes)

Create a chart to examine the wingspan of each student. Measure each student's "wingspan," add in the data, and display the chart in the classroom.

CREATE (40 minutes)

Divide the students into groups and pass out materials and instructions to measure and draw a scale representation of a Turkey vulture, California Condor, juvenile condor, and human.

Provide rulers, butcher paper (one 10-foot-long sheet for entire project), close-up photos, and the measurement fact sheets to each group.

Students work in groups to create the life-size artworks.

Before you begin

Prep butcher paper, measurement fact sheets, and rulers or tape measures for each group.

What to do

As neighbors to the California condor territory, it can be common for us to hear about the condor as the largest bird in North America. What does that mean in size and weight relative to an 8- or 9-year-old?

Images

Begin by projecting an image from the Stages of Life or Condors in Flight photo libraries. Ask the students if they have ever seen this bird before. Ask the students to guess, in comparison to the size of objects or people in the images, the size of the California condor. Encourage the students to observe all parts of the image. Have the students compare the size or weight of the bird to themselves.

If time permits, ask the students to guess or provide previously known information on the life of the condor: what does it eat? Where does it live? How does it behave? Have students identify what they see in the photos that allows them reach these conclusions. You may record these ideas and guesses on a flip chart to return to at the conclusion of the module.

End the discussion projecting the “Size and Coloring USFWS” photo from the Stages of Life photo library. Ask a student to find the condor in the image and read the measurement given. The top measurement is 9.5 feet. To the side of the condor, the measurement is between 8.5 to 9.5 feet. Either response is acceptable. One of those numbers is the average, which the class will learn about next. Introduce the vocabulary word “wingspan” as the measurement from the tip of one wing to the tip of the other wing.

Data

Make a data chart and measure each child’s wingspan. Measure each wingspan in feet and meters. Have the class find the average wingspan, the longest wingspan, and the shortest wingspan. Explain to the students what the “average condor wingspan is 9.5 feet” means.


Create

Explain to students that as a class, they will create life-size or true-to-scale drawings of a condor, a Turkey Vulture, and a human. Divide the class into four groups to be in charge of measuring and drawing a condor, juvenile condor, Turkey Vulture, and human. The sizes of the wingspan should be the averages supplied by the USFWS chart and the data chart created by the class.

After they are finished, hang the drawings in the classroom. Have each student take a turn to measure his or her height and “wingspan” against the final product.

Day 1 of two-day lesson
Teaching time: one hour
(approximately)

ELL MODIFICATION:
Translate the vocabulary
words to Spanish.



OPTIONAL EXTENSION:
Depending on the number of
students, other groups can be formed
to create other true-to-size birds,
including the Western Scrub Jay,
Golden Eagle, and Red-Tailed Hawk.

ELL MODIFICATION: Label the body
parts in both English and Spanish.