

**Rationale**

To understand the unique physical features of the condor, students will explore biofacts including a skull and egg.

**Objectives**

1. Students compare and contrast skulls/eggs of different birds
2. Students identify anatomical features of the condor skull and egg

**Aligned Standards**

NGSS: Asking Questions, Defining Problems and Using Models; Structure, Function  
 LS 3.A: Condor skull and egg replicas detail features of unique biological inheritance.  
 LS 3.B: Condor skull and egg replicas are used to communicate variation bird species and condor generations.  
 3.MD.B.4: Measuring Lengths

**Time**

One-day lesson  
 Teaching time: one hour (approximately)

**Vocabulary**

biofact  
 species  
 incubate  
 scavenger

**Materials**

Skulls and eggs. Class set might include California condor skull, California condor egg, Western Scrub Jay egg, and a Red-tailed Hawk egg.  
 Measuring tape, string

**Tech Integration**

Eggs photo library  
 Video of condor with egg in photo library

**PROCEDURE – DAY 1****EXPLORE (30 minutes)**

Students explore the biofacts and images of bird skulls and eggs. The teacher should guide the conversation about the shape and size of the egg and use of beak in feeding and relate the biofacts to skeleton creation lesson.

Set out bird skulls and label them A-D. On a different side of the room, set out eggs and label them E-G. Set out measuring tape and string to use to measure the biofacts.

Have students make observations about each skull in their observation journals in the form of a Venn diagram; comparing each of the skulls to the others on the table. Have students measure each skull and egg. Log any data. Ask students to infer the birds associated with each egg and skull. (Variation: create a class led Venn diagram on the board.)

After examining the skulls and completing notes, have students look at the eggs and compare the shape. Egg shapes are an adaptation to prevent egg from rolling out of nest. Have students infer what types of birds the eggs are from.

**JOURNAL (15min)**

Students look at images/video of condors and eggs and sketch the skull and egg in their journals.

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Teaching time: one hour  
(approximately)

**OPTIONAL EXTENSION:**

Ask high school students or a parent volunteer to aid in the biofact exploration.

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Ask high school students or parent volunteers to bring in any skulls they may have (i.e. a deer skull).

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**ELL MODIFICATION:**  
Translate the vocabulary words in Spanish and give an image for each one.

**OPTIONAL EXTENSION:**

Find scales to measure the weight of the skulls or eggs to record further data.

**OPTIONAL EXTENSION:**

Write letters to Wildlife Biologists with questions about eggs that do not get answered in class.

**Before you begin**

Set available skull and egg biofacts, measuring tape, and string on two tables.

**What to do**

Biological artifacts or “biofacts” allow the students to discover and explore animal artifacts (real or synthetic) kinesthetically. The skull and egg exploration provides a focused, in-depth look at specific adaptations.

**Explore**

Set up the biofacts on two different tables: one table for the skull and one table for the eggs. Set out the condor skull with images of other bird skulls next to it. If possible, request skulls from the school’s science lab. Label the skulls A-D. At the second table, set out the eggs, and label them E-G. Place string and measuring tape beside each skull and egg.

Divide the class in two groups. Allow the groups 20 minutes at each station. Have the students bring their journals to record their observations.

If necessary, review with the students how to make a Venn Diagram by drawing an example on the board. Leave the diagram on the board for the end of the activity. Instruct the students to draw a Venn Diagram on a page labeled “Skulls” and a second Venn Diagram on a second page labeled “Eggs.”

At the skull table, have the students begin by making verbal observations facilitated by the instructor. Ask the students to comment on the shape and size of the skull. List the skulls from largest to smallest. Guess what type of food the bird eats based on the beak. Measuring the skull with the string and measuring tape. Compare measurements for each skull in notebooks. Students can make measurements of beak to crown, beak length, etc.

At the egg table, discuss the size and shape of the egg. Ask students to compare the shape of the eggs. Ask students how the shape of the egg might function as an adaptation. This is to prevent the egg from rolling out of the nest. Have students infer what types of birds (large vs. small, condor vs. other) correspond to each egg. Ask the students how egg coloration might aid in protection. Have the students use the string and measuring tape to measure each egg. Measure the eggs around the middle and from top to bottom. Have the students record these measurements in their notebooks.

Lead the class in a Venn Diagram on the board. Add observations from the students’ diagrams to collect a full list of observations.

Project the images and videos found in the “Egg” photo library. Talk about the way the egg sits in the nest cavity. Ask questions: What is around the egg? What prevents the egg from falling out of the nest? How does the condor interact with the egg (see “Egg 1” and video “Egg vid 2”)? Explain to students that Nest Monitors like those in the “Egg 5” photo sometimes replace eggs that do not hatch with ones from a breeding facility like the LA Zoo. They keep the egg safe in a padded box. Point out the photo labeled “Egg 8” and the video “Egg vid 2” where there is a small crack in the eggs. What is happening to these eggs? Discuss “pipping”: the process by which a condor chick breaks out of the egg.

**Journal**

End the discussion by asking the students to sketch in their journals an egg inside a nest cavity.