

## **Lesson Plan 10: The Condor's Shadow & Do the Math!**

Unit Question: What role does the California condor play in the California ecosystem, and how do changes in the ecosystem impact condors over time?

Science and Engineering Practices:

- Using Mathematics and Computational Thinking
- Analyzing and Interpreting Data

Teacher Prep: Have the Condor's Shadow DVD or [online video](#)\* ready to play. Day 2: Print/Share [Do the Math! - Worksheet](#) and have calculators for students to use.

\*password is: *Pitahsi*

**Lesson:** *(two class periods)*

### **1. Intro**

- Students will watch the documentary the Condor's Shadow, and write down questions on post it notes to add to the "questions board"
  - Watch the video over 2 days, leaving 20 minutes for the activity day 2

Day 2

### **2. Do the Math!**

- Read through the [worksheet](#) with the students.
- Explain the equation we use to find out how many pounds of deer meat are in Ventura County
  - Some classes may need more assistance (walk through the problem's equation with the correct values as a class) – use your discretion
- Students should work independently, but may need assistance from their peers.
  - Students will need calculators

*\*If students finish early, have them assist other students, revise their preliminary model, explore condor content online, or generate questions for the guest speaker*

**Do the Math!**

Mule deer are a common sight in Ventura County's wild spaces. They are an important part of a food web that includes vegetation like trees and shrubs, consumers like rabbits, and secondary consumers, or predators, like foxes, snakes, and mountain lions. Creatures like California condors, and ravens, as well as the many microscopic fungi, and bacteria make up the scavengers and decomposers in the food web.



**Important Facts:**

- 170 lbs is the average weight of an adult mule deer.
- Carrying capacity is 40 deer per square mile (CDFW)
- Ventura County is 2208 square miles.

$\underline{\hspace{1cm}} \text{ lbs/deer} \times \underline{\hspace{1cm}} \text{ deer/mile}^2 \times \underline{\hspace{1cm}} \text{ mile}^2 \text{ in Ventura County} = \underline{\hspace{1cm}} \text{ lbs of deer meat in Ventura County}$

1. How many pounds of mule deer exist in our county? \_\_\_\_\_
2. If half of that population dies in any given year (hunting, natural causes), how many pounds of mule deer **carcass** would exist? \_\_\_\_\_
3. If half of the carcass is taken/eaten by the primary predator (human, mountain lion, etc.), then how many pounds of carcass remains in the environment for scavengers (like California condors) and decomposers?  
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4. If scavengers and decomposers did not exist, how could we dispose of carcasses throughout the environment?  
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Draw what you think California would be like if there were no scavengers at all: