



Sea Lion Survival Activity Teacher's Guide

Objective: Explore the ability of sea lions to survive in a pristine ecosystem, overfished ecosystem, and realistic ecosystem while exploring the sea lion niches, predators, and human influence

Arizona State Standards: HS.L2U3.18; HS+B.L2U1.1

Vocabulary:

- Limiting Factors
- Carrying Capacity

Materials (For class of 30, adjust as necessary for class size):

- 30 plastic bags(optional)
- One recording sheet per student
- 15 Anchovy Fish weight cards
- 10 Herring Fish weight cards
- 6 Squid Fish weight cards

Instructions:

Prep:

- Teacher will need to print appropriate number of anchovy, squid and herring sheets each on different colored paper and cut out each fish weight card
- Teacher will print and cut out the cards for impaired sea lions
- Teacher will present the Sea Lion Survival Activity PowerPoint to the class

Round 1:

- Teacher will instruct students to place their plastic bag around the outside of the playing field. If not using bags, each student should find their own spot to put their fish. Students should not steal fish from other students.
- Teacher will spread all of the fish weight cards on the playing field
- Students will collect the fish weight cards one at a time bringing them back to their bag each time.

- Once all cards are collected students will use the recording sheet to record how many anchovy, herring, and squid cards they collected.

Round 2:

- Teacher will collect all cards.
- To demonstrate an ecosystem where overfishing is occurring teacher will remove roughly half of all the fish weight cards. Teacher will then redistribute these cards along the playing field
- Students will follow the same instructions as for round 1 and record this data on the recording sheet

Round 3:

- In order to simulate a natural ecosystem this round will be played with the same number of fish weight cards from round 2 (roughly half of the total fish weight cards) to account for human fishing.
- In addition teacher will choose one student to act as a predator to the sea lion population. This student will have to attempt to tag sea lion students one at a time. If a student is tagged they are “eaten” and must return to the side line
- Teacher will also randomly distribute the sea lion impairment cards to students which give instructions on how that student is able to capture fish.
- Sea lion students in this round should be instructed that they can “haul out” at any point by standing near their fish stash on the sidelines and be safe from predators, but they should consider that they do need some fish to survive.
- Play will continue until all sea lions have been eaten, hauled out, or until fish is all collected from the playing field.
- Students will record this set of data on the recording sheet

Wrap up:

- Students will add up the total poundage of fish they collected during each round and record on the recording sheet.
- Teacher will finish using the PowerPoint to explain that a sea lion needs an average of 20 pounds of fish a day to survive. Students should circle the rounds in which they survived by catching 20 pounds of fish.
- Class will discuss how human factors can impact the carrying capacity of a species



Sea Lion Survival Activity Recording Sheet

Record the number of each food type card you collected in each round. Then multiply by the weight of each food type. Finally, total all the fish weight from each round to find the total pounds of fish you "ate" each round. The average sea lion needs to eat 20 pounds of fish each day. Circle any rounds where you collected 20 pounds of fish and survived.

Round One:

Anchovies: _____ anchovy cards x.5= _____ Pounds
Squid: _____ squid cards x 1= _____ Pounds
Herring: _____ herring cards x 2= _____ Pounds
Total pounds = _____

Round 2:

Anchovies: _____ anchovy cards x.5= _____ Pounds
Squid: _____ squid cards x 1= _____ Pounds
Herring: _____ herring cards x 2= _____ Pounds
Total pounds = _____

Round 3:

Did you have an impairment? _____

Anchovies: _____ anchovy cards x.5= _____ Pounds
Squid: _____ squid cards x 1= _____ Pounds
Herring: _____ herring cards x 2= _____ Pounds
Total pounds = _____

Which round did you do the best in? Why?

What factors impacted your ability to catch fish the most?
