Lesson 1: Introduction to Seabirds
Lesson 1 Presentation Content

Engage – What is a seabird?
Explore – Wingspan Activity
Explain – Life Cycle & Adaptations
Elaborate – Marine Food Webs
Evaluate – Albatross Adaptations
Engage

What is a Seabird?
Black-footed Albatross Soars Above the Waves

Photo by Sophie Webb
Seabirds live in many ocean habitats, from the Tropics...
...to the Arctic

Sophie Webb
Even when nesting on land, seabirds spend most of their time at sea.
Ambassador Species

Laysan Albatross
mōlī

Black-Footed Albatross
kaʻupu
I now belong to a higher cult of mortals, for I have seen the albatross!

- Robert Cushman Murphy
Ocean Wanderers
Where do they go?
Explore

Wingspan Activity
Laysan Albatross Shows Off Its Wingspan

Photo by Peter Hodum
What is your ‘wingspan’?
Explain
Life Cycle and Adaptations
Nesting sites in the middle of the Pacific
The Albatross Reproductive Cycle

• Adults usually breed for the first time between ages 6 – 12 and can breeding every other year for their entire lifetime, which can last 60 years or more!

• Mates return to the colony in late October and females lay a single egg in November or December. Both parents incubate the egg.

• Chicks hatch January to February, after about 66 days of incubation.

• The chick is attended continuously for about 20 days, guarded for another 10 days, and then visited by the parents only briefly to be fed until late June.
Albatross Gather in Colonies to Lay Their Eggs
Adult Albatross Perform Mating Dances
Different Dances for Different Species

Video provided on website
Albatross Dancing and Mating

Video provided on website for download
Albatross Egg
Laysan Albatross on the Nest

© Sophie Webb
Newly Hatched Laysan Albatross Chick
Albatross Chicks Get Much Larger Prior to Fledging

Photo by Peter Hodum
Adult Albatross Feeding Large Chick
Albatross Feeding

Video provided on website for download
Albatross Chicks Exercise Their Wings and Practice Flying Before Fledging
Albatross Exercising their Wings

Video provided on website for download
Adaptations - Albatross Belong to a Group of Seabirds Called “Tubenoses”
Adaptations – Salt Glands

Spray of salt droplets being blown from the nasal openings.
Adaptations - Wide Gape

© Robert Tizard
Adaptations – Webbed Feet
Adaptations – Dynamic Soaring

Illustration from WHOI Graphic Services, Woods Hole Oceanographic Institution
Elaborate Marine Food Webs
Life at the Sea Surface
Blue Planet
Ocean Basins
Five Basins, One Global Ocean
honu- Hawaiian Green Sea Turtle

Photo by Dr. Robert Schroeder, NOAA/NMFS/PISC/JIMAR/CRED
manō - Shark

Photo by NOAA Fisheries/Mark Conlin
naiʻa - Dolphins
Microbes Are the Most Abundant Organisms in the Ocean

Diatoms

Cyanobacteria

Image by CBNMS

Image by State of California
Albatross Food Chain

phytoplankton → zooplankton → small fish → squid → albatross

Image credits: Phytoplankton: NOAA MESA Project, Zooplankton: NOAA/D.Forcucci; NOAA Central Library/Charleston Bump Expedition 2003. NOAA Office of Ocean Exploration; Dr. George Sedberry, South Carolina DNR, Principal Investigator, Fish: NOAA, NEFSC, Squid: NOAA/MBARI 2006, Albatross: NOAA Corps/Lieutenant Elizabeth Crapo
Sampling Plankton

Painting by Sophie Webb
Zooplankton

Photo by Sophie Webb
WINGED AMBASSADORS

OCEAN LITERACY THROUGH THE EYES OF ALBATROSS
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Lesson 1 Presentation Content

Engage – What is a seabird?

1. Black-footed Albatross soars above the waves
2. Seabird Habitats, tropics to the poles
3. Seabirds nest on land, but still spend most of their time at sea
4. Seabird Biodiversity
5. Ambassador Species – Laysan and Black-footed Albatross
6. Poem
7. Locations of albatross showing their vast range
8. Travels of one Black-footed Albatross from CA to Japan

Explore – Wingspan Activity

1. Laysan Albatross wingspan
2. Birds and Human wingspan art at the Royal Albatross colony

Explain – Life Cycle & Adaptations

Life Cycle
1. Map of nesting Colonies in Hawai‘i
2. Albatross Colony
3. Mating Dances
4. Videos of Dancing (and a mating version) on website

Adaptations
1. Albatross are “Tubenoses”
2. Variety of species in the group “Tubenoses”
3. Albatross have a large gape for eating
4. Illustration of salt glands
5. Albatross have large webbed feet for ocean and land functions
6. Illustration of Dynamic Soaring, a low energy method of traveling

Elaborate – Marine Food Webs

1. Blue Planet
2. Ocean Basins
3. Other animals in the ecosystem – Turtles, Sharks, Dolphins
4. Microbes
5. Albatross Food Chain
6. Painting of how oceanographers sample plankton
7. Close-up of Zooplankton