Birds of a Feather, Fruit, and Flower

OREGON COAST AQUARIUM

Teacher's Guide

Topic: Coastal Forest Animal and Plant Reproduction

Grade level: Middle School

Aligned Standards

Next Generation Science Standards (NGSS) Performance Expectations:

MS-LS1-4. Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.

Ocean Literacy Principles:

Principle #5. The ocean supports a great diversity of life and ecosystems.

c. Ocean biology provides many unique examples of life cycles, adaptations, and relationships among organisms that do not occur on land.

What behaviors and structures are involved in animal and plant reproduction? Focusing on local species, we will explore this topic and how successful animal and plant reproduction are interrelated.

Program at a glance

Students will explore the dynamics of coastal forests with a focus on factors influencing reproductive success of birds and flowering plants. Students will use their new knowledge to examine evidence and develop an argument regarding an Oregon coastal species

Objectives

Students will be able to:

- List behaviors and structures that impact a bird's reproductive success
- Explain how pollinators and seed dispersers assist in plant reproduction
- Identify plant characteristics that attract pollinators and seed dispersers

Skills

- Students will gain expertise in:
- Collaborating with other students and communicating reasoning
- Constructing an argument based on evidence

Program features

- Facilitated educational experience in our Classroom, learning about the reproductive behaviors of four native birds and two native plants
- Self-guided exploration of the Aquarium

Extension activities

Use these prompts to facilitate further discovery before, during, or after your field trip to Oregon Coast Aquarium.

In the Classroom

- Before your aquarium visit…
    - Learn about flowers in a dissection lab where students explore the various parts and their functions.
    - Here's an option from Botanic Gardens Conservation International: https://www.bgci.org/files/Worldwide/US_Files/Lesson%203.pdf
- For seed dispersal, this STEM lesson from Project Learning Tree will allow the students to creatively engage with the topic via an engineering challenge:
    - https://www.plt.org/stem-strategies/have-seeds-will-travel/
- After your aquarium visit…
    - Learn about birds that visit your school grounds
        - Attach a bird feeder or a variety of bird feeders (ex. Seed feeder and nectar feeder) to your classroom window(s) to see what kinds of birds visit
            - The Merlin app is an excellent option to help identify birds by either what they look like or by their call.
        - The Cornell Lab of Ornithology has many great bird classroom resources.
            - This option incorporates both STEM learning and citizen science: https://www.birds.cornell.edu/k12/nestwatch/
    - Compare reproductive strategies of bull kelp (annual) and giant kelp (perennial)
    - Compare reproductive strategies of flowering plants and cone-bearing plants.

At Oregon Coast Aquarium

- Visit our aviary and learn about the breeding behavior of our alcids!
- As you walk around the aquarium, have students choose an animal whose reproductive strategies (structures and/or behaviors) they would like to learn more about. As a homework assignment, or for another class assignment, they can learn 3 fun facts about their chosen animal or plant. (Some fun options include octopuses, clownfish, and spiny dogfish sharks.)