

Synopsis and Key Concepts Wetlands

BUILD A WETLAND ESTUARY

Students take field notes during a virtual field trip and then transform the classroom into a wetland estuary as pairs of students make three-dimensional organisms based on a Wetland Information Card they are assigned. They become expert naturalists for their organism, find additional information about it and add a sketch to the class bingo boards. Students then present their “field talk” on their organism as the rest of the class uses goldfish crackers to play bingo as each organism is mentioned. They then write a paragraph in pictures and words about their classroom field trip.

- *Estuaries are special wetlands where salt and fresh water mix.*
- *Estuaries include open water, mud flats and salt marshes.*
- *Many different kinds of organisms live in an estuary. Each organism lives in a particular part of the estuary.*

ESTUARY LIFE

Students learn about wetlands and estuaries as they listen and delve into the lyrics of the song *Estuary Life* by the Banana Slug String Band. They participate in a jigsaw activity using Estuary Life Content Cards containing additional information about the lyrics, relating especially to new vocabulary or content. Students then participate as contestants in a Game Show to check for understanding.

- *Estuaries are formed where fresh water from a river mixes with salty ocean water.*
- *Estuaries provide habitat for many different types of living things.*
- *Human impact may harm estuary communities.*

OYSTER BEDS

This activity uses a content-rich approach to increasing literacy skills. Students in small groups make observations about oyster shells and communicate their observations to other students with words or drawings. They then find the “match” to their shell and with their partner hypothesize about the living animal, which made it. The activity concludes with students writing collaborative and individual poetry using the word walls filled with new and descriptive vocabulary gleaned from throughout the entire activity.

- *Scientists need to make careful observations and communicate them clearly in order to learn about the natural world.*
- *Poetry offers a way for people to communicate their thoughts and feelings about the special qualities and values of the ocean and ocean habitats.*

CLAMS INSIDE AND OUT

Students rotate through interdisciplinary stations about shells to give them more experience with mollusks. They then learn about the structure, biology, and natural history of clams by coloring, cutting out, and constructing a 6-page clam “Bivalve Booklet”. Students then dissect a real clam to find the parts they learned about with their Bivalve Booklet.

- *Each animal has special body parts and ways of behaving, which are adaptations to survive and be successful in their habitat.*
- *Scientists use dissection as a way of learning more about an animal’s body parts and how the parts work together. These body parts are called structures.*

CRAYFISH INVESTIGATIONS

Students are guided through a full open-ended inquiry in five sessions. (An alternate route provides students with a partial inquiry in three sessions.) Students are first introduced to an Inquiry Journal and focus on making observations, sketching and asking questions about crayfish and categorize them as investigable or not . They are then provided with more background information about crayfish on which to base their investigations. Small groups of students choose their question and plan their investigation. In Session 3 students actually do their investigation, in Session 4 they make a poster presentation of their results and Session 5 provides an opportunity for content synthesis of the class results.

- *Crayfish have many adaptations to survive and thrive in a wetland habitat.*
- *Scientists learn about the world through an inquiry process.*
- *Inquiry science consists of making observations about the world, asking questions about the observations, doing investigations to discover answers to questions and making new observations leading to new explanations and questions.*
- *Scientists communicate about their own and their peers’ investigations and explanations.*

SALINITY CURRENTS

Students, in small cooperative groups, make observations and participate in discussions about two bottles of water—one salty and one fresh. Their observations and discussions are facilitated by questions leading to further observations. Students then design and carry out an investigation to determine which is which, using only the limited materials given to them on a tray. Students then use data sheets, make predictions, answer

questions designed to facilitate their discoveries, and compare their results with other groups as they participate in a structured investigation. A teacher demonstration then helps students understand the concept of salinity currents and applies their results to the real world.

- *Salinity is a measure of the amount of salt dissolved in a liquid.*
- *Fresh water will float on top of saltier water.*
- *Fresh water is less dense than salt water.*
- *Salinity currents can form when fresh water from the land and salt water from the ocean meet in an estuary.*

BIRD BEAK BUFFET

Students go on a video journey to the wetlands as if they were scientists studying the habitat. Students then role-play species of birds with beaks of different shapes and sizes. They gather different food items with their beaks, graph the results and compare their feeding success.

- *Different types of shorebirds can feed together in one area because each type is adapted to feed on different types of prey. (This is called resource partitioning.)*
- *Adaptations are features or behaviors that improve an organism's chance for survival.*
- *Scientists often use math when they gather data about animals. Graphing the data helps us to discover patterns and explain observations.*