

SUGGESTED ACTIVITIES

(Biomes and Ecosystems)

Picture-perfect Science Lessons 2005 by K. Rohrich Ansberry and E. Morgan:

<u>Activity</u>	<u>Page Number</u>	<u>Concept</u>
Name that shell	53 (both books)	Adaptations of organisms and changes in the environment
Rice is life	69 (<u>Rice</u> by Atkinson)	Plant biology
Mystery Pellets	115 (<u>Butternut Hollow Pond</u> by Heinz)	Ecosystems
Close encounters	133	Adaptations and ecosystems
Oil spill	169 (<u>Oil Spill</u> by Berger)	Environmental change

From NSF/IERI Science IDEAS Project:

<u>Activity</u>	<u>Page Number</u>	<u>Concept</u>
Living things	77 <u>Big Book of Science '04</u> by Zike	Ecosystems
Precipitation	92 <u>Big Book of Science '04</u> by Zike	Water cycle
Rain Forest	93 <u>Big Book of Science '04</u> by Zike	Ecosystems

From *Harcourt Science Teacher's Ed. Unit E: (For ALL grade levels)*

<u>Activity</u>	<u>Page Number</u>	<u>Concept</u>
Needs of plants	A4-5 (3 rd)	Basic photosynthesis (solar energy & food web)
Bird beaks and food	A38-39 (4 th)	Bird adaptations
How light affects plants	A62-63 (4 th)	Photosynthesis (solar energy & food web)
Water, water everywhere	B12-13 (5 th)	Water cycle
What eats what in ecosystems	B32-33 (5 th)	Ecosystem/Food web

BUILDING AN OCEAN

Audience: Kindergarten - 5th grade

Outcome/Objective: Students will identify basic mangrove/seagrass/coral reef plants and animals and describe this interrelated ecosystem.

Materials: Materials needed in initial construction of props: Line drawings of mangroves, fish, sponges, coral and invertebrates; colored pencils, laminator, scissors and velcro. Line drawings are shaded with colored pencils, laminated and backed with small pieces of velcro. A cloth covered hard board is needed as a backdrop for the velcro-backed illustrations.

Key Words: Ocean, mangrove, coral reef, coral polyp, elkhorn coral, brain coral, pillar coral, ribbon coral, soft coral, sea fan, sponge, anemone, jellyfish, seagrass, conch, starfish, habitat.

Suggested time: This activity is approximately 30 minutes long.

Procedure:

The activity begins with a blank backdrop (a cloth-covered board). The instructor asks, "What is an ocean?" and leads the audience in discussion about marine organisms and what they need to survive, such as food, clean water and protection from predators. An "Ocean" is then "created" by attaching the laminated drawings to the backdrop. The instructor talks about the importance of inshore mangrove forests to offshore coral reefs and engages the audience in discussion of the attributes of each part of the ecosystem and its importance to the others. While introducing habitats where marine plants and animals live, the instructor asks for audience volunteers to place mangroves and seagrasses on the board and leads discussion about their significance in the ecosystem. Corals are then placed on the board and their unique construction is noted (for example, a coral head is a "condominium" built by living animals and is not a plant or rock). Audience volunteers then place invertebrates in appropriate places on the board and identify each invertebrate and its niche. The instructor may introduce sponges with the question, "What helps keep the water clean?" After mangroves, seagrasses, corals, sponges and invertebrates are placed in the "ocean", the instructor selects other audience members to "complete the ocean" by adding various species of fish to the proper habitat. Discussion is open-ended, and "Build an Ocean" can be adapted to enrich any related subject as desired by the instructor. Examples: "What could happen if the oceans were not kept clean?" (add magazine cutouts of trash, oil, etc.) "What would happen if all the seagrass died?" (have audience member remove the seagrass) "How can we protect the ocean?" (audience members explain responsible boating, diving, coastal clean-ups, etc.) "Build an Ocean" can be repurposed for use in English classes (write a story about the "ocean" we have created) or math (using a grid system, count the seagrass in a given area and multiply to estimate total seagrass in an acre.)