



Hudson River Lessons for Kindergarten through Third Grade

Students will practice English language arts skills by listening to or reading short articles, then engage in activities to reinforce content and practice other skills.

Objectives: Students will respond to articles in ways that require:

- reading or listening for information and understanding;
- understanding scientific concepts pertaining to the living environment.

Grade level: Elementary (Grades K-3)

Subject Areas: English Language Arts, Science, Mathematics, Social Studies

New York State Learning Standards:

English Language Arts Standard 1

Mathematics, Science, & Technology Standards 4, 6

Social Studies Standard 3

Skills:

- Read and listen to acquire facts and ideas from texts.
- Gather and organize information about organisms and environmental phenomena.
- Interpret data presented in tables and maps.
- Describe major stages in the life cycles of selected plants and animals.
- Describe how plants and animals depend on each other and their physical environment.

Duration:

Preparation time: 5 minutes for each lesson

Activity time: 20-45 minutes for each lesson

Materials: Depending on the activity, each student may need:

- A copy of the selected article and worksheet
- Pencil, pen, crayons, or markers
- Scissors
- Tape or glue
- Measuring tape or ruler

Background:

This collection allows young children to engage in standards-based study of the Hudson River. While the topics vary, the strategy is to have students read - or listen to the teacher read - each article and then engage in an activity that reviews content and uses other skills to process related information. English language arts skills are reinforced in all lessons. Other skills/understandings specific to each activity are listed below, as is a recommended grade level along with names and URLs of related lessons for older or more advanced students.

Meet the Hudson River/Mapping the Hudson River

- Draw maps and diagrams that represent places, physical features, and objects;
- Locate places within the local community and state;
- Designed for grade 2; for grades 3-7, see "From the Mountains to the Sea" link at www.dec.ny.gov/education/25398.html .

Growing Up as a Dragonfly

- Order and sequence objects and/or events;
- Describe the major stages in the life cycles of selected plants and animals;
- Designed for grades K-2.

Growing Up as an American Eel

- Order and sequence objects and/or events;
- Describe the major stages in the life cycles of selected plants and animals;
- Designed for grades 1-3; for grades 3-7, see "The Eel's Incredible Journey" link at www.dec.ny.gov/education/25398.html .

Growing Up as a Striped Bass/How Big? How Old?

- Interpret organized observations and measurements, recognizing simple patterns, sequences, and relationships;
- Measuring - making quantitative observations by comparing to a conventional or nonconventional standard;
- Understanding that each kind of animal goes through its own stages of growth and development during its life span;
- Designed for grades 2-3.

Hogchoker/Camouflage Hunt

- Identify the behaviors and physical adaptations that allow organisms to survive in their environment;
- Understanding that an organism's external physical features enable it to carry out life functions in its particular environment;
- Designed for grades K-2.

What Do Animals Need To Stay Alive? HABITAT!

- Understanding that animals depend on each other and their physical environment;
- Understanding that animals live in habitats and communities;
- Designed for grades 1-3; for grades 3-5, see also "Fish Communities of the Hudson" <http://www.dec.ny.gov/education/25394.html> .

What Do Animals Need To Stay Alive? FOOD!

- Understanding that animals depend on each other and their physical environment;
- Understanding that organisms maintain a dynamic equilibrium that sustains life - for example, taking in food supplies energy and materials necessary for growth and repair;
- Designed for grades 1-3; for grades 3-6, see also "Dining Out With Fishes and Birds of the Hudson" <http://www.dec.ny.gov/education/60486.html> .

Activity:

1. Introduce the topic covered in the article.
2. The teacher may read the articles aloud - or have students read them - to the class to reinforce listening skills. They may also be assigned as in-class student reading.
3. The activities associated with the articles are best done in class.

Assessment:

- Answer sheets are provided for "Growing Up as an American Eel," "What Do Animals Need To Stay Alive? HABITAT!" and "What Do Animals Need To Stay Alive? FOOD!" For the other lessons, "correct" responses will vary with the individual or encompass a range of possibilities.
- Assess comprehension by having students share answers to questions about the articles, or collect and review worksheets.
- Make up additional questions about the content of the articles.

Resources:

To expand learning about topics covered in these lessons, more pictures of Hudson River organisms are available at <http://www.dec.gov.ny/education/88154.html> . Information about classification, size, habitat, place in food chains, and life cycle is included for each. The card-sized images are arranged on sheets to be printed back to back with this information. Each image can then be cut out with the appropriate text on the reverse side.

These children's books cover the Hudson and topics related to the content of these lessons.

- Lauber, Patricia. *Who Eats What? Food Chains and Food Webs*. HarperCollins Publishers, New York: 1996. Appropriate for ages 5-9.
- Locker, Thomas. *Where the River Begins*. Puffin Books, New York: 1993. Appropriate for ages 4-8.
- McKinney, Barbara. *A Drop Around the World*. Dawn Publications, Nevada City, California: 1998. Appropriate for ages 4-8.
- Pfeffer, Wendy. *What's It Like to Be a Fish?* HarperCollins Publishers, New York: 1996. Appropriate for ages 4-8.
- Prosek, James. *Bird, Butterfly, Eel*. Simon & Schuster Children's Publishing, New York: 2009. Appropriate for ages 6-10.
- Sill, Cathryn P. *About Fish: A Guide for Children*. Peachtree Publishers, Atlanta: 2002. Appropriate for ages 4-8.
- Talbott, Hudson. *River of Dreams: The Story of the Hudson*. G.P. Putnam's Sons, New York: 2009. Appropriate for ages 6-8.
- Wallace, Karen. *Think of an Eel*. Candlewick Press, Cambridge, Massachusetts: 2004. Appropriate for ages 4-8.

Vocabulary List:

Adirondack Mountains: a group of mountains in northern New York State

angler: a person who fishes with hook and line

camouflage: colors and patterns that let animals blend in with their surroundings

carnivore: an animal that eats meat

community: a group of living things that interact and are located in one place

eel: a snake-like fish with smooth skin and a single fin running from its back around its tail to its belly

elver: a young eel

energy: the ability to do work, to power activity; the sun (solar) and food are sources

estuary: a body of water in which fresh and salt water meet

food chain: the path by which energy in food moves from one organism to another

fresh water: water that is not salty (rainwater is fresh water)

gill: in fish and other animals living in water, an organ used to draw oxygen from water

glass eel: a very young eel that is colorless; one can see through it

habitat: the particular sort of place where a given plant or animal lives

herbivore: an animal that eats plants

high tide: highest water levels in the tidal cycle

insect: an animal with the body clearly divided into a head, thorax, and abdomen, with six legs, and often with one or two pairs of wings

journey: travel from one place to another

lake: large inland body of standing water

life cycle: the sequence of forms and activities by which a living thing develops into an adult able to reproduce and restart the cycle

low tide: lowest water levels in the tidal cycle

metamorphosis: a change of form as a living thing transforms from one life stage to another - a tadpole to a frog, for example

migrate: to move from one place to another

nymph: immature insect

ocean: the entire body of salt water that covers 70 percent of the earth's surface

omnivore: an animal that eats both plants and other animals

predator: an animal that eats other animals

river: a natural stream of water larger than a brook or creek

seawater: salty ocean water

spawn: to lay eggs; usually refers to animals that live in water

stage (of life): one of the distinct forms in the development of a plant or animal

surroundings: the setting around an animal or object of interest; its neighborhood

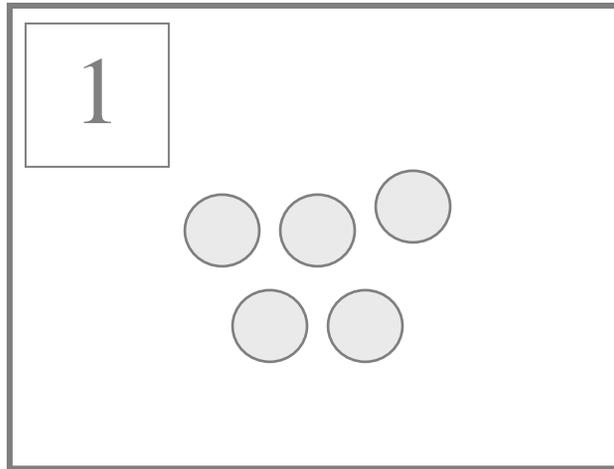
tides: the alternate rising and falling of the surface of the ocean

Name: _____

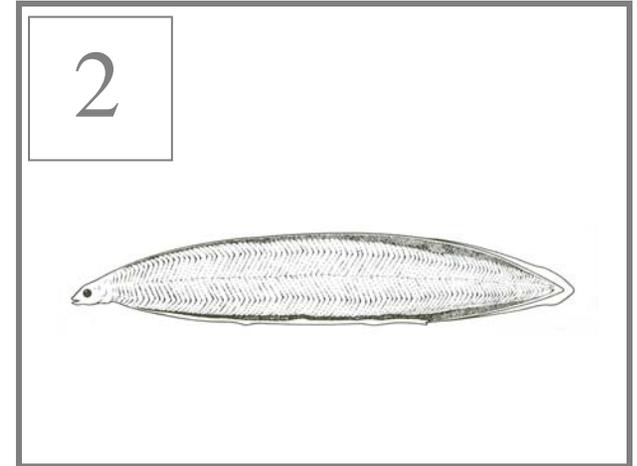
Growing Up as an American Eel ANSWER SHEET



adult eel



eggs



baby eel

American Eel
Life Cycle



elver



glass eel

What Do Animals Need To Stay Alive? HABITAT! ANSWER SHEETS

Below are pictures of three Hudson River creatures and three Hudson River habitats. Draw a line joining each creature to its habitat.



A. The spotted sandpiper prefers sandy or muddy shorelines.



Hudson River at Poughkeepsie



B. The Atlantic sturgeon prefers deep water in large rivers and the ocean.



Tivoli North Bay



C. The marsh wren prefers marshes.



Hudson River beach in Port Ewen

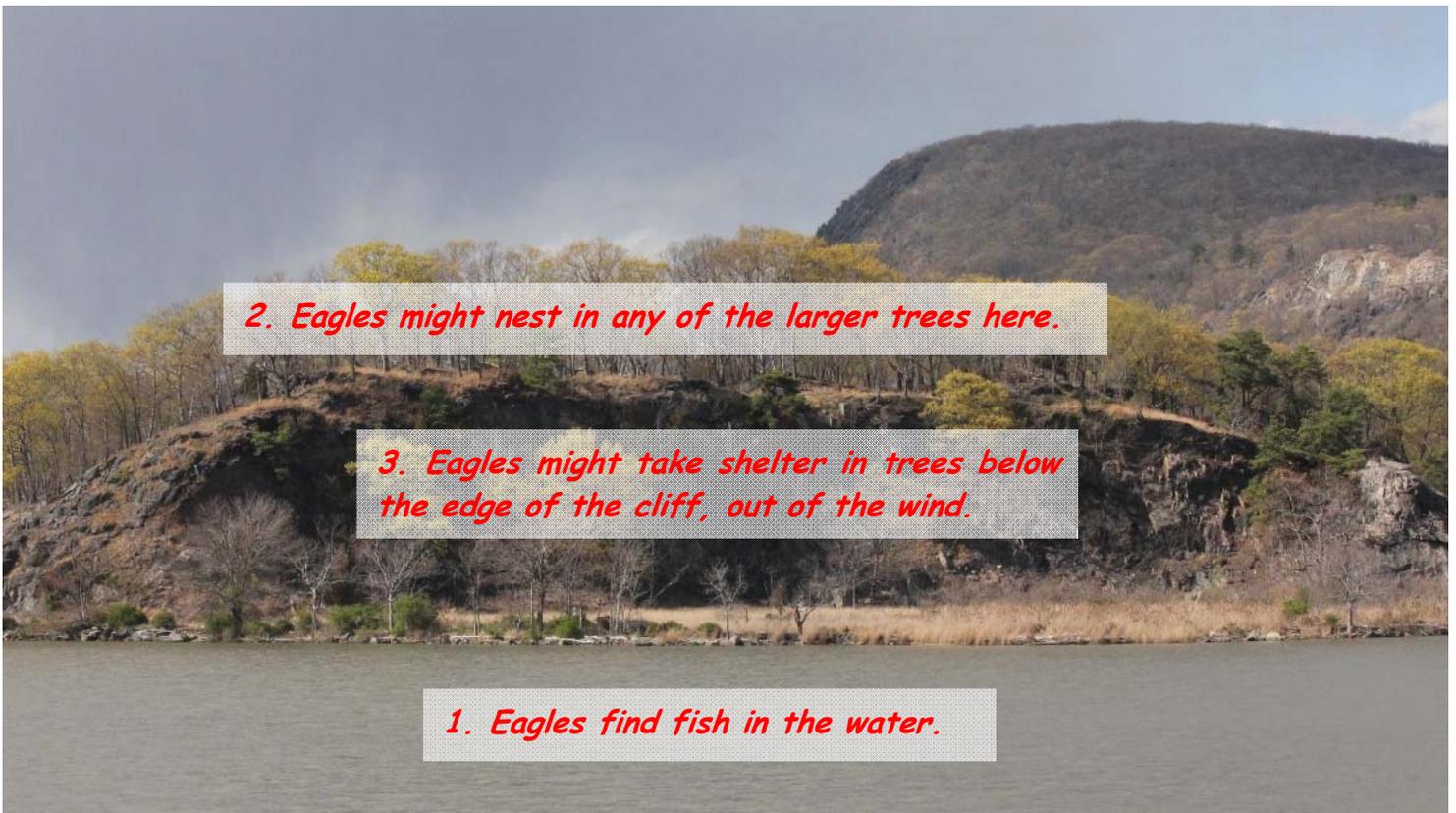


Photo by Mike Pogue

In their habitats, animals find food, water, shelter, and a place to raise their young. Bald eagles need water to find the fish they eat. They need large trees for their big nests. In winter, they need shelter from cold winds at night.



Here is a picture of eagle habitat on the Hudson. Put the number 1 where an eagle would find food, 2 where it might build a nest, and 3 where it might find shelter from winds.



2. Eagles might nest in any of the larger trees here.

3. Eagles might take shelter in trees below the edge of the cliff, out of the wind.

1. Eagles find fish in the water.

Round Island

What Do Animals Need To Stay Alive? FOOD! ANSWER SHEET

Different animals eat different kinds of food.



The muskrat eats plants. Animals that eat only plants are called **herbivores**.



The northern water snake is a **carnivore**. Carnivores eat other animals.



Some animals are not picky eaters. They eat plants and animals. They are called **omnivores**. The common carp is an omnivore.

Food chains show where living things get their energy. All food chains start with the sun. Green plants make their own food using sunlight. Animals must eat plants or other animals to live and grow.

In this Hudson River food chain, arrows show where each living thing gets energy. The sun gives energy to the plant. The insect gets energy by eating the plant. The fish eats the insect to get energy. Last, the bird eats the fish to get its energy.



1. Are you an herbivore, carnivore, or omnivore? **Except for vegetarians or very picky eaters, most people are omnivores.**
2. In this food chain, which animal is an herbivore? **The insect.**
3. How many carnivores are in this food chain? **Two, the fish and the bird.**
4. If insects disappeared, what would happen to fish and birds? **The fish and birds would have a hard time finding food, and might not survive.**