

River Journey 2-5th grade

Teacher Resource Packet



Dear Teacher,

In this packet you will find suggested activities and resources related to the **River Journey** program that you can use in your classroom, before and after your visit to The Children's Museum of Science and Technology. Concepts taught in the classroom will come to life during your visit as students experience fascinating exhibits, museum artifacts and living specimens. We look forward to sharing in the excitement of scientific learning with you and your students.

Please keep in mind the following when preparing for your Museum Program:

- All students should wear nametags
- River Journey is 75 to 90 minutes in length, please arrive 10 minutes prior to start time
- Please inform the museum upon confirmation of any special needs prior to the program at (518) 235-2120.

River Journey Program Description: Embark on an ecological journey along our 75 foot living Hudson River Exhibit. The program introduces students to the geography and habitats of the Hudson River and the great diversity of organisms living in the watershed. Guided by scientific inquiry, students discover how and why animals are adapted to their habitats. They will work together to tackle questions of watershed geography and independently develop their artistic talents by sketching a living specimen and habitat range map.

NYS Learning Standards:

Elementary Science/Analysis, Inquiry and Design S1.1a: Observe and discuss objects and events and record observations

Elementary Science/ Living Environment 3.1: Describe how the structures of plants and animals complement the environment of the plant or animal

Elementary Science/ Living Environment 6.1: Describe how plants and animals, including humans, depend upon each other and the nonliving environment

Elementary Arts Standard 1: Creating, performing and participating in the arts

Program Goals:

- To introduce students to the geography of the Hudson River watershed a variety of aquatic habitats, and the species interactions within those habitats.
- To provide students with the opportunity to actively participate in the scientific process through observation, data gathering, organizing and inference.

Participants Objectives:

- Participants will be better able to describe Hudson River geography and ecology.
- Participants will be better able to describe general locations of key watershed habitats in relation to municipal, cultural or natural NYS landmarks.
- Participants will be better able to make inferences about species distribution in relation to environmental conditions.

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I. Pre-Visit Activities

A. Classroom River Quilt

Pre-cut colored construction into a standard size (4 inches square works well). Prepare 3-6 squares for each student. Ask students what they know about New York State wetlands and the Hudson River. Some questions to pose include the following:

- What is a wetland?
- How are wetlands important to people and other living things?
- Who inhabits wetlands?
- What types of wetlands are in your area?

Create a list on the chalkboard as students brainstorm what they know about aquatic habitats and the Hudson River. Each idea will contribute to a classroom knowledge quilt that will grow as student understanding grows.

Give each student three squares and ask them to write and illustrate one idea about wetlands on each square. Provide magazines for cutting out local plants and animals. When complete, arrange the squares on a display board. Leave room to add to the wetlands quilt later.

Following the museum visit students will add new pieces of information to the quilt. The quilt will represent the knowledge that the children have gained in understanding the local living environment while allowing them to visually experience personal growth and understanding.

B. People and the Environment

Read the book *A River Ran Wild* by Lynn Cherry. Discuss how the river changed as the lifestyles and behaviors of people changed. Relate the history of the river in the book to the history of the Hudson River. Ask the kids to think of ways to prevent water pollution in their town. Create a recycling center in the classroom and try to encourage the school to recycle. Stress the importance of recycling paper because it saves water and stress the need to recycle plastic containers which end up in streams and collect along the shores of the Hudson River.

II. Post Visit Activities

A. Science, Literacy and Art

Using the sketches from the museum visit, have kids write about the advantages of the adaptations that they observed. Assign a research project and have each student become an expert on the animal. Visit the local library and research one of the following topics: life cycles, food chain and food webs, habitats or family and social behaviors. Photocopy everyone's sketches, writing and their research and compile into a classroom Hudson River Guide or Nature Journal.

B. Science, Literacy and Art

Read River Story by Meredith Hooper. Organize a series of classroom activity based on the poetic structure and artwork of the book.

Have each student create a "River Story Journal." The journal will include creative writing with supporting artwork that summarizes student understanding of Hudson River topics. For example, the first page of the story reads in bold "All rivers have a beginning....." and is followed by what the author imagines the beginning of the river to look like. Have students write their interpretation of what the beginning of the Hudson River looks like. Follow the format throughout, but let students be creative while encouraging them to incorporate newly learned information, personal experiences and their powers of imagination.

C. Get involved with the Hudson River Estuary

Join Scenic Hudson in their annual "Great River Sweep" during the third week in April. Choose a nearby river front site and volunteer with your class to clean it up. Dispose of fishing lines, plastic containers, glass and trash by recycling and proper waste disposal. Keep track of the amount of materials collected and compare results from year to year. Invite parents to come along and create a sense of stewardship within your classroom. Visit www.scenichudson.org or contact The Children's Museum of Science and Technology for more information.

Contact www.hudsongreenway.state.ny.us for a list of river front access points in your area. Many of these sites have hiking trails, boat launches and other resources for accessing the river and nearby wetlands. Bring your class, clean up the site and do a scientific survey of the plants, trees, birds or animals in your area. Discuss how these organisms are adapted to life along the Hudson River Estuary.

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Vocabulary

Abiotic: Describe the physical, not biological, aspects of an organism's environment

Adaptation: Any inherited characteristic or group of characteristics that help a species to better survive in its habitat

Biotic: Living; used to describe the living features of an ecosystem or habitat

Brackish: Water that is somewhat salty, and is a mixture of fresh and salt water

Camouflage: The devise that animals use to conceal by imitating the colors and textures of the surrounding environment in order to avoid being seen by predators or prey

Estuary: A body of water where fresh water mixes with salt water from the ocean

Fish: A vertebrate that is cold-blooded, has scales covering its body, uses gills for breathing in water, and possesses fins for locomotion

Habitat: The place where an animal lives and is able to meet its basic life needs

Invertebrate: Animal that does not have a backbone

Salt Marsh: Costal habitats periodically drained and flooded by tidal waters and characterized by muddy substrate

Tide: Periodic and cyclical rise and fall of ocean water

Tide Pool: A body of water ranging in size from a puddle to a large pool that is left behind at low tide.

Tributary: A stream that flows into another stream or body of water

Watershed: The area of land from which water runs off into a given body of water

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Books for Kids and the Classroom

Bunting, Eve 1996. Secret Place. Clarion Books a Houghton Mifflin Company. NY, NY
Even in urban environments, animals need healthy aquatic habitats. Learn how well certain animals adapt to environmental changes.

Cherry, Lynne 1992. A River Ran Wild. A Gulliver Green Book of Harcourt Brace and Company. NY, NY.
A great book that demonstrates the importance of rivers to people throughout history; from Native American societies, industrialization and current movements to clean up and enjoy this important natural resource.

Hooper, Meredith. 2000. River Story. Candlewick Press, Cambridge MA.
Beautiful watercolors and lyrical writing lead the reader on a rivers journey, beginning high in the mountains and ending in the open sea. Story easily relates to the geography and ecology of the Hudson River.

Wadsworth, Ginger 2002. River Discoveries. Charlesbridge Publishing. Watertown MA.
Discover the behaviors and lifestyles of common river inhabitants like, moose, otter, raccoons, trout and more.

Sanders, R. Scott 1999. Crawdad Creek. National Geographic Society. Washington D.C.
Seen through they eyes of a brother and sister, life in and around a creek is magical, inspiring and full of surprises.

Resources for Teachers

Coulombe, Deborah, 1992. The Seaside Naturalist A Guide To Study At The Seashore. Fireside, NY, NY

Ranger Ricks Nature Scope, 1989. Wading into Wetlands. National Wildlife Federation. Learning Triangle Press

Stanne, Stephen, P. 1996. The Hudson; An Illustrated Guide To The Living River. Rutgers University Press, New Brunswick, NJ

Tran, N. and L. Bartovics, Editors, 2001. A Teachers' Guide to Water Education Resources in the New York-New Jersey Harbor Estuary Region. New York –New Jersey Harbor Estuary Program, NY, NY