Great Lakes in My World Supplemental Activities

Unit 1 - Lakes

Lake Connection

Recognize connections to the lake by quickly recording feelings on paper, then analyzing the spontaneous feelings that emerged.

Illinois Learning Standards – 4.A.2b, 4.A.2c Trunk Items to Supplement Activity: none

I am a Camera

Students acknowledge their connections to the lake by taking mental "pictures" and translating them into artwork

Illinois Learning Standards – 4.A.2b, 4.B.2a, 5.C.2a

Trunk Items to Supplement Activity: none

Maps of Home

Students draw maps of their neighborhoods, including the nearest Great Lake, and then compare these to professional maps. Using maps, students determine the best way to get from school to the lake in relation to the rest of the United States.

Illinois Learning Standards – 4.A.2b, 4.B.2a, 17.A.2b

Trunk Items to Supplement Activity: none

Watershed Orientation

Students orient themselves to the Great Lakes using maps and learn about watersheds, including point and nonpoint source pollution, by building a model.

Illinois Learning Standards – 4.A.2c, 11.A.2b, 13.B.2f, 17.A.2b, 17.C.2c

Trunk Items to Supplement Activity: Aquatic Illinois CD-ROM; Major Watersheds of Illinois poster

Satisfy Your Curiosity

Students formulate questions on select Great Lakes species and research answers throughout the Lake Ecology Unit. Information gathered can be used to complete the final unit project.

Illinois Learning Standards – 3.A.3, 4.A.2b, 4.B.2a, 4.B.3a, 5.A.2a, 5.A.2b, 5.A.3a, 5.B.3a, 5.B.3b, 5.C.3b, 11.A.2a, 11.A.2e

Trunk Items to Supplement Activity: Biodiversity of Illinois CD-ROMs Volumes I, II and III; all field guides; Illinois' Natural Resources Trading Cards Sets I, II, III and posters

Eco-Language

Students learn definitions of common food web terms and discuss examples of each one through story writing, illustration and presentation.

Illinois Learning Standards – 3.B.3a, 3.C.2a, 4.A.3a, 4.B.3a, 5.C.3a, 5.C.3b

Trunk Items to Supplement Activity: Biodiversity of Illinois CD-ROMs Volumes I, II and III; Illinois' Natural Resources Trading Cards Sets I, II, III and posters

A Closer Look

Students formulate questions about microscopic lake organisms and answer their questions through observation and research.

Illinois Learning Standards – 11.A.2b, 11.A.3c, 12.A.3c, 12.B.2b

Trunk Items to Supplement Activity: aluminum pans; pipettes; mini-plankton net; field trip observation container set

Fish Observation

Students observe and compare two Great Lakes fish, either in class or through a trip to an aquarium, and discuss structure, function and the significance of their differences.

Illinois Learning Standards – 11.A.2b, 11.A.3c, 12.A.3c

Trunk Items to Supplement Activity: Biodiversity of Illinois CD-ROMs Volumes I, II and III; Great Lakes Fishes poster; Illinois' Natural Resources Trading Cards Sets I, II, III and posters; Peterson Field Guide to Freshwater Fishes

Tangled Web

Students make a yarn web of connections between Great Lakes species, discuss the significance of the complexity of the web and discover the impacts of changes to the web.

Illinois Learning Standards – 3.A.3, 3.C.2a, 5.C.2a, 11.A.2c, 12.B.2a, 13.B.2f

Trunk Items to Supplement Activity: Biodiversity of Illinois CD-ROMs Volumes I, II and III; Illinois' Natural Resources Trading Cards Sets I, II, III and posters

What's New?

Students play a game that demonstrates the impact of suddenly introducing a new species to an ecosystem.

Illinois Learning Standards – 4.A.2c, 12.B.2a

Trunk Items to Supplement Activity: none

Great Lakes Relay

Students take part in a Great Lakes food web relay race, passing nutrients and energy between species. Students compare the relay outcomes and discuss how nutrients cycle and energy flows through food webs.

Illinois Learning Standards – 12.B.2b

Trunk Items to Supplement Activity: none

Invasive Issues

Students research and present findings on invasive species, then research and write about possible solutions.

Illinois Learning Standards – 4.B.3b, 5.A.2b, 5.A.3a, 5.B.3a, 5.B.3b, 5.C.3a, 5.C.3c, 11.A.2c, 11.A.2e
Trunk Items to Supplement Activity: Aquatic Illinois CD-ROM; Asian Carp poster; Biodiversity of
Illinois CD-ROMs Volumes I, II and III; Exotics to Go! CD-ROM; Field Guide to Freshwater Mussels of the
Midwest; Freshwater Mussels of the Upper Mississippi River book; Illinois Mussels poster; Illinois' Natural
Resources Trading Cards Sets I, II, III and posters; Peterson Field Guide to Freshwater Fishes; Sea Grant ID
Cards; zebra mussel specimen; Zebra Mussels – Control video; Zebra Mussels – Spread and Impact video

Moving Mercury

Students learn about bioaccumulation and its harmful effect on the food chain through the example of mercury in the aquatic ecosystem.

Illinois Learning Standards – 3.B.3a, 11.A.2c, 11.A.2e, 13.B.2f, 17.C.2c

Solubility

Students learn about water and fat solubility through a demonstration and discussion. This activity prepares students for *It Adds Up and Up*.

Illinois Learning Standards – 11.A.3c, 17.C.2c Trunk Items to Supplement Activity: none

It Adds Up and Up

Students discuss mercury issues and carry out calculations to further understand biomagnification of mercury within the Great Lakes.

Illinois Learning Standards – 5.A.2b, 5.B.3a, 5.C.3c, 11.A.2e, 12.B.2a, 13.B.2f, 17.C.2c Trunk Items to Supplement Activity: none

Building a Web

As a class, students create a food web model that includes their research organism and additional details they have learned. Students may be assessed individually based on their ideas and contributions.

Illinois Learning Standards – 3.A.3, 3.B.3a, 3.C.2a, 3.C.3a, 4.A.3a, 4.B.2a, 4.B.3a, 4.B.3b, 5.A.2b, 5.A.3a, 5.A.3b, 5.B.3a, 5.B.3b, 5.C.3a, 5.C.3c, 11.A.2c, 11.A.2e, 12.B.2a

Trunk Items to Supplement Activity: Biodiversity of Illinois CD-ROMs Volumes I, II and III; Illinois' Natural Resources Trading Cards Sets I, II, III and posters

Unit 2 - Sand Dunes

Dune Inspiration

Learn about sand dunes, share dune experiences and create haiku poetry about dunes.

Illinois Learning Standards – 3.C.2a

Trunk Items to Supplement Activity: none

Making a Mark

Students make marks in the sand and discuss how sand has made a mark on them.

Illinois Learning Standards – 4.A.2a, 4.A.3a, 4.B.2b

Trunk Items to Supplement Activity: none

Satisfy Your Curiosity

During this unit, students conduct an in-depth study on a sand dune species.

Illinois Learning Standards – 3.C.2a, 3.C.3a, 4.B.2a, 4.B.3a, 5.A.2a, 5.A.2b, 5.A.3a, 5.B.2a, 5.B.2b, 5.B.3a, 5.B.3b, 5.C.2a, 5.C.3a, 5.C.3b, 5.C.3c, 11.A.2a, 11.A.2e, 12.B.2b 12.B.3b

Trunk Items to Supplement Activity: Biodiversity of Illinois CD-ROMs Volumes I, II and III; Illinois' Natural Resources Trading Cards Sets I, II, III and posters

Sand Study

Students learn how sand is formed by making some from rocks.

Illinois Learning Standards – 11.A.2b, 12.E.2b, 12.E.3b, 17.B.2a

Trunk Items to Supplement Activity: none

Moving Sand

Students are introduced to the scientific method and use it to design and conduct experiments on dune-plant relationships.

Illinois Learning Standards – 4.A.3a, 5.A.2a, 11.A.2b, 11.A.2d, 11.A.2e, 11.A.3a, 11.A.3d, 12.E.2b 12.E.3b

Trunk Items to Supplement Activity: aluminum pans

Adaptations and Observations

Students observe organisms in sand dune ecosystems and determine the adaptations that help them survive.

Illinois Learning Standards – 4.B.2b, 5.C.2a, 11.A.2b, 12.A.3c, 12.B.2b, 12.B.3b, 17.B.2b Trunk Items to Supplement Activity: none

Indoor Dunes

Students study Creature Cards at sand dune ecosystem stations and determine what adaptations help the organisms to live in their environments.

Illinois Learning Standards – 4.B.2b, 12.B.2b, 17.B.2b

Trunk Items to Supplement Activity: none

Adaptation Stories

Students listen to a story about an organism's adaptations, then conduct research on an adaptation of a certain species and write a story about it.

Illinois Learning Standards – 3.B.2b, 3.C.2a, 5.A.2a, 5.A.2b, 5.B.2a, 5.B.2b 11.A.2b, 12.A.3c

Trunk Items to Supplement Activity: Biodiversity of Illinois CD-ROMs Volumes I, II and III; all field guides; Illinois' Natural Resources Trading Cards Sets I, II, III and posters

Succession Circles

Students record sand dune ecosystem observations in a Venn diagram to show overlapping biotic and abiotic factors in the succession of sand dunes.

Illinois Learning Standards – 11.A.2e, 12.E.3b, 17.B.3b

Trunk Items to Supplement Activity: none

Dune Decisions

Students work in small groups to discuss dune dilemma cards and their personal decisions.

Illinois Learning Standards – 4.A.2b, 4.B.2a, 4.B.2b, 4.B.2c, 13.B.2f, 17.B.3b, 17.C.2c

Trunk Items to Supplement Activity: none

Dune Mining Debate

Students role-play in debates to learn the pros and cons of sand dune mining as an environmental issue.

Illinois Learning Standards – 4.A.3a, 4.B.3c, 4.B.3a, 5.A.3b, 13.B.2e, 13.B.3d, 13.B.3e, 13.B.3f, 17.B.3d Trunk Items to Supplement Activity: none

Living Dune

Students create a booklet or other communication piece that summarizes their understanding of the sand dune ecosystem.

Illinois Learning Standards – 3.B.2b, 3.B.3a, 3.C.2a, 3.C.3a, 4.A.2a, 4.A.3a, 4.B.2a, 4.B.2b, 4.B.3a, 4.B.3b, 5.A.2a, 5.A.2b, 5.A.3a, 5.B.3a, 5.B.3b, 5.C.2a, 5.C.3a, 5.C.3b, 11.A.2e, 12.B.2b, 12.B.3b

Trunk Items to Supplement Activity: none

Dune Reflection

Students reflect on their connection to the dunes, what they have learned in the unit and what steps they can take to keep the dunes healthy.

Illinois Learning Standards – 4.B.2a, 5.A.2a, 5.A.3a, 5.A.3b

Unit 3 – Wetlands

Mud Painting

Students create resist paintings on fabric using wetland objects and wetland mud, while reflecting on life in a wetland.

Illinois Learning Standards – 4.A.3c

Trunk Items to Supplement Activity: none

Groundwater Exploration

Students make a model to learn how groundwater moves. They locate wetlands on a map of the local watershed and write about the movement of water through their watershed.

Illinois Learning Standards – 3.A.2, 3.A.3, 3.B.3a, 17.A.2b

Trunk Items to Supplement Activity: Aquatic Illinois CD-ROM; Major Watersheds of Illinois poster; Illinois Wetlands: An Interdisciplinary Study

Value of Wetlands

Students participate in a demonstration of the values of a wetland and use poetry to discuss the significance of a wetland ecosystem.

Illinois Learning Standards – 4.B.3b

Trunk Items to Supplement Activity: Aquatic Illinois CD-ROM; Illinois Wetlands: An Interdisciplinary Study; Wetland Wonders

Wetland Observation

Students work in small groups to record observations of the wetland and make connections between its plants, animals, soil, water and topography.

Illinois Learning Standards – 4.A.2a, 4.B.2b, 11.A.2b, 11.A.2e, 11.A.3c, 12.B.2b

Trunk Items to Supplement Activity: all field guides; aluminum pans; *Aquatic Illinois* CD-ROM; aquatic net; *Biodiversity of Illinois CD-ROMs Volumes I, II and III*; *Calls of Frogs and Toads* CD-ROM; *Common Dragonflies* DVD; field trip observation container set; *Illinois Common Birds* poster; *Illinois Frogs and Toads* poster; *Illinois Furbearers* poster; *Illinois Mussels* poster; *Illinois Salamanders* poster; *Illinois Snakes* poster; *Illinois Turtles* poster; *Illinois Wetlands: An Interdisciplinary Study; Illinois' Natural Resources Trading Cards Sets I, II, III* and posters; mini-plankton net; nature press; observation container; pipettes; plastic forceps; standard 4-inch dip net; student kick net

Critical Critters

Students look for macroinvertebrates in water samples from a wetland. Students identify and record the organisms they find and discuss their ecological significance to the wetland.

Illinois Learning Standards – 5.B.2b, 11.A.3c, 12.B.2b

Trunk Items to Supplement Activity: aluminum pans; Aquatic Invertebrates in Still and Flowing Waters poster; aquatic net; Biodiversity of Illinois CD-ROMs Volumes I, II and III; Common Dragonflies DVD; Field Guide to Freshwater Mussels of the Midwest; field trip observation container set; Freshwater Mussels of the Upper Mississippi River book; Guide to Freshwater Invertebrates of North America; Illinois Wetlands: An Interdisciplinary Study; mussel shells; observation container; pipettes; plastic forceps; 4-inch dip net, student kick net; Wetland Wonders

Living Life Cycles

Students study the life cycles of aquatic insects, discuss the importance of wetlands as habitat and create a skit about life cycles.

Illinois Learning Standards – 4.A.2b, 4.B.2a, 4.B.3a, 5.A.2a, 5.A.2b, 5.B.2b, 5.C.2b, 12.A.2a

Trunk Items to Supplement Activity: Aquatic Illinois CD-ROM; Aquatic Invertebrates in Still and Flowing Waters poster; Biodiversity of Illinois CD-ROMs Volumes I, II and III; Common Dragonflies DVD; Guide to the Freshwater Invertebrates of North America; Illinois Wetlands: An Interdisciplinary Study

Name that Plant

Students practice classification skills to understand how plants are typically arranged in a field guide. They use information collected to create a field guide to wetland plants.

Illinois Learning Standards – none

Trunk Items to Supplement Activity: A Field Guide to the Wetlands of Illinois; Biodiversity of Illinois CD-ROMs Volumes I, II and III; Illinois Trees: Seeds and Leaves poster; Illinois Trees: Volume II poster; Illinois Wetlands: An Interdisciplinary Study; Illinois' Natural Resources Trading Cards Sets I, II, III and posters; Wetland Wonders

Working Wetlands

Students create and observe models that demonstrate how wetlands clean water through sedimentation, filtration and absorption.

Illinois Learning Standards – 4.A.2a, 4.A.3a, 5.A.3a, 11.A.2a, 17.B.3a

Trunk Items to Supplement Activity: Aquatic Illinois CD-ROM; Illinois Wetlands: An Interdisciplinary Study; Wetland Wonders

Mini Wetlands

Students design and build a classroom living system that is able to treat "gray water."

Illinois Learning Standards – 4.B.2a, 4.B.3b, 5.A.2a, 5.A.2b, 5.A.3b, 11.B.2a, 11.B.2b, 11.B.2c, 11.B.2d, 11.B.2e, 11.B.3a, 11.B.3b, 11.B.3c, 11.B.3d, 11.B.3e, 11.B.3f, 17.B.3a, 17.B.3b

Trunk Items to Supplement Activity: none

Teaching About Wetlands

Students create an educational piece about a local wetland to share with the community.

Illinois Learning Standards – 4.B.3b, 5.A.3b, 13.B.3f, 17.C.2c

Trunk Items to Supplement Activity: none

Unit 4 – Human Communities

What's the Environment?

Students explore definitions of the word "environment" that include an urban definition and write about how life in the Midwest would be different without the Great Lakes.

Illinois Learning Standards – 4.A.2a, 4.A.2b, 4.A.3a, 4.A.3d, 4.B.2b

Trunk Items to Supplement Activity: none

Sound Picture

Students create an image based on sounds heard at the lake and then discuss the relationship between people and the Great Lakes.

Illinois Learning Standards – none

Trunk Items to Supplement Activity: none

Lake Landmarks

Students create a list of important aspects of the nearest city, and make a map, weaving in the importance of the Great Lakes.

Illinois Learning Standards – 17.A.2b, 17.A.3a, 17.A.3b

Litter Tag

Students play a tag game to understand the harmful effects litter has on Great Lakes organisms

Illinois Learning Standards – 4.B.2b, 13.B.2f, 17.C.2c

Trunk Items to Supplement Activity: none

Garbage Investigation

Students analyze beach trash, discuss the problems posed by it and propose solutions to these problems.

Illinois Learning Standards – 11.A.2b, 11.A.2c, 12.E.2c, 17.C.2c

Trunk Items to Supplement Activity: none

Beach Mysteries

Students learn about bacteria as indicators of beach water quality for swimming.

Illinois Learning Standards – 3.C.2a, 3.C.3a, 12.B.2a, 13.B.2a, 13.B.2f, 17.B.3b, 17.C.2c

Trunk Items to Supplement Activity: none

Adopt-a-Beach

Students adopt a beach along the Great Lakes shoreline and visit it two to five times to collect litter and other data.

Illinois Learning Standards – 4.B.2b, 11.A.2b, 11.A.2c, 13.B.2f, 17.C.2c

Trunk Items to Supplement Activity: none

Taking Action

Students analyze data from a beach scenario, plan a presentation and decide on actions for improving the health of the beach.

Illinois Learning Standards – 4.B.2b, 4.B.3a, 13.B.2f, 17.C.2c

Trunk Items to Supplement Activity: none

Create-a-Community

Students take on roles in a small group to create a Great Lakes community that places balanced value on social, economic and ecological values.

Illinois Learning Standards – 4.B.2a, 4.B.2b, 4.B.3a, 12.E.2c, 13.B.2c, 13.B.2f, 13.B.3d, 13.B.3e, 13.B.3f, 17.B.3b, 17.C.2c

Trunk Items to Supplement Activity: none

Unit 5 - History

Who Needs the Lakes?

Students role-play a representative from Great Lakes history, explain this role to other students and create a timeline

Illinois Learning Standards – 13.B.2f, 16.A.2b, 16.C.3a, 16.D.3a, 16.E.2a, 16.E.3c, 17.C.2c, 17.C.3c, 17.D.2b, 18.C.2, 18.C.3b

Trunk Items to Supplement Activity: History of Illinois articles; Illinois Wetlands: An Interdisciplinary Study

Now and Then

Students brainstorm lists of how the Great Lakes play a role for humans, both today and in the past.

Illinois Learning Standards – 3.A.2, 3.B.3a, 4.B.2b, 16.E.2a, 16.E.3a, 17.C.3a

Seasons Change

Students read an account about the seasonal lifestyle of the Ojibwe (Chippewa). They compare and contrast this lifestyle with their own through discussion and illustration.

Illinois Learning Standards – 16.E.2a, 17.C.2a, 17.C.3a

Trunk Items to Supplement Activity: none

Ways of Life

Students use Venn diagrams to compare and contrast different groups that lived in the Great Lakes watershed, including two main groups of Native Americans and European settlers.

Illinois Learning Standards – 16.A.3b, 16.D.3a, 16.E.2a, 17.A.2b, 17.C.3a, 17.C.3c, 17.D.2b, 18.C.3b Trunk Items to Supplement Activity: Illinois Wetlands: An Interdisciplinary Study

Boats of Many Sizes

Students match boats to the correct descriptions, work in small groups to create a boat timeline, discuss costs and benefits of Great Lakes shipping and reflect on shipboard living.

Illinois Learning Standards – 16.D.3a, 16.E.2a, 17.C.2a, 17.D.2a

Trunk Items to Supplement Activity: none

200 Years of Change

Students role-play different scenes that characterize the impact of European settlement on the Great Lakes in order to gain an understanding of some interactions that help define Great Lakes history.

Illinois Learning Standards – 4.B.2b, 4.B.2c, 4.B.3a, 4.B.3c, 5.C.3b, 16.A.2b, 16.C.3a, 16.E.2a, 17.C.2b, 17.D.2b, 18.C.2

Trunk Items to Supplement Activity: none

Something's Fishy

Students work in groups to examine a time period's interaction and influence on the Great Lake's fishery.

Illinois Learning Standards – 4.B.3a, 4.B.3b, 13.B.3f, 17.C.2a, 17.C.2c, 17.C.3a, 18.C.2

Trunk Items to Supplement Activity: Great Lakes Fishes poster

Water Quality Over Time

Students circulate through stations to answer questions, learn about the history of water quality in the Great Lakes watershed and discuss their conclusions with the class.

Illinois Learning Standards – 13.B.3f, 16.A.3b, 16.E.3c, 17.B.3b, 17.C.2b, 17.C.2c, 17.D.2a, 17.D.2b Trunk Items to Supplement Activity: none

Sign of the Times

Students create newspapers that reflect different time periods within the Great Lakes region.

Illinois Learning Standards – 3.A.2, 3.A.3, 3.B.2d, 3.B.3a, 3.B.3b, 16.A.2b, 16.A.3b, 16.E.3b, 17.C.2b, 17.C.3a, 17.D.2a, 17.D.2b, 18.C.2

Trunk Items to Supplement Activity: Aquatic Illinois CD-ROM; History of Illinois articles; Illinois Wetlands: An Interdisciplinary Study

Unit 6 – Geology and Water Flow

Timelines

Students create a geological timeline that includes the formation of the Great Lakes along a 100-meter space. Illinois Learning Standards – 11.A.2c, 12.E.2b, 17.B.3a, 17.B.3b

Looking at Landscape

Students observe the local landscape then use journaling and discussion to explore its impact on their lives.

Illinois Learning Standards – 4.B.2b

Trunk Items to Supplement Activity: none

Water, Water Everywhere

Students participate in a demonstration of the types of water on Earth and reflect on their own water use through reading, discussion and graphing.

Illinois Learning Standards – 11.A.2a, 11.A.2b, 11.A.2c, 11.A.2d, 11.A.2e, 11.A.3a, 11.A.3c, 13.B.2d, 13.B.2f, 17.A.2b, 17.B.3b, 17.C.2c

Trunk Items to Supplement Activity: Aquatic Illinois CD-ROM

Water Flow

Students act out the Great Lakes water cycle and flow in a game, read a water flow poem and label the water movements on a map.

Illinois Learning Standards – 3.B.3a, 3.C.2a, 3.C.3a, 17.B.3a

Trunk Items to Supplement Activity: Aquatic Illinois CD-ROM

Landscape Changes

Students create a model of a glacier and simulate the formation of the Great Lakes landscape.

Illinois Learning Standards – 12.E.3a, 17.A.2b, 17.A.3b, 17.B.3a, 17.C.2b, 17.C.3a, 17.D.3b Trunk Items to Supplement Activity: none

Rock Songs

Students conduct geology research and re-write the lyrics to songs to convey knowledge based on self-generated Great Lakes geology questions.

Illinois Learning Standards – 5.A.2a, 5.A.2b, 5.A.3a, 5.C.2b, 5.C.3c, 17.B.2a, 17.B.3a

Trunk Items to Supplement Activity: none

Water in Motion

Students build a model and design an experiment that explores renewal rates of the Great Lakes and related pollution issues.

Illinois Learning Standards – 3.B.3a, 3.C.2a, 4.B.2b, 5.A.3a, 11.A.2a, 11.A.2b, 11.A.2c, 11.A.2d, 11.A.2e, 11.A.3a, 11.A.3c, 12.E.2a, 12.E.2b, 12.E.3b, 13.B.2f, 13.B.3d 17.B.3b, 17.C.2c

Trunk Items to Supplement Activity: none

Whose Water?

Students research, discuss and debate views on Great Lakes water withdrawals and exportation by taking different roles in the issue.

Illinois Learning Standards – 4.A.3a, 13.B.3d, 13.B.3e, 13.B.3f, 17.B.3a, 17.C.2c

Trunk Items to Supplement Activity: none

Global Climate Change

Students participate in demonstrations and discussions about the greenhouse effect and global warming with regards to the Great Lakes.

Illinois Learning Standards – 11.A.2a, 11.A.2b, 17.B.3a, 17.C.2c

Shaped by Geology Students synthesize the information from previous activities to create an educational piece that conveys the geologic history, and the present-day significance of the Great Lakes region to their own lives. Illinois Learning Standards – 3.B.2b, 3.B.3a, 3.C.2a, 3.C.2b, 3.C.3a, 3.C.3b, 4.B.3b, 5.A.3a, 5.B.2a 5.B.2b, 5.B.3a, 5.B.3b, 5.C.2a, 5.C.3b, 11.A.2e, 16.E.2a, 17.B.3a, 17.C.2a, 17.D.3b Trunk Items to Supplement Activity: none	