

STEM



kit



Once a pond a time

GUIDE



Wisconsin
Water Library
UNIVERSITY OF WISCONSIN-MADISON

STEM



Once a pond a time

Science, Technology, Engineering and Math (STEM) Storytime Kit

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Wisconsin Water Library is a service of the Wisconsin Sea Grant and University of Wisconsin Water Resources Institutes.

UW Sea Grant supports scientific research, education and outreach to foster the wise use, conservation and sustainable development of Great Lakes and coastal resources.

The Water Resources Institute focuses on solutions to Wisconsin's present and emerging water resources issues.

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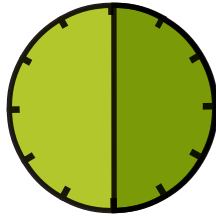


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ONCE A POND A TIME STORYTIME GUIDE

This storytime guide is designed for children in preschool through second grade and lasts between 30 and 60 minutes, based on the number of books read and the science-based activities presented.



Science is integrated into a traditional story time by beginning with a “science chat” and finishing with a fun science game that includes identifying some of the plants and animals found in and around ponds in Wisconsin. An additional science activity is included in the kit—cards that illustrate how ponds differ from larger and smaller bodies of water.

Objectives of this kit are

- 1) to introduce ponds as a body of water of a certain size and
- 2) to discover what lives in and around a pond.

ONCE A POND A TIME WHAT'S INSIDE?

This kit includes everything you need for storytime, including four read-aloud books, a book of poems about ponds, our favorite pond song, a science game and a pond craft. Also included are some photographs that show ponds as they relate to other bodies of water, a reading list of other books about ponds and some websites for additional information.

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THE STEM KIT

Pond Books *to read and discuss*

Bodies of Water Photos *to display or discuss*

Lily Pad Stencil *to use in the craft*

What's in a Pond? Game *to play including a blue tablecloth "pond" and cutout illustrations of pond inhabitants*

ONCE A POND A TIME

OUTLINE

This STEM kit integrates literacy and science in one storytime. Begin with your favorite welcome song, introduce pond science in a “science chat,” read one or more books, sing a song and play a fun science game. A craft is also included as well as photographs of different bodies of water. Depending upon the group and your comfort level, you can choose what activities and books you would like to offer.

WELCOME SONG

Start with your favorite welcome song.

SCIENCE CHAT

What is a pond? Defined as “a still body of water smaller than a lake, often shallow enough for rooted plants to grow throughout,” ponds are so much more. Ponds are filled with mystery and surprise. The sounds of frogs and toads are often heard; cattails and cool plants seen. What a wonderful topic to read about!

The objectives of this storytime are to introduce the concepts of pond size and inhabitants, so we suggest starting the storytime with the question,

“Who lives in (or around) a pond?”

You might hear responses like “frogs” or “toads” or “cattails,” but children in Wisconsin who have visited a pond may have some surprising answers, giving the group a great opportunity to think like scientists. (*See following page.*) Simply by observing and sharing, they become scientists! The books and the science game included in this kit will introduce more plants and animals they might see.

If your group is older, you might also ask,

“What is a pond?”

It is useful to illustrate a pond with the photographs in the kit. You can start with “oceans” and decrease in size to “puddles.” The photograph of a pond shows rooted plants growing in it—you can point this out to the children as a characteristic of a pond.

ONCE A POND A TIME THINK LIKE A SCIENTIST



A SCIENTIST IS SOMEONE WHO...

- Observes and wonders
- Asks questions
- Listens to ideas of others
- Conducts experiments
- Shares his/her ideas and discoveries
- Explores the world around him/her
- Uses tools to solve problems

A SCIENTISTS SAYS...

- I agree with you because...
- I disagree with you because...
- Why do you think that?
- So, what you're saying is...
- Can you tell me more?
- Can you give me an example?
- How could we test that?
- That reminds me of...



ONCE A POND A TIME READ

The following books are included in this kit and have worked well with this storytime.

If you have a favorite title about ponds, please feel free to substitute.

Read one, two or three books, depending on the group.

We always start this storytime with a poem from the book *Song of the Water Boatman and Other Pond Poems* included in the kit. The poem “*In the Depths of the Summer Pond*” is a great choice because it introduces some of the creatures we discussed during our science chat and will return to when we play the game, but all of the poems in the book are great and the illustrations are beautiful.

READ-ALoud BOOKS

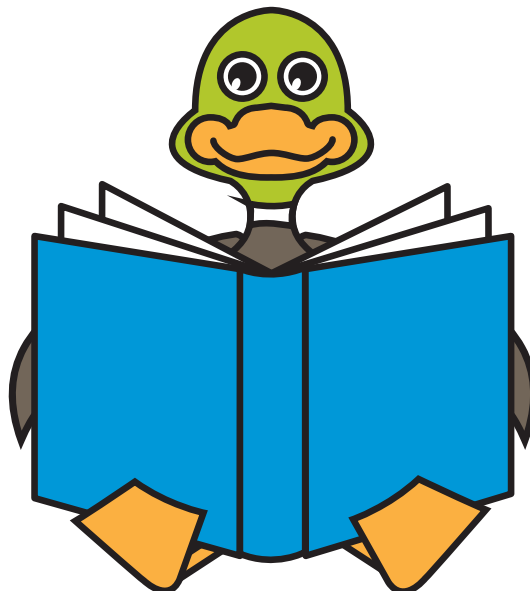
Songs of the Water Boatman and Other Pond Songs by Joyce Sidman;
illustrated by Beckie Prange

The Dark, Dark Night by M. Christina Butler; illustrated by Jane Chapman

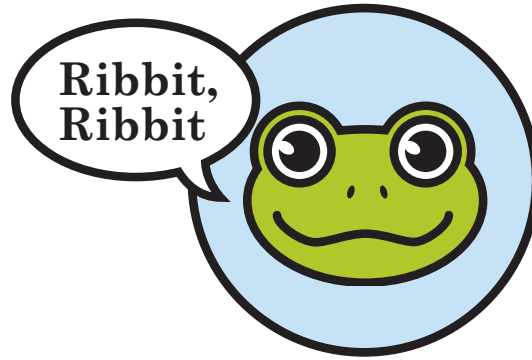
Turtle Splash: Countdown at the Pond by Cathryn Falwell

In The Small, Small Pond by Denise Fleming

Pond Circle by Betsy Franco; illustrated by Stefano Vitale



ONCE A POND A TIME SING

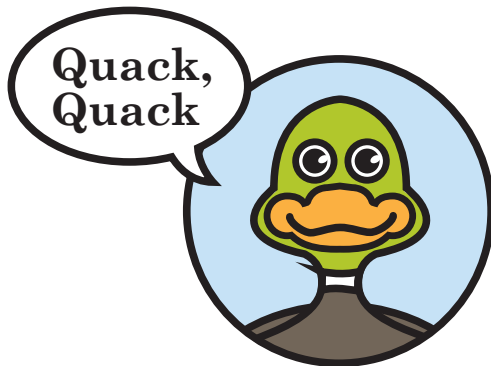


OLD MCDONALD HAD A POND

Tune: "Old McDonald Had a Farm"

Old McDonald had a pond E-I-E-I-O
And in that pond he had a FROG E-I-E-I-O
With a Ribbit, Ribbit here
And a Ribbit, Ribbit there
Here a Ribbit
There a Ribbit
Everywhere a Ribbit, Ribbit
Old McDonald had a pond E-I-E-I-O

Prompt the children for other occupants of the pond. Here are some suggestions:



Dragonflies *quiver*

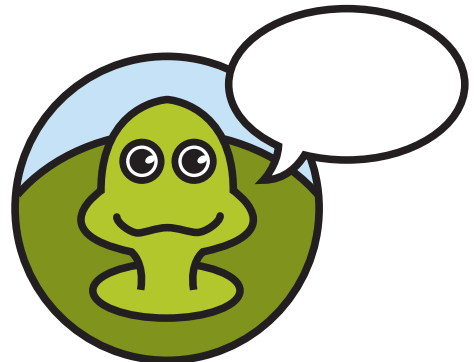
Turtles *are silent*

Swallows *swoop*

Hérons *lunge*

Ducks *quack*

Geese *honk*



ONCE A POND A TIME GAME

WHAT'S IN A POND?

Set the blue tablecloth (included in the kit) on the floor to create a “pond.” Everyone sits around the pond. (Watch your feet—you don’t want them to get wet!!) Then ask the children what they can find in (and around) a pond. This will reinforce things that we have been talking about in the storytime.

When children offer a correct response, give them an illustration of the creature they named and invite them to sit in the pond. The pond will become very full and sometimes spills out of its boundaries.

What you’ll need:

Round blue tablecloth

Plant and animal illustrations

*Kristen will happily take a photo of
game components to insert here!*

ONCE A POND A TIME CRAFT

The children can create their own pond ecosystems to take home with them. An ecosystem is the organisms, the physical environment and their interactions within a given area. In a pond, the living organisms can be as tiny as microscopic zooplankton or as large as beavers. The nonliving elements include water, sunlight, temperature and atmosphere. All of these factors interact through a variety of processes, including photosynthesis, food webs and decomposition.

As the children work, explain the concept of an ecosystem, gently guide them to include some of the animals and plants they learned about during the storytime.



Supplies:

Blue card stock, cut in pond shape

Lily pad stencil (*included*)

Green paper for lily pads

Colored adhesive bandages

Stickers

Markers

Whatever gets the creative juices going

ONCE A POND A TIME READING LIST

Wisconsin Water Library, UW-Madison, (608) 262-3069 or askwater@aqua.wisc.edu

We've included some nonfiction titles (marked with an asterisk) for children of all ages that want to really dive into pond science.

Beaver at Long Pond By William T. George.
New York: Greenwillow Books, 1998

Beaver is just waking up as most of the rest of the animals around the pond are going to bed, and he has a busy night of house construction and eating ahead of him. The illustrations are beautifully realistic.

The Dark, Dark Night By M. Christina Butler;
illustrated by Jane Chapman. Intercourse, Pa.:
Good Books, 2008

Upon awakening from his long winter's nap, Frog spends a happy day playing with his friends. When he reaches his pond after dark, he sees a huge pond monster and needs his friends' help to face it.

Foo, the Flying Frog of Washtub Pond By Belle Yang. Cambridge, Mass.: Candlewick, 2009

In a cozy, tropical place called Washtub Pond, three web-footed creatures pass carefree days playing and dreaming together. Sue-Lin Salamander, Mao-Mao Mudpuppy and Foo Frog have been best, same-size friends since the day they were born. But like all young creatures, these three grow up—and some really BIG changes in Foo Frog put the trio's friendship to the test.

***Fresh Water** By Peter Ampt. Broomall, Pa.:
Chelsea House Publishers, 2002

Readers can explore different kinds of freshwater environments, from mountain streams to backyard ponds, and see examples of their effects on humans and other life forms.

***The Hidden Life of the Pond** By Dwight Kuhn
and David M. Schwartz. New York: Crown
Publishers, 1988

Follow life in the pond from a warm spring rain to the start of a cold winter. Beautiful nature photography accompanies descriptions of each species. Children will witness the complex life that even a very small pond can support.

In the Small, Small Pond By Denise Fleming.
New York: Harry Holt and Co. 1993

The rhyming text and vibrant illustrations will have the very young enraptured by the exciting life in and around a pond.

ONCE A POND A TIME READING LIST

The Magic Goggles: Discovering the Secrets of the Lake By Lynn Markham. Stevens Point, Wis.: Center for Land Use Education, College of Natural Resources, University of Wisconsin-Stevens Point, 2009

Maggie and her little brother Tate are visiting their grandparents' lake cabin when they discover two pairs of really old goggles in a dusty old trunk in the attic. Down at the lake, the kids discover the magic goggles make them as light as a damselfly and let them see right through lily pads to the underwater forest below. Based on their experiences, Maggie and Tate discover what creates the magic of the lake.

Measuring at the Pond By Linda Bussell. Pleasantville, N.Y.: Weekly Reader Books, 2009

Ms. Tosh's class is taking a field trip to a local pond. Tag along with the students as they observe and measure the interesting plants and animals they find.

Oceans, Lakes, and Rivers By Melanie Ostopowich. New York: Weigl Publishers, 2006

Part of the "Science Matters" series, this book guides young readers through the many forms of water and how they impact life on Earth. It also describes bodies of water, explains how the water cycle works, presents a brief biography of Jacques Cousteau and includes a hands-on experiment.

Pond Circle By Betsy Franco; illustrated by Stefano Vitale. New York: Margaret K. McElderry Books, 2009

In the pond by Anna's house, a food chain begins with algae that is eaten by a mayfly nymph that is eaten by a beetle that is eaten by a bullfrog...

***Pond Life: A Guide to Common Plants and Animals of North America's Ponds and Lakes** By George Kell Reid. New York: St. Martin's Press, 2001

This "Golden Guide" is filled with identification tools, including illustrations, to help identify members of the plant and animal kingdoms that can be found in North American freshwater ponds. The introduction also contains information on food webs, habitats and observing techniques for young naturalists.

***Pond: One Small Square** By Donald M. Silver. New York: Learning Triangle Press, 1994

The misconception that ponds are uninteresting or uneventful places will be dispelled with this look at the life that thrives at the various levels and throughout the changing seasons in a small pond. The comprehensive, illustrated index assists readers who might be interested in a specific topic or species.

ONCE A POND A TIME READING LIST

Pond Walk By Nancy Elizabeth Wallace. New York: Marshall Cavendish Children, 2011

One summer day, Buddy and his mother take a walk around a pond and observe the animals and insects that live there.

***Rivers, Lakes, Streams, and Ponds** by Richard Beatty. Chicago, Ill.: Raintree, 2011

Earth's freshwater lakes, rivers, streams and ponds are teeming with plant and animal life. Find out about this delicately balanced ecosystem.

Song of the Water Boatman & Other Pond Poems By Joyce Sidman; illustrated by Beckie Prange. Boston: Houghton Mifflin, 2005

This collection of poems provides a look at some of the animals, insects and plants that are found in ponds, with accompanying information about each.

Splash! By Ann Jonas. New York: Greenwillow Books, 1995

The vivid illustrations will delight kids learning to count as fish, frogs, turtles, pets and even a little girl climb in and out of a pond. How many are in my pond? Find out in this fun book!

Turtle Splash By Cathryn Falwell. New York: Greenwillow Books, 2001

As they are startled by the activities of other nearby creatures, the number of turtles on a log in a pond decreases from ten to one. Includes factual information about the animals mentioned in the story. but they do try, try, try again (and again). And with reason and persistence, they'll get that buttermilk where it needs to be!

ONCE A POND A TIME FOR MORE INFORMATION

National Geographic

education.nationalgeographic.com/media/exploring-ponds-and-vernal-pools/

American Association for the Advancement of Science

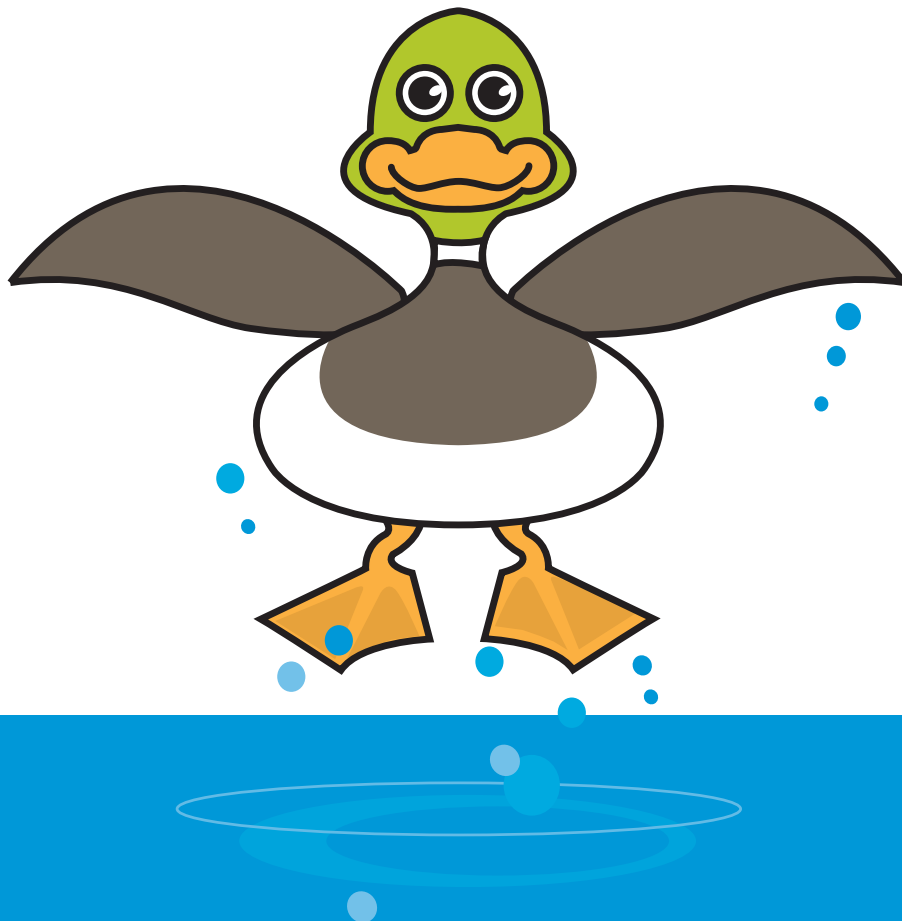
sciencenetlinks.com/lessons/pond-1-pond-life/

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