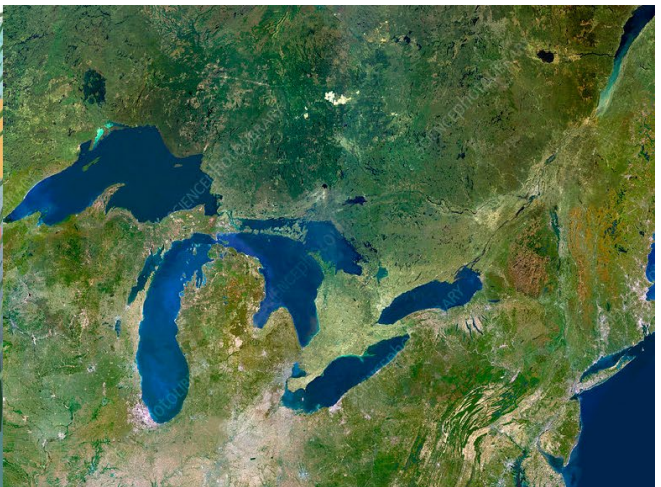


# OCEANS OF POSSIBILITIES – IN OUR BACKYARD

IFLS Library System  
March 3, 2022  
Via Zoom



Presented by

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## NIBI SONG



The story of the Nibi (Water) Song told by Beatrice Menase Kwe Jackson, Migizi Clan.

This song was written by Doreen Day at the request of her grandson. She attended a conference about the water in which the internationally known speaker, Dr. Masaru Emoto said, the very least we should do every day, is to speak to the water:

Water, we love you.  
We thank you.  
We respect you.



So she did this. Every day on their drive to drop Mashkoonce (Little Elk) to school, they passed a body of water. And every day they said these words to the water as they drove by. They made games by saying it in different voices and then would say it as fast as they could. Then one day Mashkoonce, said, "Nokomis why can't we say this in our language?" So, Dorene asked her daughter's language teacher to write it in Ojibwemowin. Dorene had the words taped to the car visor as they learned the words.

One day this grandson Mashkoonce said, "Nokomis why don't we sing the words, don't you think the water would like it to be sung?" So she thought about it and came up with the tune. They sang this song to the water every morning on their drive to school.

It is sung like a lullaby and we don't use shakers or drums.

Doreen and her grandson, Mashkoonce, give permission for everyone to share this song... sing it to the water every day.

Ne-be Gee Zah- gay- e- goo  
Gee Me-gwetch -wayn ne- me - goo  
Gee Zah Wayn ne- me- goo

Source: [http://www.motherearthwaterwalk.com/?attachment\\_id=2244](http://www.motherearthwaterwalk.com/?attachment_id=2244)

## Ojibwe Terms and Phrases

Water - Nibi

Giche Gumee - Lake Superior

Water is life - Bimaadiziwin Nibi

They are collecting data in the river - Agindaasobii'igewag ziibiing

Much water - nibiikaa

Bagizo - she/he goes swimming

On the water - agwamo

Warm water - giizhoogamin

Cold water - dakib

Boat/canoe - jiimaan

Paddle - abwi

steamboat/ship - ishkode-jiimaan

Big boat - mangoonagad

Small boat - agaasoonagad

Long boat - ginoonagad

So many boats - dasoonag

Seek to learn - nanda-gikendan

Learn by observation/imitate - gikinaeaabam

Teach - gikinoo'amaw

They teach each other - gikinoo'amaadiwag

School - gikinoo'amaadiwigamig

Storm - nichiiwad

Sun warms - aabawaasige



These are some Ojibwe terms and phrases that can be found in the online Ojibwe dictionary (<https://ojibwe.lib.umn.edu/>).

# SCIENTIFIC METHOD



## A SCIENTIST IS SOMEONE WHO...

- Observes and wonders
- Asks questions
- Listens to ideas of others
- Conducts experiments
- Shares their ideas and discoveries
- Explores the world around them
- Uses tools to solve problems

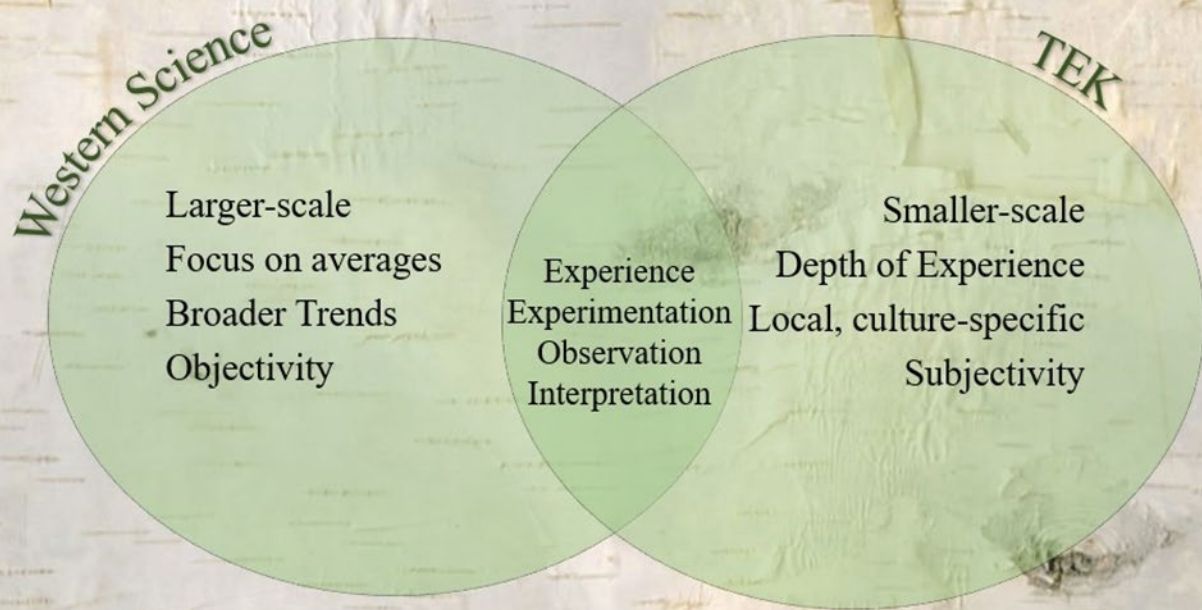
## A SCIENTISTS SAYS...

- 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...



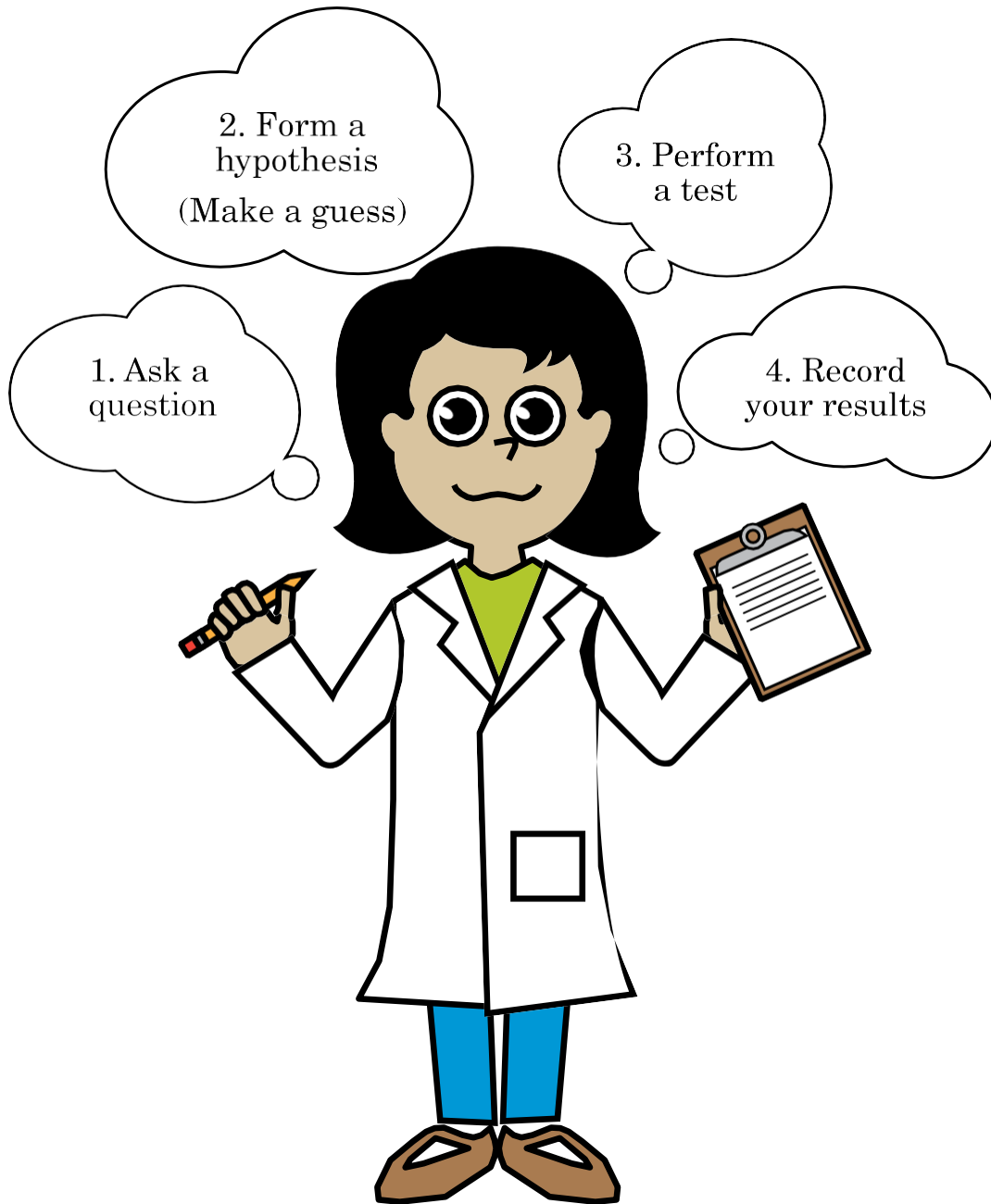


## Integration of TEK & Western Science



# SCIENTIFIC METHOD

THINK LIKE A SCIENTIST



# **SUMMER ACTIVITIES**



# Community Science Event

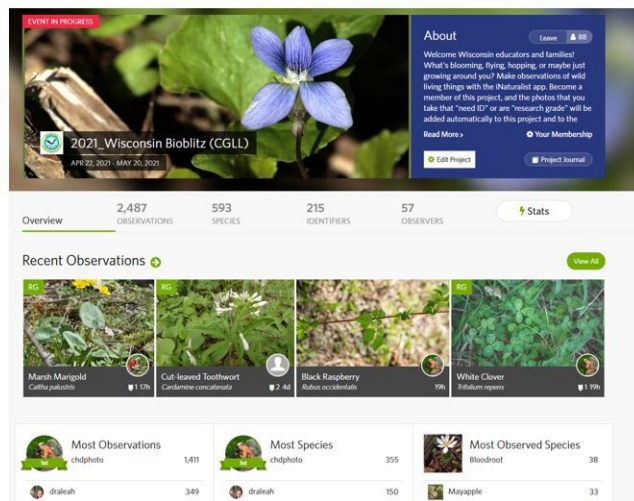
## Spring 2022

To find out more and to be added to the mailing list,  
contact [askwater@aqu.wisc.edu](mailto:askwater@aqu.wisc.edu)



# Join us in 2022!

[go.wisc.edu/rzc8li](https://go.wisc.edu/rzc8li)



Wisconsin BioBlitz – a project of the Great Lakes Bioblitz 2021

## **Water Art Exhibits**

available for loan

Wisconsin Water Library, UW Madison

1. **Under the Surface** – Young adults enrolled in residential treatment go under water for healing and science. Includes 28 photographs and artist's statements.
2. **Zaaga'igan Ma'iinganag** -- "Lake Wolves" are Bayfield High School Indigenous students in photography class. Includes 26 photographs and artist's statements
3. **Living Memory – Portrait of A Lake Sturgeon** is an exhibit with +50 black and white images of this iconic fish. Comes with scavenger hunt.
4. **Lake Michigan** and **Lake Superior Water** Books are available for library loan

Contact Anne Moser [akmoser@aqua.wisc.edu](mailto:akmoser@aqua.wisc.edu)

[go.wisc.edu/4n6n3n](https://go.wisc.edu/4n6n3n)



Bimaadiziwin Nibi - Water is Life

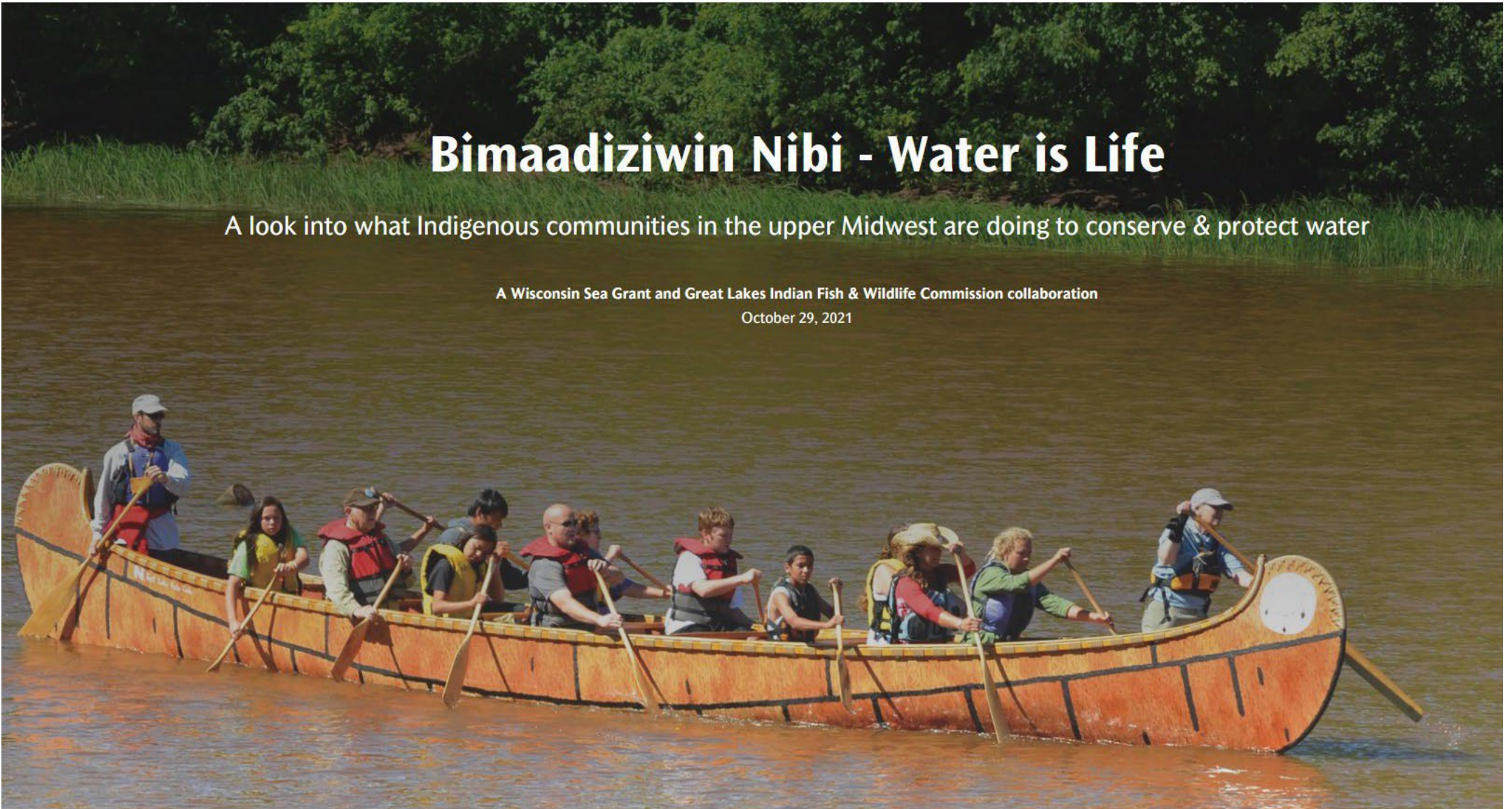


# Bimaadiziwin Nibi - Water is Life

A look into what Indigenous communities in the upper Midwest are doing to conserve & protect water

A Wisconsin Sea Grant and Great Lakes Indian Fish & Wildlife Commission collaboration


October 29, 2021





go.wisc.edu/Maadagindan

 Maadagindan! Start Reading!

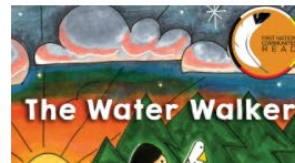
[Home](#) [About](#) [Growing Up Ojibwe](#) [The Sacred Harvest](#) [The Birchbark House](#) [The Water Walker](#) [Works Cited](#) 

# Maadagindan!

*Start Reading!*

## Ojibwe Books for Young Readers Spring 2022

An online book club discussion guide for parents, teachers,  
educators and anyone that loves to read to children.



# **BIBLIOGRAPHIES**



# WATER

## Recommended Children's Literature

### Water Cycle

[All the Water in the World](#) / by George Ella Lyon and Katherine Tillotson. New York: Atheneum Books for Young Readers, 2011. Ages 4 - 8.

[Water is Water](#) / by Miranda Paul and Jason Chin. New York: Roaring Brook Press, 2015. Ages 4 - 9.

[Agua, Agüita](#) / by Jorge Tetzl Argueta and Felipe Ugalde Alcántara. Translated by Gabriela Baeza Ventura. Houston, Texas: Piñata Books, an imprint of Arte Público Press, 2017. Ages 4 - 8.

[Precipitation](#) / by Frances Purslow. New York, NY: AV2, 2011. Ages 9 - 12.

[Hey, Water!](#) / by Antoinette Portis. New York: Neal Porter Books, Holiday House, 2018. Ages 4 - 8.

[Exploring Earth's Water Cycle](#) / by Emily Donovan. New York: PowerKids Press, 2019. Ages 8 - 12.

[Am the Rain](#) / by John Paterson. Nevada City, CA: Dawn Publications, 2018. Ages 3 - 8.

### Properties of Water

[Experiments with Water](#) / by Chris Oxlade. Chicago, Ill. Heinemann Library, 2008. Ages 8 - 11.

[The Magic School Bus Ups and Downs: A Book About Floating and Sinking](#) / by Jane B. Mason and Nancy Stevenson. New York: Scholastic, 1997. Ages 4 - 8.

[Things That Float and Things That Don't](#) / by David A. Adler and Anna Raff. New York: Holiday House, 2013. Ages 4 - 8.

[I Get Wet](#) / by Vicki Cobb and Julia Gorton. New York: HarperCollins, 2002. Ages 4 - 8.

### Water as a Resource

[One Well: The Story of Water on Earth](#) / by Rochelle Strauss and Rosemary Woods. Toronto: Kids Can Press, 2007. Ages 8 - 12.

[Our World of Water: Children and Water Around the World](#) / by Beatrice Hollyer. New York, N.Y.: Henry Holt and Co., in association with Oxfam, 2009. Ages 4 - 10.

[Splash! Water \(Taking Care of Your Planet\)](#) / by Núria Jiménez, Empar Jiménez, and Rosa M. Curto. Barrons Juveniles, 2010. Ages 5 - 9.

[Water: Our Precious Resource](#) / by Roy A. Gallant. New York: Benchmark Books, Marshall Cavendish, 2003. Ages 10 - 12.

[Water Pollution](#) / by Melanie Ostopowich. New York: AV2 by Weigl, 2010. Ages 8 - 12.

[The Water Princess](#) / by Susan Verde and Peter H. Reynolds. New York, NY: G. P. Putnam's Sons, an imprint of Penguin Random House LLC, 2016. Ages 5 - 8.

[We Are Water Protectors](#) / by Carole Lindstrom and Michaela Goade. New York, NY: Roaring Brook Press, a division of Holtzbrinck Publishing, 2020. Ages 3 - 6.

[Explore Water! 25 Great Projects, Activities, Experiments](#) / by Anita Yasuda and Bryan Stone. White River Junction, VT: Nomad Press, 2011. Ages 6-9.

## Bodies of Water

[Fresh Water](#) / by Peter Ampt. Broomall, PA: Chelsea House Publishers, 2002. Ages 4 - 8.

[Oceans, Lakes, and Rivers](#) / by Melanie Ostopowich. New York, NY: Weigl Publishers, 2006. Ages 7 - 9.

[Rivers, Lakes, Streams, and Ponds](#) / by Richard Beatty. Chicago, Ill.: Raintree, 2011. Ages 11 - 14.

[Ocean Sunlight: How Tiny Plants Feed the Seas](#) / by Molly Bang and Penny Chisholm. New York: Blue Sky Press, 2012. Ages 4 and up.

[Far From Shore: Chronicles of an Open Ocean Voyage](#) / by Sophie Webb. Houghton Mifflin Harcourt, 2011. Ages 10 - 12.

## Water as Art (and More)

[Water Rolls, Water Rises \(El Agua Rueda, El Agua Sube\)](#) / by Pat Mora, Adriana Domínguez, and Meilo So. New York: Children's Book Press, an imprint of Lee & Low Books Inc., 2014. Ages 5 - 8.

[Water Can Be](#) / by Laura Purdie Salas and Violeta Dabija. Minneapolis: Millbrook Press, 2014. Ages 5 - 8.

[Water Runs Through This Book](#) / by Nancy Bo Flood. Golden, CO: Fulcrum Publishing, 2015. Ages 8 - 12.

## Lesson Plans and STEM Kits

[Can Water Be Sticky? A Storytime About Properties of Water, Especially Adhesion and Cohesion](#) / Wisconsin Water Library.

[All the Water in the World: A Storytime About Our Drinking Water Supply](#) / Wisconsin Water Library.



[Ride the Water Cycle: A Storytime About the Wonderful Water Cycle](#) / Wisconsin Water Library.

[Does it Sink or Float? STEM Kit](#) / by Anne Moser, Elizabeth White, and Kristen Rost. Madison, Wisconsin: Wisconsin Water Library, University of Wisconsin - Madison, 2015, updated 2018.\*

[Once a Pond a Time STEM Kit](#) / by Anne Moser, Elizabeth White, and Kristen Rost. Madison, Wisconsin: Wisconsin Water Library, University of Wisconsin - Madison, 2016, updated 2018.\*

*\*Through the links provided, you can both request a kit and download the corresponding storytime guide! Those affiliated with UW - Madison should request a kit through the UW Library Catalog.*



# GREAT LAKES

## Recommended Children's Literature

### Informational Books

[The Great Lakes](#) / by Janet Piehl. Minneapolis: Lerner, 2010. Ages 6 - 9.

[The Great Lakes](#) / by Sharon Katz. New York : Benchmark Books, 1999. Ages 11 - 13.

[Lake Erie](#) / by Anne Ylvisaker. Mankato, Minn. Capstone Press, 2004. Ages 8 - 10.

[Lake Huron](#) / by Anne Ylvisaker. Mankato, Minn. Capstone Press, 2004. Ages 8 - 10.

[Lake Michigan](#) / by Anne Ylvisaker. Mankato, Minn. Capstone Press, 2004. Ages 8 - 10.

[Lake Ontario](#) / by Anne Ylvisaker. Mankato, Minn. Capstone Press, 2004. Ages 8 - 10.

[Lake Superior](#) / by Anne Ylvisaker. Mankato, Minn. Capstone Press, 2004. Ages 8 - 10.

[Great Ships on the Great Lakes: A Maritime History](#) / by Catherine M. Green, Jefferson J. Gray, and Bobbie Malone. Madison, Wis.: Wisconsin Historical Society Press, 2013. Ages 7 - 12.

[What's on the Beach?: A Great Lakes Treasure Hunt](#) / by Mary Blocksma. Bay City, MI: Beaver Island Arts, 2003. Ages 6 - 8.

[People of the Great Lakes](#) / by Ryan Nagelhout. New York : Gareth Stevens Publishing, 2015. Ages 8 - 11.

### True Stories

[The Edmund Fitzgerald: Song of the Bell](#) / by Kathy-Jo Wargin. Chelsea, Mich.: Sleeping Bear Press, 2003. Ages 5 - 8.

[The Christmas Tree Ship: The Story of Captain Santa](#) / by Rochelle M. Pennington. Woodruff, Wis.: Guest Cottage/Amherst Press, 2002.

[Miss Colfax's Light](#) / by Aimée Bissonette. Ann Arbor, MI: Sleeping Bear Press, 2016. Ages 6 - 9.

[Lost & Found: Legendary Lake Michigan Shipwrecks](#) / by V. O. VanHeest. Holland, MI: In-Depth Editions, 2012. For YA readers.

[Shipwrecks and Lost Treasures, Great Lakes: Legends and Lore, Pirates and More!](#) / by Michael J. Varhola. Guilford, Conn.: Globe Pequot, 2008. For YA readers.

[Shipwrecks, Monsters, and Mysteries of the Great Lakes](#) / by Ed Butts. Tundra Books: Original edition, 2011. Ages 9 - 12.

[The Edmund Fitzgerald: Lost With All Hands: A True Story for Young Readers](#) / by Robert Hertel. River Road Pubns, 1998. Ages 9 - 12.

[29 Missing: The True and Tragic Story of the Disappearance of the SS Edmund Fitzgerald](#) / by Andrew Kantar. Michigan State University Press, 1998. Ages 12 - 17.

[The Sinking of the Edmund Fitzgerald: The Loss of the Largest Ship on the Great Lakes](#) / by Charles River Editors. CreateSpace Independent Publishing Platform, 2014. For YA readers.

[The Gulls of the Edmund Fitzgerald](#) / by Tres Seymour. Orchard Books; First Edition, 1996. Ages 4 - 8.

[Shipwrecks of the Great Lakes: Tales of Courage -- and Cowardice \(Amazing Stories\)](#) / by Cheryl MacDonald. Amazing Stories, 2010. Ages 11 - 18.

[Whaleback Ships Of The Great Lakes: McDougall Adventures](#) / by Stan Bougie. Independently published, 2021. For YA Readers.

## Fictional Stories

[Sport: Ship Dog of the Great Lakes](#) / by Pamela Cameron. Madison, WI: Wisconsin Historical Society Press, 2019. Ages 5 - 10.

[A Field Guide to Mermaids of the Great Lakes](#) / by Debbie Scheller. Deborah Scheller, 2017. Ages 10 - 12.

[Driftwood: Stories Picked Up Along the Shore: Paintings and Companion Stories](#) / by Howard Sivertson. Duluth, Minn.: Lake Superior Port Cities, 2008.

[On Sand Island](#) / by Jacqueline Briggs Martin. Boston: Houghton Mifflin, 2003. Ages 4 - 7.

[Tallulah: Mermaid of the Great Lakes](#) / by Denise Brennan-Nelson. Ann Arbor, MI: Sleeping Bear Press, 2015. Ages 6 - 9.

[A Pocketful of Passage](#) / by Loraine Campbell. Detroit, Mich.: Wayne State University Press, 2007. Ages 8 - 12.

[The Day the Great Lakes Drained Away](#) / by Charles Ferguson Barker. Michigan: Mackinac Island Press, 2005. Ages 3 - 6.

[Good Night Great Lakes](#) / by Adam Gamble, Mark Jasper, and Ute Simon. New York: Good Night Books, 2019. Ages 0 - 3.



# INDIGENOUS PEOPLES OF WISCONSIN

## Recommended Children's Literature

### Informational Books

[Native Americans of the Great Lakes](#) / by P.M. Boekhoff and Stuart A. Kallen. San Diego, Calif.: Kidhaven Press, 2004. Ages 10 - 14.

[Native People of Wisconsin](#) / by Patty Loew. Madison, WI: Wisconsin Historical Society Press, 2015. Ages 8 - 11.

[The People and Culture of the Menominee](#) / by Raymond Bial. New York: Cavendish Square, 2016. Ages 8 - 12.

[Ojibwe](#) / by Katie Lajiness. Minneapolis: Big Buddy Books, an imprint of Abdo Publishing, 2019. Ages 7 - 10.

### Stories and Narratives

[The Sacred Harvest: Ojibway Wild Rice Gathering](#) / by Gordon Regguinti. Minneapolis: Lerner Publications, 1992. Ages 8 - 12.

[Nanabosho, Soaring Eagle and the Great Sturgeon](#) / by Joe McLellan. Winnipeg: Pemmican Publications, 1993. Ages 4 - 7.

[Keepers of the Earth: Native American Stories and Environmental Activities for Children](#) / by Michael J. Caduto and Joseph Bruchac. Golden, Colo: Fulcrum Publ., 1997. Ages 6+.

[The Legend of Sleeping Bear](#) / by Kathy-jo Wargin and Gijsbert van Frankenhuyzen. Chelsea, MI: Sleeping Bear Press, 1998. Ages 7 - 10.

[Water Walkers: Walking Lake Superior](#) / by Carol Ann Trembath and David W. Craig. Michigan: Lakeside Publishing, 2015. Ages 5 - 12.

[The Water Walker](#) / by Joanne Robertson. Toronto, Ontario, Canada: Second Story Press, 2017. Ages 6 - 10.

[Stepping Stones: Walking Lake Michigan](#) / by Carol Ann Trembath and David W. Craig. Michigan: Lakeside Publishing, 2017. Ages 5 - 12.

[Growing Up Ojibwe](#) / by Joshua M. Whitebird. Odanah, WI: Great Lakes Indian Fish and Wildlife Commission, 2018.

[Keeshig & the Ojibwe Pterodactyls](#) / by Keeshig Spade, Celeste Pedri-Spade, Kiniw Spade, and Robert Spade. Neyaashiinigmiing, Ontario: Kagedonce Press, 2019. Ages 3 - 7.

[Bimishkaawin: Ojibwe Water Ways](#) / by Kevin Roach. Bloomington, IN: Grassroots Indigenous Multimedia, 2019.

[Nibi aawon nbiish \(Nibi is Water\)](#) / by Joanne Robertson. Toronto: Second Story Press, 2020. Ages 0 - 3.

[Remembering Green: An Ojibwe Girl's Tale](#) / by Lisa Gammon Olson and Lauren Rutledge. Lemont, PA: Eifrig Publishing, 2020. Ages 5 - 10.

[Mii maanda ezhi-gkendmaanh \(This Is How I Know\)](#) / by Brittany Luby. Toronto; Berkeley: Greenwood Books/House of Anansi Press, 2021. Ages 3 - 7.

## Activity Books

[The Good Path: Ojibwe Learning and Activity Book for Kids](#) / Afton, Minn.: Afton Historical Society Press, 2002. Ages 8 - 13.

[Ganawenimaa nimamainan aki \(Respect our Mother Earth: a kid's environmental activity booklet\)](#) / by Sue Erickson and Dennis Soulier. Odanah, WI: Great Lakes Indian Fish & Wildlife Commission, 2005?

[Gimaamaa-akiiminaan gimigwechiwendaamin \(Thankful for our Mother Earth: Spearing through the ice, activity booklet\)](#) / by Dylan Jennings and Wesley Ballinger. Odanah, WI: Great Lakes Indian Fish & Wildlife Commission, 2016.

[Gimaamaa-akiiminaan gimigwechiwendaamin \(Thankful for our Mother Earth: A kid's manoomin activity booklet\)](#) / by Dylan Jennings and Wesley Ballinger. Odanah, WI: Great Lakes Indian Fish & Wildlife Commission, 2017.

## Indigenous Peoples of America

[An Indigenous Peoples' History of the United States for Young People](#) / by Roxanne Dunbar-Ortiz, adapted by Jean Mendoza and Debbie Reese. Boston, Massachusetts: Beacon Press, 2019. Ages 12 - 17, Young Adult.

[We Are Still Here! Native American Truths Everyone Should Know](#) / by Traci Sorell and Frané Lessac. Watertown, MA: Charlesbridge, 2021. Ages 7 - 10.



# SCIENTISTS

## Recommended Children's Literature

[Dolphin Man: Exploring the World of Dolphins](#) / by Laurence Pringle. Honesdale, Pa.: Boyds Mills Press: 2002. Grades 1 - 5.

[Dear Benjamin Banneker](#) / by Andrea Davis Pinkney and Brian J. Pinkney. San Diego: Harcourt Brace & Co.: 1994. Grades K - 3.

[Environmental Pioneers](#) / by Patricia Byrnes. Minneapolis: Oliver Press: 1998. Grades 6 and up.

[Far from Shore: Chronicles of an Open Ocean Voyage](#) / by Sophie Webb. Houghton Mifflin Harcourt: 2011.

[Forecast Earth: The Story of Climate Scientist Inez Fung](#) / by Renee Skelton. New York: Franklin Watts, Scholastic: 2005. Ages 11 and up.

[The Frog Scientist](#) / by Pamela S. Turner. Boston: Houghton Mifflin Books for Children: 2009. Grades 5 - 8.

[Gaylord Nelson: Champion for Our Earth](#) / by Sheila Terman Cohen. Madison, WI: Wisconsin Historical Society Press: 2010. Grades 3 - 6.

[John Muir: My Life with Nature](#) / by John Muir. Nevada City, Calif.: Dawn Publications: 2000. Grades 4 - 7.

[Life in the Treetops: Adventures of a Woman in Field Biology](#) / by Margaret D. Lowman. New Haven, Conn.: Yale University Press: 1999. Grades 6 and up.

[Manfish: The Story of Jacques Cousteau](#) / by Jennifer Berne. San Francisco: Chronicle Books: 2008. WWL call number 110253 Kids

[Rachel: The Story of Rachel Carson](#) / by Amy Ehrlich and Wendell Minor. San Diego: Harcourt: 2003. Grades 3 - 5.

[Seaglass Summer](#) / by Anjali Banerjee. New York: Wendy Lamb Books, Random House: 2010.

[Tales of a Shaman's Apprentice: An Ethnobotanist Searches for New Medicines in the Amazon Rain Forest](#) / By Mark J. Plotkin. New York: Viking: 1993. Grades 7 and up.

[The Secret World of Walter Anderson](#) / by Hester Bass. Cambridge, Mass.: Candlewick Press: 2009. Grades 2 - 6.

[The Shaman's Apprentice: A Tale of the Amazon Rain Forest](#) / by Lynne Cherry. San Diego: Harcourt Brace: 1998. Grades 1 - 5.

Talking with Adventurers: Conversations with Christina M. Allen, Robert Ballard, Michael L. Blakey, Ann Bowles, David Doubilet, Jane Goodall, Dereck & Beverly Joubert, Michael Novacek, Johan Reinhard, Rick C. West and Juris Zarins / by Pat Cummings and Linda Cummings. Washington, D.C.: National Geographic Society: 1998. Grades 4 - 7.

[Under the Ice](#) / by Kathy Conlan. Tonawanda, N.Y.: Kids Can Press: 2002. Grades 4 - 8.

[The Water Gift and the Pig of the Pig](#) / by Jacqueline Briggs Martin. Boston: Houghton Mifflin: 2003. Grades K - 2.

[What Is a Scientist?](#) / by Barbara Lehn. Brookfield, Conn.: Millbrook Press: 1998. Grades K - 2.



**"ALL THE WATER IN THE WORLD"**



## SUPPLIES

### Oceans of Possibilities

#### ALL THE WATER IN THE WORLD

##### Surface tension 1

- ☐ Eye Dropper
- ☐ Cups
- ☐ Water

##### Surface tension 2

- ☐ Water
- ☐ Pepper
- ☐ Soap
- ☐ Toothpicks
- ☐ Plates for soap
- ☐ Bowls

##### Capillary Action

- ☐ Water
- ☐ Food Coloring
- ☐ Paper Towel
- ☐ 6 short glasses

##### Buoyancy

- ☐ Clear Tub of Water
- ☐ Objects for testing
- ☐ Clipboard
- ☐ Recording Sheet - handout

##### Art Project

- ☐ Water
- ☐ Watercolor paints
- ☐ Paintbrushes
- ☐ Cups of water
- ☐ Variety of salt (table, coarse, rock, etc.)
- ☐ paper

# SING

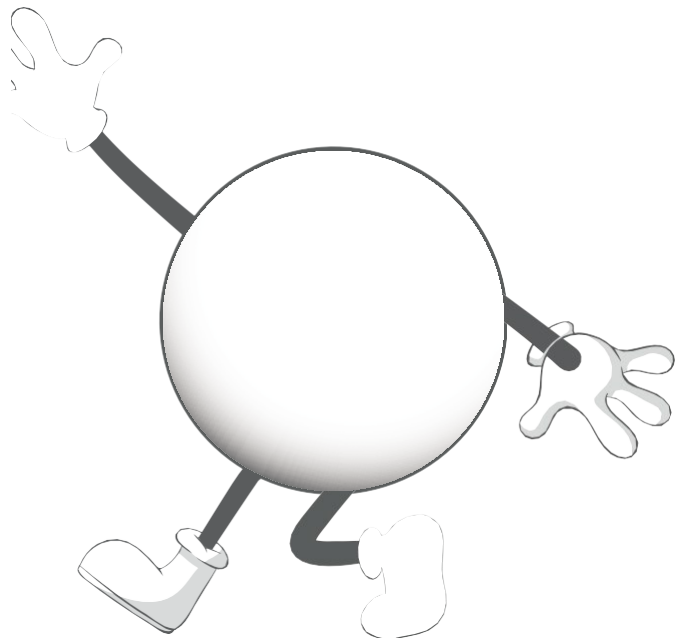
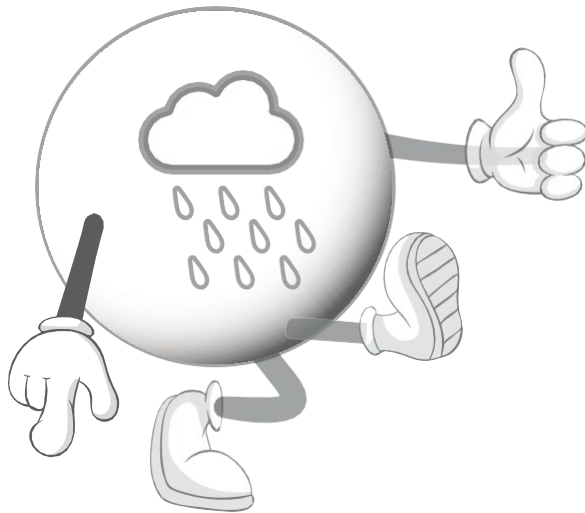
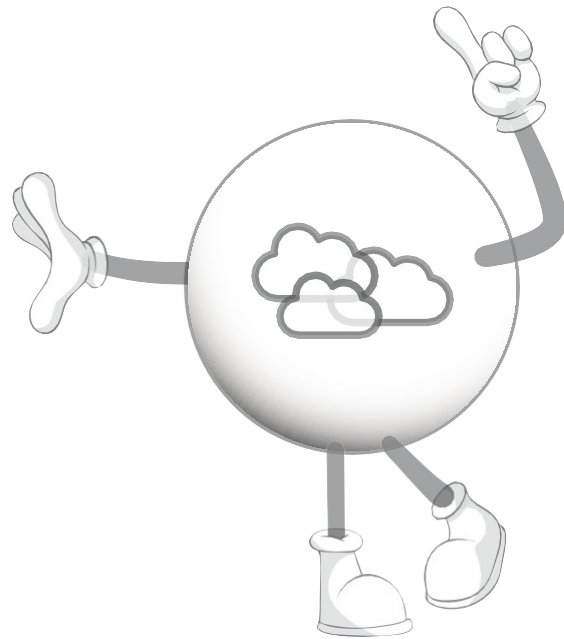
We have three favorite water cycle songs!

## The Water Cycle Boogie

SING TO ANY TUNE THAT GETS YOU AND THE CHILDREN MOVIN

Evaporation,  
Condensation,  
Precipitation,  
Accumulation.

And the water cycle boogie goes 'round and  
And the water cycle boogie goes up and down  
REPEAT twice (*or your choice*)



# Sink or Float

## Record Log

[illegible]

# MOVE

## An **adhesion/cohesion** Simon Says

### Remember:

**Cohesion:** Water molecules are attracted to each other. This property is what allows water to form a drop that maintains a spherical shape without coming apart.

**Adhesion:** Water molecules are also attracted to other substances. Adhesion causes water to soak into fabric, like clothing or a towel, or cling to plants or windows.

### To play the game:

- ① Explain that each player's hands have turned into water molecules.
- ② The directions to the players will be to cohere (clap) or adhere (hands on hips) their "water hands."

Simon says, "cohere."  
(*clap hands together*)

Simon says, "adhere."  
(*touch hands to hips*)

- \* To make the game more challenging, add an object/body part that the player is supposed to adhere to.

Example: Simon says, "adhere, nose."  
(*Touch hands to nose*)

## FACTS AND FIGURES ABOUT WATER

Water is unique in that it is the only natural substance found in all three physical states — liquid, solid, and gas — at the temperatures normally found on Earth.

Water freezes at 32° Fahrenheit (F) and boils at 212°F (at sea level, but 186.4° at 14,000 feet). Water is unusual in that the solid form, ice, is less dense than the liquid form, which is why ice floats.

Air pressure affects the boiling point of water, which is why it takes longer to boil an egg in Denver, Colo., than at the beach. The higher the altitude, the lower the air pressure, the lower the boiling point of water, and thus, the longer time to hard-boil an egg. At sea level water boils at 212°F (100°C), while at 5,000 feet, water boils at 202.9°F (94.9 °C).

Water is called the “universal solvent” because it dissolves more substances than any other liquid. This means that wherever water goes, either through the ground or through our bodies, it takes along valuable chemicals, minerals and nutrients.

Pure water, which you won’t ever find in the natural environment, does not conduct electricity. Water becomes a conductor once it starts dissolving substances around it.

Pure water has a neutral pH of 7, which is neither acidic (<7) nor basic (>7).

The water molecule is highly cohesive — it is very sticky. Water is the most cohesive among the non-metallic liquids.

Water has a high specific heat index — it absorbs a lot of heat before it begins to get hot. This is why water is valuable to industries and in your car’s radiator as a coolant. The high specific heat index of water also helps regulate the rate at which air changes temperature, which is why the temperature change between seasons is gradual rather than sudden, especially near the oceans.

The density of water means that sound moves through it long distances (ask a whale!). In sea water at 30°C, sound has a velocity of 1,545 meters per second (about 3,500 miles per hour).

Some of water’s physical properties:

- Weight: 62.416 pounds/cubic foot at 32°F; 1,000 kilograms/cubic meter
- Weight: 61.998 pounds/cubic foot at 100°F; 993 kilograms/cubic meter
- Weight: 8.33 pounds/gallon; 1 kilogram/liter
- Density: 1 gram/cubic centimeter (cc) at 39.2°F, 0.95865 gram/cc at 212°F

# SHIPWRECKS



## DIVE UNDER WATER, INTO HISTORY WITH SHIPWRECKS

- ☐ Script – [email akmoser@aqua.wisc.edu](mailto:akmoser@aqua.wisc.edu)
- ☐ Dive slates
- ☐ Photo mosaic – available for loan [email akmoser@aqua.wisc.edu](mailto:akmoser@aqua.wisc.edu)
- ☐ clipboard
- ☐ Ship glossary
- ☐ Pencil
- ☐ Silver Lake worksheet

Potential project for readers: create a time capsule.



# The Silver Lake

What is the length (from bow to stern)? \_\_\_\_\_

What is the width? \_\_\_\_\_

How many hatches do you find? \_\_\_\_\_

What do you see in the hatches? \_\_\_\_\_

How many masts? \_\_\_\_\_

Does it have a windlass? \_\_\_\_\_

Do you see any evidence of the wreck? \_\_\_\_\_

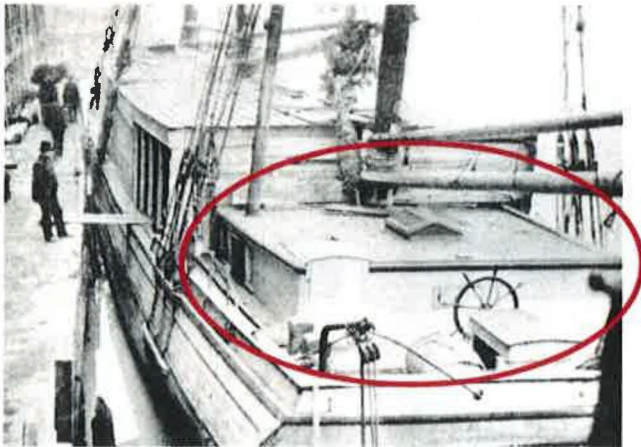
Do you see anything on the ship that is NOT manmade? \_\_\_\_\_

Any unusual features? \_\_\_\_\_

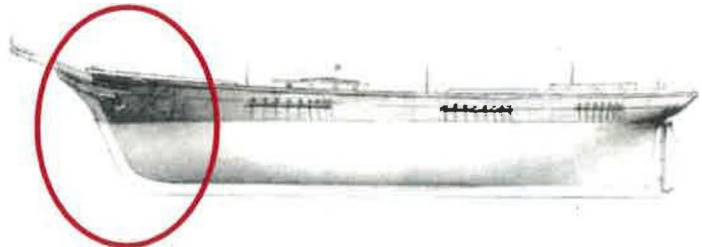


# Ship Glossary

Aft cabin- square cabin structure at the stern of a ship

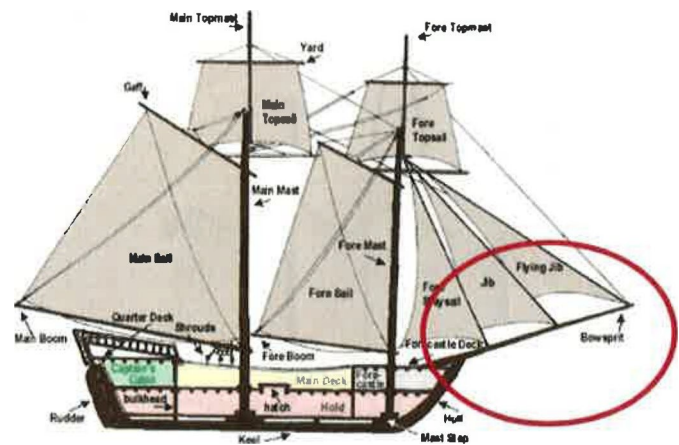


Bow- front of a ship

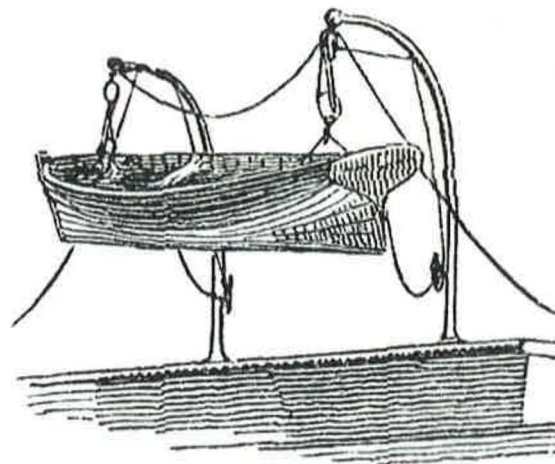


Bowsprit- spar, or pole, that extends from the bow of a ship

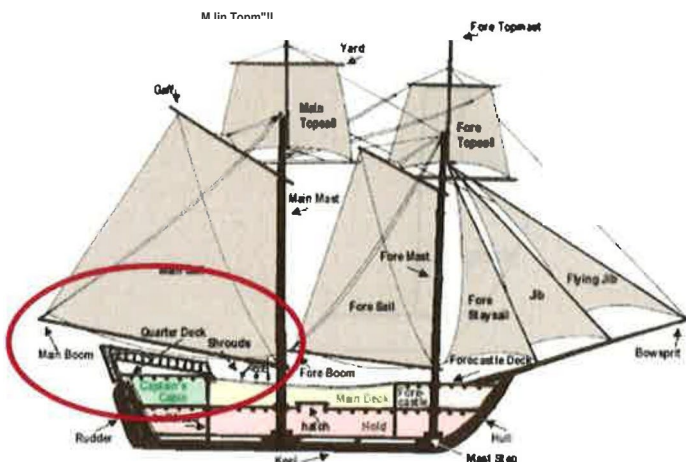
Anchor- a heavy object attached to a rope or chain, used to hold a vessel in place



Davit- device for hoisting and lowering a boat



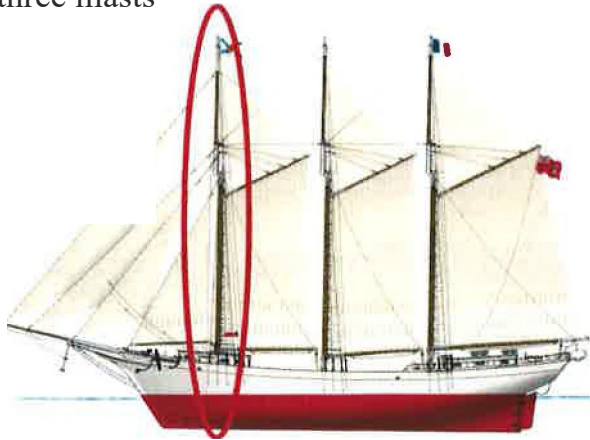
Boom- a moveable spar, or pole, that extends from a mast, & is attached to the bottom of a sail



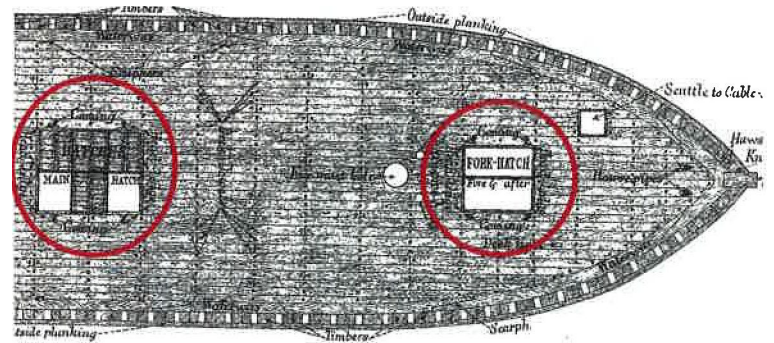
**Davits.**



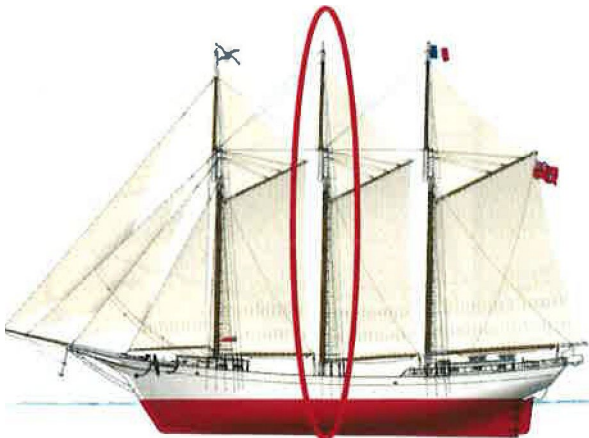
Foremast- forward most mast on a ship with three masts



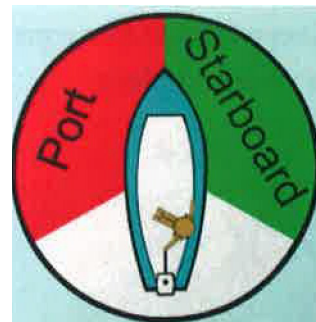
Hatch- square or rectangular opening in the ship's deck for loading cargo



Mainmast- middle mast on a ship with three masts (primary mast)

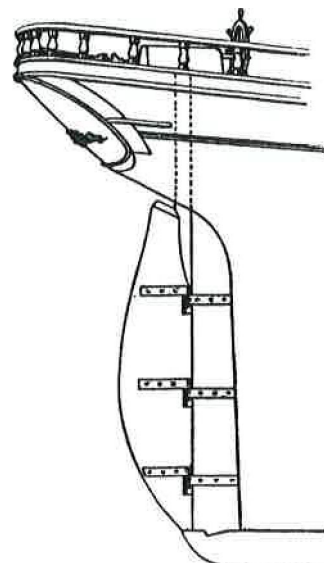


Port- the left hand side of a ship

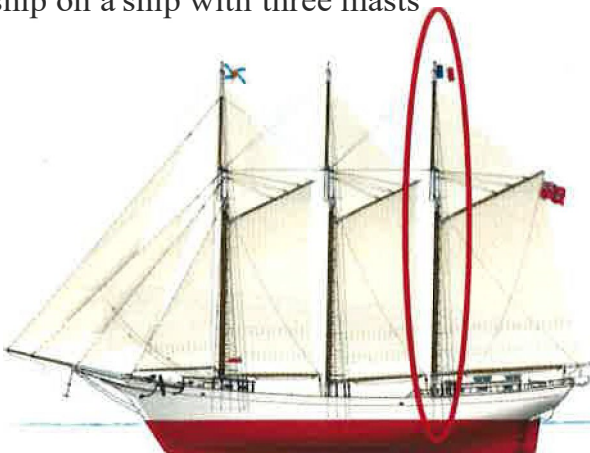


Stern

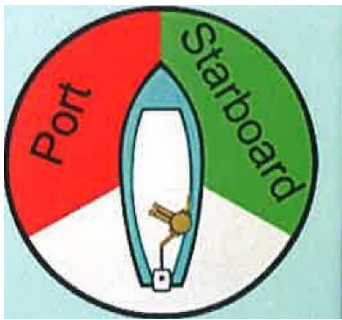
Rudder Post- post that connected the rudder to the ship's wheel



Mizzenmast- mast closest to the stern of a ship on a ship with three masts

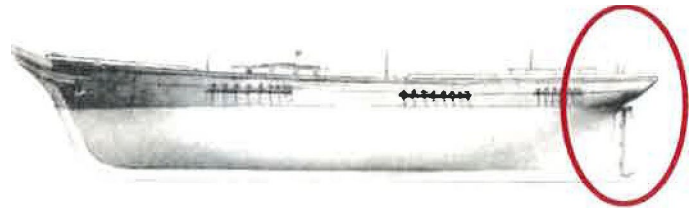


Starboard- the right hand side of a ship

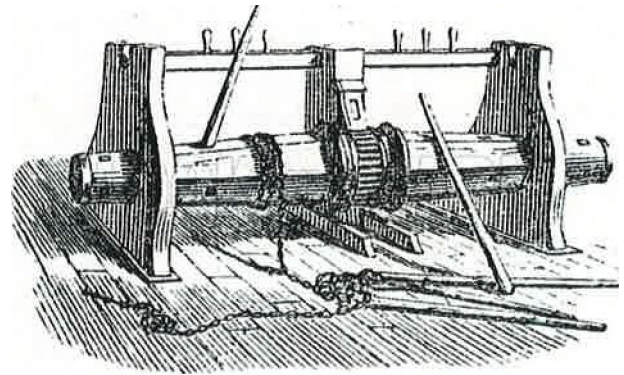


**Stern**

Stern- back part of a ship



Windlass- winch used to raise and lower a ship's anchor



**Ship's Windlass.**



## Learn more about Great Lakes Shipwrecks

By Anne Moser

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### WISCONSIN SHIPWRECKS

Learn about Wisconsin Shipwrecks

<https://www.wisconsinshipwrecks.org/>

Take the challenge of our shipwreck scavenger hunt and crossword puzzle!

<https://go.wisc.edu/19j8r5>

Explore Shipwrecks and Aquatic Invasive Species

<https://go.wisc.edu/i5eo99>

About the Silver Lake

<https://www.nps.gov/nr/feature/places/13000128.htm>

<https://www.wisconsinshipwrecks.org/Vessel/Details/570?region=Index>

ROVe The Great Lakes from Wisconsin Sea Grant

<https://go.wisc.edu/ROVe2>

Experience Great Lakes maritime history & underwater exploration (curriculum but lots of stuff for families)

Wisconsin Sea Grant YouTube channel

[https://www.youtube.com/playlist?list=PLhHCCseyxU38Z\\_1jZplhLp5nUGodX0agW](https://www.youtube.com/playlist?list=PLhHCCseyxU38Z_1jZplhLp5nUGodX0agW)

Watch ROV footage and listen to a maritime archaeologist talk about working with remotely operated vehicles in shipwreck research

### THE EDMUND FITZGERALD

About the weather

<https://cimss.ssec.wisc.edu/wxwise/fitz.html>

About the Edmund Fitzgerald

<https://ssedmundfitzgerald.org/>

Edmund Fitzgerald data sets to use at home

<https://www.michiganseagrant.org/lessons/lessons/by-broad-concept/earth-science/data-sets/the-storm-that-sunk-the-edmund-fitzgerald/>

## THE TITANIC

Robert Ballard discovers the Titanic

<https://youtu.be/RhmUdcdaSWs> (Encyclopedia Britannica)

Ballard's return in 2004

<https://youtu.be/6Z7REEnwKOO>

Using ROVs to find the Titanic

<https://ocean.si.edu/planet-ocean/seafloor/titanic-wrecksite>

Finding the Titanic – interview with Dr. Ballard

<https://www.youtube.com/watch?v=mJjPApkqLww>

Painting the Titanic

<https://www.youtube.com/watch?v=lwflYwl-IT8>

How the Titanic was lost – picture gallery

<https://www.nationalgeographic.co.uk/history-and-civilisation/2019/08/how-titanic-was-lost-and-found?gallery=42089&image=11-titantic-pictures>