

WATER IS LIFE 2022

Program Overview

“Water is Life” is a collaboration between Mia, the Science Museum of Minnesota, and the Minnesota Landscape Arboretum. Mia’s “World of Water” experience is one of a series of three programs presented by Mia, MLA & SMM designed to engage students in powerful, real-world learning experiences that stimulate scientific discovery, critical thinking, and language development, supporting academic standards in science, social studies, English/language arts, and visual arts. During each program, students will practice making observations and using evidence to describe and support their ideas.

The Three Big Ideas of “Water is Life” are:

- **Plants, animals, and people need clean water to live.**
- **Water has special properties. It changes forms.**
- **People around the world create ways to interact with water in their lives.**

Mia’s “World of Water” is the second in the sequence of three programs.

“WATER CHANGES” (IN-SCHOOL ASSEMBLY AND RESIDENCY) Science Museum of Minnesota

- Make observations about water and how water changes.
- Conduct experiments to explore the processes that move water through the water cycle.
- Learn the differences between precipitation, evaporation, and condensation.
- Race against the “sun” to evaporate water from puddles.
- Hold a cloud in your hands.
- Condense water to make rain right in the classroom.

“WORLD OF WATER” (FIELD TRIP) Minneapolis Institute of Art

A two-hour field trip comprising three 35-minute activities

- Observe and discuss images or objects depicting how humans from different times and cultures capture, move, and depend upon water for personal and community use on a conversational tour.
- Create a watercolor painting using diverse materials and techniques in a studio art activity.
- Sketch images, patterns and shapes from African and Native American artworks to inspire your own design for an original water container.

“PLANTS AND THEIR HABITATS” (FIELD TRIP) Minnesota Landscape Arboretum

- Discover plants from all around the world as you become a plant researcher in real time at the Arboretum! Student scientists learn about different plant adaptations from three key habitats that are defined by water: the Desert, Tropical Rainforest, and Wetland.
- Identify diverse plant adaptations in the Mixed Up plant Lab
- Explore the Greenhouse and locate countless plants from each habitat
- Create your own take-away terrarium with tropical rainforest plants!

“World of Water”

Mia’s “Water is Life” program comprising three activities is called “World of Water” because it emphasizes how people around the world depend on water and make art to store, carry, drink, use, and celebrate water.

What do I need to do Water is Life?

Most of all you need a sense of adventure and a sense of joy and wonder. Second graders, especially, and some third graders like to have fun and use their imaginations. They need to move! They need quiet time to look and think and time to make, talk, and share their thoughts.

Blue Bags with sketchbooks, clipboards, pencils and photo props of fish and map. These will be stored in the coat check area of Target Atrium. LI staff will restock the bags before the next day.

There will be six bags available at all times.

How is it organized?

Two or three classes of 2nd graders (in a few instances, 3rd graders) from each of our 10 “Water is Life” schools will come for an experience scheduled from 10:15 to 12:15. Each of three segments will take about 35 minutes plus travel time. Please allow plenty of time for the students to get back to the Target Atrium to get their coats and leave on time for their buses.

Each of the two or three classes has two tour guides (one for each half of the class) who will coordinate the tour and design activity with each other. **Lead Guides, please assign the pairs for each group. Individuals in each pair, decide together what routes each of you will use.** A teacher and assistant will conduct the watercolor activity with the guides present in the studio.

So, four or six guides will be working at the same time. Each pair will cycle through

the activities as illustrated here:

	Group 1	Group 2	Group 3
10:15-10:50	Studio 112	Design-2 nd floor West	Tour- 3 rd floor and 2 nd floor East
10:55-11:30	Tour- 3 rd floor and 2 nd floor East	Studio 111	Design-2 nd floor West
11:35-12:10	Design-2 nd floor West	Tour- 3 rd floor and 2 nd floor East	Studio 112

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11:35-12:10	Design-2 nd floor West	Tour- 3 rd floor and 2 nd floor East

1. The design activity takes place on the second floor in the Arts of Africa and Arts of Native America galleries. In addition to discussing vessels please include other artworks that communicate the value of water.
2. The Studio watercolor activity is taught by instructors. Both tour guides should bring their students to the studio at the designated time. If you need a quick break, this is a good time to do so. The more helping hands in the room, the better, so please do not leave for the entire activity.
3. The tour focuses on three paintings on the third floor, the Japanese tea house, Chinese jade water vessels, and a quick look at Taihu rocks on the east end of the second floor. The teachers really want the students to have a consistent experience on the tour, so we have selected these artworks, and even designed routes for each guide to follow. The routes include opportunities to look for specific water-related artworks or designs along the way.

World of Water Design Activity

The design activity is kind of like a treasure hunt. While discussing the importance of water in many Native American and African cultures/communities, students search for designs, patterns, shapes and images in the galleries that will inspire their own original design of a water bottle, flower vase, or pet water bowl.

*More ideas for this revised activity are at the end of this document

Equipped with a pencil, sketchbook, and clipboard, each student makes sketches of design ideas (shapes, patterns, images, designs) they like. They also discuss the pros and cons of different materials for the product they will design. Students gain an understanding of how people value water so much they make beautiful artworks to contain it and communicate its importance for many purposes.

This is designed to be lively and engaging, and to encourage students to look closely at artworks for inspiration. You do not need to engage in extended conversations about the artworks themselves. The focus is on the qualities of the different materials and looking for designs that they might like to include in their final drawing(s) on the back page of the sketchbook.

Talking Points

- People around the world need water to survive.
- Water unites all living things around the world.
- People around the world value water so much they make beautiful artworks for fetching, carrying, storing, cooking, serving and drinking water, as well as for communicating the importance of water to humans, plants, and animals.
- Artists make choices when designing artworks. They think about function, materials and beauty.

Discussion Prompts

As you begin: Water is an essential resource for people around the world. Let's list as many ways as we can think of that people use water. What about animals? What about plants?

What kinds of containers do humans use to fetch, carry, store, cook, serve, and drink water? (Ask one at a time.)

What does the word culture mean to you? Discuss. Explain.

Artwork Discussion Question Ideas

What do you see? What else? What shapes do you see? What colors? What kinds of lines? What kinds of patterns?

What kind of container do you suppose this might be? What do you see that makes you say that? What does the shape tell you about how it might have been used? What about the surface texture?

How do you think this artwork illustrates the value of water?

Artists use different materials based on the type of artwork they want to make and what they have available. What material does this artwork appear to be made of? What do you see that makes you say that?

Review the materials and speculate about the pros and cons of each. For example, why would metal be a better choice for this than clay?

What do you wonder about this artwork?

How do you suppose this designed object benefited the people or community for whom it was made?

Watercolor Studio Experience

Watercolor Exploration – Led by an art instructor

Students will explore watercolor painting with a variety of techniques (wet on wet, dry on wet, blowing, dabbing) and materials (salt, plastic wrap, wax crayons) to create abstract paintings with a variety of textures. Students will learn how water can create art and how watercolors interact with a variety of materials.

Your job is to encourage students to experiment with a variety of materials, support them if they are struggling, and to assist instructor with putting the watercolors on the drying rack when the students finish.

Tour: “Water Gives Us Life”

Each pair of guides will decide who takes which of these two routes.

Route 1	Route 2
The Element of Water	Japanese tea house
Fishing Vessels Offshore in a Heavy Sea	Chinese rocks/ jades
Bear Chance	Fountain
Japanese tea house	The Element of Water
Chinese rocks/ jades	Fishing Vessels Offshore in a Heavy Sea
Fountain (on way to studios or design activity)	Bear Chance

Please be sure to stop at the big fountain on the tour. Young people love it and it is a great Art and Engineering object! There is a great view of it from the third floor rotunda.

Be sure to build in physical activities as you move from one artwork to the next. Invite kids to pretend to row a boat or twist like a Chinese dragon in the waves, or whatever feels best to connect the different objects.

Introduction: key ideas

Key points for museum tour and to connect with Science Museum visit to their school and upcoming visit to Landscape Arboretum:

- All plants, animals, and people need and use water to live and grow.
- You saw how water changes form during the Science Museum’s visit to

- your school.
- Scientists closely observe what happens to water in nature.
 - You will see how plants need water to live and grow at the Arboretum.
 - At the museum today, we'll see how artists make close observations of nature to create images of water and decorate vessels for holding water.
 - Works of art tell stories about how people around the world use water and its importance to our life.
 - We're going to be like scientists and do some very careful looking at the art, so we can see how "water gives us life."

Jacopo and Francesco Bassano, The Element of Water, about 1576-77 G 341

This night scene is a great treasure hunt painting. What are the people using the water for? The painting shows a fish market being set up on a riverbank at dawn. The vendors display a variety of seafood, while other activities involving water, such as laundering, ferrying, and drinking, take place nearby. Neptune, god of the sea, drives his chariot across the sky.

- Fish market being set up at dawn in Venice, Italy
- Shows water's importance in daily life; people are engaged in a variety of activities requiring water: washing laundry, ferrying, fishing, carrying for use at home, drinking
- Fish offered for sale at the market are accurately depicted: one clearly identifiable fish is Northern pike, the same species we have here in Minnesota
- People choose to live by water for all the resources water provides – and learn to access/navigate the water by boats and bridges (Engineering).
- Along with objects that relate to water, Neptune, the god of the sea, rides a horse-drawn chariot across the darkened skies – water as magical/mystical.

Ludolph Backhuysen, Fishing Vessels Offshore in a Heavy Sea, 1684 G 309

What's going on in this picture? What do you see that makes you say that? What more can we find?

What do you imagine it feels like to be on that boat? What clues in the picture make you say that? What does wind sound like? Has anyone in the group heard the sound of waves crashing against something? What does that sound like?

Label copy: A fishing boat caught in a storm thrashes about the waves, its mainsail torn. Another boat, in the far right of the picture, is on its way to help. Meanwhile, a merchant ship in the distance heads out to battle the storm. As one of the great marine painters of the 1600s, Ludolph Backhuysen painted many dramatic scenes like this. A Dutch artist, he would naturally have been drawn to the sea as a

subject, the oceans being the main source of food, trade, and military victories for the Dutch, enabling their prosperity. Though, as this painting shows, the sea was sometimes more foe than friend.

- Before airplanes, ships were the best way for people and things to get from one county to another.
- The world's five oceans are connected and cover 71 percent of the planet [source: NOAA].
- Engineering – building boats that could traverse the seas and carry large amounts of cargo.
- Water as powerful and dangerous – wind, waves and currents
- Oceans provide valuable resources – minerals and oil

Philip Goodwin, Bear Chance, 1907

G 301

Please note that on November 12 Picture Person training groups will be using “Bear Chance,” so guides will need to select an alternative work from the Mississippi River gallery (303).

What form(s) of water do you see here? Where do you see snow in this painting? Look at the sky. What would it feel like to sit in the snow with this bear? If you were to paint a snow scene what colors might you use? If you were to paint a sky that was about to snow, what colors might you use?

The Cream of Wheat Company originally commissioned this painting as advertisement for their cereal. Philip R. Goodwin, an artist known for his wildlife paintings

- Liquid form of water changes to snow and ice when the temperature drops
- You talked about animals and hibernation during winter with the Science Museum
- Bear comes out of hibernation because Cream of Wheat is so tasty.
- You make cream of wheat with boiling water – heat/melt snow to make water. Fresh water vs. salt water for drinking and cooking with.
- No plants growing or visible except for trees that keep needles during winter
- Plants are covered by the snow
- Snow as insulation in the winter, melts into water in the spring

Replica of the Saan Teahouse at Daitokuji Gyokurin-in, Kyoto, 2001 (constructed), Yasuimoku Komuten Company Ltd. G 225

This Japanese tea house is a marvelous place to engage students in the many ways water was central to the tea house from ceremonially cleansing before entering the

tea house, the ink painting on the wall, the preparation of tea (kettle, ladles, cups), and even to the growth of the natural materials used to make the house and mats.

Look closely at the garden outside the tea house. Think about all the rainwater that made it possible to have this garden. Look for a place you could wash your hands before entering this special house made just for gathering with others for tea and conversation. How might this place for washing your hands look different from other places you wash them? Why might it look different?

Look around the inside of the tea house. Where do you see vessels and other items that were used for making, serving, and drinking tea? Discuss how the participants enjoyed experiencing the room and the tea with all of their senses.

Look closely for an artwork that required water! The ink painting on the wall required water to make the ink and a paintbrush to paint it.

Label copy:

Japan's ruling warrior elite first held lavish tea gatherings in their formal reception halls. As tea masters like Murata Shukō (1422-1502), Takeno Jōō (1502-1555) and Sen Rikyū (1520-1591) began to advocate the practice of wabi (rustic) tea in the 16th century, separate, specially designed teahouses began to be built. Shukō introduced an architectural style called sōan, literally "grass hut." Sōan teahouses were small and constructed from humble materials including roughly milled lumber, bamboo, thatch, and earthen walls. In its simplicity, soan teahouses were meant to suggest a monk's retreat in the wilderness. The low entranceway required all participants to humble themselves as they entered the tearoom from the garden. Although a built-in alcove for the display of art was adopted from more formal structures, its size was greatly reduced--sufficient only to display a small painting or simple floral arrangement.

The museum's teahouse is based on the Sa-an, an 18th century teahouse within the Zen monastery of Daitokuji in Kyoto that is now designated as one of Japan's "Important Cultural Properties." A small, carved signboard under the eaves of the museum's teahouse reads "Zenshin-an," Hermitage of the Meditative Heart -- a name bestowed on the structure by Fukushima Keidō, the current abbot of Tofukuji temple in Kyoto.

Chinese Jades and Taihu Rocks G 210 & G 216

Explore the Chinese Taihu rocks in scholar's study garden or out the window from the landing. You will need to look from the landing during Picture Person training on 11/28.

From the label copy for rock garden: Strangely shaped rocks are an important physical and symbolic element in Chinese gardens. The pores, holes and strange forms of these limestone rocks were naturally molded through erosion by flowing

water and acidic soil. These rocks are called Taihu because those produced at the foot of Dongting Mountain in Suzhou near the Taihu Lake. The more eccentric the rock, the more it was prized.

Explore Chinese Jade water vessels, including those made for painting and calligraphy.

Jade was an extremely valuable material for making art. It was so valuable people were willing to travel for years and thousands of miles on donkeys to get it! It is so hard you have to carve it with even harder stones like diamonds! Look at the vessels to explore all of the different ways they hold water and for what purposes. Also explore all of the different plant and water images on the jades. Note: Although this has traditionally been a stop on the design activity, we moved it to the tour because these cases are so high the students have had some difficulty drawing here.

On the way from the jades to the design activity or studio, be on the lookout for dragons twisting around in the waves. You will find them all over the place!

Fountain, Italian, 16th century (on way to studios or design activity) **G 235**

Conclusion

We've seen how humans use water and depend on it. We know that humans, plants, and animals all need water to live. We need to protect this precious resource so that clean water is available for us as well as all the plants and animals around the world.

Design Activity Supplemental Information

Water is Life Design Activity: Focus on Native American and African art

The goals of the World of Water design activity focused on Native American and African art are to encourage young people to explore how artists across time and geography have valued water so highly that they created beautiful art to celebrate and use (store, preserve, transport, serve, etc.) it; to sketch design ideas, images, patterns, shapes, etc.; to think about the properties of different materials; and to draw their own vessels.

Arts of Native America

Here are some words of wisdom from Marlana Myles, a Dakhóta artist, about the concept of water is life as it relates to Native American art and culture. Many second graders might not be aware of the recent “water is life” movement related to the pipeline being built on Standing Rock Reservation, however, the larger message of water as essential and sacred will be important to your tour. For many Native Americans, water is alive.

“Water is Life” by Marlana Myles

The concept of Water is Life. “Water is Life” (Dakhóta: Mni Wiconi, pronounced 'Mini Wee-cho-nee) is a slogan recently used by Dakhóta and Lakǎóta people fighting for their water rights amid the building of an oil pipeline on their land on the Standing Rock Reservation in South Dakota and North Dakota. The Dakota Access Pipeline protest has raised awareness across the country about our responsibility to keep water clean and healthy for all forms of life that rely on it.

To many Native American tribes, including the Dakhóta tribes of this region, water is more than life; water is a sacred medicine. Waterways have been important to the Dakhóta as a means of travel, sustenance, fishing, and swimming; people have always gathered near water. The state of Minnesota is named after the Mnisota Wakpa (Minnesota River), where many Dakhóta villages were located and continue to exist today as reservations. In Dakhóta, the name “Minnesota” translates to “Clear waters reflecting the sky,” and, true to its name, Minnesota is known for its 10,000 lakes.

Dakhóta people did not shape the land; they lived in harmony with nature. Today, Dakhóta people still understand this concept, leaving a gift, often tobacco and a prayer, when taking from the land and acknowledging that relationships, including one with the land and waters, should be handled with reciprocity. Dakhóta people, along with those of many tribes, give thanks and love to water—because, without it, there is no life.

Ask yourself, “Have I cared enough about the water?”

Discussion questions to ask students:

What makes Earth different than all the planets in the solar system? (water)

What relationships exist between water and life?

In what ways do human waste and garbage impact water?

In what ways have you cared for and about water?

On your tour, explore the ways Native artists throughout time and across the North and South American continents have made vessels to store and share water. Also explore the importance of water as expressed in Native stories told

through art—animals including the underwater panther and the thunderbird appear in art from the ancient past to the present. Look for images of other water animals—fish, snakes, turtles and water birds. Look for images of corn, blossoms, and flowers to talk about the sacredness of Mother Earth and the importance of plant life and how all living things are interdependent.

In addition to water vessels, be sure to explore design ideas in the many other artworks that also connect to water.

Arts of Africa

Much African art also focuses on the sacredness of water. Illustrate the value of water across the African continent and cultures by looking at diverse artworks including vessels for storing water ranging from the ceramic vessels to the bronze leopard made for the ceremonial washing of a Benin king's hands. Associations between water and royalty and other sources of power are abundant in the Benin tusk and memorial head and Yoruba artworks. The Sande Society mask references the emergence of spirits from the waters in the rings around her neck and her shiny skin. The Ghana lobster coffin (a very large vessel of sorts!) references not only an individual, but also the importance of the lobster industry and other forms of fishing to the country. Shells (from the ocean 1500 miles away) in the Kuba art were highly valued as money. Look for pictures of vessels and symbols of water on the False Door including the ibis, serpent, and water symbol for the Nile River. In the rotation of iron objects, look for the iron artwork that features snake/lightning bolt/water rivulet forms to help bring rain.

There are so many ways to think about water in these galleries!