

Investigating Water

MESS® Recommended Materials



Basic equipment

- sink
- water table or bins
- water-resistant smocks
- vinyl table cloth or shower curtain (for carpeted areas)
- mop or towels
- camera
- printer for photos
- photos of water bodies, sources of water, uses for water, and forms of water
- freezer

Tools for measuring water

- clear plastic measuring cups
- balance scale
- rain gauge

Objects for exploring the shape of water and water flow

- water wheels
- watering cans

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- water pumps
- pump bottles
- spray bottles
- squirt bottles
- sieves (strainers, sifters)
- plastic containers of different sizes and shapes
- vinyl tubing (1 inch in diameter or larger)
- funnels of different sizes
- basters
- water flow cups (plastic cups with holes up and around the side)

Objects to explore other properties of water

- river rocks
- plastic pipettes
- wax paper
- sponges
- materials to test explore absorption such as paper, fabric, plastic, wood

Objects to explore floating and sinking

- floating/sinking tubes
- test objects such as wood block, metal bolt, cork, crayon or candle, fishing bobble, golf ball, metal and plastic key rings, hollow plastic egg, rock, rubber duck, boat, washer

Materials to explore mixing with water

- plastic test tubes with covers
- test materials such as sugar, salt, cornstarch, flour, sand, vinegar, oil, soap, food coloring

Books

Allen, Pamela. *Mr. Archimedes' Bath*. New York: HarperCollins, 1980. As Mr. Archimedes and his Australian animal friends try to figure out why the bathtub keeps overflowing, they unknowingly discover the scientific principle of water displacement.

Allen, Pamela. *Who Sank the Boat?* New York: Putman & Grosset, 1996. A cow, donkey, sheep, pig, and mouse decide to go rowing in a small boat. When one of them gets in, the boat goes from floating to sinking. Colorful illustrations add to the comic tension.

Base, Graeme. *The Water Hole*. New York: Harry N. Abrams, 2001. Arranged around the activities at an animal watering hole, this counting/puzzle/storybook demonstrates animal diversity, dependence on water holes, and the cycle of seasons. The animal sounds lighten the serious message.

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Brett, Jan. *The Umbrella*. New York: Scholastic, 2004. With umbrella in hand, Carlos ventures into the cloud forest to look for native animals. From the drip, drip of water drops to the sinking of the umbrella (by a hummingbird, no less), he manages to miss all the exciting animal adventures.

Bridges, Margaret Park. *I Love the Rain*. San Francisco: Chronicle Books, 2005. From hating the rain to loving it, Molly's friend Sophie helps her see the wonder in rain. The splashy, detailed watercolor illustrations help set the mood for stimulating imaginations.

Brimner, Larry Dane. *Raindrops*. New York: Children's Press, 1999. From one raindrop to a lazy lake for sailing, the concepts that water flows and clings to itself are detailed in bright, bold pictures.

Bunting, Eve. *Ducky*. New York: Houghton Mifflin, 1997. Along with thousands of other floating toys, a rubber duck falls off a cargo ship in the middle of the ocean. The lonely duck encounters both scary sea creatures and all kinds of weather before the ocean currents deliver him to land. There he is added to the "ducks found" list before happily becoming the bath toy he was intended to be.

Carle, Eric. *10 Little Rubber Ducks/10 patitos de goma*. New York: HarperCollins, 2005. Based on the same true story as Eve Bunting's *Ducky*, the adventures of 10 rubber ducks make counting fun and useful from the factory to a storm at sea. Ordinal numerals and colorful cutout collages help the reader keep track of the ducks. Interactive sound adds a fun finishing touch.

Cobb, Vicki. *I Get Wet*. New York: HarperCollins, 2002. Throughout a book designed to encourage all children to make discoveries, a young boy asks questions and suggests easily performed experiments to demonstrate several properties of water. Supplies needed for the experiments are minimal.

Frost, Helen. *Water as a Liquid*. Minneapolis, MN: Capstone Press, 2000. Using photos and age-appropriate text, this book discusses where water comes from, why it is important, and some of its liquid properties (shape and flow). The small book format limits its use. Also available by the same author: *Water as a Gas*; *Water as a Solid*.

Graham, Joan Bransfield. *Splish Splash*. Boston: Houghton Mifflin, 2004. Short poems within brightly colored graphic designs describe water in its many forms—from crocodile tears to sprinklers and more.

Greenfield, Eloise. *Water, Water*. New York: HarperFestival, 1999. In very simple text and colorful pictures, a young boy describes where he sees water, how it looks and feels, and what it is used for.

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Keats, Ezra Jack. *The Snowy Day*. New York: Viking Press, 1962. The wonder of a snowy day is effectively conveyed in text and pictures as young Peter explores making footprints, snowballs (that melt when taken indoors!), snowmen, snow angels, and another day of wonder. Caldecott Award book.

Kerley, Barbara. *A Cool Drink of Water*. Washington, DC: National Geographic Society, 2002. “Everyone, everywhere needs water for life.” Minimal text and beautiful National Geographic photographs detail where people all over the world find their water.

Lehn, Barbara. *What Is a Scientist?* Brookfield, CT: Millbrook Press, 1998. Simple text and color photographs describe how scientists work: questioning, observing, reporting, etc. Children demonstrate each of the tasks.

Locker, Thomas. *Water Dance*. New York: Harcourt Brace, 1997. Taken together, Locker’s poems and oil illustrations represent the water cycle. Separately, the short pieces show water moving and changing. The number of details in each illustration can be a conversation starter.

London, Jonathan. *Puddles*. New York: Penguin Books, 1997. A young boy and girl experience both the sometimes frightening thunderstorm and joyful explorations of the resulting puddles, baby rivers, mud, and squirming worms. A warm bath and hot chocolate add to the day.

Lunis, Natalie, and Nancy White. *Being a Scientist*. New York: Newbridge Educational Publishing, 1999. Being a scientist means observing, measuring, classifying, predicting, testing, and sharing information. Photos give children ideas of what they, as scientists, might do.

Marzollo, Jean. *I Am Water/Soy el agua*. New York: Scholastic, 1996. “I am . . . home for the fish, rain for the earth, etc.” Simple text and colorful paper-collage illustrations detail many uses for water. Written as an early reader, the book provides opportunities for discussions about water.

McPhail, David. *The Puddle*. New York: Farrar Straus Giroux, 1998. A little boy who wants to sail his boat in a rainy day puddle meets some unexpected visitors—a talking frog, thirsty elephant, etc. The puddle eventually dries up, making the bathtub the best place for floating his sailboat.

Robinson, Fay. *Where Do Puddles Go?* Chicago: Children’s Press, 1995. Colorful photos of disappearing rain puddles introduce children to the water cycle. This small-format book should be read selectively as it covers more information than young children need. A picture glossary and index are appended.

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Royston, Angela. *Solids, Liquids, and Gases*. Chicago: Heinemann Library, 2002. Water's three states are described using age-appropriate text. Mixing solids and liquids, as well as melting and freezing, appropriate photos, a glossary, bibliography, and index are pluses.

Sargent, Brian. *How Heavy Is It?* New York: Children's Press, 2005. "Weight is how heavy something is." The weight of familiar heavy and light items is demonstrated on several different kinds of scales, including balances. Some advanced detail can be edited out in reading.

Schuh, Mari C. *Drinking Water*. Mankato, MN: Pebble Books, 2006. Why is water important to human bodies? Limited text and diverse, colorful photographs answer why, when, and where questions.

Shulevitz, Uri. *Snow*. New York: Farrar Straus Giroux, 1998. As snowflakes slowly come down and melt, most people in the city downplay the snowfall potential. Watercolor illustrations add detail to the sparse text about the boy who believes and even celebrates a white city.

Tompert, Ann. *Just a Little Bit*. Boston: Houghton Mifflin, 1993. An elephant and a mouse want to try out the seesaw, but the weight imbalance does not allow much action. They get help from numerous other animals, but it isn't until a little brown beetle is added to the mouse's end that the balance changes.

Trumbauer, Lisa. *Why We Measure*. Mankato, MN: Yellow Umbrella Books, 2003. Rulers, maps, speedometers, scales, measuring tapes, etc. are all tools we use to measure various things. Although the small-book format is limiting, this book provides a good introduction to the concept of measurement.

Volkman, Roy. *Curious Kittens*. New York: Random House Children's Books, 2001. In simple color photos and sparse text, two little kittens wonder about the swimming experience in a fishbowl. They explore several ways to solve the problem of getting wet, effectively demonstrating the scientific process.

Weninger, Brigitte, and Anne Möller. *Precious Water*. New York: North-South Books, 2000. A clear glass of water is the introduction to "all things need water." Plants, "animals, and people" are all examples. Collage pictures and limited text are sufficiently detailed for good discussion.

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Wood, Audrey. *King Bidgood's in the Bathtub*. New York: Harcourt Brace, 1985. A number of the king's subjects fail to persuade King Bidgood to leave his bathtub—until his page does the obvious thing. Good observers, however, will note what happens to the water level in the tub as each attempt is made. Repetitive text and period illustrations add to the mood. Caldecott Honor book.

