

# **(GARBAGE) AT THE BEACH**

**A STORYTIME ABOUT MARINE DEBRIS**

**LESSON PLAN**



**Wisconsin Water Library**  
UNIVERSITY OF WISCONSIN-MADISON

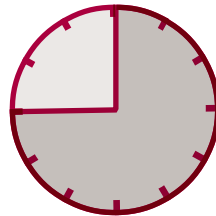
APRIL 2020

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## A STORYTIME ABOUT MARINE DEBRIS

### LESSON PLAN

The objectives of this storytime are to teach children where garbage comes from and how it ends up in the water, becoming “marine debris,” and a little about microplastics, which are small pieces of plastic.



This lesson plan works well with children in preschool through second grade. The lesson lasts from 45 minutes to an hour, based on the number of books read. To orient the children to what it means to be a scientist, think scientifically and “do science,” use the “[A Scientist Is...](#)” and “[Scientific Method](#)” handouts available at the end of this lesson plan.



## SING

Begin with your favorite welcome song.

## SCIENCE CHAT

Ask the children what garbage is, where it come from and where it winds up.

*They may be surprised to learn that it often winds up in the waterways.*



## MARINE DEBRIS BRAINSTORM

Have in hand a trash can with examples of garbage we might find in the water. Some things we have put in our trash can have included: plastic grocery bags, plastic water bottles, rubber gloves, tin cans, plastic foam cups, plastic silverware, rope, glass bottles, bottle caps, zipper storage bags, balloons, six-pack rings, food wrappers, flip flops and straws.

Start the conversation by asking if anyone has seen this type of garbage at the water's edge or at the beach. There are many other questions to ask, including:

*What other garbage might you find at the beach?*

*Where does it come from?*

*Do you make garbage?*

*What kind of garbage do you generate?*

*Does garbage always go where it is supposed to?*

*Where else does it go?* (Lead the conversation to the fact that often garbage can be found in and around our waters, streamside, lakeside or at the beach)

Scientists call garbage found in and around our oceans, lakes, rivers and streams **marine debris**.

# READ

Here are suggestions from the Wisconsin Water Librarians, but feel free to swap out with your own or visit our subject-specific reading lists: [Beachcombing](#) and [Water Pollution](#).

All book descriptions are quoted with permission from the Cooperative Children's Book Center (CCBC), Publishers Weekly or Kirkus Reviews.

**[Bats at the Beach](#)** (2006) by Brian Lies.

“Gathering up ‘our buckets, trowels, / banjoes, blankets, books, and towels,’ a family of bats flits out to the beach for a moonlit picnic of ‘yummy treats’ — ‘Beetles, ants, and milkweed bugs, / crickets, moths, and pickled slugs.’ ... Aside from the deliciously macabre menu, it’s not too different from a human outing; in Lies’s lambent, exactly detailed paintings, bats with an appealingly mouse-like look cavort happily through the waves. ... As a purpling sky to the east signals that it’s time to clean up, they ‘flutter homeward, drained and weary,’ as ‘small bats doze off, tired and teary.’ Perfect for sharing with younglings of the wingless sort, when it’s time for them to do the same.” (Kirkus Reviews)

For ages 5-7.

**[Beach Day](#)** (2001) by Karen Roosa, illustrated by Maggie Smith.

“It is a land and waterscape that reaches right down into our primordial souls — the beach, here given full iconic treatment. Using scant couplets to convey the most elemental pleasures of a day at the beach, and enticingly depicted in Smith’s watercolors, this will call up memories of any reader who has spent time on the ocean’s shore. From that first rush down the dunes and onto the strand — ‘Waves roar, / Rush, and soar! / Rolling, crashing / To the shore’ — to the tramp back out — ‘Sun-warmed skin, contented grin’ — it is an experience unlike any other and Roosa’s got it just right. Good stuff, simple and viscerally transporting, the waft of salt strong from the page. Over too soon.” (Kirkus Reviews) For ages 3-6.

**[A Beach Tail](#)** (2010) by Karen Lynn Williams, illustrated by Floyd Cooper.

“‘Swish-swoosh.’ The sound of waves washing the shore repeats throughout an engaging picture book in which a young African American boy is the architect of his own adventure. After Gregory draws “a Sandy lion” in the sand at the beach, his dad cautions, ‘Don’t go in the water, and don’t leave Sandy.’ And Gregory doesn’t, but as the tail he draws on Sandy gets longer and longer, it takes him farther and farther away from his dad: over an old sand castle, around a horseshoe and a ghost crab, all the way to a jetty. ... Floyd Cooper’s sun-washed, sandy illustrations are the perfect accompaniment to this terrific picture book narrative.”(CCBC) Highly Commended, 2011 Charlotte Zolotow Award 2011. For ages 3-7.

**[Surf’s Up](#)** (2016) by Kwame Alexander, illustrated by Daniel Miyares.

“A sunny day near the ocean means different kinds of excitement for frog friends Bro and Dude. Dude peeks into the window: ‘SURF’S UP, BRO!’ But Bro is too immersed in a book to respond (‘You’d rather read a book than go to the beach?’ Dude asks incredulously), so Dude pops pal and surfboard onto the back of his push scooter. On the way, Bro is still reading: ‘WOWIE KAZOWIE!’ The story (‘about a man looking for a whale’) begins to unfold around them both. Newbery winner Alexander’s humorous, tautly poetic dialogue between friends begs to be read aloud to small listeners or by new readers, and these frogs have cultural punch that many plain-vanilla animal characters

lack. The nod to Moby-Dick is a bonus. A warmhearted tribute to reading.” (Kirkus Reviews) **For ages 4-7.**

**A Beach Day** (1990) by Douglas Florian.

“‘Car ride. / Seaside. / Parking lot / Find a spot.’ These lines exemplify the brief text set in a large typeface accompanying the full-color, double-page spreads which visually tell the story of a beachside Fourth of July. Fourteen labeled drawings of shells which might be found on the Atlantic and Pacific coasts end the picture story and perhaps offer useful information to an older child or adult sharing the book with a very young beach-goer.” (CCBC) **For ages 2-4.**

**1 2 3 Beach: A Cool Counting Book** (2012) by Puck.

“Items commonly seen at the beach are ready to be counted in this vibrant board book featuring bold graphic images. The first page spread shows the number ‘1’ accompanied by a blue and red beach umbrella on gold sand. ‘2’ is a gold and white beach ball and a red and white volleyball. ‘4’ is two pairs of flip-flops. Every turn of the page brings a new dynamic image. A final ‘Let’s Talk!’ spread reiterates the numbers and images, offering a conversation starter for each.” (CCBC) **For ages 2-4.**

**Beach** (2006) by Elisha Cooper.

“Another charmer from Cooper, who, with his signature impressionistic, diminutive figures and scenes, delivers a perfect day at the beach, observing people, paraphernalia and nature. Panoramic views appose Lilliputian visual narratives — a woman pulling a wagon packed with toys and kids, a boy pretending he’s a sea turtle as the waves carry him out, kids building a sand castle and a dog barking at waves. ... As soothing and satisfying as the spray from dancing waves, sand between your toes and sun-warmed, waist-high water, this is as close as you can get to the beach without getting wet.” (Kirkus Reviews) **For ages 4-8.**

**Water Sings Blue: Ocean Poems** (2012) by Kate Coombs, illustrated by Meilo So.

“A marvelous collection of poems about the watery landscape of the sea and things found in and around it combine to build a sense of wonder, and even a little whimsy. Kate Coombs’ poems are often playful in concept (a sea urchin falling in love with a fork, a Hermit crab realtor cataloging his listings: various types of shells). But she also offers fresh, arresting descriptions of ocean wonders (a shark ‘slides through the water / like a rumor / like a sneer ... the color of fear’). Meilo So’s watercolor paintings provide the perfect visual backdrop, soft-edged and dreamy with their watery blues and greens and sandwashed browns, but with occasional bold splashes of color that enliven the seascape, whether it’s bright cities of coral splashed with pinks and yellows and greens on one page, or the blooms of red-orange jellyfish on another.” (CCBC) **For ages 4-9.**

**At the Beach** (1994) by Huy Voun Lee.

“There’s no better place for Xiao Ming to practice his Chinese character writing than in the sand at the beach, where real people and objects mirror the images of the characters he’s writing. Cut-paper collages work beautifully to convey abstract symbols through simple, concrete images, from ‘big’ (a man stretched out on the beach) to ‘good’ (mother and child together).” (CCBC) **For ages 6-10.**

*The following picture books address the issues of garbage, recycling and greener living:*

**I Stink!** (2002) by Kate and Jim McMullan.

“‘Who am I? I’ve got lights. Ten w-i-d-e tires. no A.C., not me ... Know what I do at night while you’re asleep? Eat your TRASH, that’s what.’ So begins a fast moving text about a cheerful personified garbage truck hard at work. Children will almost be

able to hear the scrunch and crunch of the A-B-Cs of refuse enumerated by this rackety raconteur who says, ‘Ah!’ while gobbling ‘Apple cores Banana peels Candy wrappers Dirty diapers (yes, dirty diapers) Eggshells Fish heads Gobs and gobs of gum ...’ and much more. Yuck! A delightfully upbeat story about the very vehicle needed to get a sticky job done. Yay!” (CCBC) Highly Commended, 2003 Charlotte Zolotow Award. **For ages 2-6.**

**These Seas Count** (2013) by Alison Formento, illustrated by Sarah Snow.

“The children in Mr. Tate’s class take a field trip to clean up beach litter in this companion to ‘This Tree Counts!’ and ‘These Bees Count!’ This civic-minded activity also gives the kids a chance to learn about ocean habitats and the importance of conservation — with a number lesson to boot.” (Publishers Weekly) **For ages 4-7.**

**The Dumpster Diver** (2007) by Janet S. Wong, illustrated by David Roberts.

“As the old saying goes, one person’s trash is another’s treasure. But, where does one dive for sunken treasure in the city? In the dumpsters, of course. Dressed in protective gear that rivals the hardest of deep-sea divers, Steve, an electrician, takes three neighborhood children along on his dumpstering adventures. Through their treasured discoveries, the children learn how to creatively alter raw materials into new objects. They learn the beauty of recycling and rethinking a standard way of life. They learn how to combat a throw-away culture. And, most importantly, they learn how to apply this fun creativity to an understanding of financial equity. The diving team’s operation is not without risk and not everyone accepts their way of thinking. ... Through imaginative interplay of story, illustrations, and design, Wong’s *Dumpster Diver* will entertain, inform, and challenge young readers to think differently.” (CCBC) **For ages 5-8.**

**Recycle! A Handbook for Kids** (1992) by Gail Gibbons.

“Bright pen-and-wash illustrations show children collecting and separating recyclable paper, glass, cans, and plastic and taking them to deposit points or putting them out for pickup. Gibbons urges elimination of non-biodegradable polystyrene products, which release dangerous CFCs when burned, and shows a sanitary landfill and recycling plants where materials are crushed, melted, and reformed into useful products. The captioned panels and running text stress the need for reducing waste and saving natural resources. ... A concluding page lists things kids can do to make a difference. Printed on recycled paper. Attractive and timely, an excellent introduction.” (Kirkus Reviews) **For ages 4-10.**

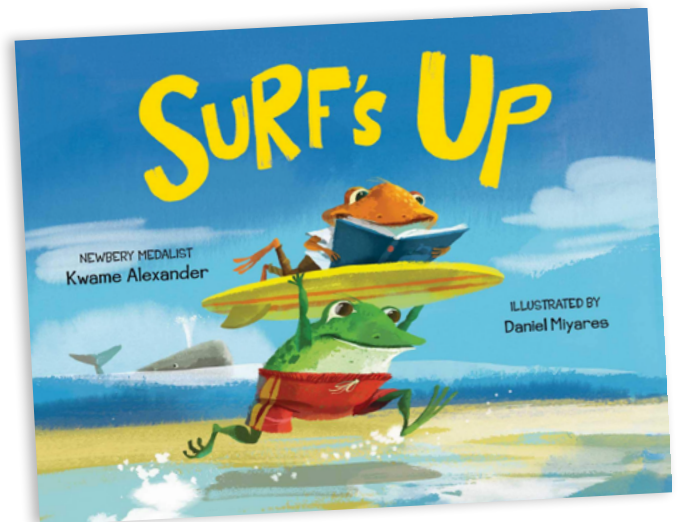
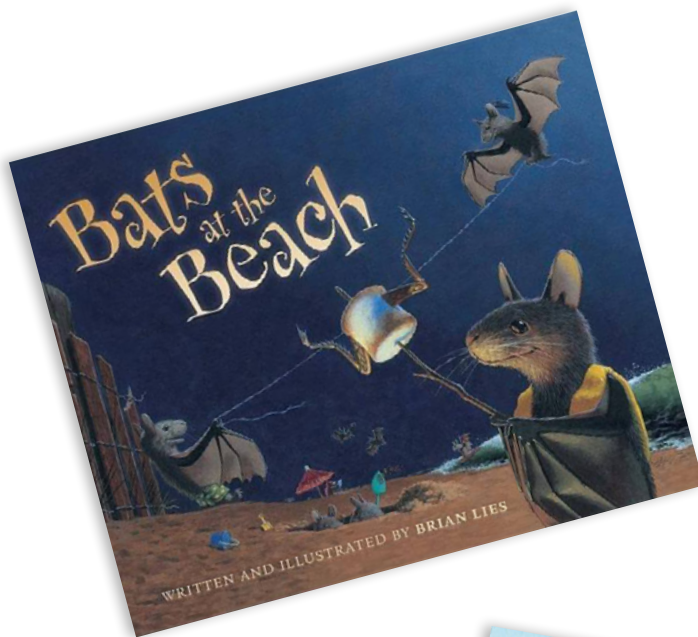
**Recycle Every Day!** (2003) by Nancy Elizabeth Wallace.

“The bunnies at Minna’s school have been asked to create a poster about recycling. The best posters will be used as illustrations in the Community Recycling Calendar. Minna really wants to win, and her family has helpful suggestions. The story is a vehicle for the Be Green message, but young readers won’t mind. Between the seven activities Minna and her family do during the week and the posters her 12 schoolmates display, each with a recycling suggestion of its own, there are plenty of ideas youngsters can act upon to be kinder to the Earth. There is more story here, but less information, than Gail Gibbons’s *Recycle!* (1992). However, the intended audience will enjoy the extras. An excellent introduction to this increasingly important subject.” (Kirkus Reviews) **For ages 5-9.**

**The Green Mother Goose: Saving the World One Rhyme at a Time** (2011) by Jan Peck, David Davis illustrated by Carin Berger.

“For this collection of 30 poems, not only nursery rhymes but also familiar children’s songs (‘Yankee Doodle,’ ‘Here We Go Round the Mulberry Bush,’ etc.) have been given new lyrics promoting energy conservation activities and healthy living. The author of *Texas Mother Goose* (2006) here teams up with the ‘green-minded’ author of *The Giant Carrot* (1998) to produce a lively

combination of parody and sound earth-saving suggestions. ‘Little Jack Horner / Changed bulbs in the corner’ and ‘Hickety, Pickety, free-range hen’ combine with a Mother Hubbard who ‘went to the market / To buy only local.’ Their strong message is leavened by Berger’s whimsical, inventive illustrations, which lighten the tone. [The] illustrations invite close inspection, while the poems will be welcomed in schools where going green is a value.” (Kirkus Reviews) **For ages 5-9.**



*The following books (for older readers) directly address the issue of marine debris and plastic pollution:*

**Tracking Trash: Flotsam, Jetsam, and the Science of Ocean Motion** (2007) by Loree Griffin Burns.

“Dr. Curtis Ebbesmeyer compiles data gathered from beachcombers all over the world who find items washed ashore from cargo spills at sea. Recovered Nike sneakers and children’s bathtub toys reveal a lot about the motion of the sea, but the motion of the sea also reveals a lot about human civilization. Human debris — shampoo bottles, fishing nets, and other sorts of trash, mostly plastic — gathers in huge masses called garbage patches. They threaten the well-being of marine life and the ocean itself, and challenge us all — as individuals and as nations — to think carefully about how our actions impact the earth. [Part of] Houghton’s excellent ‘Scientists in the Field’ series, Burns’s dynamic writing, accompanied by ample photographs and other illustrative matter ... makes for an outstanding photodocumentary about both the fascinating work of science and the compelling issue of the environment.” (CCBC) **For ages 10-14.**

**Plastic Ahoy! Investigating the Great Pacific Garbage Patch** (2014) by Patricia Newman, photographed by Annie Crawley.

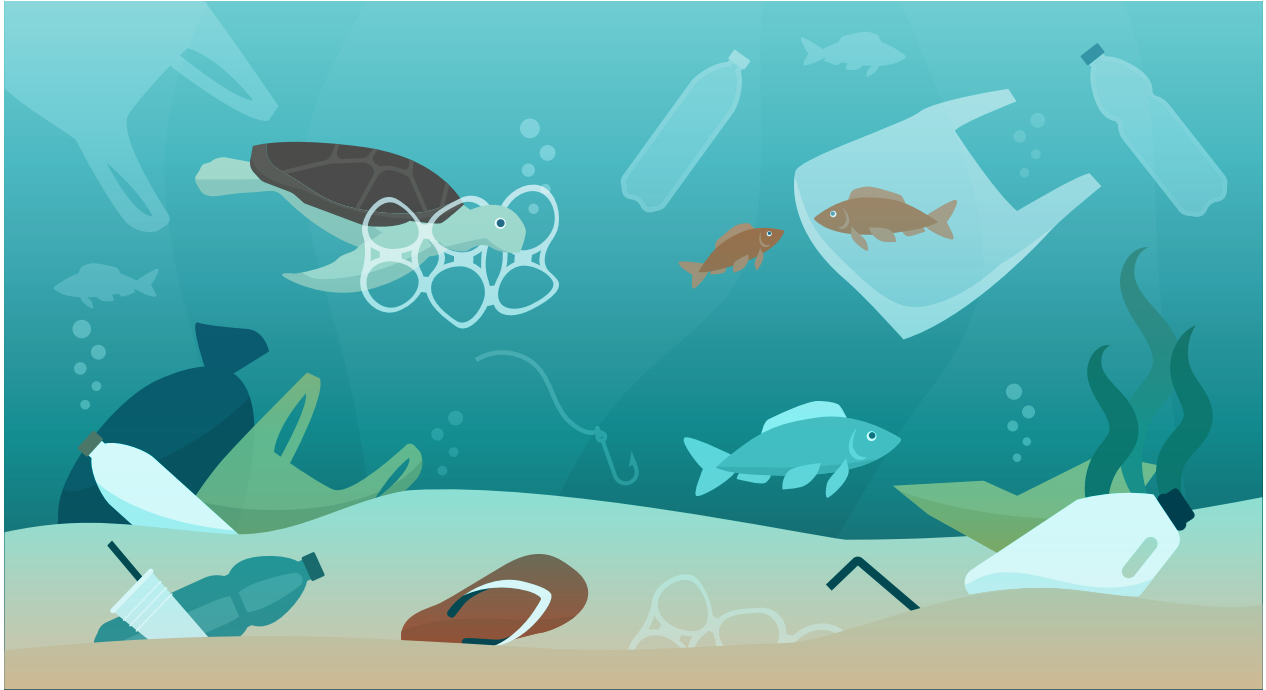
“Student researchers spend three weeks on a small ship investigating plastic residue and its effect on ocean water and marine life in the Great Pacific Garbage Patch. Straightforward organization introduces the students, the problem, the 2009 Scripps ... Expedition, daily life on the research vessel and the scientific method: observe, develop hypotheses, design experiments. A sobering introduction and solid demonstration of science research in action. (source notes, glossary, further reading, index)” (Kirkus Reviews) **For ages 10-15.**





# MOVE

Return to your trash can with examples of potential marine debris. Have kids stand up and imagine they are fish in the lake or ocean. Have them swim around using their hands as pretend fins and the room as their pretend body of water, then toss items of marine debris in their path.



As fish, what do they think will happen when they get entangled with all that trash?  
If you are feeling adventurous, use the rope to entangle all the fish with it.

# SING

Use any song you like adapted to the theme of fish (who come upon marine debris). Tell the children to imagine themselves, again, as fish in the water, running into marine debris.

Here is one suggestion:

## I'm a Little Fish

TUNE: "I'M A LITTLE TEAPOT"

I'm a little fish, I like to swim

*(Put hands in prayer position facing away from you — they're the fish. Wiggle them back and forth like a fish swimming through the water.)*

You can't catch me, 'cause I have fins

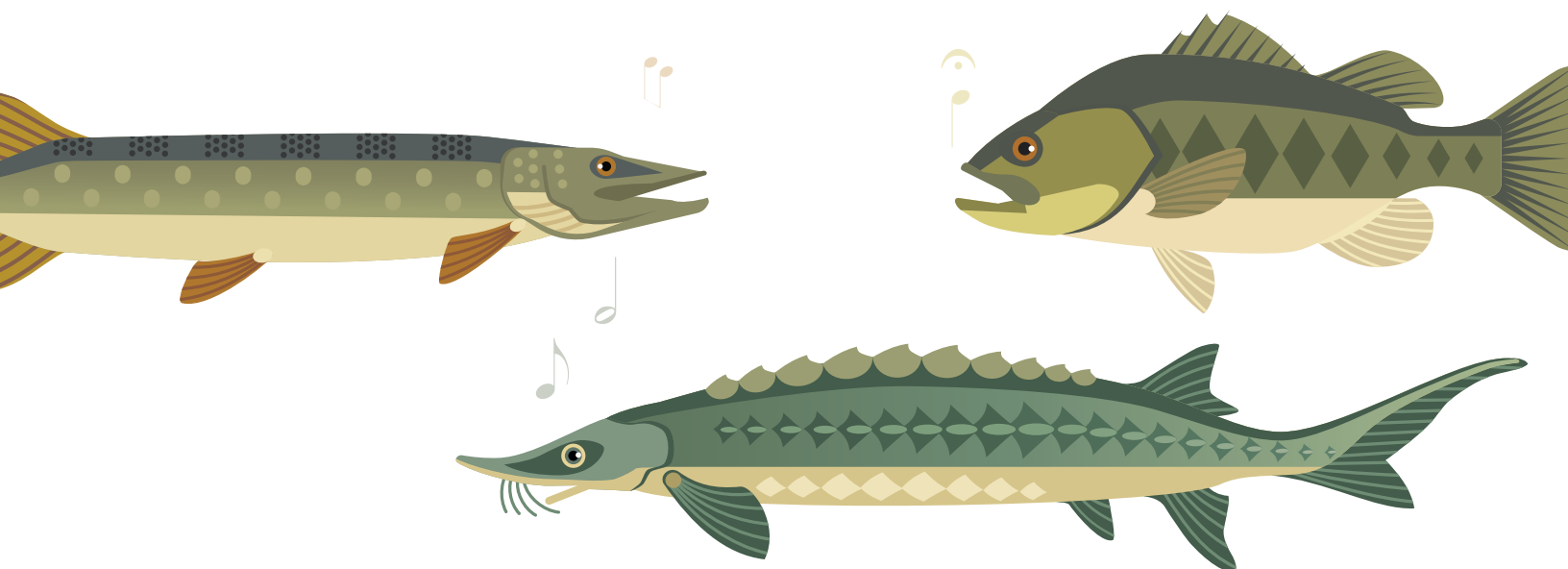
*(Shake finger back and forth, "no no no.")*

When I swim past my friends, I hear them say

*(Put hand to ear like you're listening.)*

Stop your swimming and come and play!

*(Make a STOP gesture with hand and then jump up in the air.)*



# DO SCIENCE

Many animals, including fish and sea birds, die from swallowing and/or becoming entangled with larger plastic pieces in their habitats. Another danger for animals is small pieces of plastic called microplastics. Scientists define microplastics as plastic pieces smaller than five millimeters long that can be harmful to our ocean and aquatic life. Animals that live in the water sometimes mistake microplastics for their food or inadvertently ingest it as they swim around. Research is under way to find out what effects microplastics might have on their health.

One way to demonstrate the scope of the problem with microplastics is a very simple demonstration.

## Supplies needed:

Two medium-size containers

A spoon

Rice

Beans

*Mix rice and beans in one container. The beans represent food and the rice represent microplastics. See how much food you can scoop out without any plastics.*



# CRAFT

Decorate a cloth bag

## Supplies needed:

Cloth bags

*Choose only cotton bags, not synthetic versions that contribute to the problem of excess plastics.*

Fabric paints or markers

## How to:

Have the children decorate their own cloth bags and discuss how reusing bags prevents plastic waste.



# LEARN MORE ABOUT

## MARINE DEBRIS

(AND WHAT WE CAN DO ABOUT IT)

NOAA offers a lot of information about marine debris:

[marinedebris.noaa.gov](http://marinedebris.noaa.gov)

“What is Marine Debris?” NOAA Ocean Facts:

[oceanservice.noaa.gov/facts/marinedebris.html](http://oceanservice.noaa.gov/facts/marinedebris.html)

Marine debris curricula, activities (puzzles, brain-teasers, coloring, etc.) for Grades 1-12, and publications for educators, NOAA Marine Debris Program Office of Response and Restoration:

[marinedebris.noaa.gov/activities-and-curricula](http://marinedebris.noaa.gov/activities-and-curricula)

“Trash Talk” videos (Regional Emmy Award Winning), NOAA Marine Debris Program Office of Response and Restoration:

[marinedebris.noaa.gov/discover-issue/trash-talk](http://marinedebris.noaa.gov/discover-issue/trash-talk)

“Trash Talk” Webinar for Educators, NOAA Marine Debris Program [10-minute video]:

[oceantoday.noaa.gov/trashtalk\\_webinar](http://oceantoday.noaa.gov/trashtalk_webinar)

National Geographic on marine debris:

[nationalgeographic.org/encyclopedia/marine-debris](http://nationalgeographic.org/encyclopedia/marine-debris)

“What is Marine Debris: A Cartoon Crash Course,” PEW Charitable Trusts [short video]:

[pewtrusts.org/en/multimedia/video/2016/what-is-marine-debris-a-cartoon-crash-course](http://pewtrusts.org/en/multimedia/video/2016/what-is-marine-debris-a-cartoon-crash-course)



National Geographic “How We Can Keep Plastics Out of Our Ocean” [short video]:  
[video.nationalgeographic.com/video/160916-society-plastic-pollution-our-ocean](https://video.nationalgeographic.com/video/160916-society-plastic-pollution-our-ocean)

What You Can Do About Marine Debris (US Environmental Protection Agency Trash-Free Waters Program): [epa.gov/trash-free-waters/what-you-can-do-about-marine-debris](https://epa.gov/trash-free-waters/what-you-can-do-about-marine-debris)

The Story of Stuff Project produced a video raising awareness of and promoting “upstream” solutions (changes by plastics producers) to plastic pollution:  
[storyofstuff.org/story-of-plastic](https://storyofstuff.org/story-of-plastic)

#BreakFreeFromPlastic global movement: [breakfreefromplastic.org/#about](https://breakfreefromplastic.org/#about)

The Plastic Pollution Coalition is a “global alliance of individuals, organizations, businesses, and policymakers working toward a world free of plastic pollution and its toxic impacts ...”: [plasticpollutioncoalition.org/the-coalition](https://plasticpollutioncoalition.org/the-coalition)

Alliance for the Great Lakes unites “tens of thousands of people each year in advocacy, volunteering, education and research to ensure the lakes are healthy and safe for all;” their site includes pages on current campaigns, an “Action Center,” and ways to “Get Involved,” which includes educational curricula and “Adopt-a-Beach” information:  
[greatlakes.org](https://greatlakes.org)

Healing Our Waters – Great Lakes Coalition is a coalition of 145 member organizations involved in the restoration and protection of the Great Lakes, including a “mission is to secure a sustainable Great Lakes restoration plan and the federal funding needed to implement it: [healthylakes.org/about-the-how-coalition](https://healthylakes.org/about-the-how-coalition)

International Coastal Cleanup campaign organized through the Ocean Conservancy:  
[oceanconservancy.org/trash-free-seas/international-coastal-cleanup](https://oceanconservancy.org/trash-free-seas/international-coastal-cleanup)

The Global Partnership on Marine Litter of the United Nations Environment Programme brings together international agencies, governments and civil society to address marine litter on a global scale [short video]:  
[unenvironment.org/news-and-stories/video/preventing-our-oceans-becoming-dumps](https://unenvironment.org/news-and-stories/video/preventing-our-oceans-becoming-dumps)  
and includes ways individuals can become involved: [unenvironment.org/get-involved](https://unenvironment.org/get-involved)

Trash Trunk: A Kit for Learning About Marine Debris from the Center for Great Lakes Literacy and the Michigan, Ohio and Wisconsin Sea Grant Institutes.  
[cgll.org/resources/trash-trunk](https://cgll.org/resources/trash-trunk)

# 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

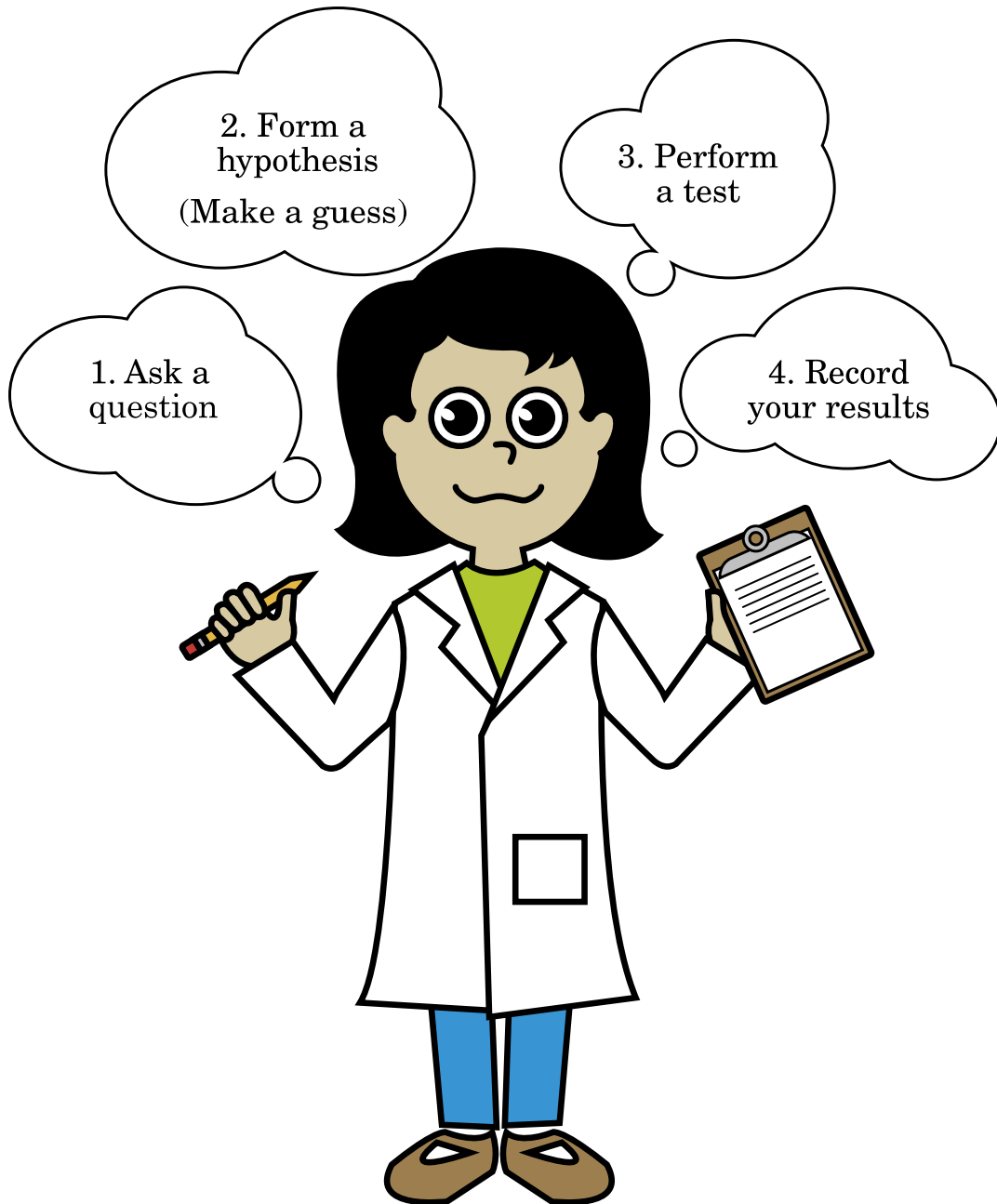
## A SCIENTISTS SAYS...

- 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...



# SCIENTIFIC METHOD

THINK LIKE A SCIENTIST





Publication number: WISCU-E-20-005

This work was funded by the University of Wisconsin Sea Grant Institute under grants from the National Sea Grant College Program, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, and from the State of Wisconsin. Federal grant number NA180AR4170097, project number C/C-1.