

WAVE IN A BOTTLE



This simple science project is one of the easiest ones I know of. But, don't let the fact of its short ingredient list fool you: it really is fun. A demonstration of the way that a wave works, this mini-ocean in a bottle is a cool and colorful method for understanding the basic science behind waves as they travel across the water. Round out the activity with a read or three from the ocean themed booklist that follows the tutorial and you'll be all set for an afternoon of imagining that you've been sent out to sea.

MATERIALS:

- clear container with tight fitting lid
- canola or mineral oil
- tap water
- food coloring
- plastic animal or boat (optional)

MAKING A WAVE IN A JAR



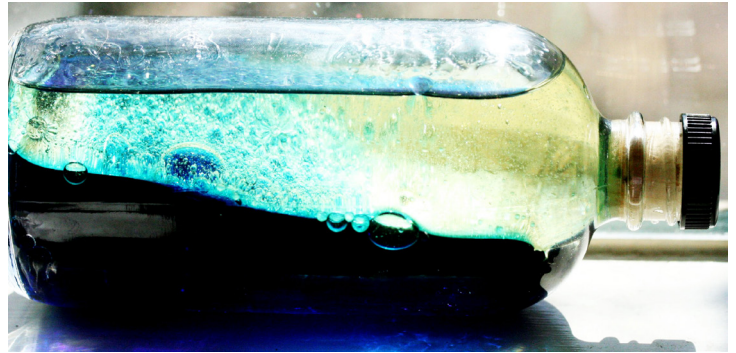
Begin by laying out your materials. You may want to work on a surface that is waterproof or easy to clean up, just in case you spill while filling your bottle.

Fill your container with equal portions vegetable oil and plain water.



Add a few drops of food coloring. Any color is fine. If you want, you can toss in a toy animal or boat (but keep in mind that it might be tricky to get it back out!).

Put the lid on your container, making sure that it is closed tightly. Create waves in the bottle by laying it on its side and gently rocking the bottle from end to end. You should see a wave move through the bottle from one end to the other.



WHAT'S AT WORK:

The movement of the bottle creates energy, which then moves through the fluid in the bottle from one end to the other. On an actual body of water, waves can be caused by a few different factors. The most common are wind and the tidal pull of the moon's gravity.

THE HIGH SEAS

Like with our massive mammalian friends, the whales, the subject of the ocean as a whole has a special place in children's literature. Although adults can be equally fascinated by the vastness and mystery of the open ocean or the sea floor, children tend to regard these ideas with a sort of rapt attention that is reserved for those natural phenomena that just seem too amazing to be true. This list is a fabulous mish-mash of all sorts of great sea-centric reading. You'll find books about boats, sailing, the science of waves, and even the occasional sea creature (both mythical and real). From coastal tides to life as a sailor, there is so very much to learn about the water that covers most of our planet; let's start here.

PICTURE BOOKS AND NON-FICTION

What Makes an Ocean Wave?

by Gilda Berger (R.L. 5.4, I.L. 2-5)

Out of the Ocean

by Debra Frasier (R.L. 3.5, I.L. preK-3)

The Atlas of the Oceans

by Linda Sonntag (R.L. 4.3, I.L. 3-6)

Great White Shark: Ruler of the Sea

by Kathleen Weidner Zoehfeld (R.L. 4.1, I.L. K-2)

Louise : The Adventures of a Chicken

by Kate DiCamillo (R.L. 3.6, I.L. K-3)

Surrounded by Sea

by Gail Gibbons (R.L. 4.3, I.L. preK-3)

Into the Sea

by Brenda Z. Guiberson (R.L. 4.8, I.L. 2-5)

The Sea Serpent and Me

by Dashka Slater (R.L. ?, I.L. preK-2)

My Life with the Wave

by Catherine Cowan (R.L. 3.8, I.L. 3-6)

Sea of Dreams

by Dennis Nolan (R.L. ?, I.L. preK-3)

Sea Watch

by Jane Yolen (R.L. ?, I.L. 2-5)

Mr. Putter and Tabby Clear the Decks

by Cynthia Rylant (R.L. 2.0, I.L. preK-3)

Henry and Mudge and the Forever Sea

by Cynthia Rylant (R.L. 2.3, I.L. K-3)

Harry by the Sea

by Gene Zion (R.L. ?, I.L. PreK-2)

Hello Ocean

by Pam Muñoz Ryan (R.L. 3.1, I.L. K-3)

Swimmy

by Leo Lionni (R.L. 2.5, I.L. preK-2)

CHAPTER BOOKS

The Storm

by Cynthia Rylant (R.L. 3.8, I.L. 2-4)

We Didn't Mean to Go to Sea

by Arthur Ransome (R.L. 6.9, I.L. 5-8)

Horrible Harry Goes to Sea

by Suzy Kline (R.L. 3.4, I.L. 2-4)

The True Confessions of Charlotte Doyle

by Avi (R.L. 7.0, I.L. 5-8)

Pippi in the South Seas

by Astrid Lindgren (R.L. 5.5, I.L. 2-5)

Moominpappa at Sea

by Tove Jansson (R.L. ?, I.L. 3-6)