

February 9, 2016

BOP STEM CCER Teaching Fellowship
Cohort 1 • Year 2

Micro-Lesson

Hunter's Point Community Middle School
Seventh Grade Special Education Mathematics Teacher

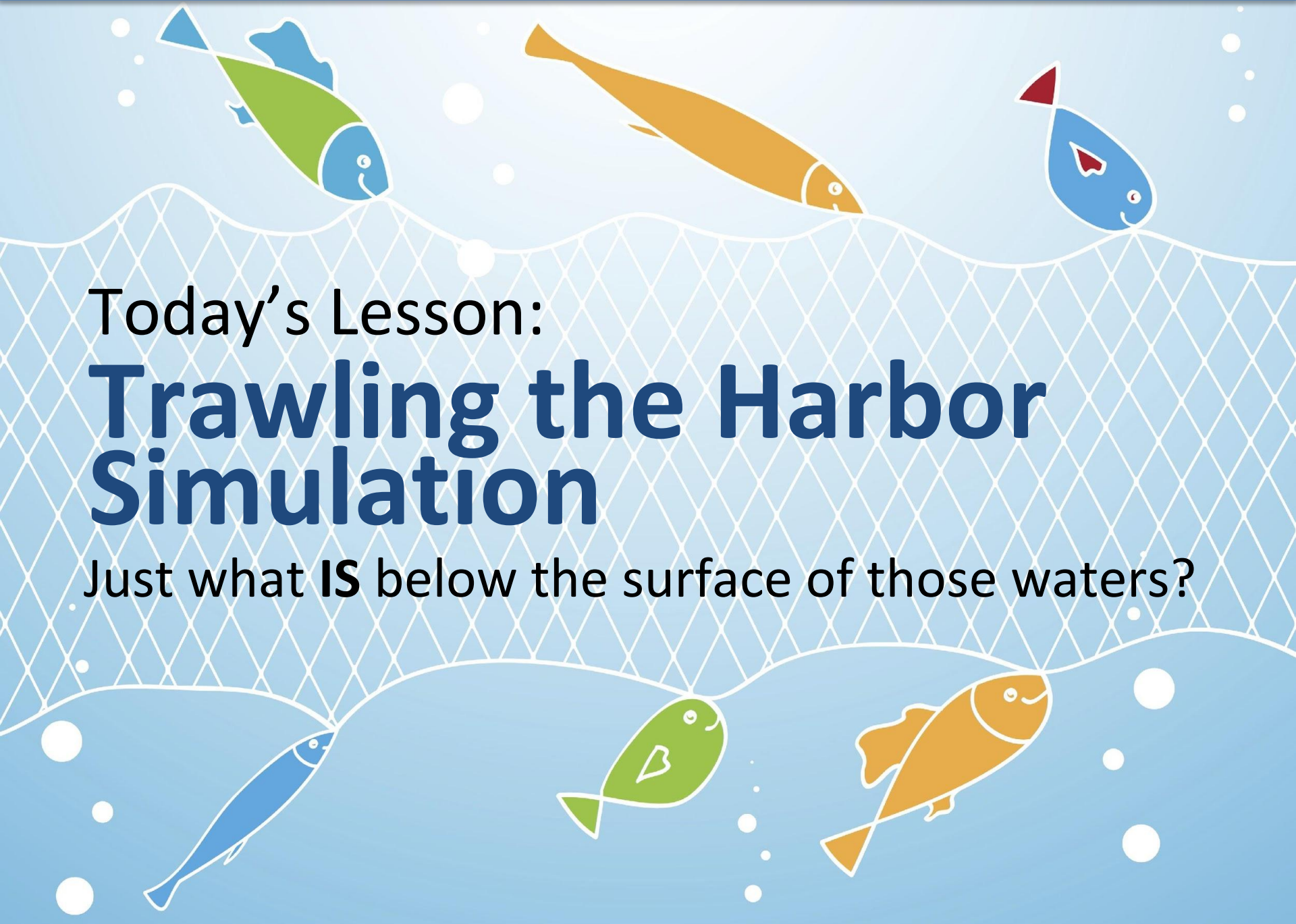
Andy Ross



Today's Lesson:

Trawling the Harbor Simulation

Just what **IS** below the surface of those waters?



Our Objectives

The background features a light blue grid pattern. Several stylized fish are scattered across the page: a green fish at the top left, an orange fish at the top center, a blue fish at the top right, a blue fish at the bottom left, and a green fish at the bottom center. There are also several white bubbles of varying sizes.

1. To introduce ourselves to the many inhabitants of New York Harbor
2. To practice data documentation/analysis and further our mastery of working with ratios, proportions and linear equations
3. To create a handbook of harbor inhabitants for future reference when in the field

LAUNCH

**What is
the artist's
perspective
of NY
Harbor?**

Saul Steinberg's illustration
for Joseph Mitchell's classic
Bottom of the Harbor 1959



LAUNCH



What do you think you would find under the surface of New York Harbor's waters?

Turn

TALK

and

EXPLORE

A light blue background with a white fishing net pattern. Several stylized fish are scattered around: a green fish with a blue head, a yellow fish, a blue fish with a red tail, a blue fish, a green fish with a white 'B' on its side, and a yellow fish. There are also white bubbles of various sizes.

Let's see what we find when we simulate a *trawling** of the Harbor!






















***Trawling** is a method of fishing that involves pulling a fishing net through the water behind one or more boats. The net that is used for **trawling** is called a **trawl**.

EXPLORE

Follow the instructions from your worksheet and then complete all parts.

TRAWLING THE HARBOR simulation

Oyster Associates & Predators

 AMPHIPOD A <input type="text"/>	 BARNACLES A <input type="text"/>	 BLACKFISH/AUTOG P <input type="text"/>	 BLUE CRAB P <input type="text"/>	 BLUE MUSSEL A <input type="text"/>	 FLATWORM P <input type="text"/>	 GREEN CRAB P <input type="text"/>
 GOLDEN STAR TUNICATE A <input type="text"/>	 JAPANESE SHORE CRAB P <input type="text"/>	 MUD CRAB P <input type="text"/>	 MUD SNAILS A <input type="text"/>	 MUD TUBE WORM A <input type="text"/>	 OYSTER DRILLS P <input type="text"/>	 OYSTER TOAD FISH P <input type="text"/>
 RIBBED MUSSEL A <input type="text"/>	 SAND WORM A <input type="text"/>	 SEA GRAPE TUNICATE A <input type="text"/>	 SEA ROBIN P <input type="text"/>	 SHORE SHRIMP A <input type="text"/>	 SLIPPER SHELLS A <input type="text"/>	 SPONGES A <input type="text"/>

1. Using your instruments, "trawl" your water tray to remove one associate/predator card. (*Organism A*)
2. Roll the dice and add your results together to determine the quantity of the organism you've found in your simulation.
3. Notate that quantity in the corresponding associate/predator box in the chart above.
4. After each person at your table has had a chance, repeat steps 1-3 for a second associate/predator card. (*Organism B*) **NOTE:** If you get the same quantity from your dice roll, roll them again until you get a different number.
5. Create a ratio of *Organism A* to *Organism B*, and write it below.

6. What is the unit rate of *Organism A* per one *Organism B*? Write it below.

Continue on back 

SUMMARIZE

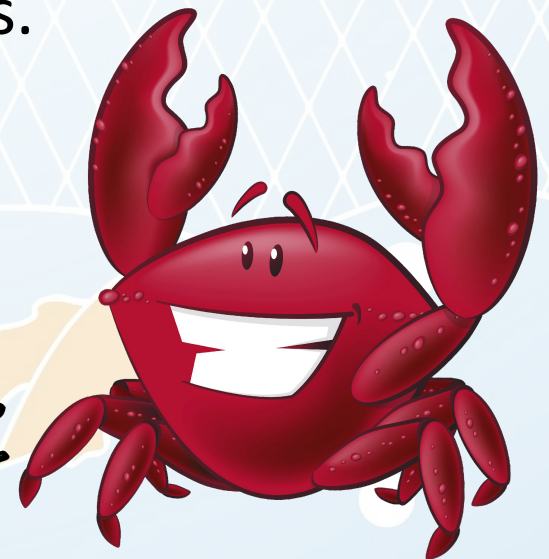


This activity is a simulation and doesn't accurately represent what you most likely will encounter in an actual field with our restoration station. At the station, we will be collecting lots of data including quantities of organisms we find there.

Once we collect that data, how can we use it to make our simulation activity more accurate as if it's a truer sample of the population?

YOUR HOMEWORK

“Adopt” an organism from your exploration. Research it and create a one-page fact sheet with drawing to be presented to the class and then added to a classroom “handbook” of harbor inhabitants. This book will serve as a resource to current and future students.



NEXT STEPS



Now that we know a bit of what we might find below the water's surface, we can start thinking about ways to protect it!