



Department of
Environmental
Conservation

Day in the Life

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

of the Hudson River and Harbor

Quick and Dirty Tips and Tricks for a Successful Day in the Life!



Addressing common mistakes and misconceptions

1. DITL Preparation

In-Classroom Activities
[Click Here!](#)

DITL English Vocab
[Click Here!](#)

DITL Spanish Vocab
[Click Here!](#)

1. Communication is Key!

- Teachers and partners need to be in touch with each other in order to have clear expectations of the day.

2. Take it slow & less is more.

- Cliché but true! Doing a few things well is more rewarding than doing many things chaotically.

3. In-class preparation makes a WORLD of difference

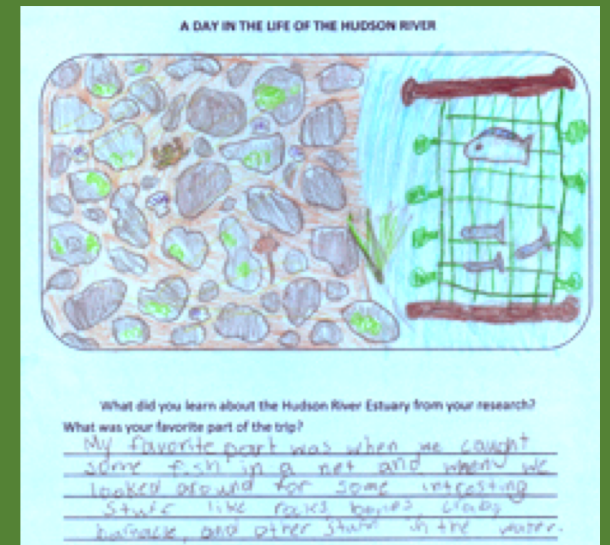
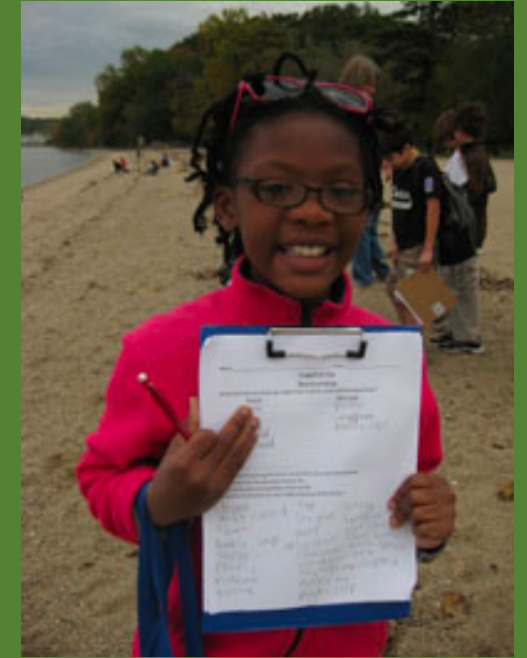
- Preparing your students with the materials and activities we have online will create a more effective and meaningful outcome.

4. Check out your site beforehand

- Familiarity with the site is a must in order to have a seamless DITL experience. Make sure that you have obtained permission or permits if applicable. Don't assume it has been done for you. Again, communication is key!

5. Back-up Activities

- Some stations or equipment may take longer than others. Instead of having all the students gathered around one instrument, keep them occupied with other activities (i.e. physical river site description and sketch, weather and wind and cloud cover data, creative-silent journaling to observe nature)



2. Data

DITL Interactive Database (Across River)
[Click Here!](#)

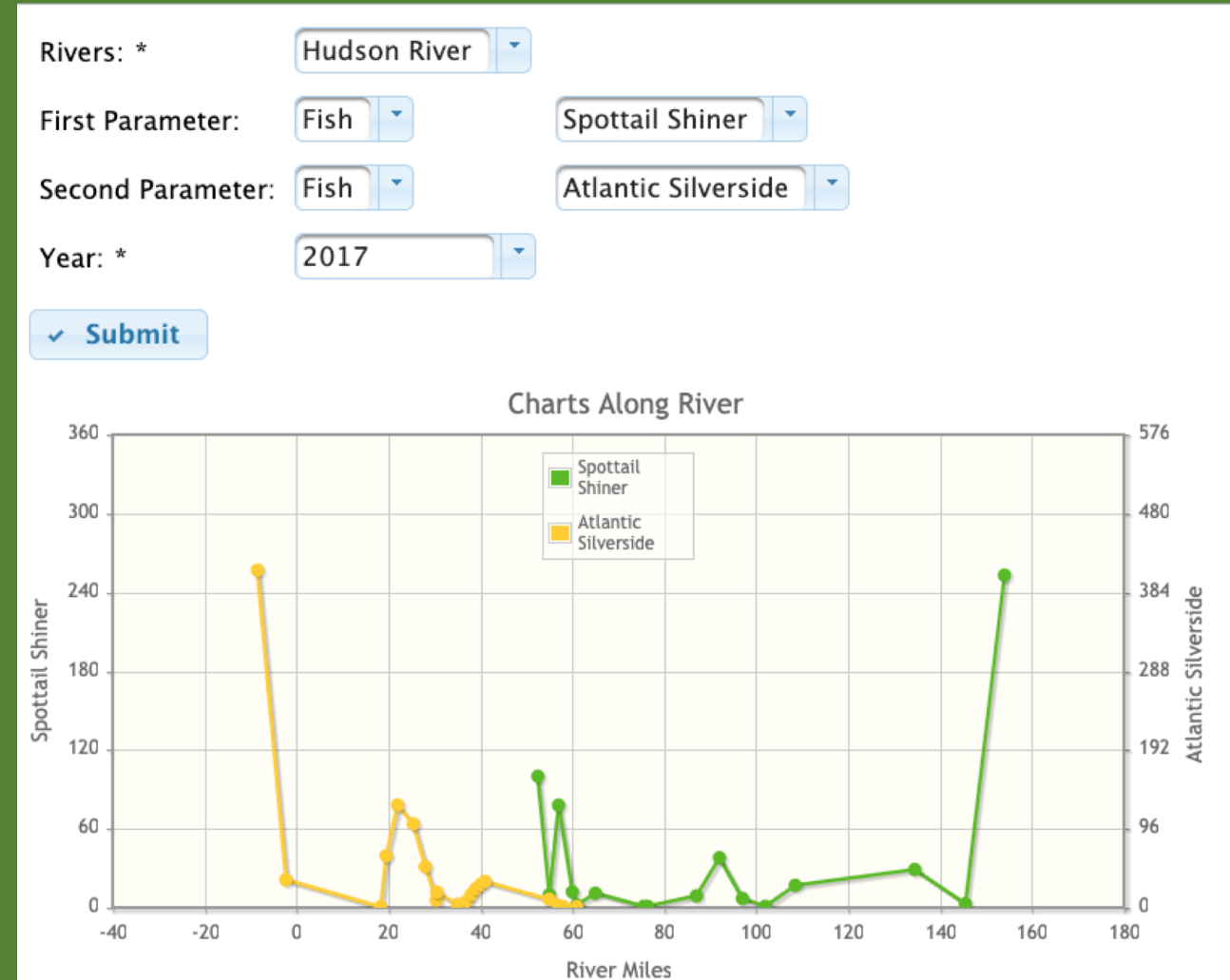
DITL Interactive Database (Overtime)
[Click Here!](#)

1. Please send us your data

- Your data is contributing towards a long term dataset to further understanding the Hudson River. You and your students' data is a crucial component and apart of ongoing research!

2. Units! Units! Units!

- We are good, but we aren't THAT good 😊



Your data contributes toward data that tells a story of the Hudson River!

3a. Salinity: Freshwater Sites

For Step by Step Directions
Click Here!

High & Low Range Quantabs

1. Take a picture of your Quantab bottle conversion chart and submit with data.

- EACH Quantab bottle has a different scale so the conversion charts are not transferable from bottle to bottle.

2. DO NOT touch the bottom of the Quantab strip with your fingers.

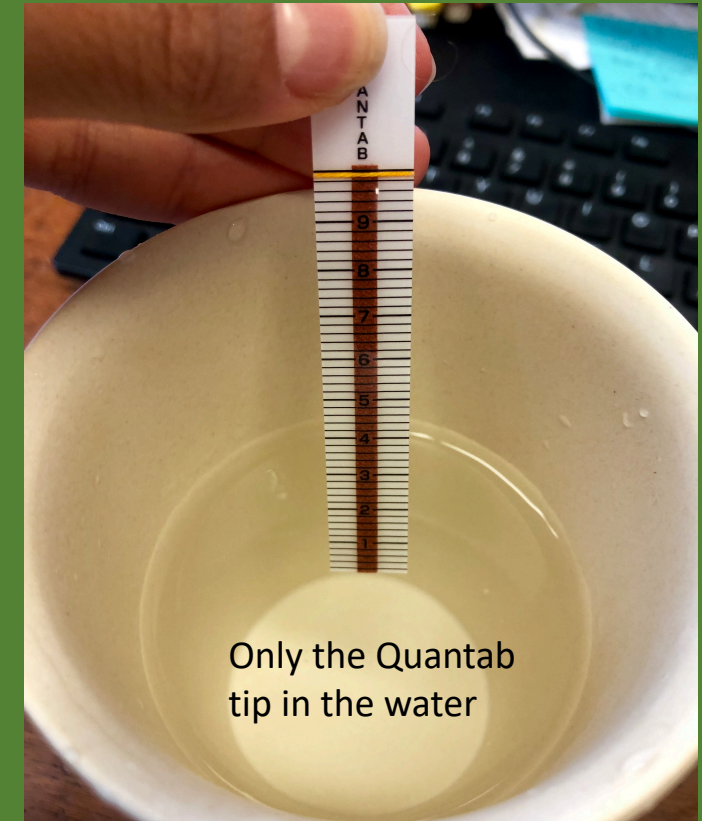
- Quantabs are extremely sensitive to traces of salt. If you have salt on your fingers, you can cause a false reading.

3. Only the tip of the Quantab should touch the water sample

- Do not submerge the entire quantab into the water sample. The capillary action will force the water up the scale on its own. You want to avoid water touching the top yellow band at all costs!

4. Record your data in PPM Chloride (ppm Cl⁻)

- Quantab units don't mean anything in the world of science. They are a conversion tool to get to ppm Cl⁻ (3rd column on the conversion chart).



Quantab Units	%NaCl	ppm(mg/L) Cl ⁻	Quantab Units	%NaCl	ppm(mg/L) Cl ⁻
2.2	0.046	276	5.6	0.225	1362
2.4	0.051	312	5.8	0.244	1477
2.6	0.058	350	6.0	0.264	1602
2.8	0.064	390	6.2	0.287	1738
3.0	0.071	433	6.4	0.311	1887
3.2	0.079	479	6.6	0.338	2050

3b. Salinity: Marine Sites

For Step by Step Directions
[Click Here!](#)

Hydrometer & Refractometer

1. Record which technique you use!

- They measure salinity in different ways! Hydrometers measure salinity based on density while refractometers measure the light refraction based on the salinity of the solution.

2. Hydrometers and Refractometers measure in 'parts per thousand' (PPT), not 'parts per million' (PPM)

- These tools are for saltier sections of the Hudson. Remember that ocean water is 35 ppt!

3. Read the hydrometer off of a steady surface.

- The needle of the hydrometer bounces with motion. The hydrometer needs to be on a steady surface to get an accurate reading.

4. Step into a sunny spot to read the refractometer.

- Refractometers measure the refraction of light; therefore, there needs to be a light source. So step out from under that shady tree!



4. Fish

Photo Tools for Fish ID
Click Here!



1. PLEASE Take pictures of your fish species!

- Fish identification is CHALLENGING and can sometimes take a village of scientists to determine the species. We want to ensure we have the most accurate data so please take pictures of each species and send them over to us!

2. How do I take pictures of my fish properly?

- Ah yes, glad you asked! There is a standardized way to take pictures fish. Hold the fish flat on your hand with the fish facing to the left (as if it is swimming to the left). Make sure all fins and special features are showing. Try to include a common item or ruler in the picture for scale.

3. Double check your fish identification!

- There are a couple FREE and easy to use resources that you can use in the field on your phone!
 - The Online Clearwater Fish Key: an online dichotomous key to use in the field!
 - INaturalist: A downloadable app on your smart phone. All you have to do is take a picture of the fish, upload it into the app, and click "what did you see?" to view suggestions. With a good picture, this app is pretty accurate!

4. When in doubt, send your fish pictures/questions to us!

- We have an extensive network of scientists that love fish! We are more than happy to help you figure out your species.

Text fish pictures to Chris Bowser: 845-802-4030



5. Photos & Photo Consent Form

[Photo Consent Form](#)
[Click Here!](#)

1. PLEASE take pictures of the day!

- The photos that you share with us bring the event to life! We love seeing the awe and excitement of your students as they hold a fish for the first time or smell a stinky sediment core.

2. Each student needs to complete the 'Photo Consent Form' and send back to us

- The photos are shared on our [Day in the Life Website](#) and will be added to your data sheets. We cannot make these pictures public unless we have permission from the student's legal guardian.

