

A 'DAY IN THE LIFE' OF THE HUDSON & HARBOR
DATE _____

<http://www.ideo.columbia.edu/dayinthelife>

PLEASE USE THIS 2023 SCAN CODE TO SEND US YOUR DATA VIA GOOGLE FORM
WITHIN 24-48 HOURS:

Google Form:
<https://forms.gle/GPneji1DdKyeArQB8>
Questions: Margie Turrin, 845-365-8494
Email (preferable): mkt@ideo.columbia.edu

PRIZE ALERT!

The groups that send in their data packets by **October 10th** will be entered into a drawing to win a PRIZE from the "Day in the Life" Team.

NOTES FOR THE DAY:

- Do all or some of these tests: prioritizing salinity, D.O., & fish
- Take photos of each different kind of fish and upload it with your data
- Supporting materials & activities are at the website link above
- Enter your data online, or email it to us ASAP.
- Be sure to include this cover sheet with your data

RECORDING SHEET I - BACKGROUND INFORMATION.

1. Site contact person _____
Organization _____
Street _____
City _____ State _____ Zip _____
phone _____ fax _____ email _____
2. School/group name _____ District _____
Name of teacher/group leader _____
Street _____
City _____ State _____ Zip _____
Phone _____ Fax _____ Email _____
Number of Students _____ Number of Adults _____
Student grade level & course if applicable _____
3. Where are you sampling. Please be as specific as possible.

4. RIVER MILE: _____
The Battery at the southern tip of Manhattan = River Mile 0
The Federal Dam at Troy = River Mile 153

DITL Surroundings Data

Name _____ Date _____ Location _____


Your surroundings affect all the other data you collect! Examine & record the sample area.

<p>LOCATION: site name, city</p> <p>RIVER MILE: Using Hudson River Estuary Map</p> <p>LATITUDE & LONGITUDE:</p>	<p>_____</p> <p>_____</p> <p>_____</p>
<p>AREA: Describe your area in 1 sentence so someone could find your sample location.</p>	<p>_____</p> <p>_____</p> <p>_____</p>
<p>SAMPLING SITE: Check all that apply</p>	<p> <input type="checkbox"/> Pier <input type="checkbox"/> Grassy <input type="checkbox"/> Forested <input type="checkbox"/> Parking Lot <input type="checkbox"/> Beach <input type="checkbox"/> Covered in vegetation <input type="checkbox"/> Banks altered <input type="checkbox"/> RipRap (Large rocks) <input type="checkbox"/> Wood Bulkhead <input type="checkbox"/> Concrete Bulkhead <input type="checkbox"/> Pipe entering the water <input type="checkbox"/> Marshy </p>
<p>SURROUNDING LAND USES: Record as a percentage of 100% For example, 50% is half the usage</p>	<p> <input type="checkbox"/> Urban/residential <input type="checkbox"/> Forested <input type="checkbox"/> Industrial/commercial <input type="checkbox"/> Beach <input type="checkbox"/> Other (explain) _____ </p>
<p>SHORELINE Record as a percentage of 100%</p>	<p><input type="checkbox"/> Sandy <input type="checkbox"/> Muddy <input type="checkbox"/> Rocky</p>
<p>RIVER BOTTOM: Check all that apply:</p>	<p>Estimated Water Depth (cm) _____</p> <p> <input type="checkbox"/> Bottom muddy <input type="checkbox"/> Bottom sandy <input type="checkbox"/> Bottom weedy <input type="checkbox"/> Bottom rocky </p>
<p>WATER: Describe the water itself</p>	<p><input type="checkbox"/> Calm <input type="checkbox"/> Choppy</p>
<p>PLANTS IN THE WATER: Record the aquatic plants (plants growing in the water) as a percentage of the total area.</p> <p>IF NONE, please check None.</p>	<p> % _____ Plant _____ % _____ Plant _____ % _____ Plant _____ % _____ Plant _____ % _____ Plant _____ % _____ Plant _____ _____ No Plants in the water </p>

DITL Surroundings Data

Name _____ Date _____ Location _____

SKETCH YOUR SAMPLING SITE: *Be sure to include a compass rose showing N/S/E/W and locate the river on your sketch, and note your sampling site.*



COMMERCIAL TRAFFIC: *Record any large boats, tugs, or barges. Record the name, color, direction & if it is light/loading (Loaded barge with cargo sits lower in the water.)*

Time:	Name	Color	North or Southbound	Loaded or Light
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Time:	Name	Color	North or Southbound	Loaded or Light
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Time:	Name	Color	North or Southbound	Loaded or Light
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RECREATIONAL TRAFFIC: *Record any sail, speed, or other rec. boats.*

Time:	Name	Color	North or Southbound	Loaded or Light
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Time:	Name	Color	North or Southbound	Loaded or Light
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Time:	Name	Color	North or Southbound	Loaded or Light
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DITL Physical Conditions Data: Name _____ Date _____ Location _____

TIDES – Semidiurnal Tides: 2 high tides & 2 low tides a day

Technique: Tide Stick: _____ OR Dock to Water: _____

Start time: _____	Water height (cm) _____	-	-	-	
Check time: _____	Water height (cm) _____	Please Circle:	Falling	Rising	Slack
Check time: _____	Water height (cm) _____	Please Circle:	Falling	Rising	Slack
Check time: _____	Water height (cm) _____	Please Circle:	Falling	Rising	Slack
Check time: _____	Water height (cm) _____	Please Circle:	Falling	Rising	Slack
Check time: _____	Water height (cm) _____	Please Circle:	Falling	Rising	Slack

CURRENTS –

*Knots = (cm/sec)/51.4

Time: _____	_____ Cm/sec	_____ *Knots	Please Circle:	Ebb	Flood	Slack
Time: _____	_____ Cm/sec	_____ *Knots	Please Circle:	Ebb	Flood	Slack
Time: _____	_____ Cm/sec	_____ *Knots	Please Circle:	Ebb	Flood	Slack
Time: _____	_____ Cm/sec	_____ *Knots	Please Circle:	Ebb	Flood	Slack

Record Metadata: Record anything about the shoreline that could cause the near shore to flow in a different direction than the current in the middle of the river (i.e. Pier, Cove, etc.)

AIR TEMPERATURE

Time: _____	Air temperature: _____ °F	_____ °C
Time: _____	Air temperature: _____ °F	_____ °C
Time: _____	Air temperature: _____ °F	_____ °C

$\square C = 0.556 \times (\square F - 32)$

$\square F = (1.8 \times \square C) + 32$

WIND SPEED

Time: _____ Beaufort #: _____
Wind Meter: _____ **Circle Units:** m/s - km/hr - mph - knots. Wind Direction (wind comes from): _____

CLOUD COVER

Time: _____
Clear(<25%): _____ Partly-Cloudy(26-50%): _____ Mostly-Cloudy(51-75%): _____ Overcast(>75%): _____

RAIN (PRECIPITATION) TODAY & WEATHER FOR THE PAST 3 DAYS-

Time: _____ Rain: _____ If yes, how steady or how much (cm) did it rain? _____
Briefly describe the weather for the last 3 days: Rain, wind, unusual temperatures? _____

DITL Turbidity Data Name _____ Date _____ Location _____

TURBIDITY - Expected High Turbidity in an Estuary. (Units vary depending on equipment)

BE SURE TO MARK THE EQUIPMENT YOU ARE USING FOR THE TEST:

1. Long Sight Tube (cm): _____	2. Secchi Disk (cm): _____	3. Turbidimeter (NTU): _____
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RECORD the correct unit for the piece of equipment that you are using: feet, cm, meters, JTUs or NTUs

Time: _____

Reading 1: _____ Reading 2: _____ Reading 3: _____ Average: _____

Time: _____

Reading 1: _____ Reading 2: _____ Reading 3: _____ Average: _____

Time: _____

Reading 1: _____ Reading 2: _____ Reading 3: _____ Average: _____

Observations

Can you describe how turbid your water is? Include color, visibility, how deep can you see into it?

DITL Chemical Data Name _____ Date _____ Location _____

WATER TEMPERATURE - Expected High Temperature in October would be $\leq 25^{\circ}\text{C}$. Record both $^{\circ}\text{C}$ & $^{\circ}\text{F}$

$$^{\circ}\text{C} = 0.556 \times (^{\circ}\text{F} - 32^{\circ})$$

$$^{\circ}\text{F} = (1.8 \times ^{\circ}\text{C}) + 32^{\circ}$$

Time: _____ COLLECTED WATER IN BUCKET: YES / NO If NO, Approximate Water Depth: (ft): _____

Reading 1: _____ $^{\circ}\text{C}$ _____ $^{\circ}\text{F}$ Reading 2: _____ $^{\circ}\text{C}$ _____ $^{\circ}\text{F}$ Average: _____ $^{\circ}\text{C}$ _____ $^{\circ}\text{F}$

Time: _____ COLLECTED WATER IN BUCKET: YES / NO If NO, Approximate Water Depth: (ft): _____

Reading 1: _____ $^{\circ}\text{C}$ _____ $^{\circ}\text{F}$ Reading 2: _____ $^{\circ}\text{C}$ _____ $^{\circ}\text{F}$ Average: _____ $^{\circ}\text{C}$ _____ $^{\circ}\text{F}$

Time: _____ COLLECTED WATER IN BUCKET: YES / NO If NO, Approximate Water Depth: (ft): _____

Reading 1: _____ $^{\circ}\text{C}$ _____ $^{\circ}\text{F}$ Reading 2: _____ $^{\circ}\text{C}$ _____ $^{\circ}\text{F}$ Average: _____ $^{\circ}\text{C}$ _____ $^{\circ}\text{F}$

SALINITY - Expected Range: ~40 ppm in freshwater section up to 30,000 ppm (30 ppt) in harbor.

BE SURE TO MARK THE EQUIPMENT YOU ARE USING FOR THE TEST (units are listed by equipment):

Quantab Strips (PPM Cl ⁻): High Range: _____ Low Range: _____ <i>Record the PPM CHLORIDE (3rd column on Quantab bottle)</i>	Meter/Probe (PPT) _____	Refractometer (PPT) _____	Hydrometer (PPT) _____
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Time: _____ Reading 1: _____ Reading 2: _____ Reading 3: _____ (UNITS!)

Time: _____ Reading 1: _____ Reading 2: _____ Reading 3: _____ (UNITS!)

Time: _____ Reading 1: _____ Reading 2: _____ Reading 3: _____ (UNITS!)

pH (POTENTIAL HYDROGEN) - Expected Range: Most fish prefer 6.5-8.5 (NO UNITS for pH).

BE SURE TO MARK THE EQUIPMENT YOU ARE USING FOR THE TEST:

Test Strips _____

Color Match Test Kit _____

Meter _____

pH Pen _____

Time: _____ Reading 1: _____ Reading 2: _____ Reading 3: _____

Time: _____ Reading 1: _____ Reading 2: _____ Reading 3: _____

Time: _____ Reading 1: _____ Reading 2: _____ Reading 3: _____

ALKALINITY - Expected Range: 80-100 mg/L. A measure of the water's buffering capacity (Units: mg/L)

Method: _____ Time: _____ Reading 1: _____ Reading 2: _____ Reading 3: _____

NITRATE - Expected Range: <1 mg/L. A nutrient used by plants & animals for growth (Units: mg/L)

Method: _____ Time: _____ Reading 1: _____ Reading 2: _____ Reading 3: _____

PHOSPHATE - Expected Range: <1 mg/L. Plant nutrient that occurs in rocks, soil, & animal waste (Units: mg/L)

Method: _____ Time: _____ Reading 1: _____ Reading 2: _____ Reading 3: _____

DITL Chemical Data Name _____ Date _____ Location _____

DISSOLVED OXYGEN (D.O.) - Healthy Expected Range: 5.0-11.0 mg/L. (Units: mg/L = PPM)

BE SURE TO MARK THE EQUIPMENT YOU ARE USING FOR THE TEST

Meter/Probe _____	Drop Count Kit _____	Other _____
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Time: _____ Water temperature in °C: _____ DO (mg/L or PPM): _____ % saturation: _____

Time: _____ Water temperature in °C: _____ DO (mg/L or PPM): _____ % saturation: _____

Time: _____ Water temperature in °C: _____ DO (mg/L or PPM): _____ % saturation: _____

% SATURATION OF DISSOLVED OXYGEN (D.O.) - Healthy Expected Range 90% or above

1. Locate your DO reading on the bottom scale (ppm = mg/L), and the water temperature (°C) on the top scale.
2. Draw a straight line between the temperature and DO.
3. The % saturation is the value where the line intercepts the saturation scale.

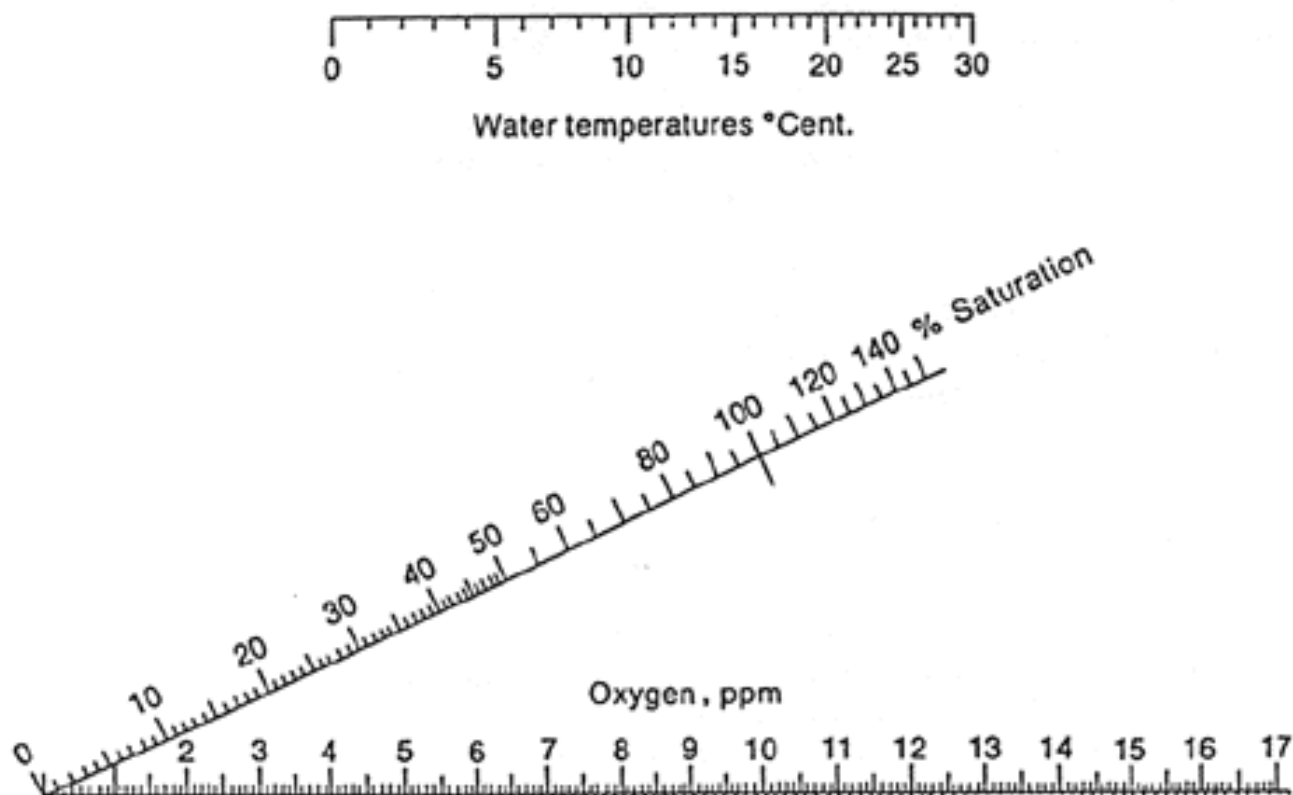


Chart Source: <http://waterontheweb.org/under/waterquality/oxygen.html>

CORE ID# Date, Location, Town/Village	NAME	DATE	LOCATION	GROUP # (if applicable)	
INFO ABOUT CORING SITE:	TIME	LATITUDE	LONGITUDE	WATER DEPTH	
CORE LENGTH: _____ cm					
	Yes	No	Descriptors - Please note additional observations		
H ₂ S smell			H ₂ S smells of rotten eggs, suggesting anaerobic bacteria		
Oil			Oil creates a slight smell, a slickness and a sheen		
Oxidized top*			*Oxidation (reaction with oxygen) creates a distinctly lighter layer of sediment.		
Length of Oxidized Top (_____ cm					
	Absent	Rare	Common	Abundant	Additional Comments
Clay					Very fine material, rich dense feel, pills when rolled - grey color
Mud					Smooth feel on fingers, often slick/ wet - brown color
Sand					Gritty feeling between fingers - variable color
Gravel					Pea sized pieces of stone - variabe color
Pebbles					Pieces of stone larger than pea - variable color
Leaves					
Wood					
Shells Oysters (dead/alive?)					
Shells mussels (except Zebra Mussels)					
Shells Zebra mussels					
Macroinvertebrates					
Living vegetation					
Brick					
Coal					
Slag					Industrial byproduct - chunky, light, pocketed & air filled
IF BAGGED, RECORD THE CORE ID # ON THE CORE COLLECTION BAG					
Sketch of your core below with measurements for each section & total core:					

<--TOP BOTTOM-->

DITL Fish and Macroinvertebrates Name _____ Date _____ Location _____

1. FISH & MACROINVERTEBRATES:

FISHING METHOD (Select all that apply): Seine:___ Traps:___ Rod & Reel:___ Electro-Shocking:___ Trawl:___ Kick Net:___ Eel Mop:_____ DID NOT FISH:___ OYSTER CAGE___ Other: (Explain) _____

FISHING #1 TIME: _____	FISHING #2 TIME: _____	FISHING #3 TIME: _____
FISHING #4 TIME: _____	FISHING #5 TIME: _____	FISHING #6 TIME: _____
FISHING #7 TIME: _____	FISHING #8 TIME: _____	FISHING #9 TIME: _____

FISH SPECIES TOTAL:	# INDIVIDUALS:	LARGEST SIZE	SMALLEST SIZE
1. _____	_____	_____cm	_____cm
2. _____	_____	_____cm	_____cm
3. _____	_____	_____cm	_____cm
4. _____	_____	_____cm	_____cm
5. _____	_____	_____cm	_____cm
6. _____	_____	_____cm	_____cm
7. _____	_____	_____cm	_____cm
8. _____	_____	_____cm	_____cm
9. _____	_____	_____cm	_____cm

 <p>Atlantic Silverside</p>	<p>Please take photos of the fish and send them to us for ID. This image of the Atlantic Silverside is the format to take fish pictures. FULL BODY + HEAD TO THE LEFT</p>	<p>blue crab</p>  <p>Female Male</p>	<p>Identify crab species: Blue vs. Mud vs. Asian etc. If possible, include the sex of the crabs M/F.</p>
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MACROINVERTEBRATE SPECIES TOTAL:	# INDIVIDUALS:	LARGEST /SMALLEST SIZE	M / F
1. _____	_____	_____cm _____cm	M / F
2. _____	_____	_____cm _____cm	M / F
3. _____	_____	_____cm _____cm	M / F
4. _____	_____	_____cm _____cm	M / F
5. _____	_____	_____cm _____cm	M / F
6. _____	_____	_____cm _____cm	M / F
7. _____	_____	_____cm _____cm	M / F
8. _____	_____	_____cm _____cm	M / F
9. _____	_____	_____cm _____cm	M / F

CATCH PER UNIT EFFORT: CPUE= Catch of a seine event/ [Net Length (m) X Length of Pull (m)]

Time: _____ Catch Total: _____ Net Length (m): _____ Length of Pull: _____ Computed CPUE: _____

DITL JOURNALING Name _____ Date _____ Location _____

JOURNALING— *How do we learn about the environment?* **WE OBSERVE!**

The power of observation plays an important role in science and Earth systems. Direct observation and careful description helps us compare species, habitats, and different geographical regions.

Things to record can begin with the following...

1. Close your eyes and listen to the environment: What can you hear? What do you smell? What does the weather feel like (i.e. humid, dry, cold, wet, windy)?
2. Open your eyes: What do you see that surprises you? Describe your surroundings.
3. What do you think might have affected your data collection today?
4. What do you still wonder about?

Hudson River Journal Entry:

By: