



# **Great Neck Public Schools** **Where Discovery Leads to Greatness**

## **Science in the Great Neck Public Schools**



**Board of Education Meeting**  
**December 17, 2018**



# Great Neck Public Schools Where Discovery Leads to Greatness

## Science in the Elementary Schools



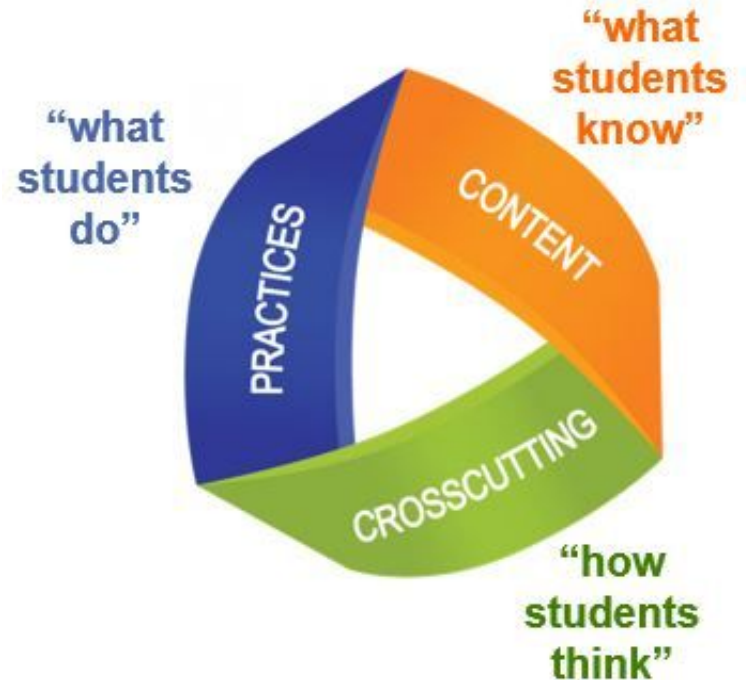
December 17, 2018  
Elementary Assistant Principals

M. Bell, S. Goldberg, N. Redito & H. Sweet

# Great Neck Public Schools

**“Don’t kill the wonder.”**

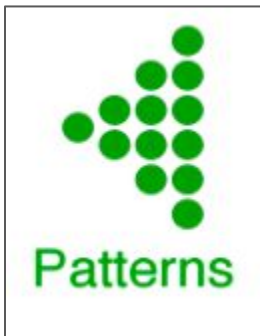
**-Paul Andersen**



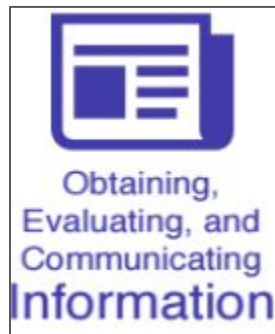
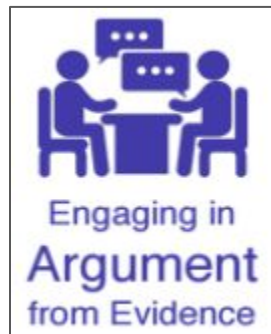
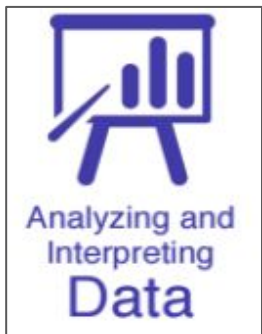
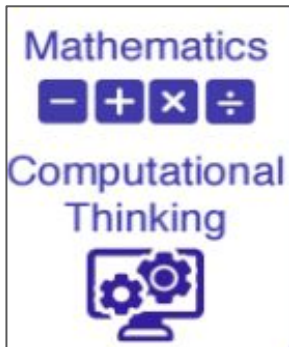
# What are Disciplinary Core Ideas?

<b>Life Science</b>	<b>Physical Science</b>
LS1: From Molecules to Organisms: Structures and Processes	PS1: Matter and Its Interactions
LS2: Ecosystems: Interactions, Energy, and Dynamics	PS2: Motion and Stability: Forces and Interactions
LS3: Heredity: Inheritance and Variation of Traits	PS3: Energy
LS4: Biological Evolution: Unity and Diversity	PS4: Waves and Their Applications in Technologies for Information Transfer
<b>Earth &amp; Space Science</b>	<b>Engineering &amp; Technology</b>
ESS1: Earth's Place in the Universe	ETS1: Engineering Design
ESS2: Earth's Systems	ETS2: Links Among Engineering, Technology, Science, and Society
ESS3: Earth and Human Activity	

# Cross-Cutting Concepts



# Science and Engineering Practices



# Interdisciplinary Connections





# What are Phenomena?





## Our Creation Story



### Stage 1

Early NGSS  
Adopters shared  
their experiences  
and lessons  
learned

### Stage 2

Compilation of  
early adopters'  
experiences =  
Implementation  
Guides

### Stage 3

More about  
approach to  
instruction--not  
programming.

17-18: Science lab  
teachers

18-19: Agility Team

### Stage 4

Successful districts  
had Core  
Leadership Teams  
that had an action  
plan, responded to  
feedback, made  
modifications when  
necessary, etc.

They were agile!

# Collaboration



- Bring together teachers and administrators
- Build relationships
- Foster investment and credibility

# Professional Development



# Home School Connection





# Science in the Classrooms







# **Great Neck Public Schools** **Where Discovery Leads to Greatness**

## **Science in the Secondary Schools**



**December 17, 2018**  
**Secondary Department Heads**

**T. Hatten, J. Schust, & M. DiPasquale**

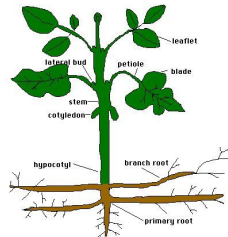
# Old vs. NGSS

## Past NYS Secondary Standards

Students **know** plants and animals have levels of organization for structure and function, including cells, tissues, organs, organ systems and whole organism.

### UNIT 2 PART 5: PLANT STRUCTURE AND FUNCTION

- Plants, like animals, are made up of tissues that form organs. Their organs are roots, stems, leaves, and reproductive structures. Plants do not have organ systems.



1

## NGSS Secondary Standards

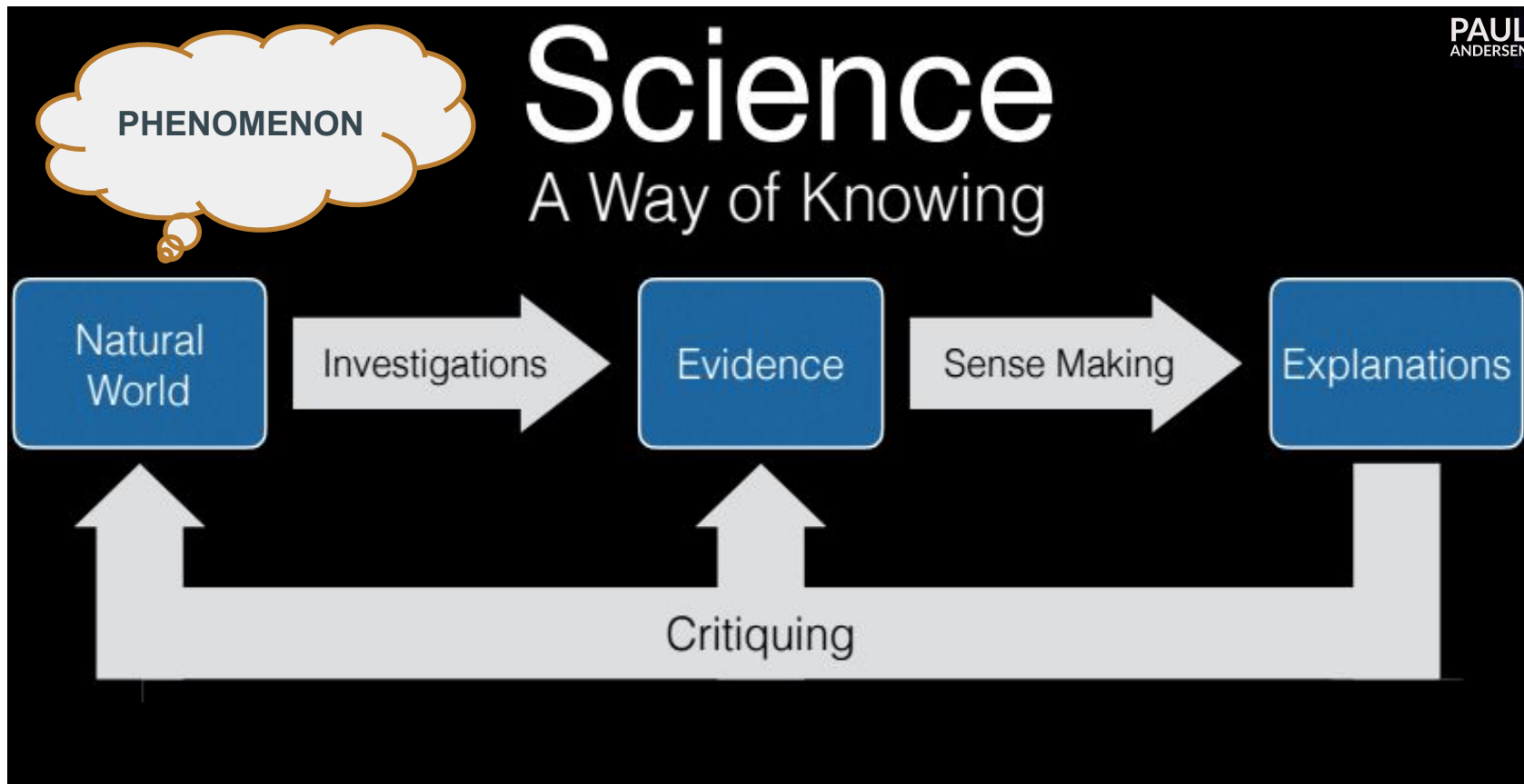
**Use arguments** supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.



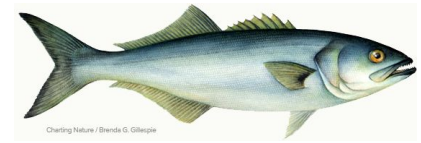
# Phenomenon

An observable event that connects students to science in their own world.





# Question



- Why are there restrictions on how much fish a pregnant woman can eat from Long Island Sound?



- Create a one sentence evidence-based claim on [www.menti.com](https://www.menti.com) - code **879410**



# A Possible Path



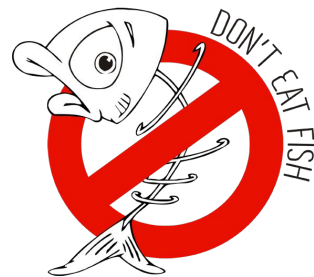
Beaver Hat  
Prodction



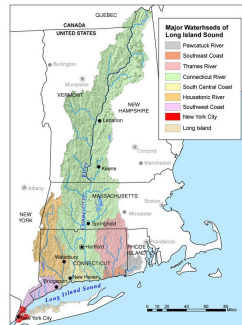
Factories use  
mercury



Run-off to  
LI Sound



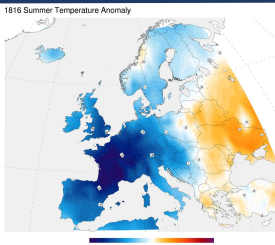
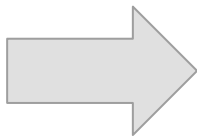
Limit fish  
consumption



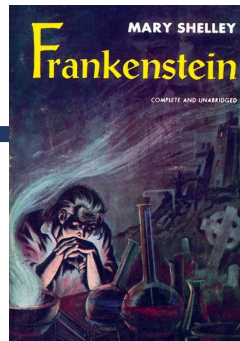
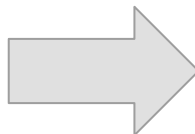
# A Deeper Look



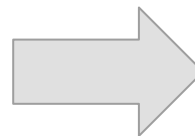
1815 Eruption of Mt. Tambora



Decrease in global temperatures

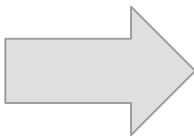


1816 Mary Shelling writes Frankenstein while stuck inside

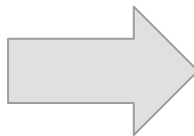


Increased demand for warm hats

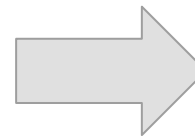
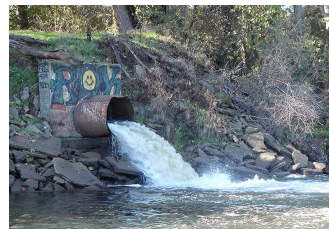
Hat Factories in Danbury, CT Expand



Factories use mercury



Run-off to LI Sound



Limit fish consumption

## Eat What You Catch?

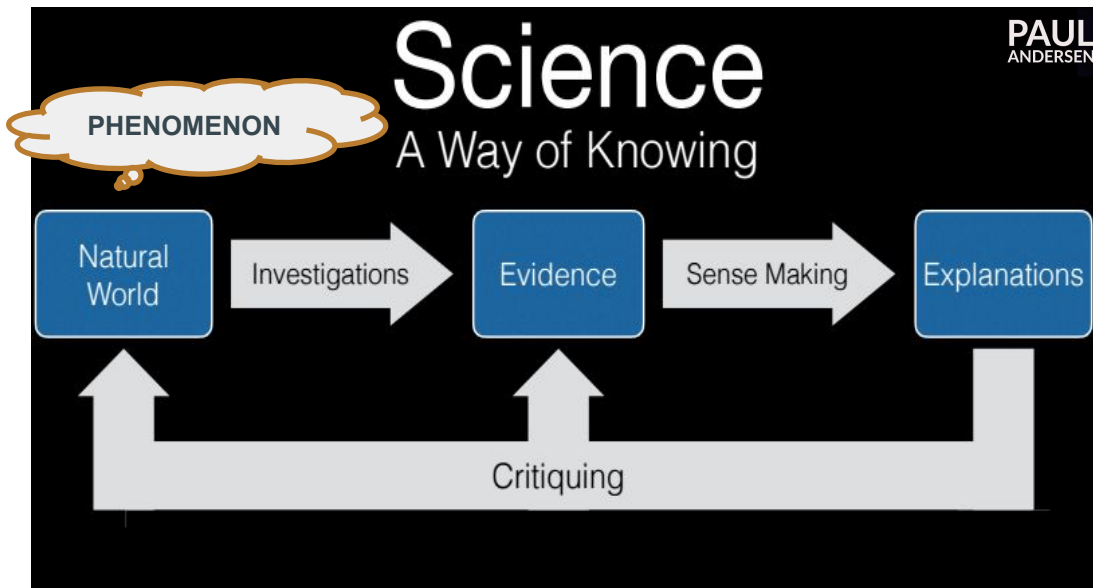
Health officials advise that people in high-risk and low-risk groups limit their state fresh water fish consumption to 1 meal per month or 1 meal per week, respectively.



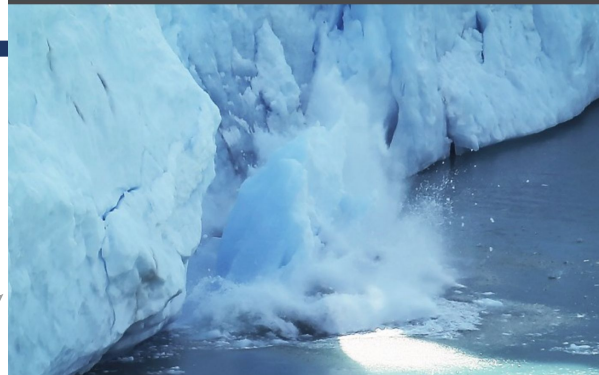
**High-risk group:**  
Pregnant women, women planning pregnancy, nursing women and children under 6.

**Low-risk group:** Everyone else.

Source: Connecticut Department of Public Health, fish consumption advisory



## Dimming the sun: The answer to global warming?



(CNN) — Scientists are proposing an ingenious but as-yet-unproven way to tackle climate change: spraying sun-dimming chemicals into the Earth's atmosphere.

## Trump to end decades-old Clean Water Act protections for wetlands, seasonal streams

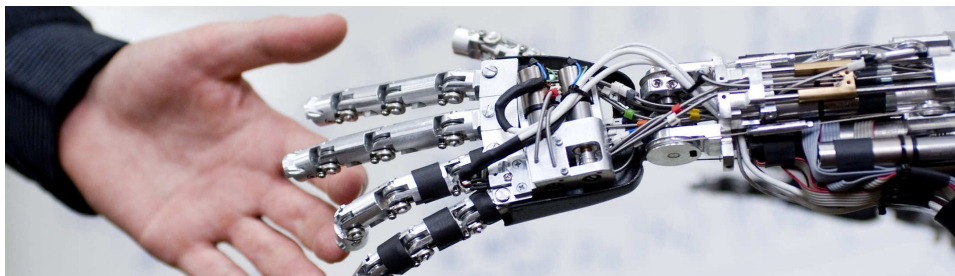
Peter Weber



The Trump administration will formally start the process of [lifting federal Clean Water Act protections](#) for millions of acres of wetlands and thousands of miles of streams across the U.S., undoing decades of protections against pesticide runoff, industrial waste, and other pollutants. The proposed rules, to be unveiled by the Environmental Protection Agency as soon as Tuesday, are a victory for agricultural and real estate interests but could degrade the drinking water used by tens of millions of Americans and endanger fisheries and the habitats of migratory birds and other species.



# Solve the Problems of Tomorrow



# Implementation at the Secondary Level

- 2017 - 2018 - Build Capacity
- 2018-2019 - Professional Development
- 2019 - 2021 - Resource development
- 2022 and beyond - Regents exams aligned with NGSS (Anticipated)





# How can you support the implementation of the NGSS?

Understanding that:

- Homework/Tests/Projects will look different
- Student-centered learning and experiences
- Emphasis on application and process NOT memorization





# Great Neck Public Schools

## Where Discovery Leads to Greatness

Thank you!

- Board of Education
- Students
- Administration
- Teachers
- GNPS Community



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