CREATIVELY ENGAGING STUDENTS IN LOCAL CLIMATE SCIENCE: HUDSON DATA JAM

Ashley Alred
Education Program Leader
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Hi there! Meet Ashley...
Now let’s meet you!

Please type into the chat…

1. Your name
2. Location
3. Grade/age of the learners you work with
4. Your favorite type of graph
CURRENT SCIENCE AT CARY INSTITUTE

Ecosystem Health

- Air pollutants - acid rain, ozone & mercury
- Climate Change Monitoring
- Urban sustainability & resiliency
- Education research
- Pharmaceuticals in streams
Ecology of infectious disease

West Nile Virus
Urban ecosystems

Invasive Species

Zebra mussels

Phragmites

Lyme disease

White-footed mouse

Forests

Water chestnut

https://www.caryinstitute.org/
By the end of this webinar, we will know/be able to…

- Brainstorm the types of data we need to explore an Essential Question about climate change.
- Identify datasets within Hudson Data Jam that we can apply to EQ.
- Understand how to use the Hudson Data Jam resources and get involved.
- View fun sample projects!
Now let’s explore our long term datasets with an essential question...
THE ESSENTIAL QUESTION

Is climate change happening in the Hudson Valley?

Photo: Creative Commons
A CHALLENGE FOR YOU...

What DATA would help us answer our EQ?

“Is climate change happening in the Hudson Valley?”

Click here to view the Jamboard. Also viewable on next slide.
What DATA would help us answer this question:

Is climate change happening in the Hudson Valley?

- Precipitation and temperature levels by year - Lauren
- Frequency of major storm events
- Water levels in the rivers - Lauren
- Reservoir water levels
- CO2 in the atmosphere over time - Audrey
- Long term data over many years - Jane
- Tree bud burst and leaf drop dates - Jane
- Biodiversity lost
- Species found in the river - Lauren
SEA LEVEL RISE AT BATTERY PARK, NYC (1856-2014)

Data c/o NOAA; Image: Wikipedia.org
DATE SPRING MIGRANT AMERICAN WOODCOCKS WERE FIRST SEEN IN DUTCHESS COUNTY (1887-2008)

Data c/o William Schlessinger; Image: Audubon.org
FIRST DAY OF FROST AT CARY ENVIRO MONITORING STATION (MILLBROOK, NY)

Data c/o Vicky Kelly; Image: farmersalmanac.com
HOW CAN WE HELP STUDENTS UNDERSTAND & AFFIRM THE VALIDITY OF CLIMATE CHANGE?

• 1. Immerse them in authentic **LOCAL** data that connects to their lives.

• 2. Help them find their **VOICE** for communicating their findings.
HOW DOES CARY INSTITUTE HELP STUDENTS THINK ABOUT LOCAL DATA IN A SCIENTIFIC (AND FUN) WAY?

SHARING REAL SCIENCE STORIES THROUGH ART
CONTEST ESSENTIALS

1. Download Local Data:

2. Graph & Report:

www.caryinstitute.org/data-jam
CONTEST ESSENTIALS

3. Communicate

4. Compete & Share
   (Visit our [Project Gallery](#)!)
BIRD MIGRATION VIDEO FROM HS STUDENTS WITH THE ART EFFECT
BIRD MIGRATION CHILDREN’S STORY BOOKS

One day in late April, Woody the Wood Thrush said to his black-throated blue warbler neighbor, "I can see the sun is getting very warm. It must be spring migration time. Let's sing our way to the south."

"I wish I could go with you, Woody," replied the warbler. "But I have a young one to take care of."

"Remember those last few nights?" Woody said softly. "It was getting very warm and the sun was shining."

"Yes," the warbler replied. "I should be strong enough to join you."

Woody urged the warbler to fly with the flock, but the warbler remained strong. Woody knew this was the way of life for birds in spring migration.
SEA LEVEL RISE VIA BATHING SUIT FASHION TRENDS
PALEOCLIMATE COMIC BOOK
Now, the tomcod are able to eat whatever they want, no matter how PCB-loaded their food is.
Knowledge:
• Science involved with their projects - concepts & practices
• Hudson watershed
• Underlying ideas about data
• Availability of data about their local environment
• Scientist role models
• Study design
DATA JAM: INTENDED STUDENT OUTCOMES

• Skills/practices
  • Data literacy
    • Examples: Manipulating, summarizing, analyzing, representing, making evidence-based claims
  • Creative expression
  • Science communication: combining data with creativity
DATA JAM: INTENDED STUDENT OUTCOMES

- Affective/feelings
  - Interest (motivation/confidence) in...
    - Data exploration
    - Creative expression
    - Combining the two
  - Identity as a data/science person
WHAT DO STUDENTS GET OUT OF DATA JAM?
RESULTS FROM 2018 DATA JAM STUDENT SURVEYS IN NM, NY, MD, PR (N=160)
“I WANT TO USE LOCAL CLIMATE DATA WITH MY STUDENTS, BUT CAN’T COMMIT TO A LONG-TERM PROJECT LIKE DATA JAM…”
WHAT KINDS OF DATA DO WE PROVIDE?
HTTP://WWW.CARYINSTITUTE.ORG/STUDENTS/HUDSON-DATA-JAM-COMPETITION/DATA-JAM-DATASETS
HOW YOU CAN BE A PART OF

Any time! Check out the DJ Website (www.caryinstitute.org/data-jam)

October 22 2022 Program Launch!

November 12 Pre-registration deadline

February 22 Registration deadline

March 8 Projects Due

March 31 Virtual Awards Ceremony & Celebration

Recorded Data Jam Webinars (including this one!): https://www.caryinstitute.org/eco-inquiry/workshops-webinars
Breakout Groups

What kinds of ideas sparked in your mind of how your students can work with data related to climate change and/or the local environment?
Thank You!

Questions?
Email alreda@caryinstitute.org