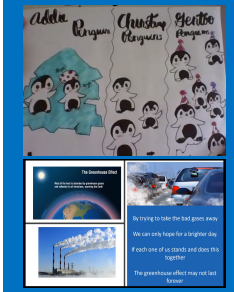
Polar Literacy: A Model for Youth Engagement and Learning

The Polar Literacy (PL) project explores the development and implementation of Out of School Time (OST) learning opportunities focused on polar literacy concepts and authentic data with middle school aged youth.

Products & Activities

- Early career polar researcher professional development
- OST Educator professional development
- Polar Literacy and Polar Scientist Videos
- Ohio 4-H Project Book Exploring Polar Science
- Data to the Rescue: Penguins Need our Help! Program
- Arctic Mystery & Polar Puzzles kits

Focus on Data Skills in Informal STEM Learning



A Data Jam is a creative interpretation of data.

PL programs culminate in a Data Jam experience for youth.

Youth examples from Data to the Rescue (top) and Arctic Mystery (bottom).

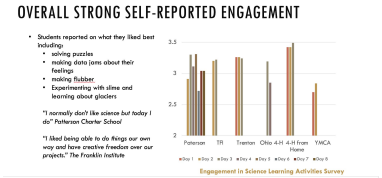
POLAR LITERACY

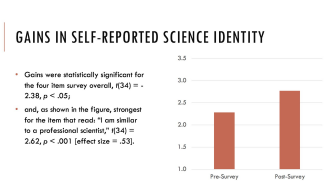
Materials for Data to the Rescue: Penguins Need Our Help.

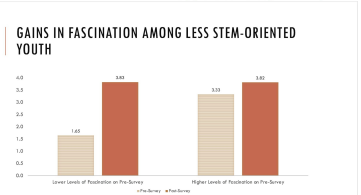
Materials for Polar Puzzles.

2021 Pilot Implementation Data

Program Description	Number of participants	# of days attended Mean (Median) of Max	Grade Range
Patterson Charter School Mystery Kit 2	11	7.2 (7.00) of 9	6th – 8th
The Franklin Institute Mystery Kit 2	15	3.73 (4.00) of 4	9th
Trenton STEM Ambassadors Ice Kit V2	31	3.21 (4.00) of 4	8th-9th
Ohio 4-H – HFF Mystery Kit 2	13	2.5 (3.00) of 5	5th – 8th
4-H from Home Mystery Kit 2	32	3.11 (3.00) of 4	6th – 8th
YMCA Canal Winchester Mystery Kit 2	22	1.45 (1.00) of 2	6th – 8th







Polar Literacy Website

Polar Videos

4-H Project Book

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Lessons Learned

Incorporating Data into Informal Learning

- Data curation is a crucial and time consuming task situated around a narrative/storyline/theme
- Incorporation of arts educators and professionals improves engagement and quality of OST programming
- CODAP is a promising tool for data manipulation in informal learning settings

Improving Understanding of Polar Literacy and Connection to Polar Science

- Youth valued connection with polar researchers
- Polar researchers found experience to be meaningful
- Narrative frame allows youth to find relevance (examples of frames include solve a mystery, help the penguins)

Impact of Delivery Mode

- Integration with social-emotional learning
- Technological challenges and opportunities influenced by the pandemic
- Providing physical materials was helpful in all cases and essential in some cases
- Narrowing the scope was necessary

What Is Next?

We continue to test implementations, refine materials, and prepare publications.
Join us! We are still looking for sites to user test materials and hope to offer professional development for educators soon.