

# Science, Technology, Engineering, Arts, and Mathematics (STEAM) Curriculum as a Lens for Language and Culture Revitalization in Rural Alaska

Naqucin Flora Ayuluk\*

Panik Lillian Olson\*

Maacungaq Lisa Unin\*

Cikigaaq Irasema Ortega\*\*

Kashunamiut District, Chevak Alaska\*

University of Alaska Anchorage\*\*



# Our Story





# Session Topics

## Part 1:

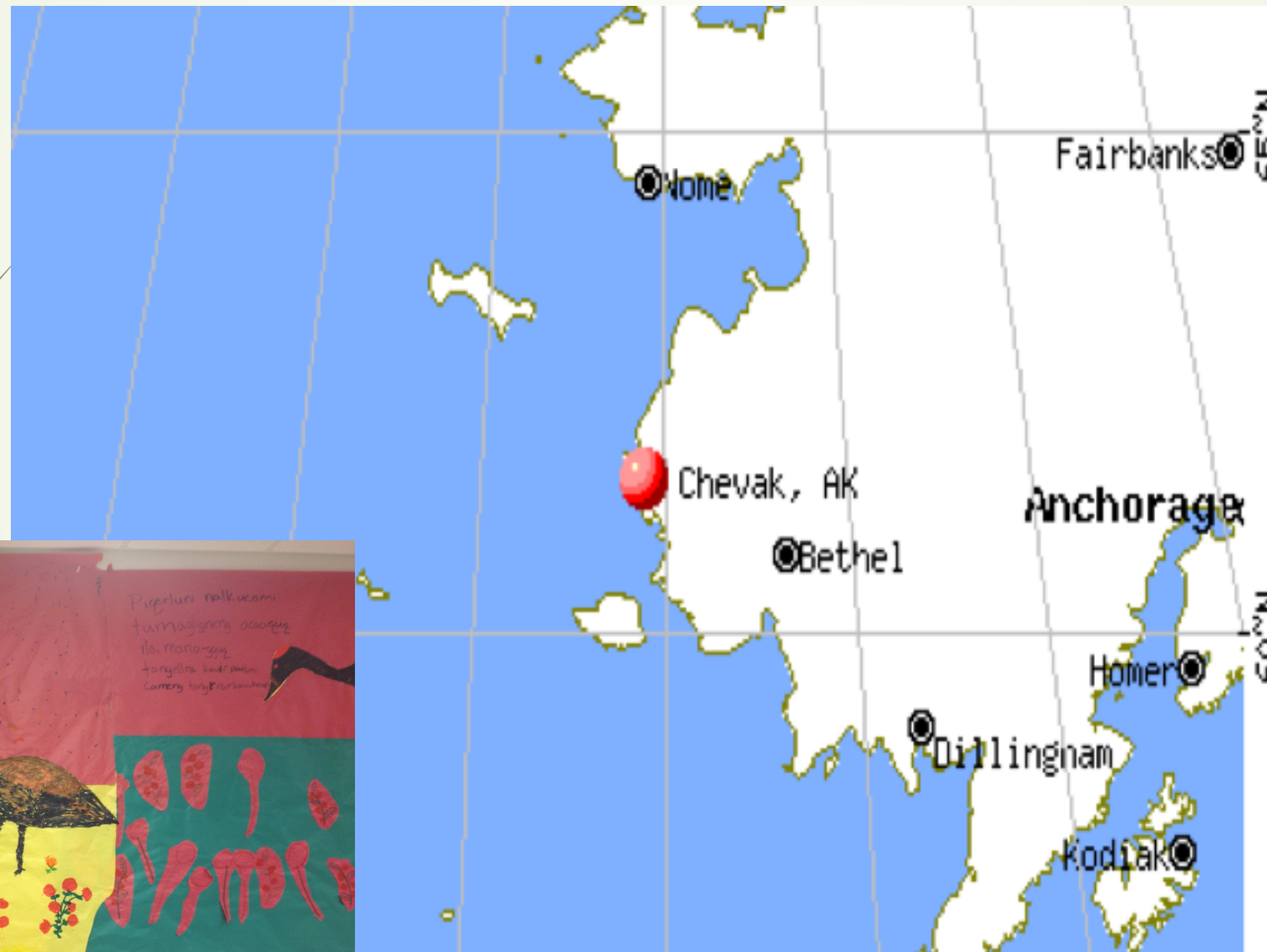
The history of the Cu'pik immersion wing

Ways in which we integrate Cup'ik  
STEAM into the Immersion wing  
curriculum.

## Part 2:

Work session  
Sharing

# Chevak School: The Cup'ik Immersion Wing

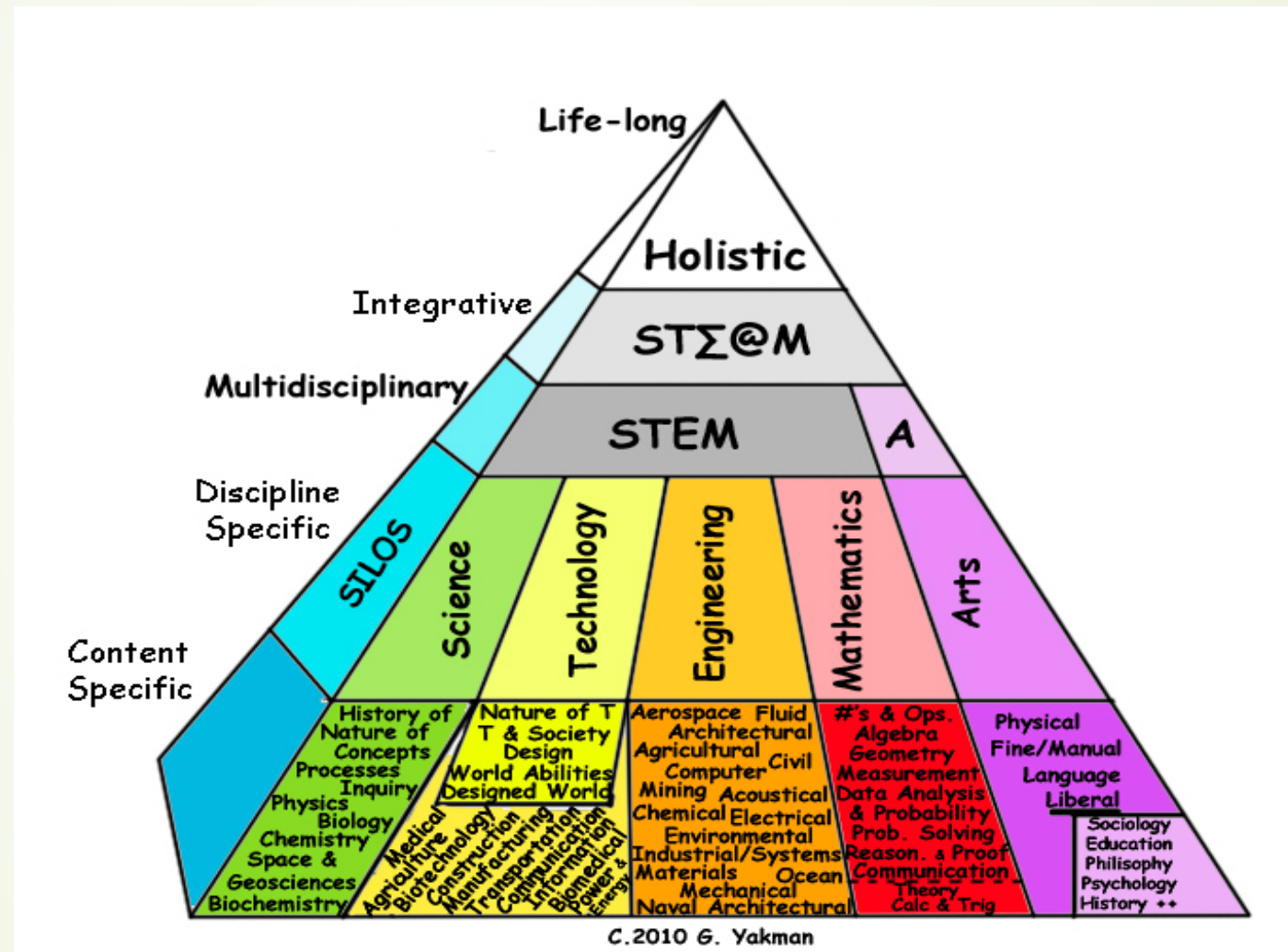




# Two Rivers of Knowledge: Elder Aiggailnguq David Boyscout



# Culturally Sustaining STEAM

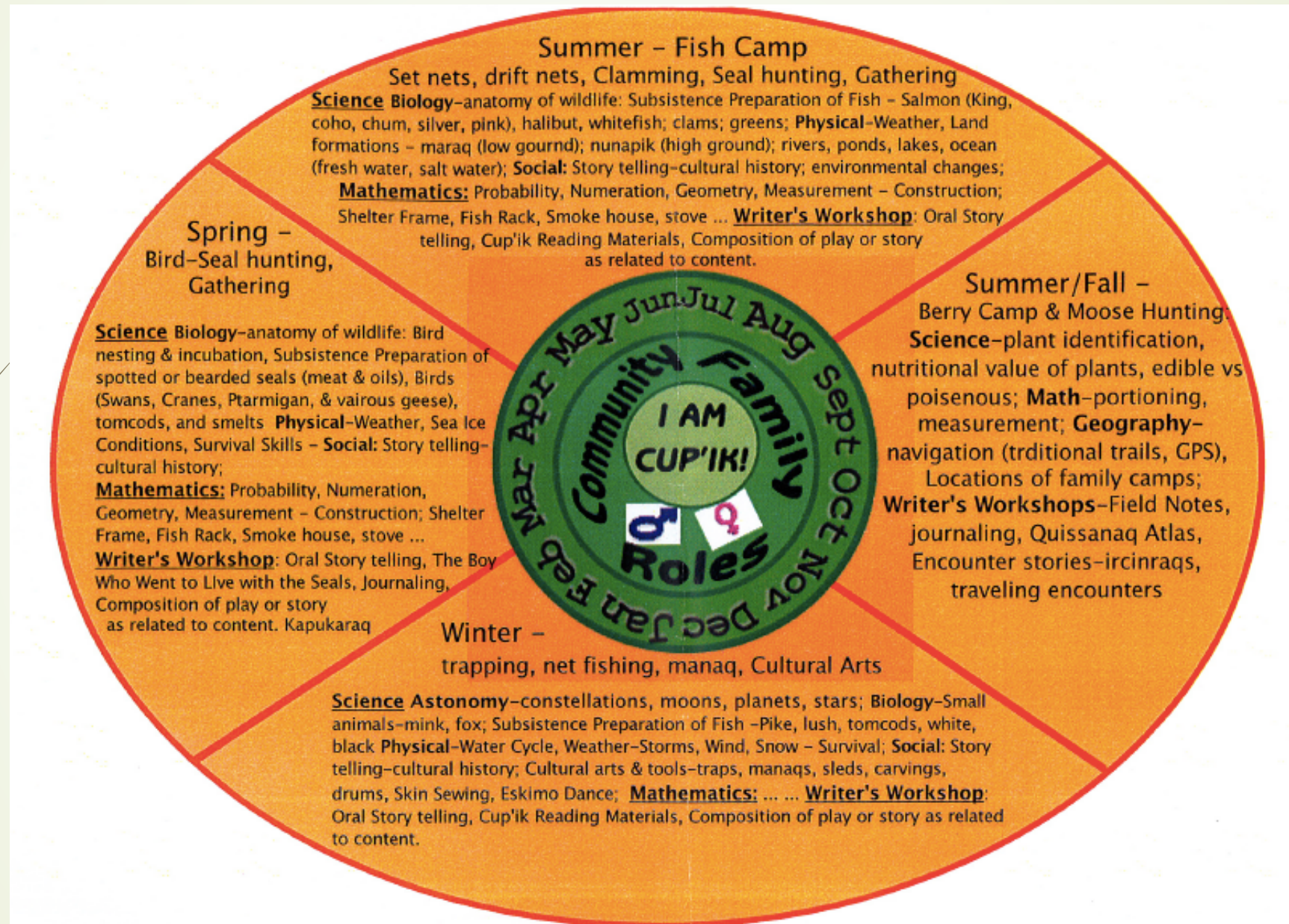








# Curriculum Map





# STEAM in Cup'ik Culture and Language

- **E-books**
- **Mouse Food**
- **Fish Traps**

# E-Books



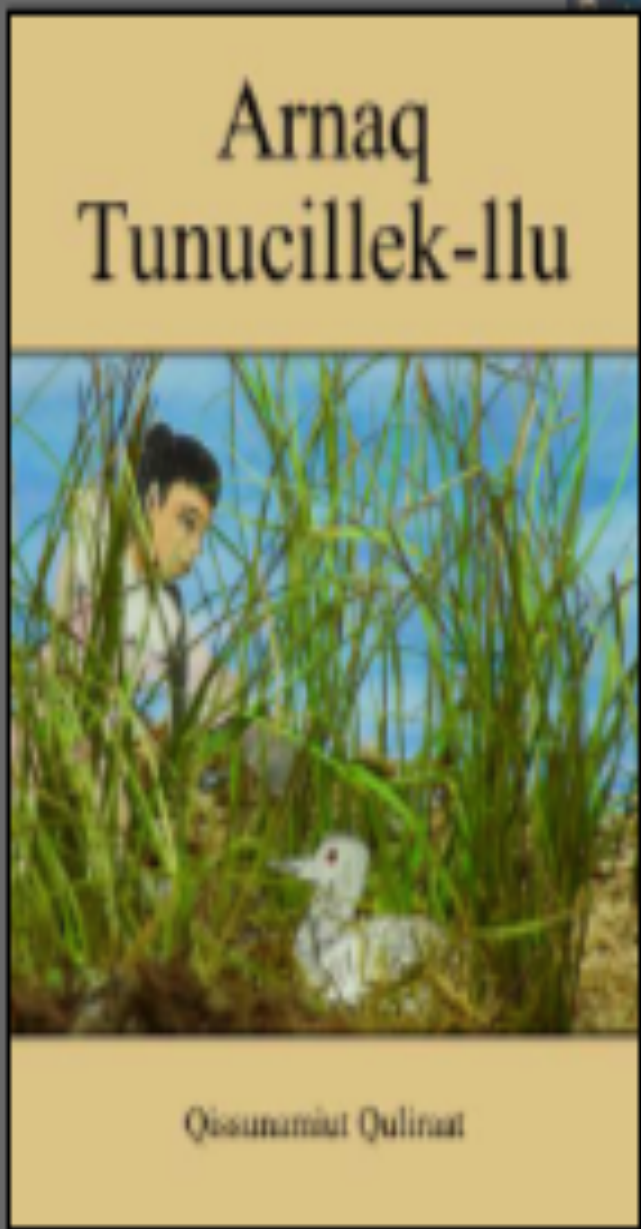


# Art integration by students



Two students from the Area Ten (10) school, the school head,



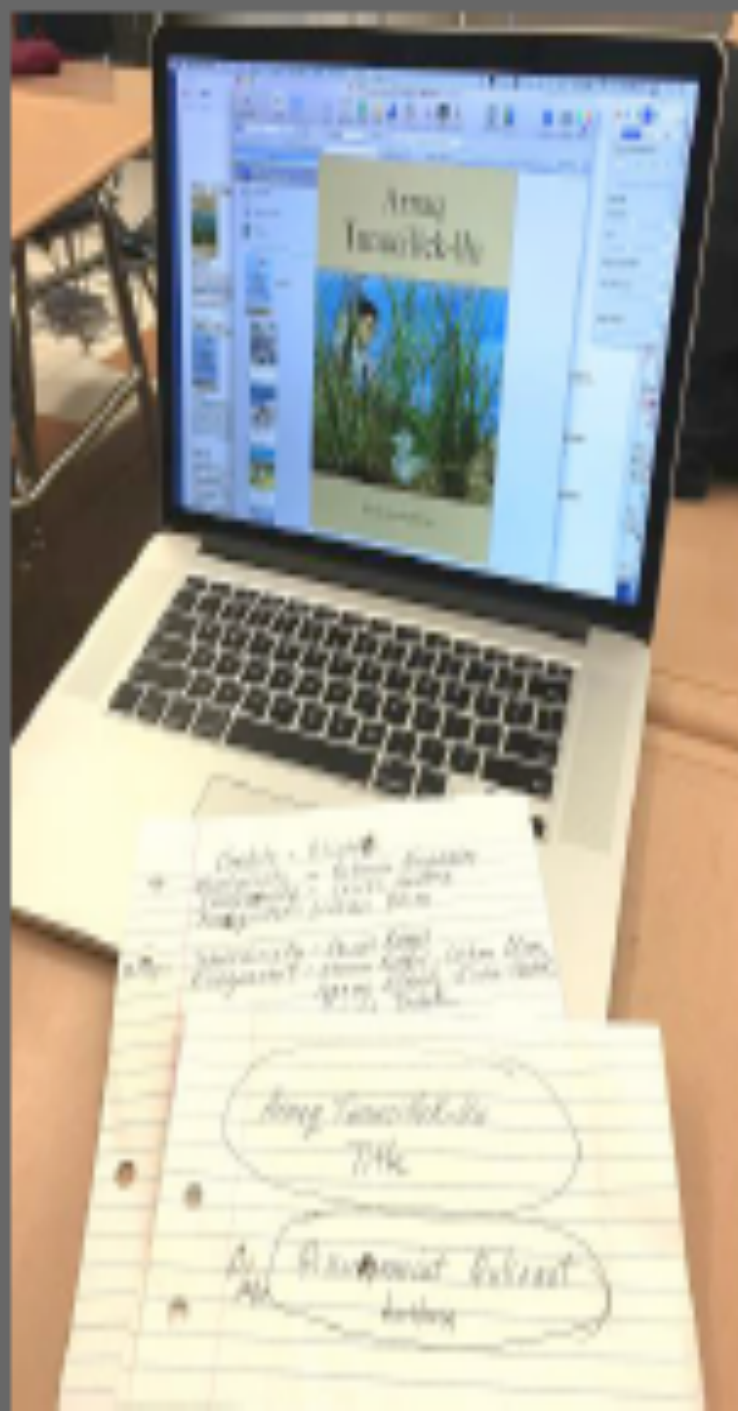


A team of Cup'ik speakers work on translating part of the *Arnaq Tunucillek-llu* book for digital publication.





Deciding on the best words to use for the book's title.



Transcribing the story from spoken Cup'ik, to written, to digital text.



Ner'raarlutek-llu makirelutek paugavet.  
Aataq uluvelgijuni, arnaq-llu issratelgijuni.

A finished page from the *Arnaq Tunucillek-Ilu* digital book.



# Evidence of STEAM in Cup'ik Ways of Knowing in Science



# Mouse Food: Learning about the tundra





# Mouse Food: Measuring, sorting, classifying and identifying







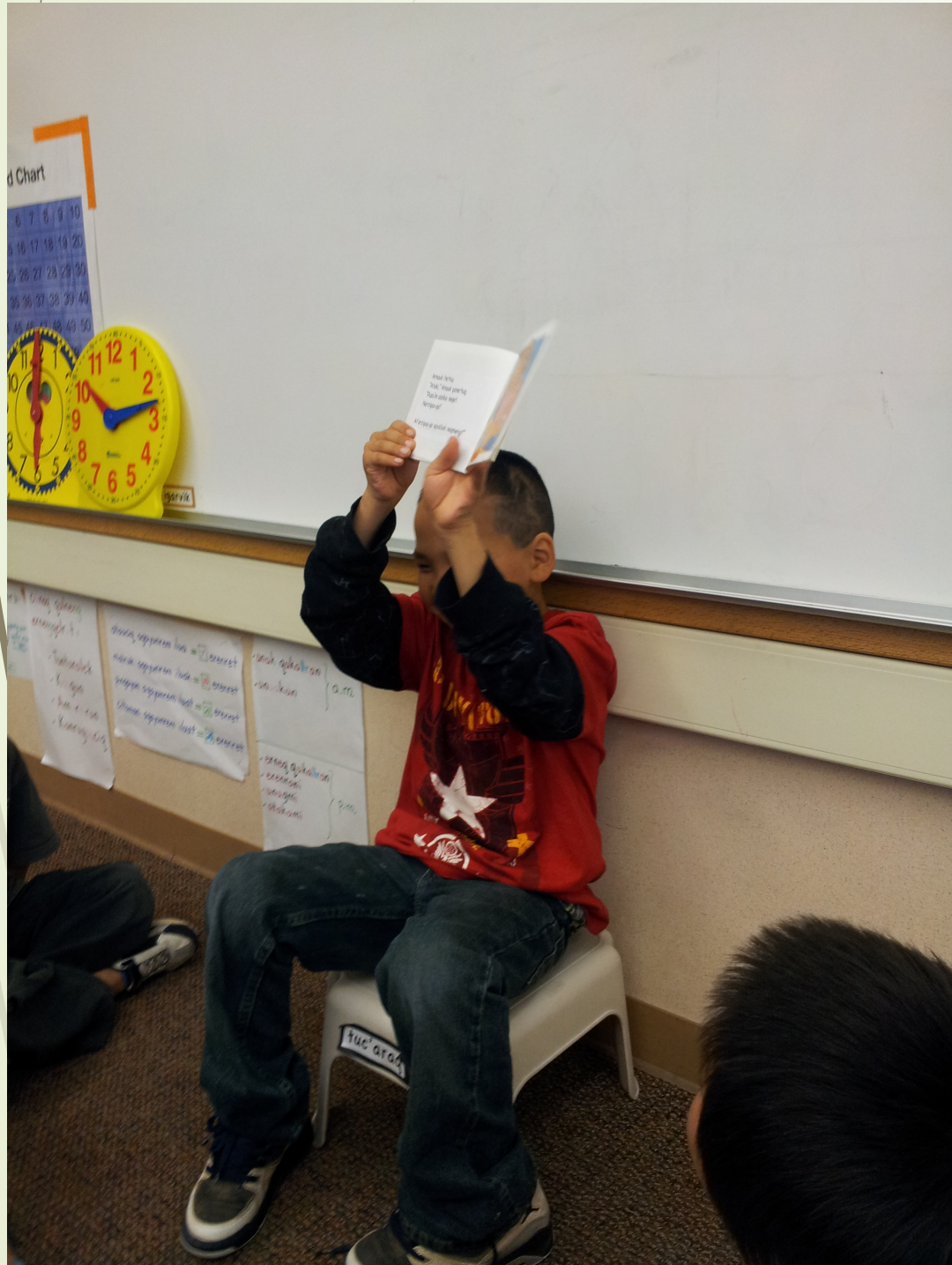


# Plant Identification





# Berry Picking





# Weather and the Water Cycle



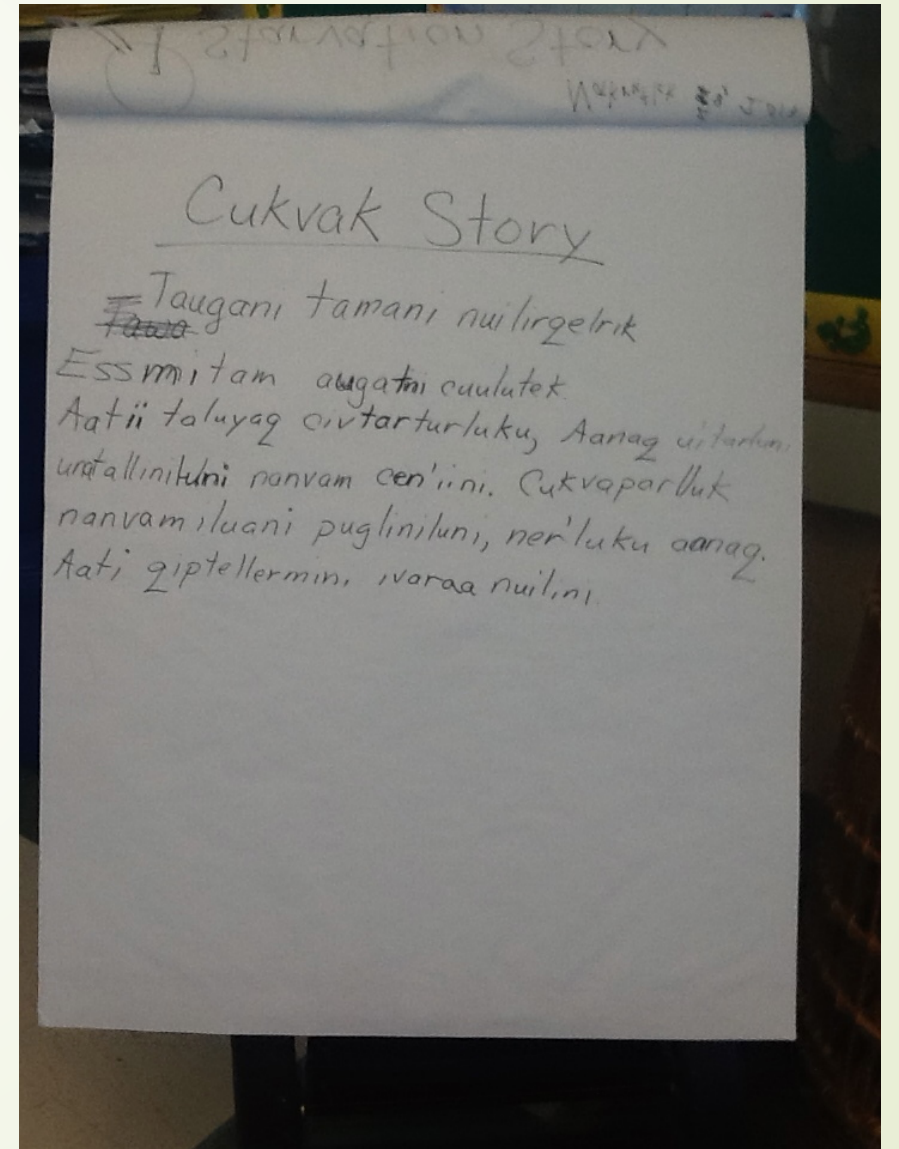


# Virtual Field trip on Marine Mammals



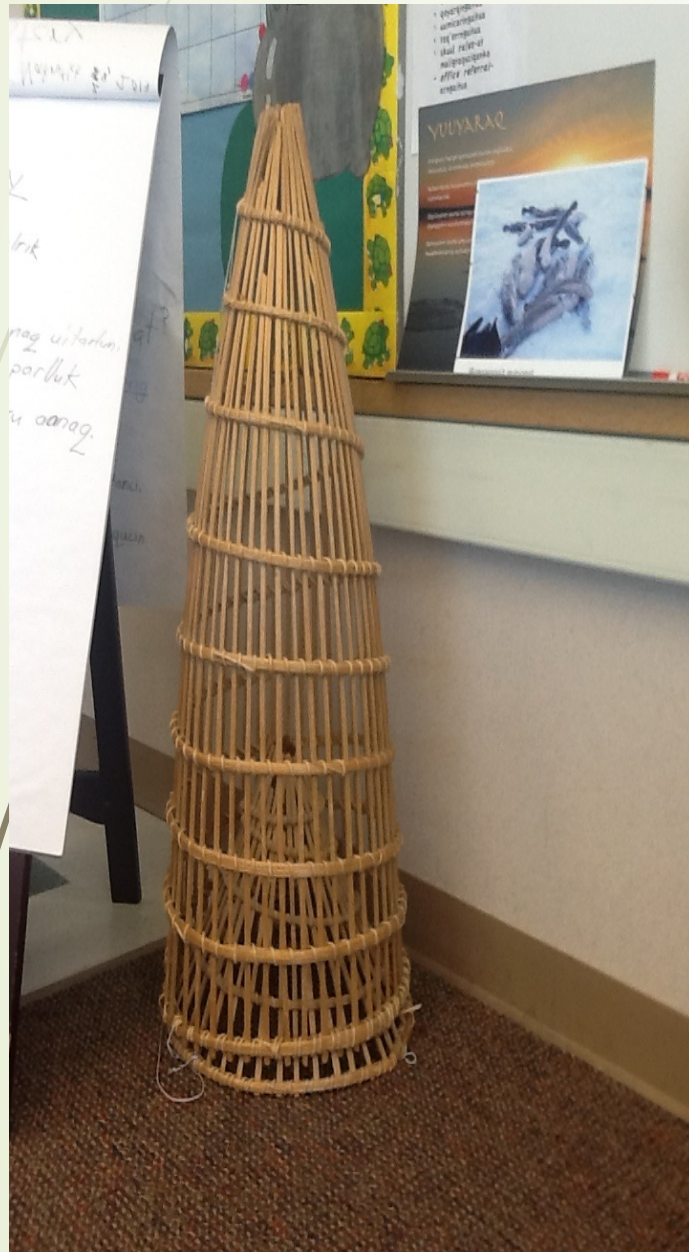


# Elder Knowledge and Literacy

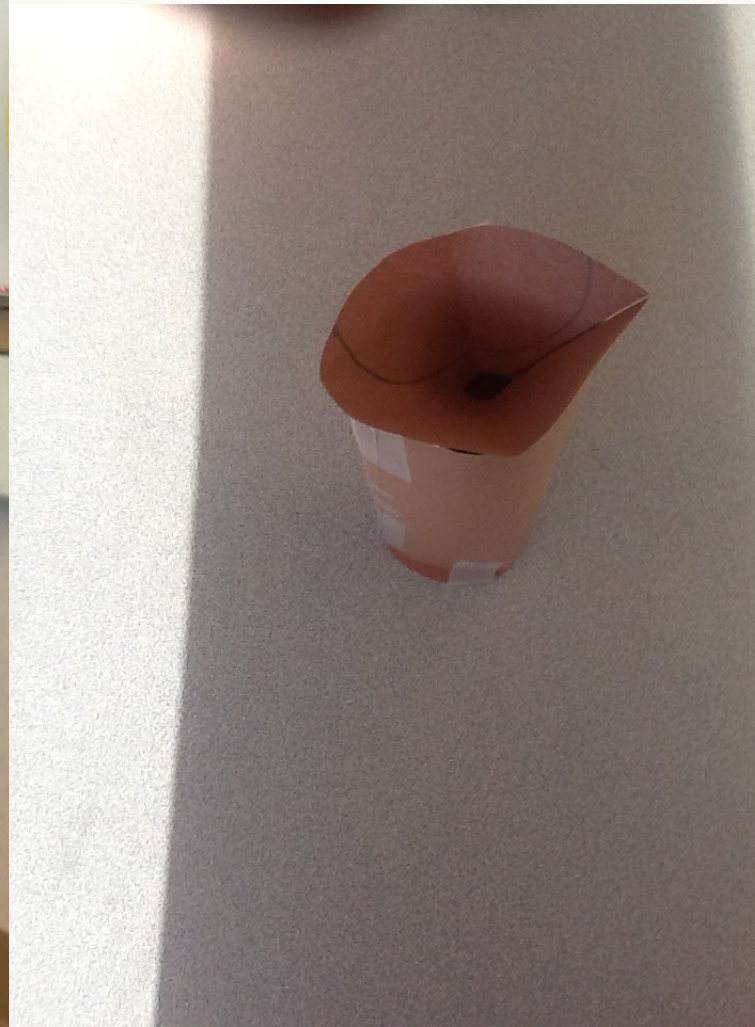




# Math, Technology, & Engineering: Fish Traps



Traditional



Student  
Model



Modern



# Comparative Fish Anatomy

## Lesson





# Mapping: The Importance of Place





# Bird Migration and Nesting





# Art and Cup'ik Language







# STEAM in Alaska

- A means to validate Ancestral knowledge
- A lens to empower Alaska Native cultures
- A vehicle to foster bilingual and bicultural students
- An approach to encourage students to enter STEAM fields and take charge of Alaska's future
- A integral part of K-22 curriculum



# Your Turn!

- Think about STEAM present in your culture
- Choices:
  1. Outline a curriculum map that aligns with your cultural knowledge system about nature
  2. Think of STEAM lessons that can be included in your curriculum.
  3. Can technology in the classroom support language, culture and sense of place in your village/ city/ school?



# Table Discussion

- Please share your work in your table with colleagues from a different place.



# Quyana Cakneq!

- Contact information:
  - Naqucin1hotmail.@com
  - [iortega2@alaska.edu](mailto:iortega2@alaska.edu)
  - [lolson@chevakschool.org](mailto:lolson@chevakschool.org)
  - cupiklady@yahoo.com



# Selected References

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- Yakman, G. (2008). ST  $\Sigma$  @M education: An overview of creating a model of integrative education. Retrieved from [http://www.steamedu.com/2088\\_PATT\\_Publication.pdf](http://www.steamedu.com/2088_PATT_Publication.pdf)
- Zeidler, D. L. (2016). STEM education: A deficit framework for the twenty first century? A sociocultural socioscientific response. *Cultural Studies of Science Education*, 11(1), 11-26.