



*Integrating Polar Studies in Maine Classrooms*  
*Visual Art, Social Studies, Environmental Sciences*  
*March 2021*

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## The Neuroscience of Visual Learning

Learning how the brain actually works.

General Physical Structure of Brain

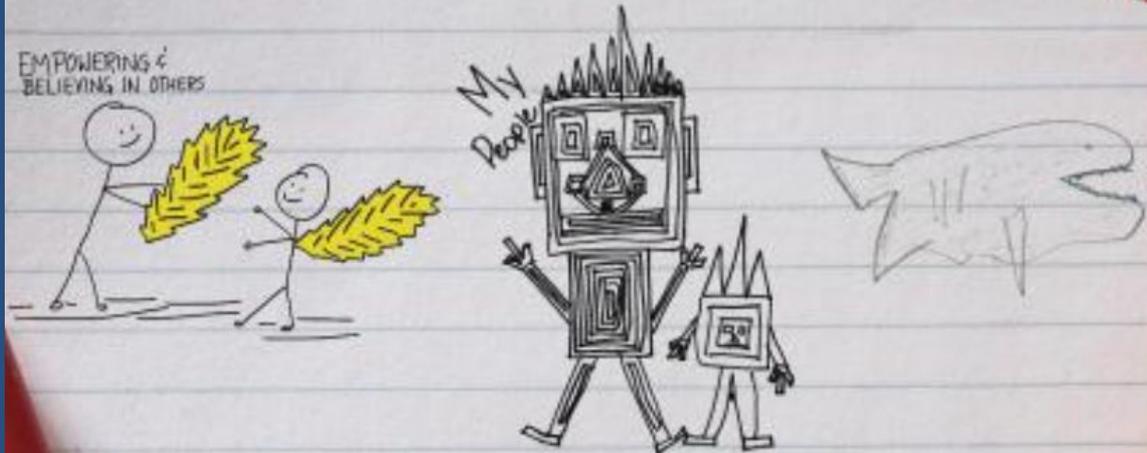
How Neural Networks are Formed

Functions of learning and memory

Edu-sketching in the classroom

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# VISUAL NOTE-TAKING FOR EDUCATORS



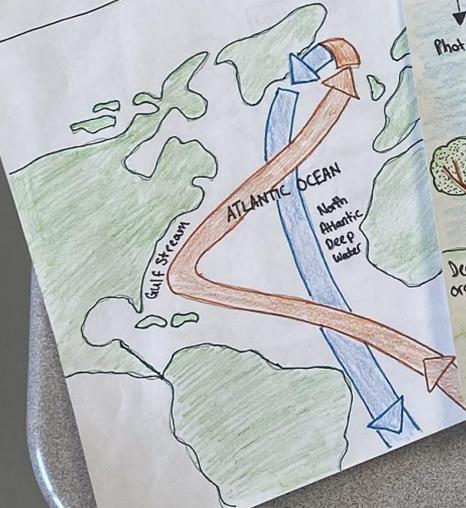
A TEACHER'S GUIDE TO  
student creativity

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WENDI PILLARS

## The Ocean Cycle

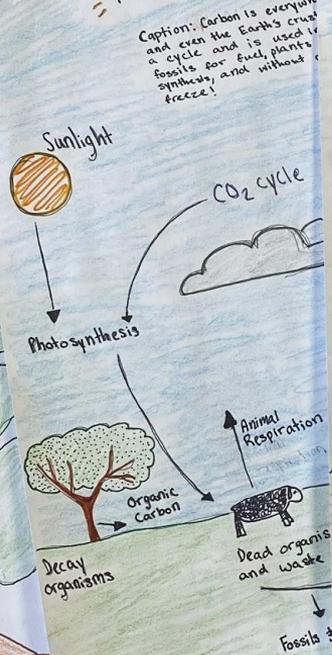
Caption: The ocean cycle is a cycle that the water circulates based on temperature and density. This helps the ocean in certain temperatures in different temperatures that being said, the ocean's temperature has increased, as a result of CO<sub>2</sub> uptake/absorption.

- Colder, denser
- Warmer, less dense



## The Carbon Cycle

Caption: Carbon is everywhere and even the Earth's crust is a cycle and is used in fossils for fuel, plants, synthesis, and without it we freeze!

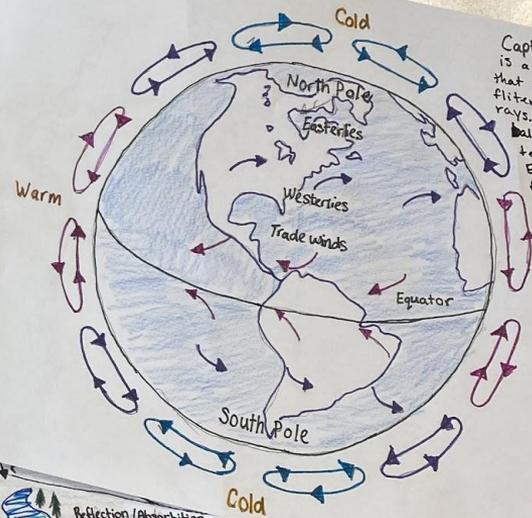


## Energy Balance



Caption: The Sun releases energy and it fills up space, absorbing and reflecting in the atmosphere. This affects global temperatures as the clouds and cities often trap heat in the atmosphere and cause a major increase in global temperature.

## The Atmosphere



Caption: The atmosphere is a thin layer of gases that surround Earth and filters out harmful UV rays. It works by balancing out the temperatures on Earth and therefore maintains a stable and livable environment.



# THE ARCTIC

BY: GLORIA S.P 10-1-20

PEOPLE FIRST SETTLED IN ALASKA

FUNDATION OF A THULE WINTER HOUSE, WITHOUT HEAVY ROOF.

5cm

NORMAL MICROCORE

SETTLEMENT

THEY USED STONE AND MUD TO MAKE HOUSES

THEY ALSO USED BOW AND ARROWS

GREENLAND SIBERIA

ALASKA CANADA

MAP SHOWING HOW THE ASTY PEOPLES EXPANDED FROM ALASKA INTO THE CANADIAN ARCTIC AND GREENLAND MORE THAN 4000 YEARS AGO.

LAMINAR ARMOUR MADE OF HARDEN LEATHER REINFORCED BY WOOD AND BONES

THEY ALSO USED THESE WEAPONS TO HUNT FISH AND COLLECT FUR AND HIDE.

MONTEANA ARCTIC GRAYLING

TYPICAL COMMON ARCTIC FISH (FOOD)

SETTLEMENT

# 中国 (CHINA)

BY: GLORIA S.P 10-1-20

CHINA

A PICTURE OF A PLAN CANAL BRIDGE. IF YOU STAND ON THE BRIDGE, YOU CAN SEE THE RIVERS SPLIT AT MENJIANG RIVER.

SICHUAN THIS IS WHERE IT ALL STARTED

IN THE THIRD CENTURY, LI BING, SERVING THE RULING QIN STATE, DIVISED A SYSTEM OF WEIR WORKS-LEVEL, PARTIAL DAMS, AND WATERWAYS. (HE CREATED THIS)

THIS IS WHAT MEN WOULD WEAR

SHIRT ON OR SUSPENDERS

DUJIANGYAN GATE, THIS IS WHERE THEY START THEIR CEREMONY.

THE DAM HELPED CHINA'S CROPS FLOURISH AND PREVENTED FUTURE FLOODS.

THE DAMS WERE 16 METERS HIGH AND ARE MADE OF LOGS AND SEDIMENTARY ROCKS

MOUNTAIN

HUITANG RIVER

ENTER

WATER

ERWANG TEMPLE

THIS IS WHERE THEY BUILD AND BREAK THE DAM THIS IS ALSO WHERE THE CEREMONY WILL TAKE PLACE



# CLIMATE ACTION



**WILDFIRES**



The world is already 1°C (1.8°F) hotter than it was between 1850 and 1900.

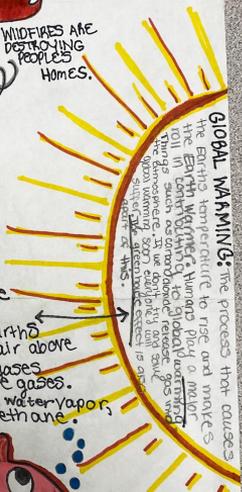
**2ND LEADING CAUSE**

Rising concentration of carbon dioxide is a factor of climate change.



**AIR POLLUTION**

WILDFIRES ARE DESTROYING PEOPLE'S HOMES.



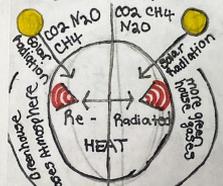
**GLOBAL WARMING:** The process that causes the Earth's temperature to rise and makes the Earth warmer. Humans play a major role in contributing to global warming. They burn fossil fuels like coal, oil, and gas. This releases heat-trapping greenhouse gases into the atmosphere.

**FIRST SOLUTION:** change what runs our vehicles to something more eco-friendly.

**CLIMATE CYCLES NATURAL VS. CURRENT CYCLE**



**HEALTH ISSUES**

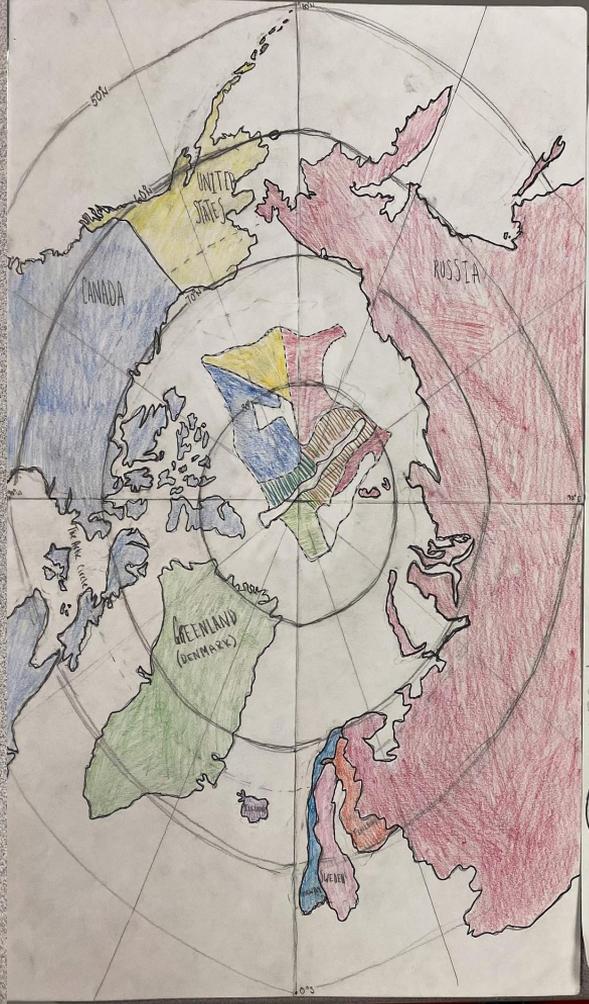


**The Greenhouse Effect**  
A warming of Earth's surface and the air above it. The heat-trapping gases are called greenhouse gases. The most common are water vapor, carbon dioxide, and methane.

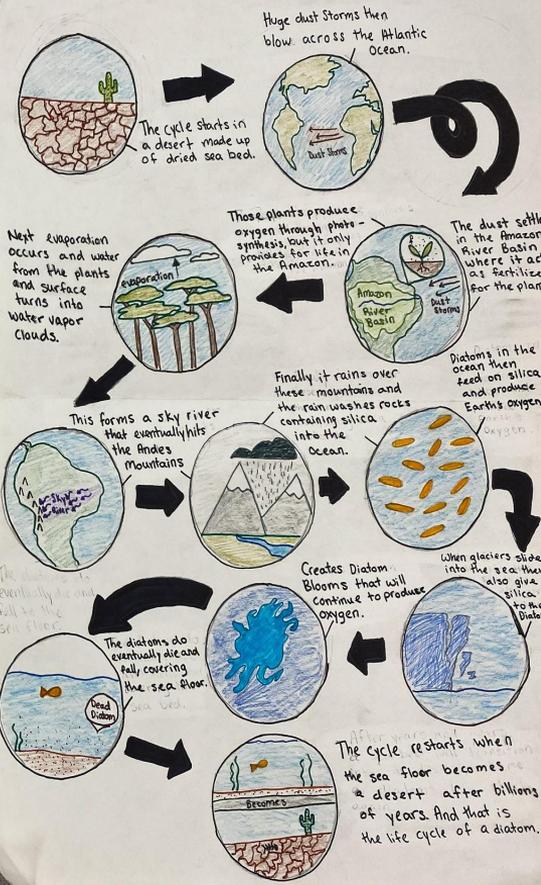


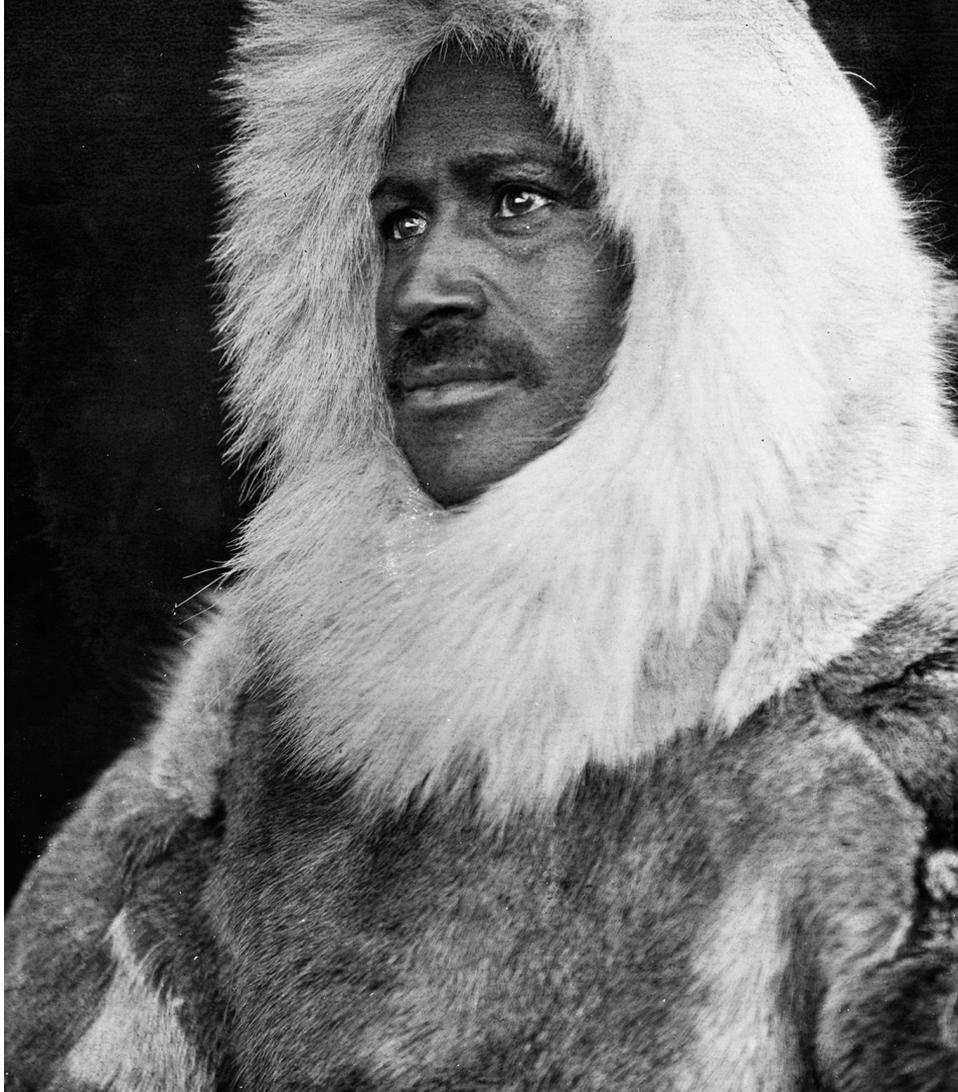
**INDUSTRIAL REVOLUTION**

**SECOND SOLUTION:** Eliminate the burning of coal, oil and eventually burning gas.



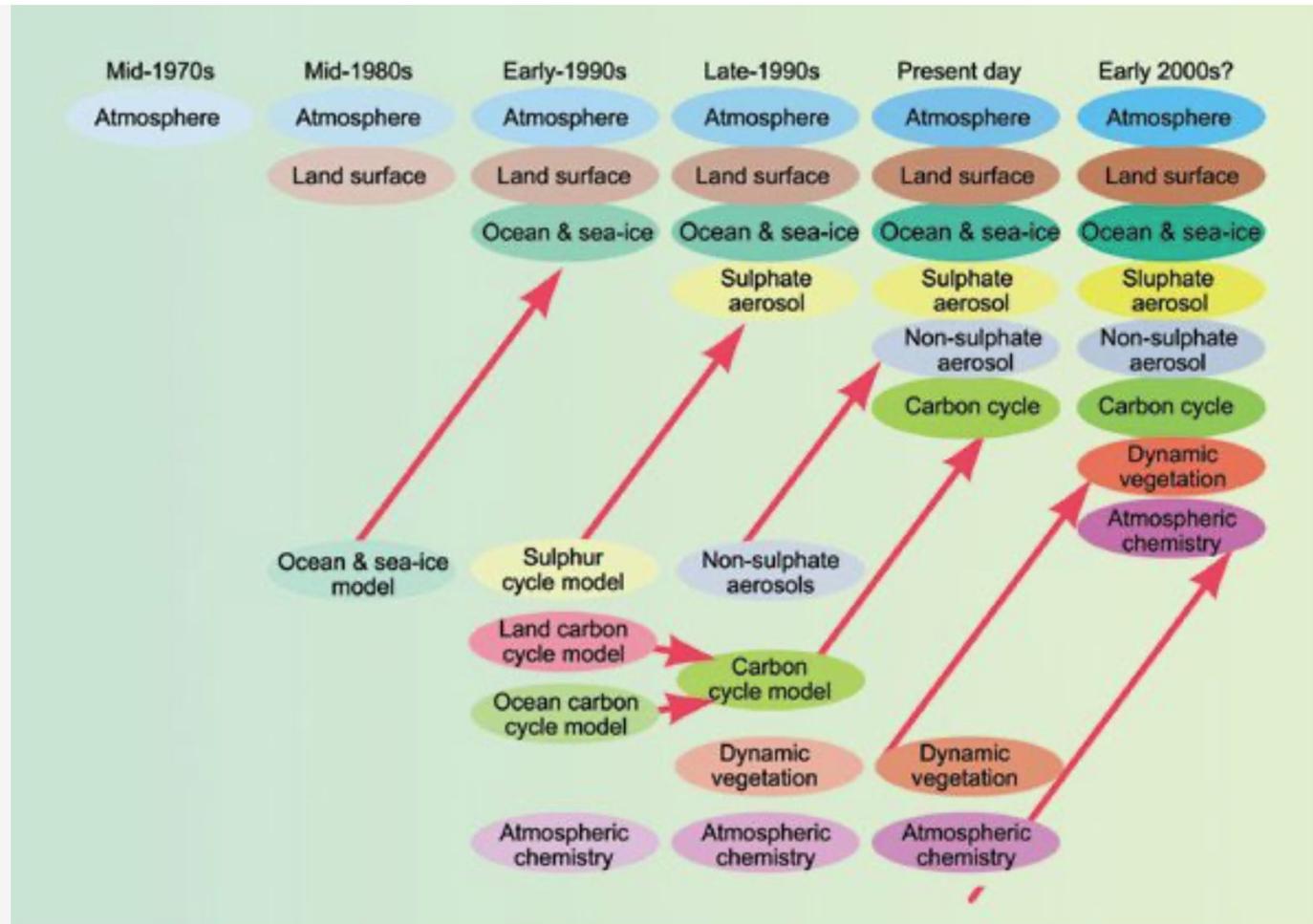
# The Life Of A Diatom

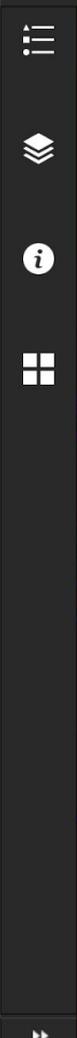




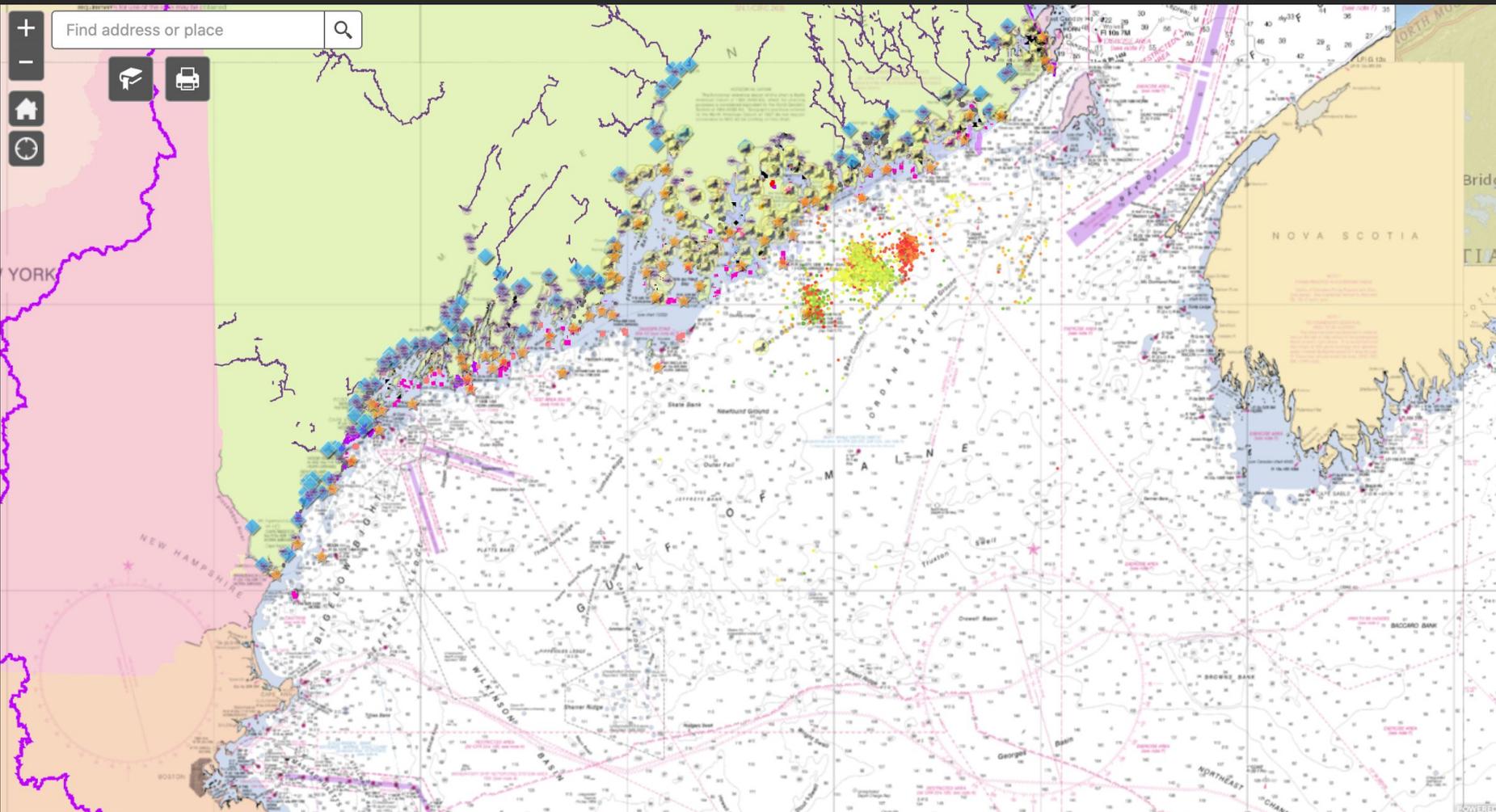


## Development Climate Models





Find address or place



30mi + -65.809 44.790 Degrees

☰ TREE MAP
📊 STACKED

**COUNTRY**

- Exports
- Imports
- ▶ **Export Destinations**
- Import Origins

**PRODUCT**

- Exporters
- Importers

**BILATERAL**

- Exports to Destination
- Imports from Origin
- Exports by Product
- Imports by Product

🌐 NETWORK
🔍 RINGS

🌐 GEO MAP
📊 LINE

📊 SCATTER

## COUNTRY

Greenland ✕

## PARTNER

Select a partner...

## DATASET

## TRADE FLOW

HS92 ▾

Exports ▾

## YEAR

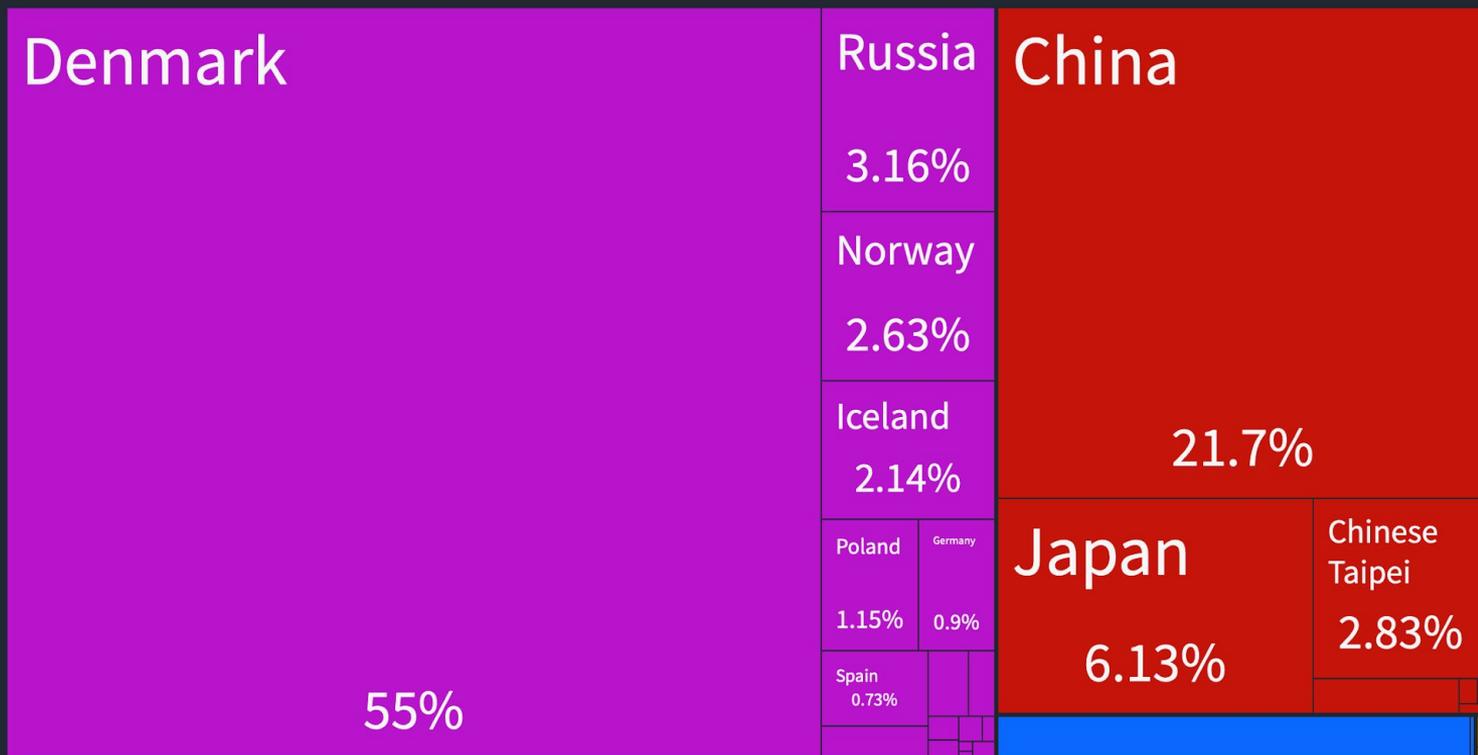
2019 ✕

BUILD VISUALIZATION

&lt; 2018

## Where does Greenland export to? (2019)

Total: \$1.25B



Trade Value

Growth

Growth (%)

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### Conference Video Archives



Iafur Ragnar Grímsson  
Speaker – "The Epicenter of Politics and Climate Change"



Paul A. Mayewski  
"Earth's First Responder in a Warming World: Arctic Climate"



Frances Ulmer  
"Winners and Losers in the 21st Century Arctic"



Ulf Sverdrup  
"Arctic Region Goes Dynamic"



Gail Whiteman  
"What Happens in the Arctic Doesn't Stay There"



Michael Bravo  
"Community and Governance in a Fractured World"



Sara Olsvig  
"The Challenges of Developing Resilient and Safe Communities"



Gunn-Britt Retter  
"The People of Eight Seasons: A Resilient Culture or a Future at Risk?"



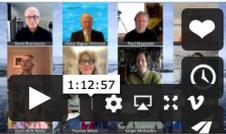
Thomas Nilsen  
"Amid Growing Distrust, Rearmament and Climate Crisis: An Arctic Power Play"



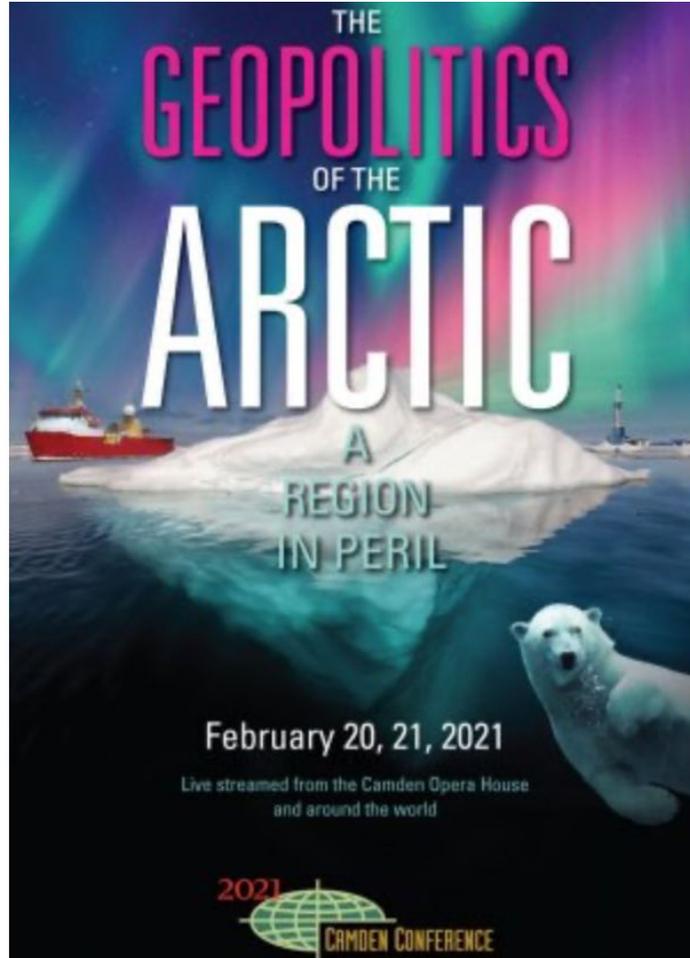
Sergei Medvedev  
"Symbolic Politics in the Arctic"



David Balton  
"Strengthening Governance of the Arctic"



Final Panel of the 2021 Camden Conference



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Showing 20 of 43 Pages , Sorted By **Relevance** ▾

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#### Additional Resources on **Polar Exploration: Primary Sources in the Manuscript Division**

by [Edith Sandler](#) | **Subjects** [Environmental Studies](#) , [History](#)

Indigenous Peoples The **Arctic** Council External The **Arctic** Council is the leading intergovernmental forum promoting cooperation, coordination and interaction among the **Arctic** States, **Arctic** indigenous communities and other **Arctic** inhabitants on common **Arctic** issues, in particular on issues of sustainable development and environmental protection in the **Arctic**. This article contains a backgrounder on the **Arctic** Council and its work. ... The Poles Today **Arctic** Health An "information portal" that offers peer-reviewed sources on articles, reports, and data relating to health of people in the north and the **Arctic** environment.

<https://guides.loc.gov/polar-exploration/additional-resources>

#### Print Bibliography on **Polar Exploration: Primary Sources in the Manuscript Division**

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Baldwin Published Expedition Accounts **Arctic** Ambitions Captain James Cook is justly famous for his explorations of the southern Pacific Ocean, but his contributions to the exploration of the northern Pacific and the **Arctic** are arguably equally significant. ... Accompanying an exhibition of the same name, **Arctic** Ambitions: Captain Cook and the Northwest Passage sheds new light on Cook's northern exploration. ... George Palmer Putnam TL540.A5 North Pole Exploration North by Degree "North by Degree: New Perspectives on **Arctic** Exploration is a stimulating volume of papers on the history of late nineteenth- and early twentieth-century **Arctic** exploration." - From publisher Susan A.

<https://guides.loc.gov/polar-exploration/print-bibliography>