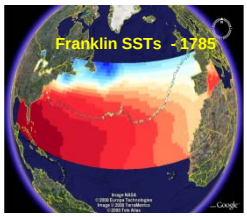
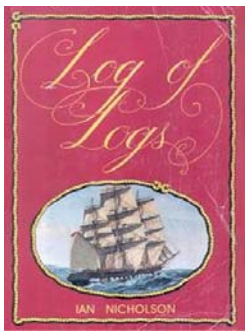
GLOBE - Franklin Climate Change Video

Teacher's Ideas – Middle School

Date: 8/1/2010	**Class:** **Earth Science** (Grades 5th to 8th) *(also for US: History of Science in America)*
	Topic: **Franklin & Climate Change** Exploring Climate Connections Between the Past and Today
Objective	To analyze the major climate issues of today by comparing the past to the present. This project supports **GLOBE's Student Climate Research Campaign**, and combines the areas of Earth Science, history, mathematics/statistics, computer/data visualization, global communication/collaboration, and publishing through the internet.
Active Engagement	These teaching ideas are based on an entertaining 8 minute video narrated by "Ben Franklin" himself. He describes the ocean temperature readings taken over 200 years ago during his various crossings of the Atlantic Ocean and how this scientific information is being used today to help analyze the earth's current climate issues. Reference is also made to colonial era land readings by Jefferson, Madison, Pemberton, etc., and how they compare to current observations. The video is sponsored by several international organizations that are keenly interested in promoting the understanding of climate changes around the world.
Assignment	**Suggested follow-up for discussion and classroom activities:** 1) GLOBE students/teachers/climatologists/citizen scientists - What are their respective roles in helping to observe and analyze today's important climate issues, including understanding the important differences between weather and climate? 2) Collaboration – What is the importance of bringing together scientists, educators, students and other interested parties from various cultures around the world? 3) Data visualization – How can this information be presented in an informative and appealing way to audiences of today? 4) Publishing results - How can the internet and other technological tools be used to help bring together the various global efforts? **Older students can:** • Explore the theme of taking bits and pieces of information from diverse sources to help measure and understand the changes we are seeing. For example, these students can identify other examples of historical observations that have been turned into knowledge that influence our lives today. • Investigate the importance of increasing the number of observations to produce credible knowledge sets. • Explore how to simplify vast amounts of information through the use of mapping software such as Google, which can illuminate historical and contemporary marine and terrestrial relationships. • Discuss the competing interests of scientific advancements vs. political or economic concerns and how best to bridge those gaps. • Those with a segment on Ben Franklin can explore how the work ethic through his Autobiography propelled him to turn idle time into useful pursuits. Can also investigate the impacts that he had in charting the Gulf Stream, it's impacts on America's quest for independence, and the inventive way he took the deeper ocean temperatures. • Investigate the impacts of Franklin's contemporaries such as Explorers James Cook, Alexander von Humboldt, Ferdinand Magellan, etc. **Main Resource:** **Help@GLOBE.gov** Other Resources: OldWeather.org, Met-ACRE.org, CitizenScienceAlliance.org
Materials Needed	High quality video for direct play or downloadable at www.globe.gov/scrc via YouTube or www.OldWeather.org/examples/benjamin-franklin-1785





jwb – 7/2010

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Exploring Climate Connections Between the Past and Today

Past: Scientists and Citizens - Sample Sea and Land Surface Readings

Franklin 1776 - Atlantic Voyage

Observations of the warmth of the sea-water, &c. by Fahrenheit's thermometer; with other remarks made on board the Reprisal, Capt. Wycks, bound from Philadelphia to France, in October and November 1776.

326 MARITIME OBSERVATIONS.

Date.	Hour A. M.	Hour P. M.	Temp. of Air.	Temp. Water.	Wind.	Course.	Distance.	Lat. N.	Long. W.	Remarks.
Octo. 31	10	4	76	70	S E	E b S	135	38 12	70 30	Left the capes Thursday night, October 29, 1776.
Nov. 1	10	4	72	78	W S W	E ¾ N	109	No ob.	68 12	
2	8		71	75	N					
	12			78			141	ditto.	65 23	
3	8	4	67	76						Some sparks in the water these two last nights.
	12			76	N W	E S E ¼ E				
		4	70	76		E b S	160	37 0	62 7	
4	9		68	76						
		1		76		N b E	194	36 26	58 8	Ditto.
		4	68	76						
		8		78						
5	8		68	76		N E				Ditto.
	12		70	75			163	35 21	55 3	
		4		75						
		8		75						
6	8			76	E b N	S 50 E				
	12			77			75	33 33	53 32	
7	8			78	E b E	N 30 W				
	12			77			108	36 6	52 46	
		4		77						
8	9		75	77	E b E	N 49 E				
	12			77			175	38 2	50 1	
		4		77						
9	9		75	77						
	12		75	75	W	N 33 E	275	39 39	46 55	

Pemberton July 1776 - Philadelphia

Courtesy of the APS Library

Today: Collaboration between Students, Teachers, Scientists, and Citizens

CITIZEN SCIENCE ALLIANCE

Past vs. Today: Comparison