

STAR NETWORK OUTREACH

*A partnership with
Educators in Nunavut*

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OUTLINE



Purpose

Examine the history and future of STAR Outreach

Who - looks at the importance of a target audience

When - looks at schedules and timelines for planning and delivery of an outreach program

What - looks at the content or product of outreach
- *FOCUS: APPROACHES AND PRODUCTS*

How - looks at ways in which to accomplish outreach goals within the structure of a research network

WHO – WHO CARES?

"STAR aims to improve understanding and prediction of severe arctic storms..."

...who cares about this improvement?

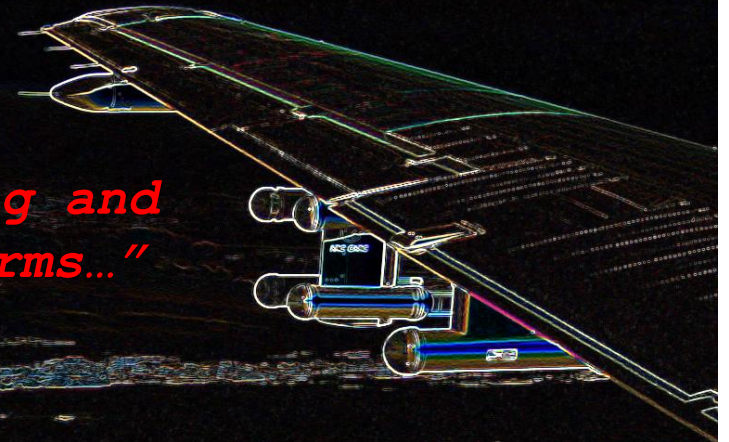
Answer : the people who live there

... and if the improvement has not yet been accomplished?

Answer: Increase awareness of the need for improvement

... and who, would want improved awareness of this issue?

Answer: EDUCATORS and STUDENTS!



Get to Know your audience

Target Audience = Students... does this idea have support?

Possible choices

High School (e.g. grade 12)

- 250-750 students per year
- one unit, Weather and Climate
- One course, Grade 10 Science (Pan-Canadian Curriculum)

College (e.g. ETP Nunavut College)

- ~30 students per year
- one unit, 2-3 weeks
- One course, Environmental Technical Program (ETP)

BUT – discovered a Nunavut specific program under development focused on Atmosphere (potential for >40% related content!) ... **SILA** ...

Curriculum in Nunavut

- curriculum focused on local and traditional uses of the environment

- Nuna (Land, Grade 10)
- Tariaq (Water/Ocean, Grade 11)
- Sila (Atmosphere, Grade 12)

- built around guiding Principles of Inuit Qaujimagatugangit (IQ)

- concepts introduced via Experiences (students, family or community elders)

- science concepts linked to an aspects of local or traditional knowledge



Curriculum Unit Icons – used to divide learning content based on traditional concepts of knowledge, sharing, and learning

WHEN – Schedules and Timelines

STAR wants to produce content...

...and SILA needs content...

Match made in heaven?

- STAR Outreach program – funding, 12-18 months
- Curriculum development (~3-5 yrs) many people (writers, teachers, administrators etc.)

So, these two complimentary groups have difficulty arranging schedules and timelines...

STAR & SILA – we're MAKING it work

... not easy or ideal...

but both sides believe it's worth it!

- STAR's contribution complete by Aug. 30, 2010
- SILA's curriculum writers complete full course content – tested in schools in 2011

WHAT TO PRODUCE

... we have an audience and schedule ...

Should content be driven by research?

Answer: research results not ready for outreach

- it's too high a level for the audience,
- it may not directly match with audience

Should content be driven by the Audience?

Answer: If produced for specific requirements is more likely to be used,

- content does not = research results

(e.g. those published in Scientific literature)

*... products must be specific to requirements,
but still related to the research goals ...*

CONTENT SCOPE

content should meet the following criteria:

- Fall within the scope and goals of STAR
(i.e. understanding of Arctic weather and climate extremes)

SILA content requires:

- Relate to processes in the atmosphere,
- clear linkages to northerners/way of life

Overlap???

Answer: req. understanding of user needs
(i.e. curricula),

- STAR can not produce material without direct
input from users (SILA)

Solution: close working relationship
(e.g. workshops, meetings, continuous collaboration)

SILA UNIT TEMPLATE

... Understand
that curriculum
is a document
and materials
provided to
the teachers...
they use and
modify for the
classroom

So what to expect...
package includes...



Learning Competencies



Materials



Language Development



Background



Opener



Connector



Activity



Reflection



Follow up Activity



Classroom Reinforcement



Accommodating Diversity



Assessment

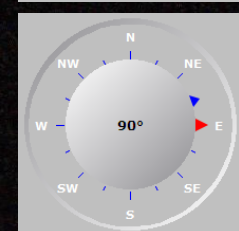
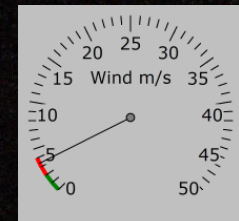
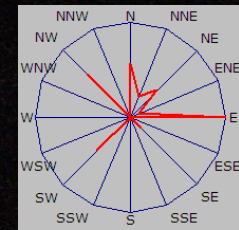
STAR and SILA Content

15 units Contributed by STAR:

- Weather Watching

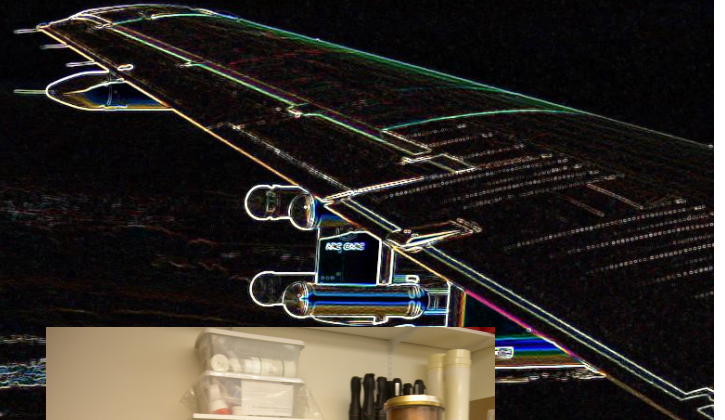
... INCLUDES A WEATHER STATION EVERY NT SCHOOL!

- Patterns in Local Weather
- Weather While Traveling on the Land
- Where the Weather Comes From
- Reading Weather Maps
- Forecasting
- Aviation Weather
- What is Extreme Weather
- Blizzards
- Global Weather Extremes
- Global Energy
- Global Climate Processes
- Sea Ice and Weather
- Climate Change Primer
- Weather prediction in the face of Climate Change

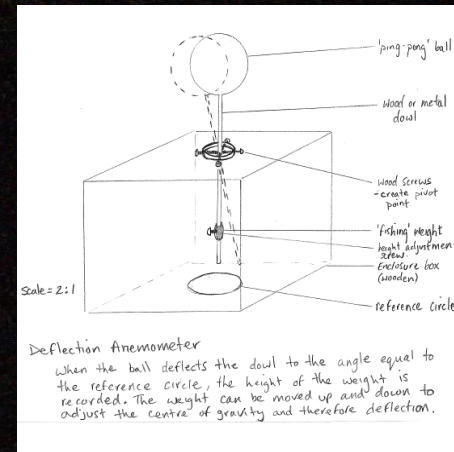


Weather Watching

CARS Field Trip



Build and Instrument



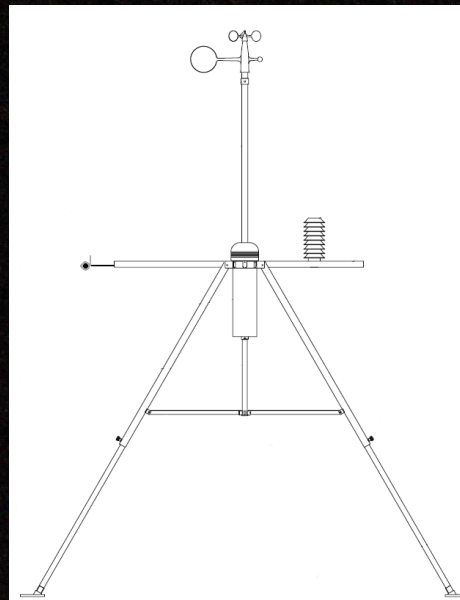
Weather Stations

Trial Weather Station in Rankin Inlet - Jan 2010

- Research station used for 'show and tell' lesson
- Student involvement and interest was high

Purchase and Distribution of Inexpensive Stations

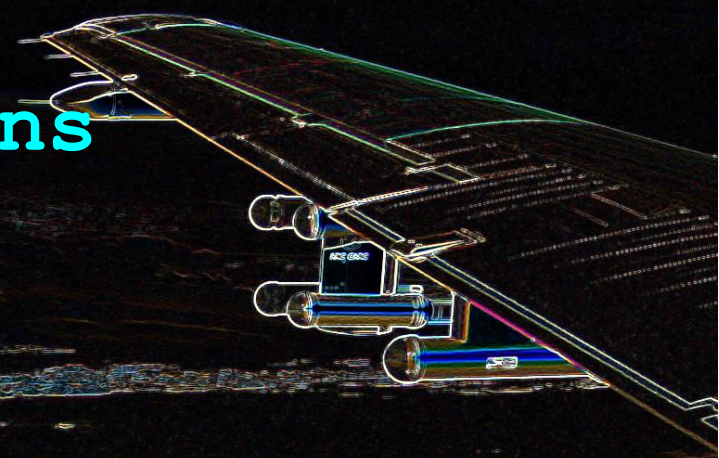
- Proposed at a STAR board meeting (thanks -Klaus Hocheim)
- Supported by NT Dept. of Ed.
- Distribution June 2010 to all high schools



School Weather Stations

Cumulus - Open Source Software

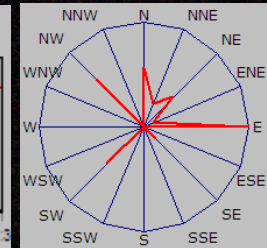
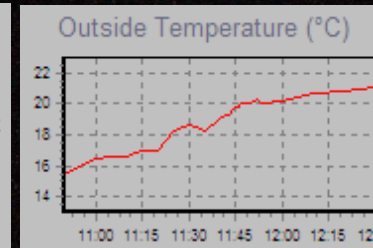
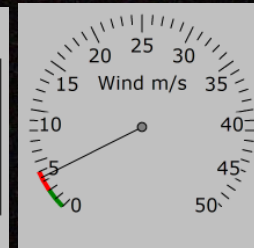
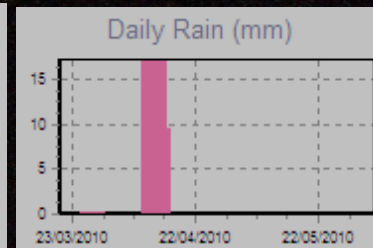
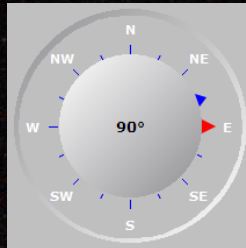
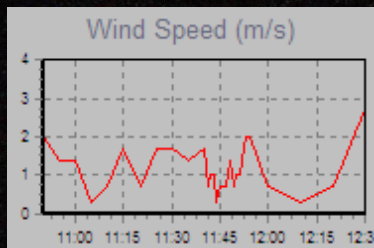
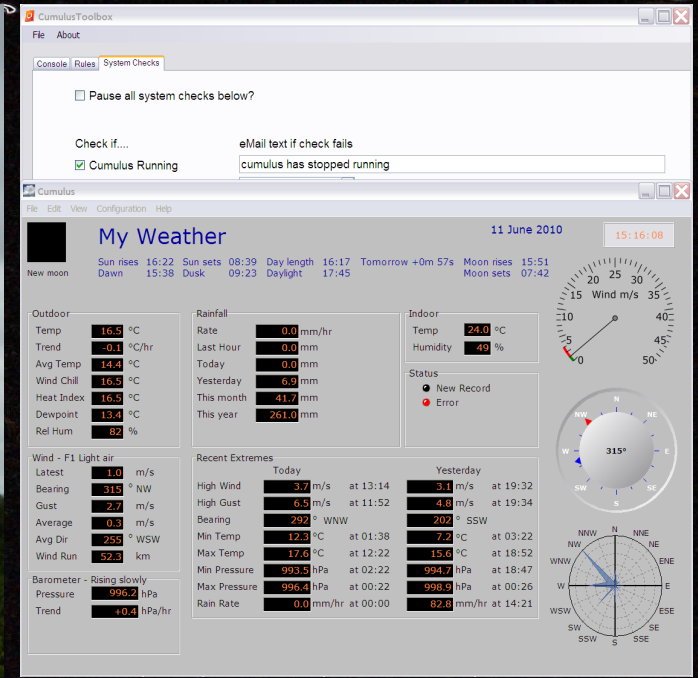
- Locally saved data
- FTP/WEB data backup/sharing
- Website Capable



Longevity??

Purpose:

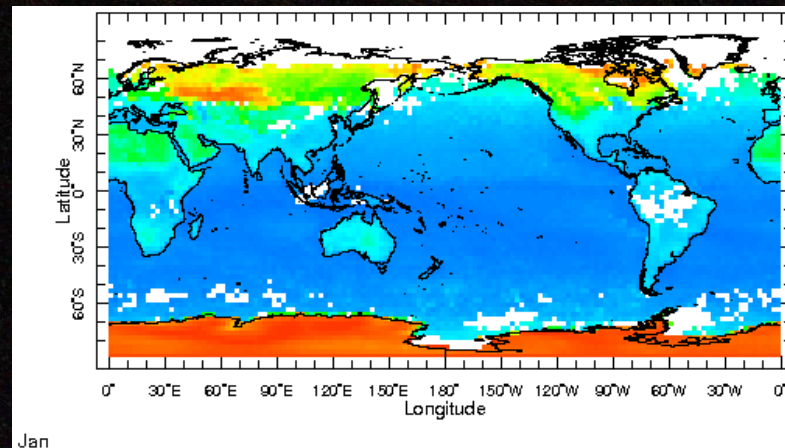
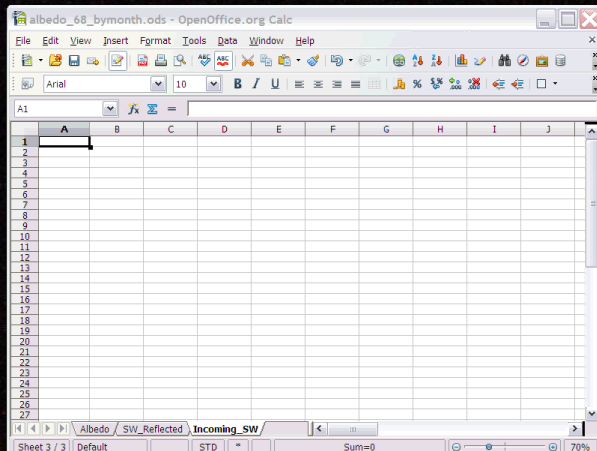
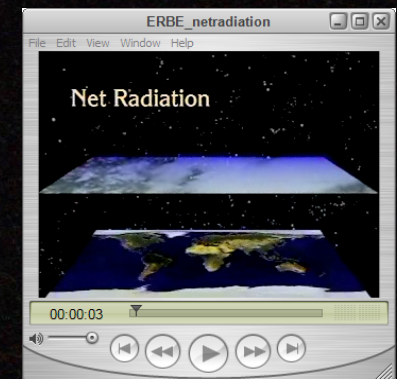
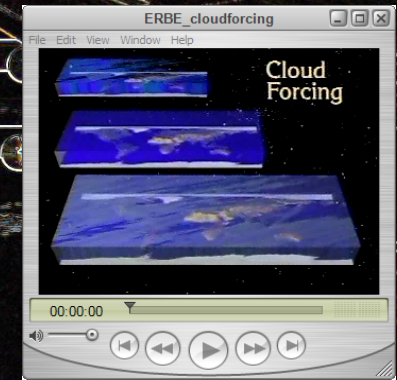
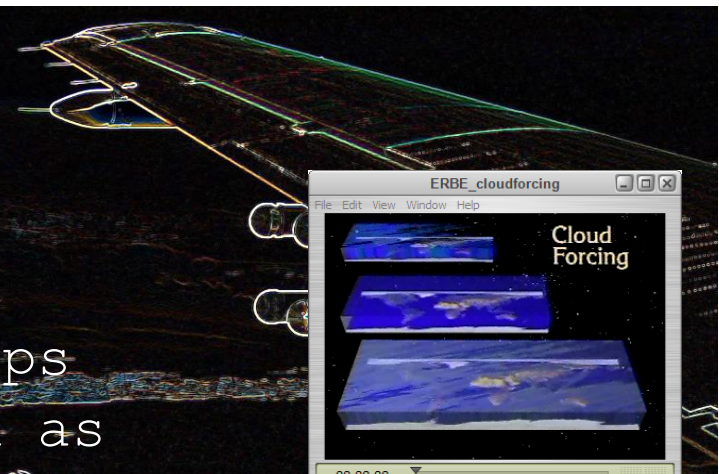
- 1yr dataset
- Promotional



Global Energy

Exercise focused on visualizing

- Global processes seen via maps
- Produced by students or used as question/discussion piece
- Wealth of options and materials
- Adapted for grade 12 and NT
- Requires testing however wealth of options allows teacher adaptation

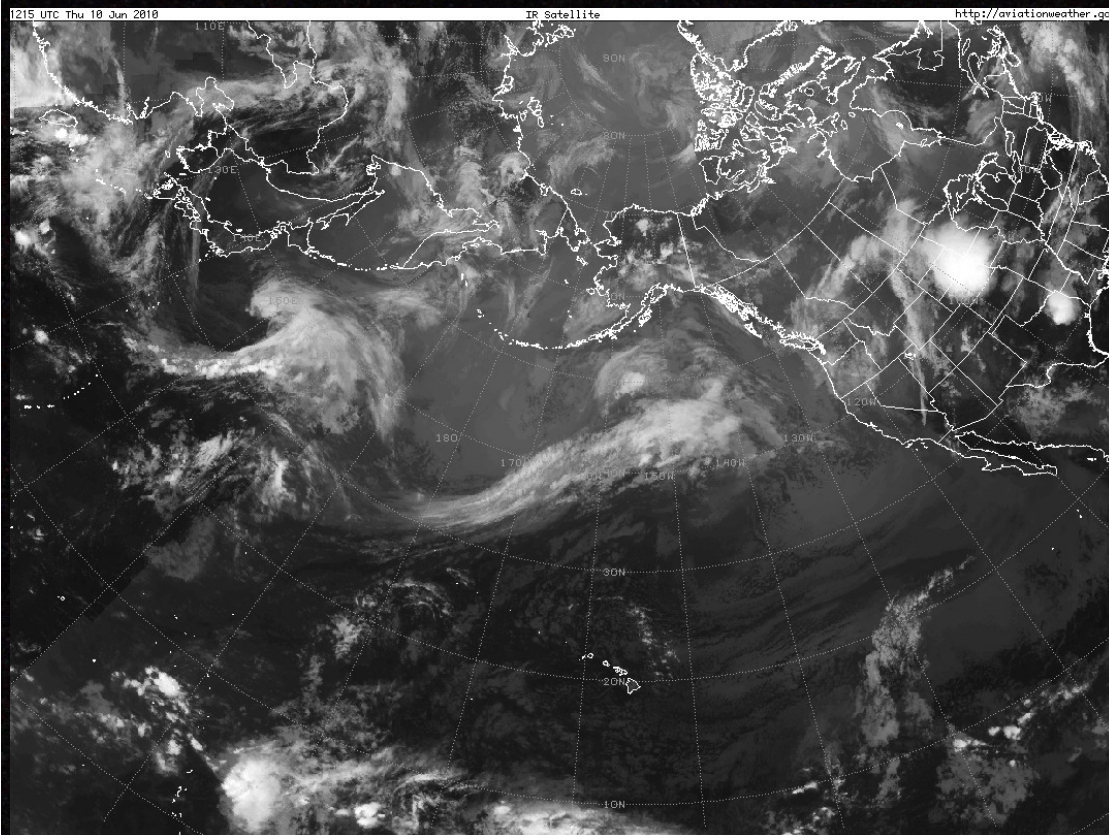


Where the weather comes from

Finding the best data/visuals available...

- Coverage of the Arctic hard to find
- Easy access tools or archive for teachers
- Likely teacher/locally dependent...

... At least we give them the info and tools...



Free Download Manager

File View Downloads Options Tools Help

Downloads Flash video downloads Scheduler Site Explorer Site Manager HTML Spider <<

File name	Size	Downloaded	Time r...	Sections	Speed	Co...	Added
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gfsr_500p_int(24).gif	31.9 KB	100% [31.9 KB]		0/1			10/06/2010, 9:08:45 AM
941_100(2).gif	160 KB	100% [160 KB]		0/1			10/06/2010, 10:52:44 AM
640x480_currents_nam_devipoints_...	57.2 KB	100% [57.2 KB]		0/1			10/06/2010, 10:57:12 AM
640x480_currents_nam_pressure_1 ...	63.3 KB	100% [63.3 KB]		0/1			10/06/2010, 10:57:17 AM
640x480_currents_nam_windspeed_...	50.2 KB	100% [50.2 KB]		0/1			10/06/2010, 10:57:24 AM
640x480_currents_nam_humidity_1 ...	57.2 KB	100% [57.2 KB]		0/1			10/06/2010, 10:57:32 AM
640x480_currents_nam_temperature...	60.6 KB	100% [60.6 KB]		0/1			10/06/2010, 10:57:37 AM
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Log Progress Media preview/convert Opinions

Time	Date	Information
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3:05:01 AM	11/06/2010	File already exists. Rename to "irnamefcvbg(4).gif"
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3:05:01 AM	11/06/2010	[Section 1] - Started
3:05:01 AM	11/06/2010	[Section 1] - Downloading
3:05:01 AM	11/06/2010	Creating new section...
3:05:01 AM	11/06/2010	Cancelled
3:05:01 AM	11/06/2010	[Section 1] - Done
3:05:01 AM	11/06/2010	Download complete
9:05:00 AM	11/06/2010	Starting download...
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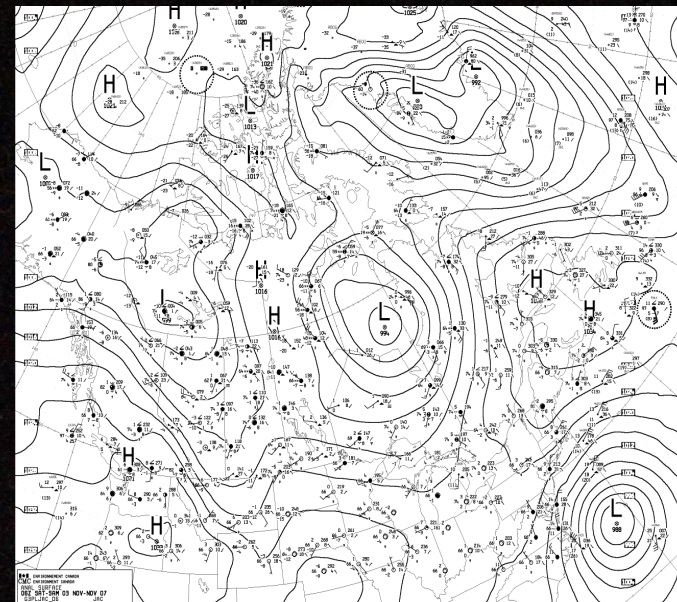
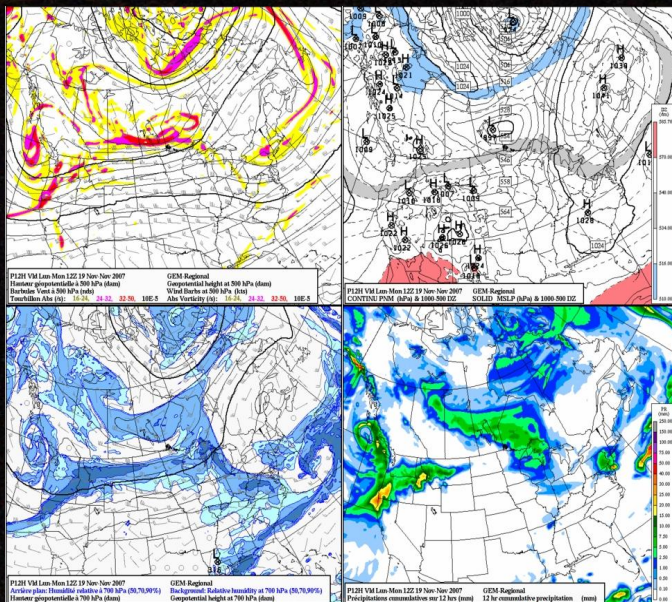
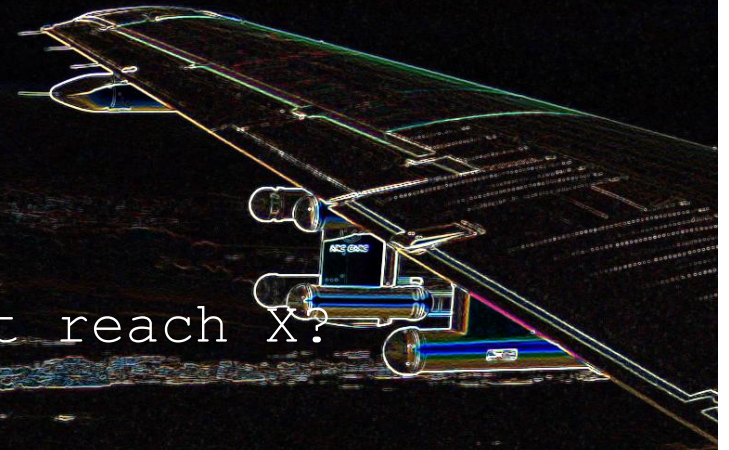
Ready 16.3 MB; 0 B 0 B/s; 0 B/s

Reading Weather Maps

Focus on Application...

- Spatial timing - when will it reach X?
- Evolution with time
- Associated weather observations

... and learn the fundamentals on the way..



Sea Ice and Weather

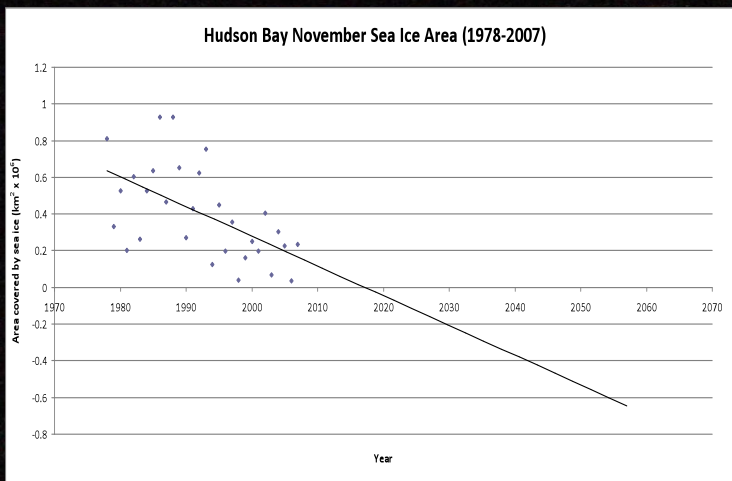
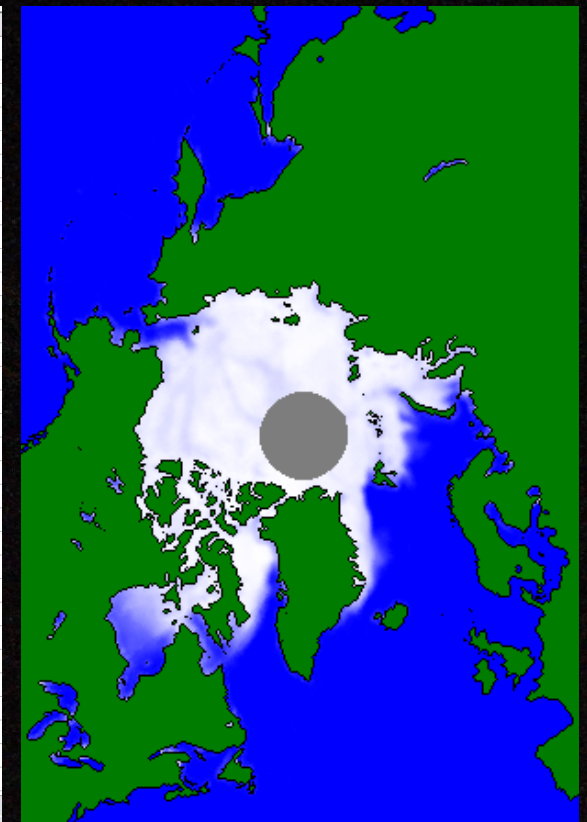


Data generation and graphing ...

- Visual exercise used to introduce skills
- Still need link to weather...?

... and link with Climate Change & Perspectives on changing environment...

	A	B	C	D	E
1	Year	Area(km ² x10 ⁶)	Area		
2	1978	0.81125	1298		
3	1979	0.333125	533		
4	1980	0.528125	845		
5	1981	0.201875	323		
6	1982	0.60375	966		
7	1983	0.264375	423		
8	1984	0.528125	845		
9	1985	0.6375	1020		
10	1986	0.92625	1482		
11	1987	0.46625	746		
12	1988	0.928125	1485		
13	1989	0.6525	1044		
14	1990	0.27	432		
15	1991	0.43	688		
16	1992	0.6225	996		
17	1993	0.754375	1207		
18	1994	0.126875	203		
19	1995	0.448125	717		
20	1996	0.198125	317		
21	1997	0.355	568		
22	1998	0.038125	61		
23	1999	0.16125	258		
24	2000	0.2525	404		
25	2001	0.199375	319		
26	2002	0.405625	649		
27	2003	0.0675	108		
28	2004	0.30375	486		
29	2005	0.225	360		
30	2006	0.036875	59		
31	2007	0.233125	373		
32					



HOW

does this approach fit in a research network?

Answer: Outreach throughout the project
(... proposal and planning all the way through to the end ...)

Outreach began after the field component

Answer: Too Late! Valuable opportunities lost

Funding secured separately from research

Answer: If funding agencies desire outreach ...
... include from the beginning

Outreach Coordinator handles all of outreach

Answer: One person always playing catch-up

Does it require specialized staff?

Answer: Maybe Not?

FUTURE STEPS

*... products must be specific to requirements,
but still related to the research goals ...*

We accept the broader interpretation of STAR:

*"... improve understanding and of severe arctic storms
and the Importance of weather and climate to the
future of the Arctic..."*

And...

Help us to PUNCTUATE the curriculum materials
with your work

- Open to suggestions on how to make this happen

SUMMARY

Who?

- Identify your target audience
- evaluate based on Size, fit, and longevity

When?

- coordinate scheduling and delivery
- adapt (req. support of funding/reporting)

What?

- flexible to user needs, stay within network goals
- focus on products with a purpose

How?

- include outreach from start to finish,
- incorporate with core network staff

Why? **Remember ...**

... you don't reach out (outreach) for your benefit...
... but for the benefit of others!

THANKS

