



Dotting the i's and Crossing the t's – Connecting Buds, Leaves and Global Warming with Climate Change

- Clearly, the work outdoors is the centerpiece of Buds, Leaves and Global Climate Change
 - The students go outside.
 - They observe nature in a systematic way.
 - They learn about the problems that come up with field research, and how to solve those problems by applying the protocol.
 - They learn how to gather data into a table.

However...



- The students only personally collect data for one school year, and we should tie in what they do in the field to practical concerns about the environment. In order to dot the i's and cross the t's, I try to connect our field work with climate change issues.

*From the MA Curriculum Frameworks
Appendix III
Historical and Social Context for Science and
Technology/Engineering:
Topics for Study*

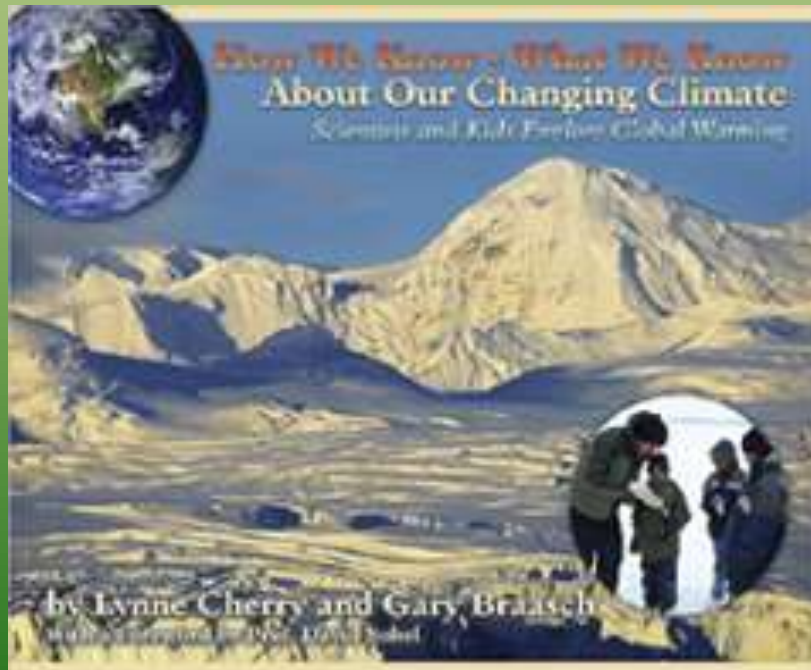
- “IV. Unintended negative effects from uses of science and technology/engineering.”
- “V. How science and technology address negative effects from uses of science and technology/engineering.”
- <http://www.doe.mass.edu/frameworks/scitech/1006.doc>

Grades 6-8

Science and Technology/Engineering Learning Standards

- “Identify ways in which ecosystems have changed throughout geologic time in response to physical conditions, interactions among organisms, and the actions of humans. Describe how changes may be catastrophes such as volcanic eruptions or ice storms.
 - Study changes in an area of the schoolyard or a local ecosystem over an extended period. Students might even compare their observations to those made by students in previous years.”

- I would highly recommend seeing if your school will spring for several copies of Lynne Cherry's and Gary Braasch's book on Global Climate Change – How We Know What We Know About Our Changing Climate

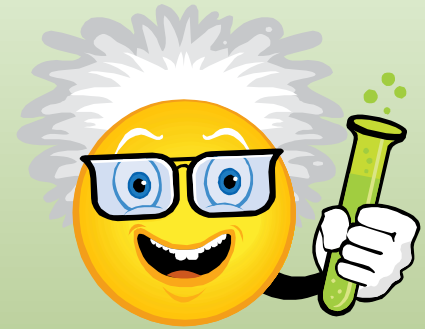


Suggestion 1

Suggestions to Use this Book

- Earlier this year, Pam sent out emails recommending this book.
- I have personally used this book in two ways...

Do the Classic Draw A Scientist Activity



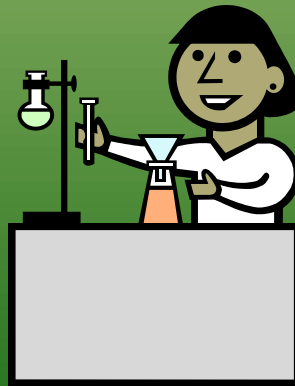
- Give students $\frac{1}{2}$ sheet of paper (because we don't want to kill more trees than we must).
- Ask them to draw a scientist. Resist all temptation to give any further directions, except to reassure them that they will not get a “bad grade” for stick figures.
- Survey the class...
 - How many students drew males? Females?
 - What race was the “scientist”?
 - What age was their “scientist”?
 - Was the “scientist” bald? Wild crazy Einstein hair?
 - Did the “scientist” have glasses?
 - Was the “scientist” in a lab? Outdoors? With boiling beakers?
- Now open the book...

Draw A Scientist Continued

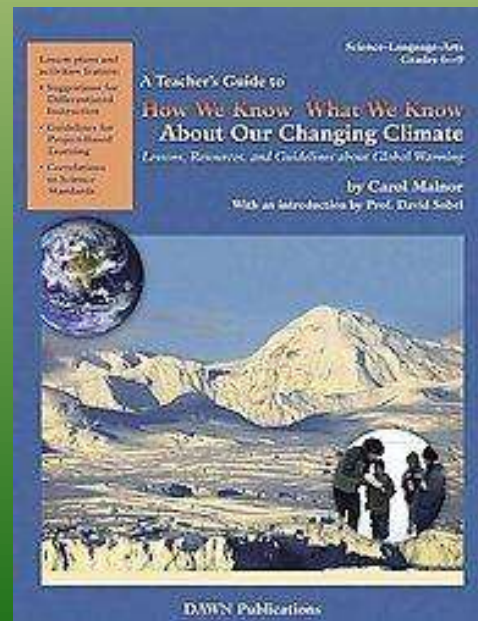
- Ask students to find pages with pictures of male scientists, then pages with pictures of female scientists.
- How about scientists that are very young (the book has preschool citizen scientists) or older scientists.
- Find non-white scientists.
- Find scientists with great hair (they're in there)
- Find scientists in the lab and in the field.

Draw A Scientist Continued

- Finally, explain the meaning of the term citizen scientist, a term that is emphasized in the book.
- Have them redraw themselves on the back of their original paper as a citizen scientist!!



A Suggestion from the Book
How We Know What We Know About Our
Changing Climate: Lessons, Resources, and
Guidelines for Teaching About Global
Warming (Paperback)
by Carol L. Malnor (Author)



Scientific Method in Lynne Cherry's Book

- Assign each student/group of students an observational study/experiment from the global climate change book.
- Have them read p.8-9 to understand the steps of scientific method.
- Give each group index cards. Give them the task of writing down the steps of scientific method for their assigned experiment. Give groups time to present/share their index cards.

Use Science News for Kids

- Science News for Kids is a free website put out by the publishers of Science News.
- The authors of the website take one or two articles from Science News each week, and write them in “kidspeak”
- Articles often have their own questions and activities, or you can read an article and come up with your own ideas.

Suggestion 2



Science News for Kids: Home Page

- Here is an example of an article/assignment I used this past fall.
- At my school, students access this article through edline, read the article online, and answer the questions attached.
- [Why Should We Study the Effects of Climate Change on Fall Leaves.doc](#)
- I have also used this article in past years.
- [Science News for Kids: Feature: A Change in Leaf Color](#) (notice the link to Harvard Forest under additional information)

Another Science Article Online

- I have used to following article in conjunction with our plants unit to understand why we have winter.
- [..\Doing Your BEST\why we have winter.doc](#)

Make Connections to Food

Suggestion 3

- Kudos to Michelle Obama for making a White House garden!!
- Using the book Garden Genetics: Teaching With Edible Plants (Teacher Edition)
By: Elizabeth Rice, Marianne Krasny, and Margaret E. Smith , I try to connect food and potential climate change.
- ..\Doing Your BEST\Biome and food plants a.doc

Make Connections to Water Use

Suggestion 4

- You can also connect water use to global climate change. This assignment was done in conjunction with a math project in which students designed a new bedroom – on a budget.
- [..\Doing Your BEST\Water conservation.doc](#)
- If I can, next year I would like to try to put in a “how much in fossil fuels could it take to heat your shower/bath water.

How Long Does It Take to Measure Climate Change?

Suggestion 5

- Don't do this one unless you are confident your students are old enough to get the point. We don't want students saying they "proved" climate change doesn't happen.
- [..\Doing Your BEST\Birthday weather.doc](#)
- Show the students this to help them understand how long it takes to see climate changes
- [Global Temperature : Image of the Day](#)
- Follow this up with a short video on how climate change is affecting the poles – we are just finishing up the International Polar Year.
- [MSN Video](#)