THE CERES S'COOL PROJECT

STUDENTS' CLOUD OBSERVATIONS ON-LINE

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SAIC

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1st CERES-II Science Team Meeting
Boulder, CO
March 29-31, 2004

What is S'COOL?

- Education and Public Outreach arm of CERES
- A simple way to involve K-12 students in real science
- A source of validation data for the CERES cloud data
- Began in 1997

S'COOL and You

- Participants in every state and 64 countries
  - Offer to serve as a resource to a local teacher
  - Arrange a S'COOL visit when traveling
  - Provide S'COOL info to teachers you know
  - Help with translation
- Presentation materials available, with script suggestions

Participants by State

Top 10

State	Number
VA	273
PR	150
FL	67
PA	65
TX	53
NC	48
CA	46
NY	41
OH	38
KY	35

Bottom 10

State	Number
RI	5
SD	5
UT	5
AR	4
HI	4
ID	4
ND	4
DC	3
VT	3
DE	2

Impact Measures

asd-www Website - April 1, 2003 - Feb. 5, 2004

- 146,181 unique visitors
- 422 hits/hour on average
- Noticeable increase from 2003 to 2004
- Broadly distributed over ~275 pages on site
- Significant visits from over 80 countries

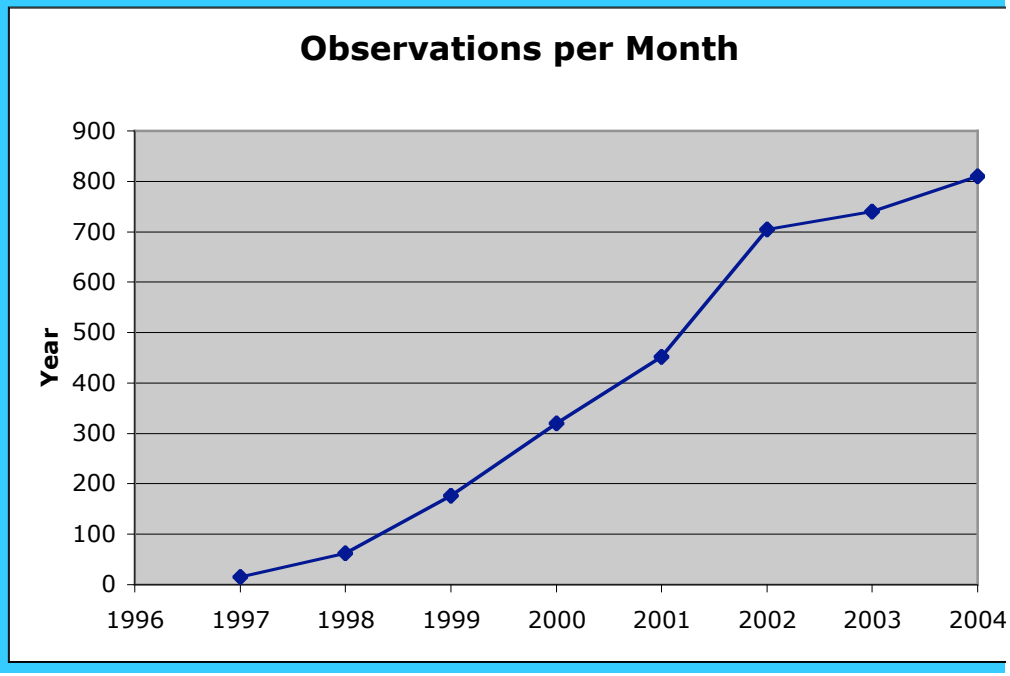
Most visited site in the Atmos. Sci. web space at LaRC

Impact Measures - cont'd

Database of observations - as of 3/18/04

- 32,098 observations
- 1693 registered participants
  - only 36% have submitted data (work for you!)
- 65 countries
  - data from 47
- Approaching 5,000

Ground/CERES matches



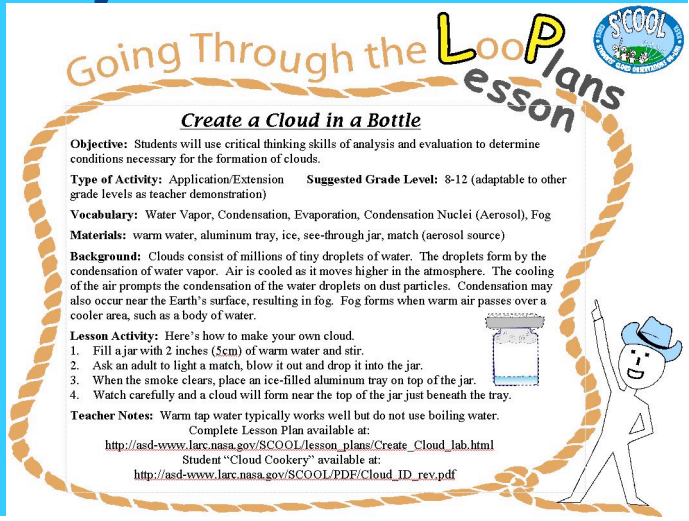
S'COOL Accomplishments Since May 2003 CERES Science Team Meeting

- Presented S'COOL
  - Conference for the Advancement of Science Teaching
  - Pre-Service Teachers Conference
  - National Association of Bilingual Educators
  - 1/2 day Teacher Workshop at Virginia Air and Space Center
- Dominican Republic is 65th country to join
- Alliances with DLESE, ESIP and ESE for presentations at NSTA National
- S'COOL Materials in Spanish provided to NASA Administrator for a 7-country tour of Latin America

New S'COOL Materials

- S'COOL cloud type Tutorial Released http://asd-www.larc.nasa.gov/SCOOL/tutorial

- German S'COOL brochure available
- German translation of poster underway
- S'COOL Intro CD with Tutorials and PPT files being offered
- S'COOL Breeze Newsletter sent January and March 2004
  - English (1467)
  - French (54)
  - Spanish (207)
  - Next issue June 2004



Going Through the Lesson Plans

Create a Cloud in a Bottle

Objective: Students will use critical thinking skills of analysis and evaluation to determine conditions necessary for the formation of clouds.

Type of Activity: Application/Extension **Suggested Grade Level:** 8-12 (adaptable to other grade levels as teacher demonstration)

Vocabulary: Water Vapor, Condensation, Evaporation, Condensation Nuclei (Aerosol), Fog

Materials: warm water, aluminum tray, ice, see-through jar, match (aerosol source)

Background: Clouds consist of millions of tiny droplets of water. The droplets form by the condensation of water vapor. Air is cooled as it moves higher in the atmosphere. The cooling of the air prompts the condensation of the water droplets on dust particles. Condensation may also occur near the Earth's surface, resulting in fog. Fog forms when warm air passes over a cooler area, such as a body of water.

Lesson Activity: Here's how to make your own cloud.

1. Fill a jar with 2 inches (5cm) of warm water and stir.
2. Ask an adult to light a match, blow it out and drop it into the jar.
3. When the smoke clears, place an ice-filled aluminum tray on top of the jar.
4. Watch carefully and a cloud will form near the top of the jar just beneath the tray.

Teacher Notes: Warm tap water typically works well but do not use boiling water.

Complete Lesson Plan available at:
http://asd-www.larc.nasa.gov/SCOOL/lesson_plans/Create_Cloud_lab.html
Student "Cloud Cookery" available at:
http://asd-www.larc.nasa.gov/SCOOL/PDF/Cloud_ID_rev.pdf

S’COOL Ambassadors

S’COOL workshop alumni:

- Lynda Bryson (NY) - 2 conferences
- Cheryl Dodes (NY)

•S’COOL at regional conventions (Nov. 04)

- Keston Smith - NSTA Northeastern region in IN
- Terri Bakke-Schultz - NSTA Northwestern in WA

S’COOL Ambassadors - Italy

- Monthly e-mail update in Italian
- 12 new schools registered (600 students)
- Center established in Modena with resources
- Schools in Modena coordinating observations
- 2 schools have developed their own S’COOL website
- Volunteers helping with translation
- Modena Scientist to visit Langley this summer

Shirt order

- http://store.shoppingnasa.com/merchant.ihtml

Some shirts are available for purchase at NASA Exchange shop

See team for instructions to order on-line.