

ARM

CLIMATE RESEARCH FACILITY

FACT SHEET

U.S. Department of Energy ARM Education and Outreach Resources

The U.S. Department of Energy's Atmospheric Radiation Measurement (ARM) Climate Research Facility supports education and outreach efforts in communities located near its research sites. The ARM research sites are located in the Southern Great Plains, Tropical Western Pacific, and North Slope of Alaska. The mission of ARM Education and Outreach is to promote science education and increase climate change awareness by focusing on three goals: student enrichment, teacher support, and community outreach.



ARM Education and Outreach Website

The ARM Education and Outreach website (<http://education.arm.gov>) makes learning and teaching about climate change easy and fun. The website is hosted by Professor Polar Bear, from the North Slope of Alaska; Teacher Turtle, from the Tropical Western Pacific; and Principal Investigator (PI) Prairie Dog, from the Southern Great Plains. The website is organized into three sections: Homeroom, Study Hall, and Teachers' Lounge, and each section corresponds to one of the education and outreach goals.

Student Enrichment

Study Hall is a great place for students to get help with their homework. It features information about climate science and links to other educational and informative websites.



The Ask a Scientist center gives students an opportunity to submit a question about climate science, weather, or the environment to an ARM scientist. Questions are answered regularly, and frequently asked questions are posted on the main "Ask a Scientist" page.

The Just for Fun section offers online games and the ARM award-winning activity book, *Climate, Coloring, Crosswords... and Other Fun Stuff*, which includes coloring pages, word searches, dot to dots, and other activities.

Teacher Support

Teachers' Lounge provides lesson plans and background information to help teach the basics of climate science.

ARM Education and Outreach has developed lessons that teachers can use to help students to investigate their own weather and climate. The lessons cover a variety of topics, including cloud formation, water cycle, melting sea ice, and the greenhouse effect. Each lesson is accompanied by a hands-on activity, which includes a list of materials, a step-by-step procedure, and a summary of important concepts.

Background information is available on diverse climate science topics, including climate change, meteorology, atmospheric science, and the mission and goals of the ARM Climate Research Facility.



Community Outreach

Homeroom summarizes ARM's outreach efforts in the communities that host ARM's permanent data-gathering sites. Information about ARM's activities is available through news stories about education events. Newsletters distributed throughout the year are filled with articles about climate science and tie into lesson plans hosted in the Teachers' Lounge.

ARM also attends education events such as WeatherFest, a yearly public science fair sponsored by the American Meteorological Society; the American Geophysical Union's Exploration Station; and Family Science days during the American Association for the Advancement of Science's annual meeting.

In 2010, ARM participated in the first USA Science & Engineering Festival, a two-week event culminating in a Grand Finale Expo on the National Mall in Washington D.C. An estimated 500,000 attendees visited more than 1000 exhibits focusing on science, technology, engineering, and math. In ARM's booth, a computer showed data gathered one year ago at ARM's permanent and mobile sites, with explanations of what measurements each data plot showed. Instruments were also available to show kids examples of the types of measurements taken at ARM sites.



A visitor to ARM's booth at the USA Science & Engineering Festival poses with one of ARM's "Climate Kids."



A native islander is interviewed at Manus Island as part of the Tropical Western Pacific educational kiosk development effort.

In recognizing the value of traditional knowledge of the environment as it relates to climate change, ARM Education and Outreach has developed computer-based kiosk programs integrating ARM science with traditional ecological knowledge from its host communities. The kiosk programs include interviews with ARM scientists to provide users with basic climate change information, as well as interviews with elders and community

leaders to discuss the local impacts of climate change on all aspects of village life. The North Slope of Alaska kiosk, titled *Climate Change: Science and Traditional Knowledge*, is installed at the Iñupiat Heritage Center in Barrow, Alaska. Similar kiosks are hosted at the Tropical Western Pacific sites at Manus Island; Nauru Island; and Darwin, Australia.

In addition to these traditional knowledge kiosk programs, live data displays from the ARM permanent and mobile sites are available in near-real-time at <http://kiosk.arm.gov/>.



ARM Technical Director Jim Mather demonstrates principles of light scattering and absorption to interested WeatherFest attendees.

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