The GLOBE Program
in Asia and the Pacific

An international hands-on, school-based education and environmental science program uniting students, teachers, and scientists in study and research about the dynamics of Earth's environment. Over 40,000 teachers in more than 20,000 schools in over 100 countries have been trained to implement GLOBE.

GLOBE Program Summary

GLOBE (Global Learning and Observations to Benefit the Environment) is a worldwide hands-on, primary and secondary school-based science and education program. Announced in 1994, GLOBE began operations on Earth Day 1995. Today, the international GLOBE network has grown to include representatives from 110 participating countries and over 100 U.S. Partners coordinating GLOBE activities that are integrated into their local and regional communities. Due to their efforts, there are more than 40,000 GLOBE-trained teachers representing over 20,000 schools around the world. GLOBE students have contributed more than 18 million measurements to the GLOBE database for use in their inquiry-based science projects. The goals of the GLOBE Program are to:

- Improve student achievement across the curriculum with a focus on student research in environmental and Earth system science;
- Enhance awareness and support activities of individuals throughout the world to benefit the environment;
- Contribute to scientific understanding of Earth as a system; and
- Inspire the next generation of global scientists.

Scientists and educators have developed environmental science educational materials as a resource for GLOBE teachers, including 54 scientific protocols, 60 Learning Activities, and many additional supplemental resources and activities.

GLOBE students measure and report physical, chemical and biological properties of Atmosphere and Climate, Hydrology, Soil, Land Cover/Biology and Phenology. The resulting global data sets are made freely available via the Internet at <www.globe.gov> to users including the worldwide environmental science community. GLOBE students also access these data for classroom studies, research, student-scientist partnerships, and worldwide school-to-school collaborations.

The current step in the evolution of the GLOBE Program, referred to as the "Next Generation GLOBE" (NGG), is aimed at increasing the number of student inquiry-based research projects focused on international large-scale science initiatives.

The National Aeronautics and Space Administration (NASA) and the National Science Foundation (NSF) have identified 4 new Earth System Science Projects (ESSPs) to add to the suite of educational activities and resources GLOBE has offered to students and teachers since 1995:

- Watershed Dynamics
- From Local to Extreme Environments (FLEXE)
- Seasons and Biomes
- Carbon Cycle

The GLOBE Program provides opportunities for students, teachers, scientists, and community members to work together through the GLOBE Schools Network, the international GLOBE Alumni organization, and the GLOBE Parent Council in support of student learning and research.

GLOBE supports education by providing hands-on experience in authentic science. GLOBE students are doing science, not just learning about the work of others. Students begin with measurements of individual environmental parameters and build how to better understand, sustain and improve Earth's environment at local, regional, and global scales.

NGG highlights GLOBE's essential elements of being both education and Earth system science, a bridge between these two international communities, a worldwide collaborative community of practice, and a program that employs inquiry based educational activities that involve students in "authentic" hands-on science, the analysis of data and the use of scientifically-tested protocols.

Educational

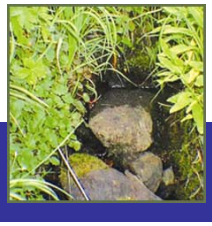
GLOBE provides a variety of K–12 educational materials, from hands-on inquiry activities for classroom use to online interactive learning experiences and investigations using student-collected data.

GLOBE Teacher's Guide

The GLOBE Teacher's Guide provides the scientific and educational foundation for the first generation of GLOBE investigations: Atmosphere, Hydrology, Land Cover, Phenology, and Soil. It includes information necessary for accurate data collection such as measurement procedures, student lab and field guides, instrument specifications, and scientific background information. The Teacher's Guide also includes a variety of Learning Activities that complement data collection and extend student understanding of the Earth as a system through a hands-on and inquiry-based approach.

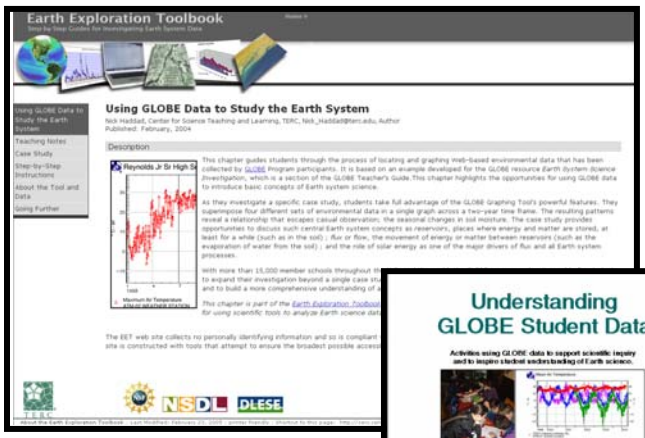
Elementary GLOBE

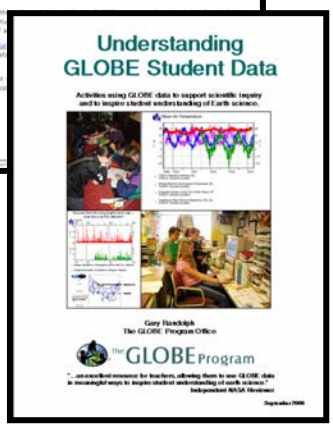
GLOBE has developed a suite of storybooks and learning activities specifically designed for grades K–4 that form the Elementary GLOBE Unit. This unit engages the youngest GLOBE students in an age-appropriate fashion. These standards-based and classroom-tested resources include five modules that each address parts of the Earth system while also building literacy skills.



Online Teaching Modules

The GLOBE Program has developed Interactive online resources to promote understanding of GLOBE Program content and scientific protocols. Resources combine graphics and interactivity to promote understanding through a hands-on approach that has been established as a successful model for online learning. The Cloud Protocols module (shown here) promotes scientific understanding of cloud formation, content on identification of cloud types, and Interactive features to help online learners accurately collect data related to the GLOBE protocols.





Data Use Activities

Educational materials have been designed to encourage student analysis and interpretation of data. The data use activities foster student investigation of environmental data using the GLOBE Web site and its online graphing tools.

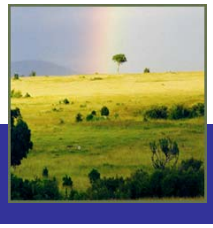
GLOBE educational technologists are exploring additional learning models to encourage student interpretation of data in an online and inquiry-based format.

GLOBE Learning Expeditions

GLOBE Learning Expeditions (GLEs) are organized every several years in order to provide students around the world the opportunity to meet one another, establish friendships and develop collaborative partnerships that will enhance their future GLOBE experience. These conferences also provide teachers an opportunity to share ideas and challenges from their GLOBE experiences, to attend protocol and activity enrichment sessions, and to develop research partnerships between schools. GLEs have occurred in 1998 (Helsinki, Finland), 2000 (Arkansas, U.S.A.), and Šibenik, Croatia (2003). The next GLE is scheduled for 2008 in South Africa. For further information visit <www.globe.gov/gle2008>.

GLOBE Annual Conferences

GLOBE Annual Conferences bring together GLOBE Country Coordinators, U.S. Partnership Coordinators, Science and Education Principal Investigators, and Partnering Organizations from around the world to address key science and education issues. These events offer a unique opportunity for participants to learn about the latest scientific research, interact with the GLOBE community, and develop collaborative student research partnerships with scientists and schools from around the world. The next Annual Conference is scheduled for 2008 in South Africa, in conjunction with the GLOBE Learning Expedition. For information visit <www.globe.gov/gle2008>.



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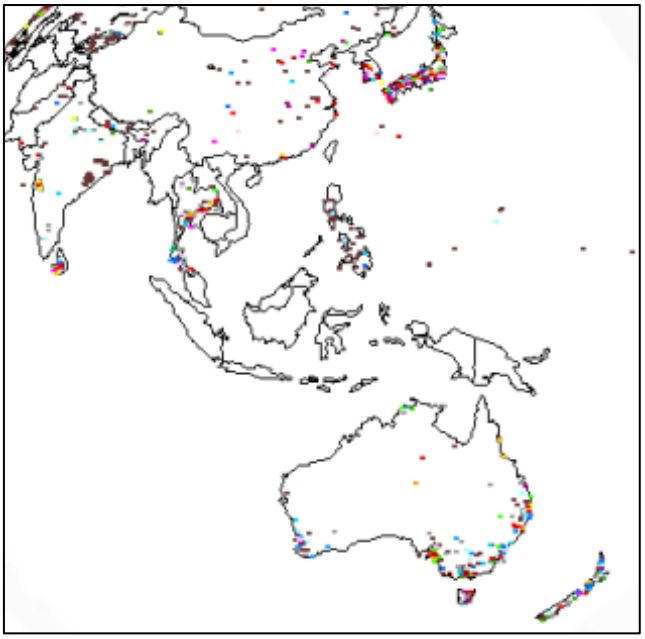
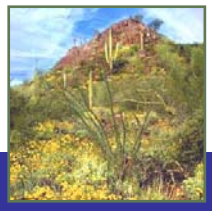


Asia and Pacific
Teachers: 2,672 Schools: 2,040
Data Reported: 1,061,502

GLOBE Online Newsletters



Regional Events in Asia and the Pacific Region

GLOBE Asia and Pacific Regional Consortium:

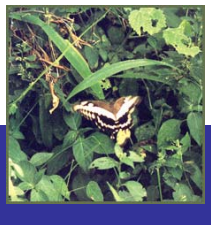
- The GLOBE Asia Pacific Region created a Memorandum of Understanding (MOU) on 19 May 2007. The MOU established the Asia and the Pacific Regional Consortium six working groups.

Recent Regional Events/Collaboration:

- 2007 11th Annual Conference, San Antonio, Texas
- 2007 Regional Consortium Meeting and TTT, Iloilo City, Philippines;
- 2006 10th GLOBE Annual Conference and Coastal Resources Symposium, Phuket, Thailand;
- 2005 Sri Lanka National GLOBE Campaign and GLOBE Day;
- 2005 GLOBE Thailand Tsunami Research Project, "The Effects of Tsunami on marine macro-invertebrates, water quality, ecology and atmosphere by means of GLOBE";
- Japan, Philippines, and Thailand participated in GLOBE Urban Phenology Year (GUPY), 2004-05;
- Young Soil Doctor Project Trainings, Thailand, ongoing since 2004;
- Annual Japanese Teacher and Student Conferences, since 2000.

Training Events of Regional Significance:

- Major regional workshops have been conducted in India, New Zealand, the Philippines, and Thailand.
- More than 50 GLOBE teacher workshops have been conducted in the Asia and Pacific region.
- 2005 GLOBE India / UNESCO World Heritage Project at Taj Mahal / Fort Agra.
- 2005 Philippine Science High School Training Workshops.
- Thailand has conducted additional workshops for issues of local relevance, including the GLOBE Soil Symposium Marine Hydrology Symposium, piloted new GLOBE Marine invertebrates protocol, and conducted Phenology Workshop



Highlights of GLOBE Stars and News and Events in Asia and the Pacific

The GLOBE Program office wants to hear stories of projects and people who shine. These are our 'Stars', the bright lights that spark our imagination and inspire us with news of GLOBE at work in the world. Tell us about the stars in your universe. Write to your desk officer about students, teachers, schools, projects or awards that you would like to bring to the attention of the worldwide GLOBE community.

For more information contact:

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For more information on GLOBE Alumni activities in the Asia and Pacific Region contact the regional representative <asiapacific-alumni-regionalrep@globe.gov>.

For more information from the GLOBE Program Office regarding activities in the Asia and Pacific Region contact the GLOBE Regional Desk Officer at: <asia-pacific@globe.gov>

PHI DELTA KAPPA International

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GLOBE was the winner of the 2004 Goldman Sachs Foundation Prize for Excellence in International Education in the Media and Technology Category.

The Goldman Sachs Foundation and the Asia Society stated that GLOBE was selected "*for the unique reach of its work around the world and its ability to bring international education to life through the process of scientific inquiry. GLOBE serves as inspiration and a model of excellence to schools and programs seeking to bring the world into our classrooms*."

GLOBE is an interagency program funded by the U.S. National Aeronautics and Space Administration (NASA) and the U.S. National Science Foundation (NSF), supported by the U.S. Department of State, and implemented through a cooperative agreement between NASA, the University Corporation for Atmospheric Research. (UCAR) in Boulder, Colorado, and Colorado State University in Fort Collins, Colorado.