The GLOBE Program
in the Near East and North Africa

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 49,000 teachers in more than 22,000 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 49,000 GLOBE-trained teachers representing over 22,000 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 Materials

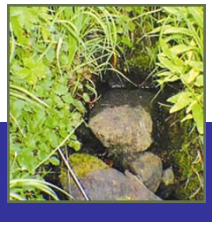
GLOBE provides a variety of K–12 educational materials, from hands-on inquiry activities for classroom use to online interactive learning experiences and investigations using student-collected data.

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.

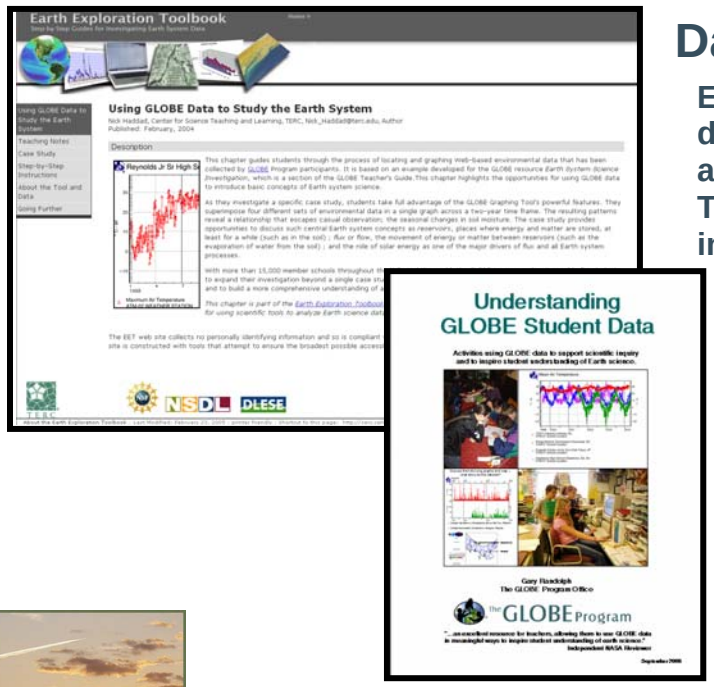
Elementary GLOBE

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.

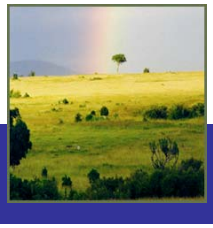
GLOBE educational technologists are exploring additional learning models to encourage student interpretation of data in an online and inquiry-based format.

GLOBE Learning Expeditions

GLOBE Learning Expeditions (GLEs) are organized every few years in order to provide students from around the world the opportunity to present their research projects to their peers, to GLOBE scientists, and the greater GLOBE community. These conferences also provide students with opportunities to establish friendships and to develop collaborative partnerships that will enhance their future GLOBE experiences. GLEs provide teachers with opportunities to share innovative ideas and challenges, to attend protocol and related professional development sessions, and to build connections for research efforts between schools. GLEs have occurred in 1998 (Helsinki, Finland), 2000 (Arkansas, U.S.A.), 2003 (Šibenik, Croatia), and 2008 (Cape Town, South Africa). For more 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 GLOBE Annual Conference will occur in August 2009 in Calgary, Canada. For more information visit: www.globe.gov/annualconferences.



GLOBE Country Coordinators in the Near East and North Africa (11 Countries)

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Kuwait
5 Schools

Currently no Country Coordinator identified for GLOBE Kuwait; contact the GLOBE Program Office by phone at 1 800 858 9947 or by email at NearEast@globe.gov

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United Arab Emirates
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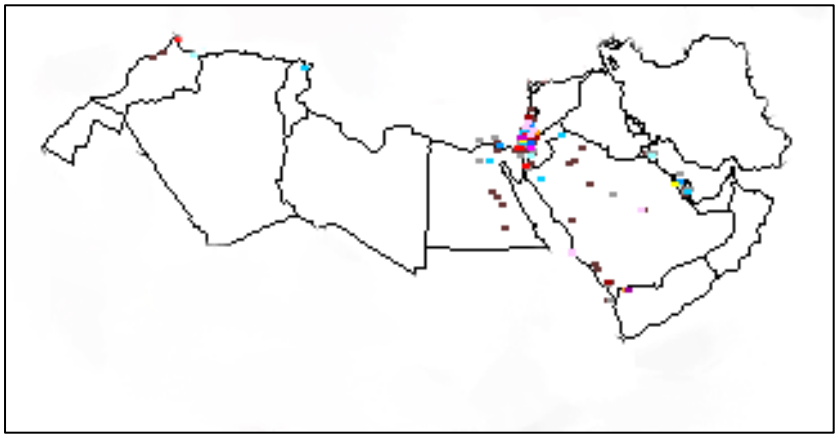

The Near East

Teachers: 316 Schools: 196
Data Reported: 323,020

GLOBE Online Newsletters

Highlights of GLOBE Activities in the Near East and North Africa

GLOBE Near East and North Africa Regional Consortium:

Country Coordinators and representatives from five countries attended the Near East and North Africa Regional Consortium Meeting in Doha, Qatar, 22-23 February 2008 to formalize the GLOBE Near East and North Africa Consortium. The document was signed by GLOBE representatives from Bahrain, Egypt, Jordan, Lebanon, Morocco, Qatar and Saudi Arabia. The Memorandum of Understanding is intended to:

- **Promote and strengthen regional and international relations among teachers and students in the GLOBE Program**
- **Create an active framework that is easy to join and applicable for all members.**
- **Fortify relationships with agencies supporting the Program in the region**
- **Develop a financial strategy to raise funds to support regional activities prioritized by the Consortium**
- **Develop joint projects and collaborations between participating schools and countries.**
- **Develop the involvement of scientists, alumni and community members, including parents**
- **Encourage the integration of the GLOBE Program into the national curricula of each country in the region**
- **Highlight GLOBE Regional successes**
- **Annually document national implementation through the GLOBE Program Survey**

Regional Events/Collaboration:

- **Regional Consortium Meeting and Master Trainer Workshop, Doha, Qatar, 2008**
- **Four regional student conferences in Bahrain, Qatar, and Lebanon 2002-2006**
- **GLOBE Games in Lebanon**
- **Student participation at the 2008 GLOBE Learning Expedition (GLE) in Cape Town (Bahrain and Lebanon) , the 2003 GLE in Šibenik, Croatia (Bahrain, Egypt, Lebanon, Qatar) and the 1998 GLE in Helsinki, Finland (Egypt, Jordan)**
- **Student exchanges between Czech Republic, Bahrain and Lebanon.**
- **Train-the-Trainer and Regional Teacher Training Workshops in Bahrain, Jordan, Lebanon, and Qatar.**
- **Collaborative student research projects, including the Seawater in Arabia: Hydrology Project and the Land Cover and Soil Characterization Project**

Master Trainer Program:

GLOBE Near East and North Africa has 9 Master Trainers and 19 Assistant Master Trainers in the GLOBE Master Trainer Program. To access the list of Trainers, please visit the following URL: <http://globe.gov/fsl/workshop/MasterList.pl>.

Highlights of GLOBE Stars and News and Events in the Near East

Jordanian Student creates Email Data Entry Generator!

September 08, 2005

Have you ever entered your GLOBE data via E-mail? It's a fantastic method of sending large amounts of data to the GLOBE database. However, it can be a bit overwhelming and difficult to understand the codes necessary to enter data. A former Jordanian GLOBE student has developed a program to help overcome these problems.

Mohammad Abu Musa began working with the GLOBE Program in 1999 while a student at the

Middle East Hydrology Project Yields Waves of Data and Big Plans

September 20, 2002

More is known and more is being learned about the waters of Bahrain, Jordan and Lebanon, thanks to the efforts of GLOBE students who are conducting the Middle East Hydrology Project. Through the project, developed by the participating countries, secondary school students are using GLOBE hydrology protocols to compare seawater quality in waters of the Arabian Gulf, the Red Sea and the Mediterranean Sea, and to determine the effects of pollutants such as sewage and industrial

on sea water. The students are taking measurements following the GLOBE temperature,

The 4th GLOBE Program Regional Conference in the Middle East

Over 100 students, teachers, and Country Coordinators from Bahrain, Lebanon and Qatar met in Doha, Qatar between March 6 and 10 for the 4th GLOBE Program Regional Conference in the Middle East. The conference was sponsored by the Qatar Ministry of Education with support from the Supreme Council for the Environment & Natural Reserves, the United States Embassy in Qatar, and RasGas, a major producer of liquified natural gas and related products in Qatar. Dr. Nawal Abdullah Al-Shaikh,

Bahrain Students Walk for Environmental Awareness

February 22, 2006

The Bahrain GLOBE Green Walk Event took place on January 25, 2006. Thirteen groups of up to ten members spent an entire day at AL-Areen Wildlife Reserve Park for a day of fun environmental education. The 140 students and teachers participating in this event explored the natural beauty of their park, deepened their awareness about the environment, while demonstrating good

environmental practice and behavior. The aim was to provide an interesting range of events for

s, as well as attracting environmentally aware students to the area.

The Green Walk consisted of thirteen stations, six of which employed GLOBE Protocols: Atmosphere; GPS; Hydrology, Land Cover, Phenology and Soil. The other seven stations were designed to raise the student's awareness about particular issues relating to Bahrain's environment: Wildlife, Trash Modeling; Green Walk; IQ; GLOBE Island; Eco-Games and Fun Games. The students enjoyed a closing ceremony by Her Highness Shaikha Hessa Bint Khalifa. Al-Khalifa, the wife of H.H. Shaikh Abdulla Bin Hamad Al-Khalifa, and Mr.

eckle, the cultural Attaché at the American Embassy in the Kingdom of Bahrain distributed

ates of participation and gifts to the winning group. The U.S. embassy was kind enough to

te backpacks to all participants.

طلاب جنوب في المملكة العربية السعودية يرصدون عبور كوكب الزهرة أمام الشمس

September 22, 2004

Khalid Bin Waleed, 6th Grade, observes the Transit of Venus using an eclipser.

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. Send your stories about students, teachers, schools, projects or awards that you would like to bring to the attention of the worldwide GLOBE community to <communications@globe.gov>.

For more information contact:

GLOBE Near East and North Africa Regional Coordinator and GLOBE International Advisory Committee Representative:

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For more information regarding activities in the Near East and North Africa Region contact: <neareast@globe.gov>.

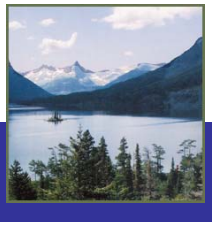
For more information on GLOBE Alumni activities in the Near East and North Africa Region contact: <neareast-alumni-regionalrep@globe.gov>.

PDK PHI DELTA KAPPA International

Featured in the Phi Delta Kappan International Studies Resource Guide – November 2004 • Volume 86 • Number 3 www.pdkintl.org/kappan/k_v86/k0411ka3.htm

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.