Building Partnerships for STEM Education

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Welcome to The GLOBE Program

To view video about The GLOBE Program, click here

Video is under Welcome to GLOBE in left bar.
What is The GLOBE Program?

• GLOBE is made possible by our sponsors:

• GLOBE is a science and education program that connects a network of students, teachers and scientists from around the world to better understand, sustain and improve Earth’s environment at local, regional and global scales.

• To date, more than 23 million measurements have been contributed to the GLOBE database, creating meaningful, standardized, global research-quality data sets that can be used in support of student and professional scientific research.
History of The GLOBE Program

- Announced on Earth Day 1994 by former U.S. Vice President Al Gore

- GLOBE targeted three main areas:
  - Scientific understanding of the Earth
  - Student achievement in science and mathematics
  - Environmental awareness of individuals around the world.

- Partnerships with multiple organizations were established

- Key activities: Atmosphere and Climate, Hydrology, Soils, Land Cover and Plant Phenology, similar to activities that are still core to the Program today.
The Goals of GLOBE

• 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
• Connect and inspire the next generation of global scientists
How GLOBE Works

- GLOBE is a network of worldwide partners, students, teachers and scientists who work together to increase their understanding of the Earth as a system.
- Countries become formally involved through bi-lateral agreements with the U.S. 112 countries have been involved with the program since 1995.
- Each country has a country coordinator who works to recruit teachers to become involved in the Program.
- In the U.S., there is a network of over 110 partners around the country with a number here in MN.
- St. Catherine University, National Center for Earth-Surface Dynamics (U-MN) Hamline University and Concordia Languages Villages.
How GLOBE Works

• Partners can work with schools in different ways

• To see one example of this in an elementary school partnership with a teacher preparation program, click here
How GLOBE Works

• Teachers acquire expertise and confidence, through free regional workshops and online training. GLOBE has developed the GLOBE Teachers Guide which is used to train teachers in the protocols and learning activities.

• Students (ages 5-18-years old) conduct scientifically meaningful environmental measurements, record their data to the GLOBE website, visualize their data and collaborate with scientists and other GLOBE students and communities worldwide.

• The measurements taken by the GLOBE students serve two important purposes
   • Participating scientists use these data in their research
   • Students learn to use their own measurements, with data from other GLOBE schools, as a key part of their study of environmental science.

• Using state-of-the-art technology, GLOBE creates a forum for students to communicate with their peers around the world.
What GLOBE Means for Teachers

- GLOBE is a network that helps teachers connect students to Earth science research activities around the world.

- GLOBE helps improve student outcomes through global engagement with science.
  - Participation in protocols helps to develop:
    - Critical thinking skills
    - Understanding of scientific research methods
    - Analytical skills
    - Independent learning skills
    - Big picture thinking – taking local information and seeing global impact
    - Hands-on learning improves understanding of Earth as a system
    - Gets students involved in scientific discovery at an early age
What GLOBE Means for Teachers

GLOBE connects teachers through Earth sciences
- Teacher training, professional development
- Network of GLOBE teachers
- Innovative way to get students excited about Earth sciences
- Integrates teaching method and hands-on projects into curriculum
- Not limited to STEM (language and geography teachers can participate too)
- Student participation in projects related to multiple investigation areas:
  - Atmosphere
  - Hydrology
  - Soils
  - Land cover
  - Phenology
What GLOBE Means for Teachers

GLOBE connects students to science
- Scientific protocols are developed by scientists, tested by teachers and executed by students
- Produces meaningful, standardized “science-grade” data that can be used in support of university-level scientific research
- Multi-national data sets; students across the world are conducting common inquiry-based science projects and uploading their measurements to the GLOBE database
- Offers opportunity for students to engage with science outside of traditional STEM related courses
- Connects students globally in support of common studies
What GLOBE Means for Students

Connecting students to a global science & education community

The Program:
- 112 participating countries
- 58,000 GLOBE trained teachers across the world
- 24,000 schools internationally
- 1.5 million students worldwide have participated
- To date, students have contributed more than 23 million measurements to the GLOBE database
- Student, teachers and scientists from each region work together using data in their research

The Portal:
- Online network
- Single sign on to enter data, access resources, connect with others
- Social networking channels that stretch beyond the website (Facebook, LinkedIn, Twitter, YouTube, Pinterest)

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What GLOBE Means for Scientists

- GLOBE connects scientists with science grade data collected by students around the world

- GLOBE connects scientists to high caliber scientific research
  - Scientific protocol is developed by scientists, tested by teachers and executed by students
  - Produces meaningful, standardized science-grade data that can be used in support of university-level scientific research
  - Multi-national data sets; students across the world are conducting common inquiry-based science projects and uploading their measurements to the GLOBE database

- GLOBE engages & inspires the next generation of Earth scientists
  - Hands-on learning of earth science locally in their community, as well as with students worldwide leading to better understanding of the Earth as a system
  - Gets students involved in scientific discovery at an early age
  - Offers a global study of the world and our common bond: the Earth
  - Trains students on the scientific protocols that can contribute to larger research

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Questions?

www.globe.gov