



THE GLOBE PROGRAM

CONNECTING THE NEXT GENERATION OF SCIENTISTS


* The GLOBE Program



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Iowa Academy of Science



* Learn Science by Doing Science



- * GLOBE students learn authentic science by collecting accurate data and using the data in their investigations.
- * GLOBE student collected data is used to help scientists generate new knowledge about the Earth.



* GLOBE Data Process



Data Collection

- Global Protocols
- Local Data
- Special Opportunities - IPOs

Data Recording

- Accuracy/Precision
- Does it make sense?
- Meta Data

Data Entry


- Share own work
- Access to other student data
- Examples of how used


Data Use

- Scientist Research
- Student Inquiry!




* How GLOBE Works

Data Collection	Data Recording	Data Entry	Data Use
 <ul style="list-style-type: none"> • Asking questions • Carrying out investigations • Interpreting Data • Using mathematics and computational thinking • Building skills to identify Patterns, Scale, and Quantity 	 <ul style="list-style-type: none"> • Asking questions • Carrying out investigations • Identifying and describing parts of systems and cycles. 	 <ul style="list-style-type: none"> • Evaluating & Communicating information • Communicating observations about patterns, scale and quantity • Communicating connections between parts of systems and cycles. 	 <ul style="list-style-type: none"> • Asking questions • Planning and carrying out investigations • Analyzing and interpreting data • Using mathematics and computational thinking • Constructing explanations • Engaging in argument from evidence • Obtaining, evaluating, and communicating information • Using and developing system and cycle models • Explaining observations of stability and change.



* Data Collected by GLOBE Students




More than different 35 measurements


- Atmosphere
- Hydrology
- Soil
- Land Cover
- Seasons/Phenology
- Remote Sensing

State GLOBE Partner and International GLOBE HQ to support teachers/students

True partnership of scientists, students, and the local community!




* All Around the World and in Iowa!



THE GLOBE SCIENCE NETWORK

GLOBE Countries

- Since 1995, GLOBE has been adopted in 111 countries.
- Over 101 Million measurements have been reported.
- In Iowa since 1999:
 - ~400 teachers trained.
 - More the 1% of the protocol data is from Iowa!






*Who can participate?

- ANYONE!
- Must be trained to report data
- Anyone can access data

www.globe.gov







*Why GLOBE with IMPACT

The title II grant expects programs to follow the Iowa Professional Development Model:

GLOBE provides:

- * Professional development
- * Classroom resources
- * Certification
- * A vast array of additional resources to meet the needs of individual teachers and classrooms, many of which can be customized.




*Why GLOBE with IMPACT

The title II grant expects programs to improve student achievement through the implementation of research based professional development and learning strategies

- * GLOBE (and all of IMPACT) engages teachers best practices for science education PD
- * Engaging teachers in the kinds of learning that we expect them to practice with their students (but at their own level).
- * Engaging teachers (and students) in real science research
- * Time to learn, use and refine use of specific classroom materials/activities (TIAPS)
- * Curriculum Replacement Units (TIAPS) - don't add more and more, accomplish more at once and deeper.
- * Case Discussions - introducing teachers to other students, teachers and scientists who have successfully contributed to GLOBE.
- * Study Groups - regular collaborative interactions (ICN sessions, administrator day at UNI, SPOTLIGHT day, school visits)
- * Technology integrated into PD so that teachers are confident in the use of technology for themselves and with their students.
- * Professional Networks - IMPACT is a network. Teachers join the GLOBE network.

Loucks-Horsley et al. summary of science professional development research for oac, 1999







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- National Aeronautics and Space Administration (NASA)
- National Science Foundation (NSF)
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- the U.S. Department of State

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*GLOBE in Iowa

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