AMS DataStreme Project and the NGSS

What is DataStreme?

DataStreme is:
- A free professional development program for in-service K-12 teachers
- Offered each fall and spring semester by Local Implementation Teams (LITs) across the country

The DataStreme Process

- AMS develops materials
- LITs offer course online with several in-person meetings
- Local Implementation Teams (LITs) recruit teachers

Goal is for teachers to introduce other teachers/administrators/community leaders to benefits of using real-world, current, environmental data for learning!

Earn 3 free graduate credits in the Earth Sciences through SUNY Brockport!

How does DataStreme help implement NGSS?

DataStreme assists teachers in states implementing NGSS to design classroom activities that align with NGSS’ crosscutting theme.

DataStreme participants learn how to investigate concepts as scientists do; using real-world, real-time data

Example: Superstorm Sandy Investigation

- Students investigated Sandy’s vertical atmospheric structure as well as wind patterns about the eye.
- Students related areas of highest wind speed with locations that suffered the greatest storm surge inundation.
- Effects on wind speed of land versus ocean were also investigated using NOAA’s Atlantic Oceanographic and Meteorological Laboratory data.

Surface and 500-mb maps for 00Z 29 OCT 2012, with Hurricane Sandy seen off the North Carolina coast along with a trough in the eastern U.S.

Example- in DataStreme Ocean, the following disciplinary core ideas are discussed:

- ESS1.B – Earth and the solar system
- ESS1.C – The history of planet Earth
- ESS2.A – Earth materials and systems
- ESS2.B – Plate tectonics and large-scale system interactions
- ESS2.C – The roles of water in Earth’s surface properties
- ESS3.B – Natural hazards
- ESS3.C – Human impacts on Earth systems
- ESS3.D – Global climate change
- LS1.B – Growth and development of organisms
- LS1.C – Organization for matter and energy flow in organisms
- LS2.A – Interdependent relationships in ecosystems
- LS2.B – Cycles of matter and energy transfer in ecosystems
- LS2.C – Ecosystem dynamics, functioning, and resilience
- PS2.A – Forces and motion
- PS2.B – Types of interactions
- PS2.C – Stability and instability in physical systems
- PS3.A – Definitions of energy
- PS3.B – Conservation of energy and energy transfer
- PS3.D – Energy in chemical processes and everyday life
- PS4.A – Wave properties
- PS4.B – Electromagnetic radiation
- PS4.C – Information technologies and instrumentation

3 courses offered

- DataStreme Atmosphere
  Explore the atmospheric environment through the use of continuously updated electronically transmitted weather data and learning materials.

- DataStreme Ocean
  Explore the flow and transformations of water and energy into and out of the ocean, the internal properties and workings of the ocean, interactions between the ocean and other components of the Earth system, as well as the societal impacts and responses to those interactions.

- DataStreme Earth’s Climate System
  Explore the climate system through inquiry-based instructional strategies and a holistic concepts of Earth from oceanic, atmospheric and terrestrial climate and problem-focused perspectives.

Since 1996, more than 19,400 teachers have completed a DataStreme course and joined a network of teacher-leaders...

Are you next?