

For: School and District Administrators, School Board Members, and Parents
An Introduction to.....

SKYMATH:
MAKING MATHEMATICAL CONNECTIONS THROUGH
TEMPERATURE EXPLORATION
A Middle School Mathematics Module
Mathematics — Technology — Science

The SkyMath mathematics module

- integrates mathematical learning with the study of real-time weather data
- involves students in using computers and other technologies to support learning
- aligns closely with state and district mathematics standards

SkyMath was developed by a team of mathematicians, educators, curriculum specialists, and scientists, and was tested by teachers in classrooms for three years.

SkyMath is available at no cost on the World Wide Web at:

<http://www.unidata.ucar.edu/staff/blynds/Skymath.html>

SkyMath Curricular Goals

- **Matters of Scale:** Master concepts needed to establish a scale and convert it to a different base
- **Central Tendency:** Describe sets of measurements considering the effects of sample size and variability on measures of central tendency (mean, median, mode)
- **Data Representation and Change:** Develop the skills to express mathematically how a quantity changes
- **Communication:** Develop skills in communicating with and about mathematics

SkyMath's Mathematical Content.....

is appropriate for 5th through 8th grade students.

SkyMath Impacts Student Performance

- Students enjoy using the SkyMath materials and become engaged in learning.
- Students master valuable mathematical skills and concepts.
- SkyMath is an effective learning unit for students with a range of mathematical abilities and experiences — from gifted to special needs students.

“The value of SkyMath for students is that they’re getting math from a completely different angle.” –Teacher

SkyMath students show growth in these areas:

- Mathematical concepts and deeper levels of understanding of concepts
- Mathematical skills and application of computational skills
- Higher level thinking, reasoning, and problem solving skills

SkyMath students learn to:

- Create, interpret, and value graphical representation of data
- Collect, sample, and interpret real-time data
- Select the best measures of central tendency (mean, median, mode) for data sets
- Work with the concepts of maximum, minimum, range, ratio, and rates of change

Standards and SkyMath

SkyMath aligns closely with state and district mathematics standards and mathematics curricula which are based on National Council of Teachers of Mathematics (NCTM) Standards. An independent content analysis of the SkyMath module demonstrated this connection between SkyMath curricular goals and NCTM Standards.

SkyMath addresses these mathematics standards:

Problem Solving
Communication
Reasoning
Mathematical Connections
Number Relationships
Patterns and Functions
Algebra
Statistics
Measurement

SkyMath activities help students achieve some science and technology standards as well.

Accountability

SkyMath has a comprehensive system for student assessment including quizzes integrated into the module and an End-of-Unit Assessment developed specifically for SkyMath and consisting of short-response and performance-based items.

Technology

The technology requirements for SkyMath are minimal. Teachers and students need access to computers, e-mail, and the Internet. The Stowaway data probe and thermometers cost approximately \$200.

Where to Find SkyMath

Go to the SkyMath homepage on the World Wide Web to access the SkyMath module, SkyMath End-of-Unit Assessment, SkyMath Evaluation Report, and other resource materials. Download materials cost-free from the Internet. Go to:

<http://www.unidata.ucar.edu/staff/blynds/Skymath.html>

For more information about SkyMath or to request materials by mail, contact:

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