

Middle School Science Curriculum Report

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Prepared by: Lisa Schwartz, Phyllis Frick and Jason Morrell

Overview

District 97 adopted new middle school science curriculum materials in May, 2009. This adoption was recommended after extensive review and discussion that began in September 2007. The review team included K-8 teachers, administrators and a consultant. The new science materials were purchased for implementation beginning in the 2009-10 school year. A plan was created for a phase-in implementation to allow for topic transition time and professional development. Below you will see the transition timeline for the new curriculum materials (STC/MS – Science and Technology Concepts for Middle Schools).

Middle School Science Materials Transition Timeline

Transition from Holt and Premier Curriculum to [STC/MS Science and Technology for Children Middle School Curriculum](#) (KEY: Holt/Premier: Regular font, STC: [blue](#))

Prior to 2009-2010

Holt/Premier	
6th Grade	Weather and Climate, Human Body, Forces and Motion
7th Grade	Space, Ecology, Introduction to Matter
8th Grade	Rocks and Minerals, Genetics, Interactions of Matter

2009-2010

Holt/Premier and STC implementation 1st year	
6th Grade	Organisms: Macro to Micro, Catastrophic Events
7th Grade	Earth in Space, Ecology, a portion of Energy, Machines and Motion
8th Grade	Rocks and Minerals, Properties of Matter

2010 - 2011

Holt/Premier and STC implementation 2nd year	
6th Grade	Organisms: Macro to Micro, Catastrophic Events
7th Grade	Earth in Space, Energy, Machines and Motion
8th Grade	Rocks and Minerals, Properties of Matter

2011 – 2012

STC Fully implemented	
6th Grade	Organisms: Macro to Micro, Catastrophic Events
7th Grade	Earth in Space, Energy, Machines and Motion
8th Grade	Properties of Matter, Human Body

Why was the STC/MS curriculum selected?

- It is inquiry based
- There is a focus on depth instead of breadth, with each unit taking approximately half a school year
- The units provide for hands on experiences that provide students with background knowledge
- The materials are aligned with the National Science Standards

Initial purchase of textbooks and materials:

6th Grade: Textbooks and reusable materials for half the number of students were ordered and teachers change units and rotate textbooks and reusable materials halfway through the school year.

7th Grade: Textbooks and reusable materials were ordered in quantities so that teachers could teach both units simultaneously due to the necessity of teaching the Earth in Space Unit prior to the ISATs in March.

8th Grade: Textbooks and reusable materials for half the number of students were ordered and teachers change units and rotate textbooks and reusable materials halfway through the school year.

Budget:

A budget of \$10,000 per school per year was created to replace consumable materials and damaged reusable materials for the STC/MS units.

Supplemental Materials used for Science Instruction:

Millmark Concept Links for Differentiation -- Sets of leveled books on topics that coordinate with STC/MS units were purchased with the initial adoption and are used for students when concepts need more clarification.

K-12 Science Continuums: Science Articulation Districts 90, 97 and 200

A two year project was in 2010 by a science articulation team from each district mentioned above under the guidance of a consultant. This K-12 Science Continuum document represents a common language and set of expectations that can help all students succeed in science and prepare students for what is needed and expected as they progress through each phase of their education. The document consists of 12 continuums that are divided into expectations of what students should be able to do to succeed in science as they progress through each grade level: K-2, 3-5, 6-8, 9-12. Skills included in the document include areas of general concern such as scientific investigation, graphing, scientific drawing, and reading of informational text. The document is meant to supplement the adopted curriculums at all grade levels. The document has been provided to all High School and Middle School science teachers, and identified teachers in the elementary buildings. The articulation team has identified the need to explore further ways to help all elementary teachers better prepare students in the basic science skills needed to enhance their middle school science experience.

Current Status of Middle School Science Curriculum Adoption

Now in its third year of adoption, science teachers at both middle schools have the opportunity to use all of the STC/MS units for their grade level. Articulation between science teachers in schools and between the two schools continues. Teachers use this meeting time to review materials and determine which lessons to focus on and to develop common assessments and lab activities. Teachers also have reviewed the Illinois State Standards to ensure alignment. With the recent release of a draft of the Next Generation Science Standards, teachers will begin reviewing the standards and focus on our current curriculum and alignment beginning next year.

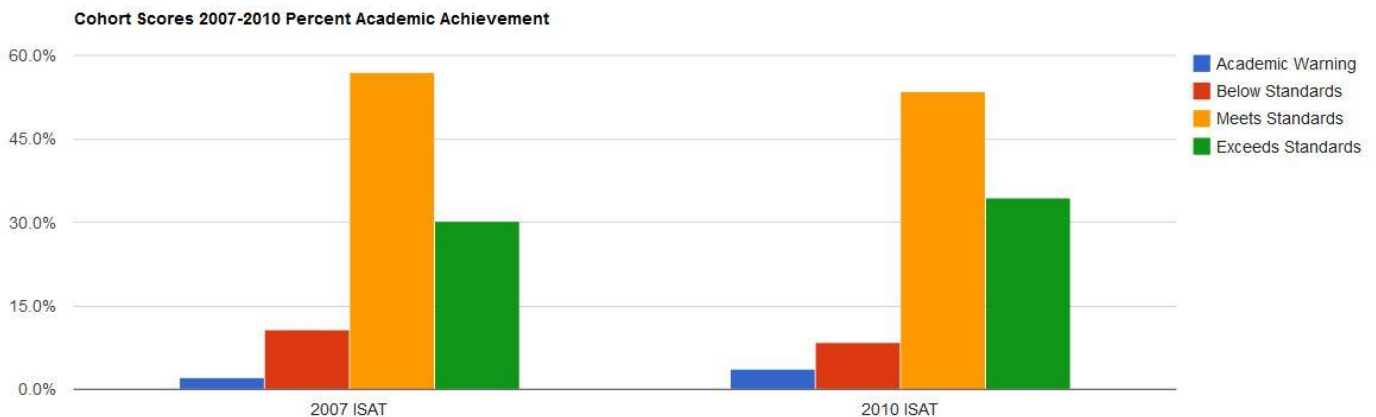
Examples of STC/MS Lessons and how they align to Illinois State Goals

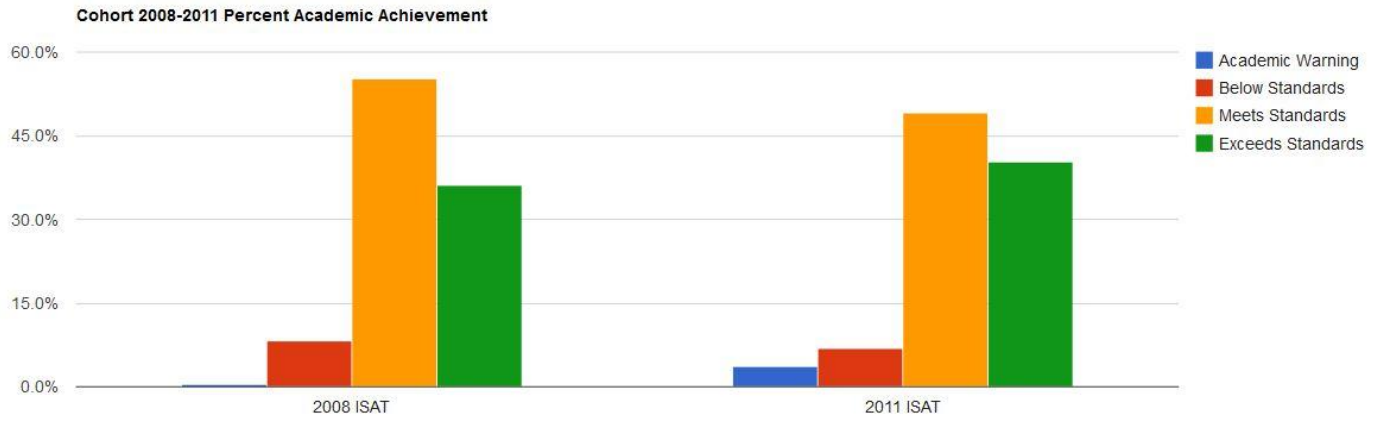
Grade	Unit	Lesson	State Goal
6	Catastrophic Events	Investigating the Effect of Temperature on Ocean Currents	12.E.3a Analyze and explain large-scale dynamic forces, events and processes that affect the Earth's land, water and atmospheric systems (e.g., jet stream, hurricanes, plate tectonics).
7	Energy, Machines and Motion	Storing And Using Energy In A Battery	11.A.3a Formulate hypotheses that can be tested by collecting data. 12.C.3a Explain interactions of energy with matter including changes of state and conservation of mass and energy.
8	Properties of Matter	Countering Corrosion	13.B.3a Identify and explain ways that scientific knowledge and economics drive technological development.

Supporting Data

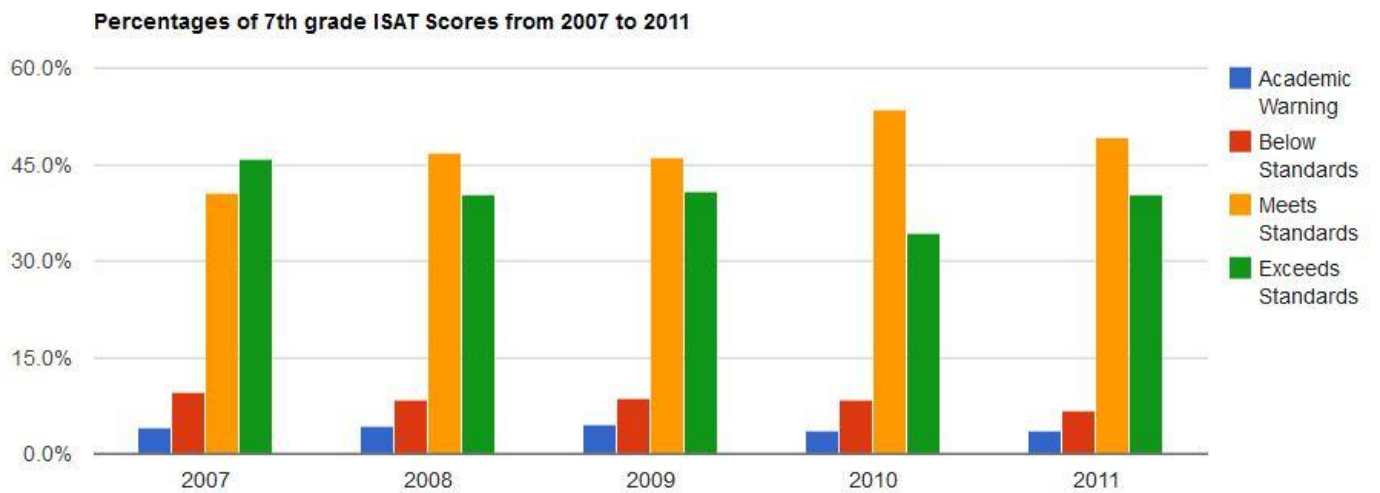
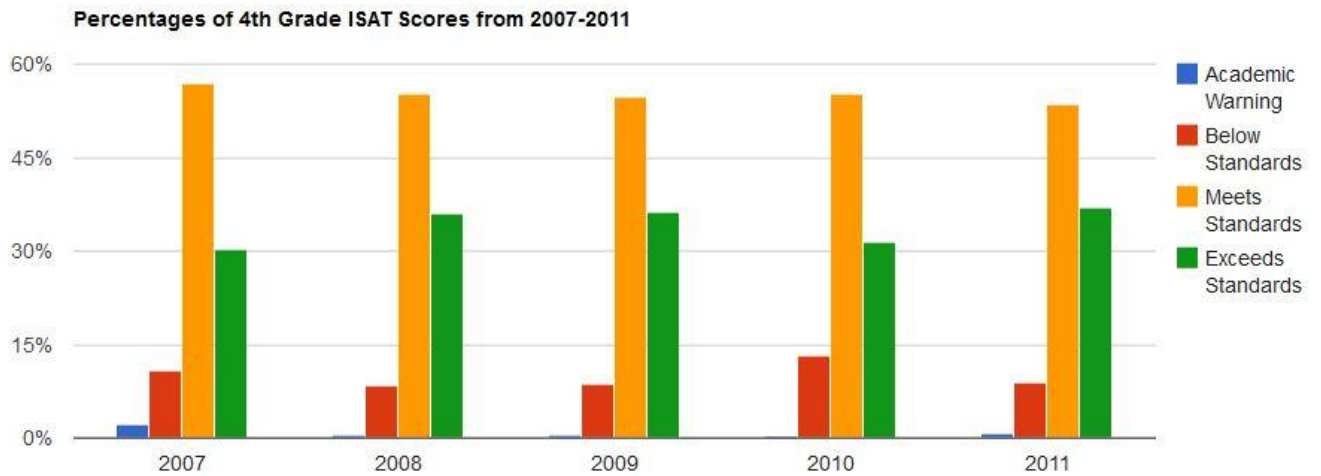
The Science ISAT is administered to students in 4th and 7th grade. Students are assessed in the areas of scientific inquiry, earth science, life science, physical science and safety.

Overall ISAT scores between two cohorts 2007/20010 and 2008/2011:





ISAT Science Scores for 4th and 7th grade from 2007-2011.



Conclusion

The middle school science teachers feel that the STC/MS materials provide a strong foundation for science instruction. There is a continued need for a dedicated time for science teachers to meet by grade level and department in addition to the team meetings that happen regularly. The middle school science teachers are also committed to supporting the work of the K-12 science continuums and would like to support this work and strengthen the articulation efforts between the elementary schools.