Exploring your Vision for Science Education

GVSU Fall Science Update
November 19, 2014

MDE’s vision and commitment to improving education
Agenda

• Where we have been
• Opportunities we have
• The future
ESEA/NCLB

• Elementary and Secondary Education Act 1965
• No Child Left Behind Act 2002

• How do we interpret this in Michigan?
• Math and Reading scores every year (except HS)
• Science is tested only in 4th, 7th, 11th grades
  – MEAP focus, science becomes an elective
  – ACT / MME, science is reasoning
Science—rigorous course of study??

- Science = not in curriculum until later years?
- 2006 MMC HS graduation requirements
  - 4 credits of ELA
  - 4 credits of Math
  - 3 credits of Science
- Biology, Chemistry or Physics, one additional science
  - Curriculum offerings weak
  - Teachers not highly trained, PD options weak
At least 3 credits...

SCIENCE

What the Michigan Merit Curriculum Law Says

Sec. 1278 (1)(b) At least 3 credits in science that are aligned with subject area content expectations developed by the department and approved by the state board under this section, including completion of at least biology and either chemistry, physics, anatomy, or agricultural science, or successfully completing a program or curriculum that provides the same content as the chemistry or physics benchmarks, as determined by the department. A student may fulfill the requirement for the third science credit by completing a department-approved computer science program or curriculum or formal career and technical education program or curriculum. The legislature strongly encourages pupils to complete a fourth credit in science, such as forensics, astronomy, Earth science, agricultural science, environmental science, geology, physics, chemistry, physiology, or microbiology.

380.1278b (5)(f) The science credit requirements of subsection (1)(b) are not subject to modification as part of a personal curriculum under this subsection.
michigan.gov/mde

- Career and College Ready

- Graduation Requirements and Standards
  - Michigan Merit Curriculum
    - FAQ

- Standards
  - Math/Science/ELA/Social Studies
    - Science Course/Credit Requirements

- Instruction
  - Integration, MTSS, Intentional Instructional Practices, CBP, Personalized Learning
Course/Credit Requirements

- Defines minimum science requirements
- Supports the use of math, science, and engineering practices in the classroom
- Helps to clarify the flexibility in the law and reminds of accountability
Standards Update

• Science, engineering and technology are cultural achievements and a shared good of humankind
• Science, engineering and technology permeate modern life
• Understanding of science and engineering is critical to participation in public policy and good decision-making
ACHIEVING THE VISION

Quality Science Instruction

- Aligned Assessments
- Teacher Prep/Certification
- Professional Development
- Model Programs & Resources
- Science Instruction Support Infrastructure
- School Improvement
- Research and High Leverage Practices
- Materials, Equipment and Supplies

Desired Student Outcomes
Use technology and tools strategically in learning and communicating.

Use argument and reasoning to do research, construct arguments, and critique the reasoning of others.

Communicate and collaborate effectively, with a variety of audiences, explanations, and design solutions.

Solve problems, construct explanations, and design solutions.
Current Drivers of Integration

- Michigan Merit Curriculum
- Career and College Readiness
- Disciplinary Literacy
- Common Core State Standards
- Next Generation Science Standards Publication
- Personalized, Flexible Learning & Seat Time Waivers
Questions??

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