MCAS, Curriculum Frameworks, and Fire Safety

Playing By the Rules

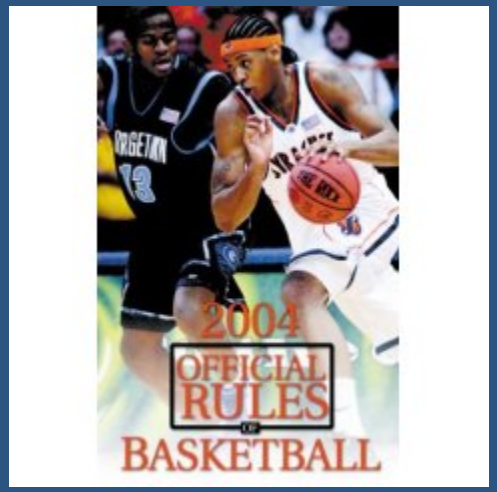
2006 Public Education Conference

Community Partnerships

"In order for fire educators to work with schools effectively, they need to understand what education reform is, how it impacts teachers and principals, and how to "sell" the fire educator's ability to work with them to reach *their* goals and objectives."

Massachusetts Public Fire and Safety Education Curriculum Planning Guidebook (2nd Edition), page 2.


OFFICIAL
RULES
OF
SOCCER


2004
OFFICIAL
RULES
OF
BASKETBALL


2001
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RULES
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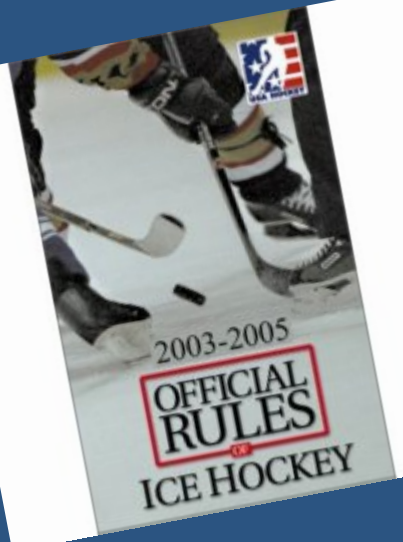
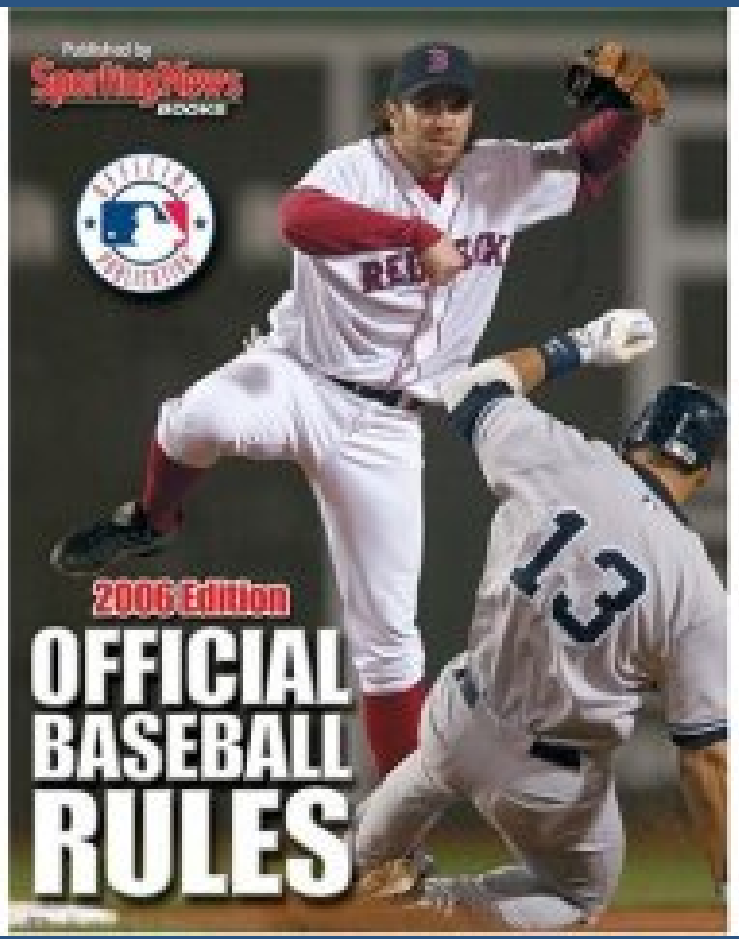
TENNIS


2006 Edition
OFFICIAL
BASEBALL
RULES


2003-2005
OFFICIAL
RULES
OF
ICE HOCKEY


OFFICIAL
RULES
OF THE
NFL

Official Rules
Foreword
1.00 - Objectives of the Game
2.00 - Definition of Terms
3.00 - Game Preliminaries
4.00 - Starting & Ending Game
5.00 - Putting the Ball in Play
6.00 - The Batter
7.00 - The Runner
8.00 - The Pitcher
9.00 - The Umpire
10.00 - The Official Scorer



Standards

- Curriculum Frameworks
- Massachusetts Comprehensive Assessment System, (MCAS)
- School and District Accountability System

Reform Initiatives

- Education Laws and Regulations
- Time and Learning

Frameworks and Learning Standards

The Curriculum Frameworks set measurable **learning standards** which reflect student competencies from pre-kindergarten through grade twelve.

The Curriculum Frameworks present a broad outline upon which Massachusetts curricula, instruction, and locally designed and administered assessments can be made.

Curriculum Frameworks

Arts

English Language Arts

Foreign Languages

Comprehensive Health

Mathematics

History and Social Science

Science and Technology/Engineering

http://www.doe.mass.edu/frameworks/current.html

Linking to the Health Curriculum Framework

The approach of the Massachusetts Comprehensive Health Curriculum Framework is to encourage each district to work with family and *community members* in the development and implementation of the health education curriculum in the schools of that district. (emphasis added)

Massachusetts Comprehensive Health Curriculum Framework, Introduction.

Health Curriculum Learning Standards

- Physical Health
  - Physical Activity and Fitness
- Social and Emotional Health
- Safety and Prevention
  - Safety and Injury Prevention
  - Tobacco, Alcohol, and Other Substance Use/Abuse Prevention
- Personal and Community Health
  - Community and Public Health

Competency Determination

- Starting with the Class of 2003
  - English Language Arts & Mathematics
- Starting with the Class of 2010
  - English Language Arts & Mathematics
  - Science and Technology/Engineering*
- Starting with the Class of 2012
  - English Language Arts & Mathematics
  - Science and Technology/Engineering*
  - History and Social Science

* discipline specific

When the Health Curriculum Framework is not enough...

Learning Standards for History

6. Interdisciplinary Learning: Natural Science, Mathematics, and Technology in History. Students will describe and explain major advances, discoveries, and inventions over time in natural science, mathematics, and technology; explain some of their effects and influences in the past and present on human life, thought and health, including use of natural resources, production and distribution and consumption of goods, exploration, warfare and communication. (See also relevant strands in the Massachusetts Mathematics, Science, and Technology Curriculum Frameworks.)

Water Supply

Explain the history of water supply systems:

- Primitive communities built around natural sources of water.
- Early Roman civilization developed the first recorded municipal water system:
  - Aqueduct brought water from distances
  - Aqueduct water stored in covered masonry cisterns
  - Cistern water delivered through lead or bored stone pipes

Water Supply (con't)

- Roman water supply system almost vanished with the decline of the Roman Empire.
- Nothing in North America could properly be called a comprehensive water system until 1800 when the Philadelphia Waterworks began delivering water.

Water Supply (con't)

In the mid 19th century, New York City and Boston developed rudimentary systems that flowed from reservoirs through hollowed out logs. The logs had large wooden plugs that allowed for tapping the system for fire fighting. (The plugs in the wooden pipes were called "fire plugs," and the term is still used today for fire hydrants.)

Today, pumping stations, water towers, and underground pipes deliver water to municipalities for domestic consumption and fire fighting use.

Lack of a fixed water supply in rural areas requires relay pumping and tanker/tender shuttle operations, two methods whose origins were the old-fashioned bucket brigade.

Essentials of Firefighting (4th Edition) Instructors Guide, p. 11 – 7.

When the Health Curriculum Framework is not enough...

Learning Standards for Economics

13. American and Massachusetts Economic History. Students will describe the development of the American economy, including Massachusetts and New England, from colonial times to the present. The subjects the students will master will include the size of populations at intervals in our history; the relative concentration on agriculture, industry, and commerce; the rise and decline of particular industries; the history of labor, including organized labor; the growth of banking and finance; the record of economic expansions and recessions; and the influence of various views on how government can best serve the economic interests of the state and the nation. The emphasis in the lower grades will be on teaching children stories about American economic history. Instruction in American economic history in later grades will focus on detailed knowledge of place, event, circumstance, and relation to other historical, geographic, and civic matters.

During World War II, the company was awarded a contract with the British government to make oxygen regulators for fighter aircraft, which led to more government contracts. The name was changed to Scott Aviation in 1942 and, after World War II, the company began to focus on products for peacetime needs. This is when the first Air-Pak was introduced, as well as emergency oxygen breathing equipment for commercial aircraft.

www.scottaviation.com

When the Health Curriculum Framework is not enough...

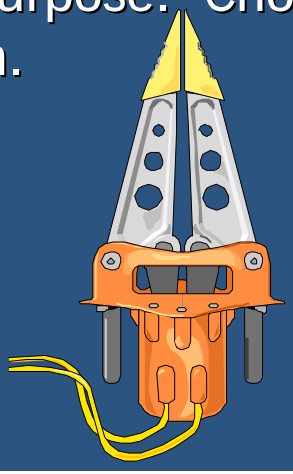
Science & Technology TECHNOLOGY STRAND

Grades 9-10

Understanding and Using Technology in Society

The nature and impact of Technology

Give examples of how a technology device, service, or system is used for a particular purpose. Choose a device, service or system and explore it in depth.



When the Health Curriculum Framework is not enough...

Learning Standards for Civics and Government

20. Forms of Government. Students will study, compare, contrast, and analyze diverse forms of government; the ways of life and opportunities they permit, promote, and prohibit; and their effects on human rights. They will evaluate forms of government in terms of justice, ordered liberty, efficiency, **public safety**, educational opportunity, and economic and social mobility.

Man Blamed for China School Blast

BEIJING (AP) -- Parents of children who died in a schoolhouse explosion in southeastern China that killed at least 41 people said Thursday that pupils were forced to make fireworks in class.

Chinese Premier Zhu Rongji blamed a man with mental problems for Tuesday's explosion, which destroyed the school in Fang Lin village, Jiangxi province.

But Zhang Chenggen, whose 11-year-old son was killed, said the school forced children to manufacture fireworks to cover its budget and benefit teachers.

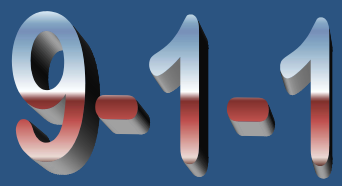
March 8, 2001

When the Health Curriculum Framework is not enough...

Mathematics NUMBER SENSE AND OPERATIONS STRAND

PreK-K

K.N.2 Match quantities up to at least 10 with numerals and words



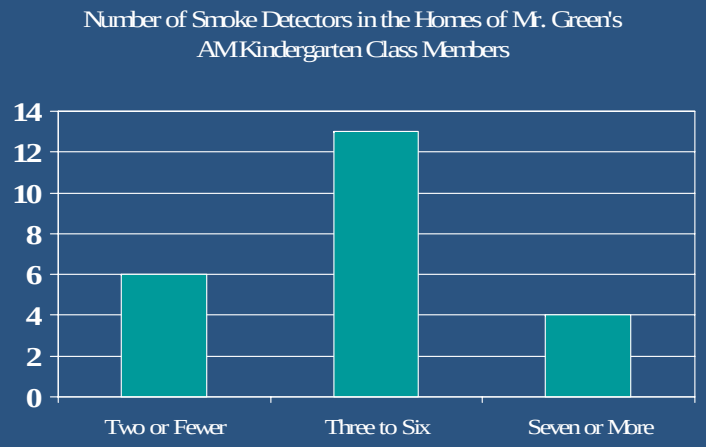
When the Health Curriculum Framework is not enough...

Mathematics DATA ANALYSIS, STATISTICS, AND PROBABILITY STRAND

Grades 3-4

4.D.1 Collect and organize data using observations, measurements, surveys, or experiments, and identify appropriate ways to display the data.

4.D.3 Construct, draw conclusions, and make predictions from various representations of data sets, including tables, bar graphs, pictographs, line graphs, line plots, and tallies.

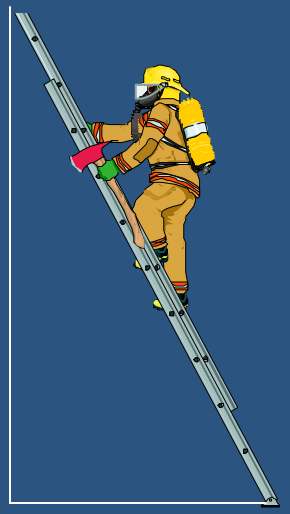


When the Health Curriculum Framework is not enough...

Mathematics GEOMETRY STRAND

Grades 9-10

10.G.5 Solve simple triangle problems using the triangle angle sum property and/or the Pythagorean theorem.



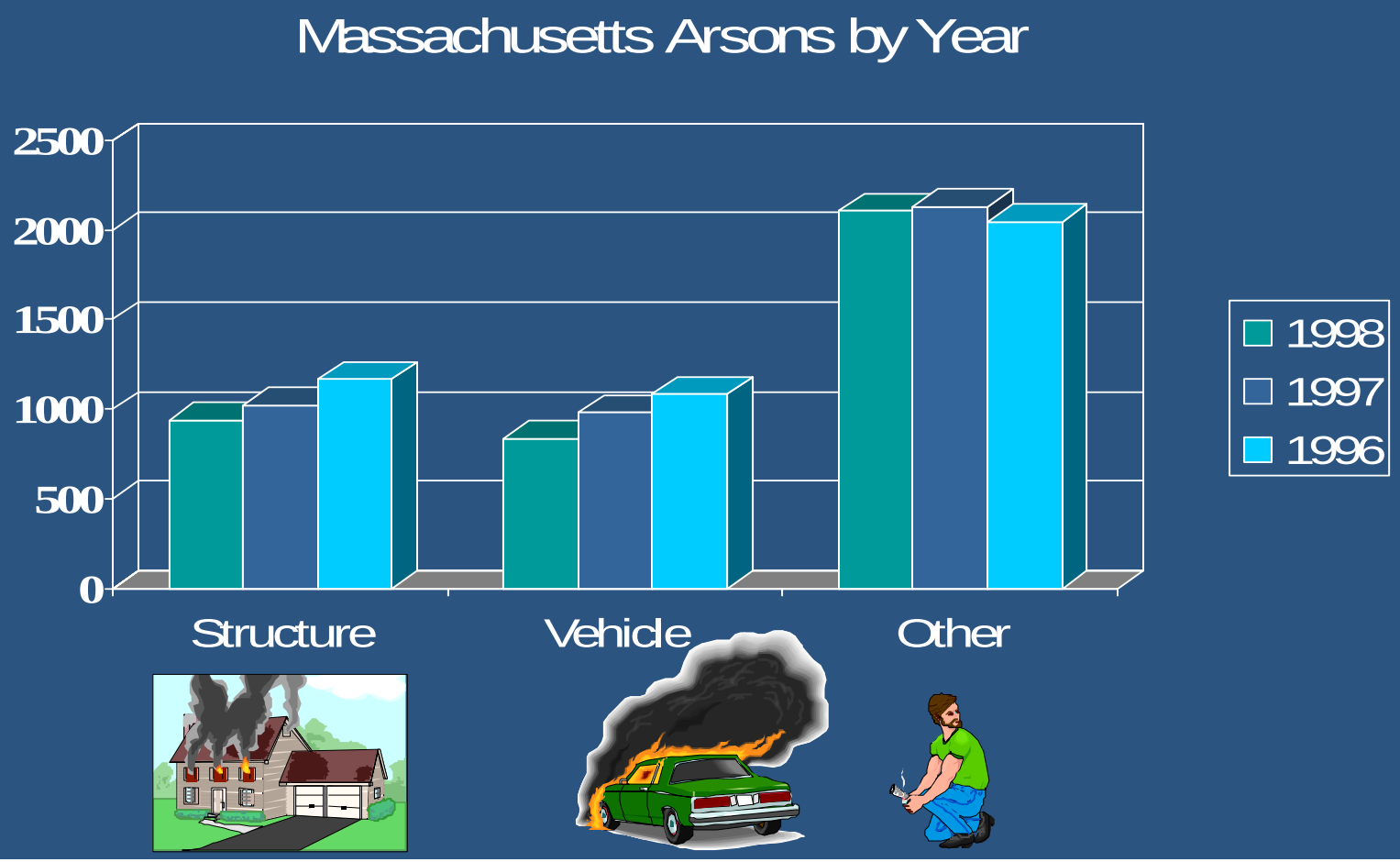
When the Health Curriculum Framework is not enough...

Mathematics DATA ANALYSIS, STATISTICS, AND PROBABILITY STRAND

Grades 9-10

10.D.1 Select, create and interpret an appropriate graphical representation (e.g., scatterplot, table, stem-and-leaf plots, box-and-whisker plots, circle graph, line graph, and line plot) for a set of data and use appropriate statistics (e.g., mean, median, range, and mode) to communicate information about the data. Use these notions to compare different sets of data.

MFIRS Presentation



When the Health Curriculum Framework is not enough...

Science & Technology DOMAINS OF SCIENCE STRAND

Grades 5-8

Properties of Matter

Present evidence that a chemical change involves the transformation of one or more substances into new substances with different characteristic properties. Give examples that such changes are usually accompanied by the release of or absorption of various types of energy, especially radiant energy such as heat or light.

Motions and Changes in Motion

Demonstrate that all forces have magnitude and direction. Create situations to model how forces acting in the same direction reinforce each other and forces acting in different directions may detract or cancel each other.

Pressure Loss/Gain

Discuss causes of friction loss
- Rough hose lining
- Damaged hose couplings
- Sharp bends/kinks in hose
- Adapters
- Partially closed valves/nozzles
- Wrong size gasket
- Excessive hose length
- Excess flow for hose size

Discuss effects of elevation on fire streams
- Nozzle *above* fire pump = pressure *loss*
- Nozzle *below* fire pump = pressure *gain*

Accountability

The Massachusetts School and District Accountability System is designed to gauge the progress of schools and districts toward getting all students in the Commonwealth to proficiency in English Language Arts and Mathematics by 2014, the principal goal of the federal No Child Left Behind Act (NCLB).

The system enables policymakers, parents, and the public to assess the effectiveness and monitor the improvement of all public schools and districts, hold school leaders accountable for that performance and improvement, and to identify where State intervention is needed.

http://www.doe.mass.edu/sda/

Laws and Regulations

603 CMR – Department of Education

- 603 CMR 27.00 Student Learning Time
- 603 CMR 28.00 Special Education Regulations
- 603 CMR 30.00 Massachusetts Comprehensive Assessment System and Standards For Competency Determination

Massachusetts General Laws

Chapters 69-78A

- MGL Chapter 71: Public Schools
- MGL Chapter 71 § 89: Charter Schools
- MGL Chapter 71B: Children with Special Needs

http://www.doe.mass.edu/lawsregs/

Time and Learning

603 CMR 27.00: Student Learning Time

- Ensure that every public school in the Commonwealth provides its students with the structured learning time needed to enable the students to achieve competency in “core subjects” and “other subjects.”
  - **Core Subjects**: mathematics, science and technology, history and social science, English, foreign language and the arts, and vo-tech ed program subjects
  - **Other subjects**: other than core academic subjects that are required to be taught, and other subjects approved by the school committee as part of the district’s program of studies.
- Minimum of either 425, 900, or 990 hours per school year of structured learning time, depending on student’s grade level.

http://www.doe.mass.edu/lawsregs/603cmr27.html

Structured Learning Time

Structured learning time shall mean time during which students are engaged in regularly scheduled instruction, learning activities, or learning assessments within the curriculum for study of the "core subjects" and "other subjects." In addition to classroom time where both teachers and students are present, structured learning time may include directed study, independent study, technology-assisted learning, *presentations by persons other than teachers*, school-to-work programs, and statewide student performance assessments.

Structured Learning Time

Time which a student spends at school breakfast and lunch, passing between classes, in homeroom, at recess, in non-directed study periods, receiving school services, and participating in optional school programs shall not count toward meeting the minimum structured learning time requirement for that student.

Speak the Language of Education

AYP

Adequate Yearly Progress

IDEA

Individuals with Disabilities Education Act

IEP

Individualized Education Program

Inclusion

Speak the Language of Education

- Disability
  - Autism
  - Intellectual Impairment
  - Sensory Impairment
  - Hearing/Vision/Deaf-Blind
  - Neurological Impairment
  - Emotional Impairment
  - Communication Impairment
  - Physical Impairment
  - Health Impairment
  - Specific Learning Disability

Questions?

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