

Digital Learning Environments

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Massachusetts Department of
Elementary & Secondary Education
Thursday, April 8, 2010



April 2010

S	M	T	W	T	F	S
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	1
2	3	4	5	6	7	8

For Immediate Release

Wednesday, March 24, 2010

Contact: Heidi Guarino 781-338-3106 or JC Considine 781-338-3112

Massachusetts 4th and 8th Graders Rank First in Reading on 2009 NAEP Exam

Results Mark Third Time in a Row MA Students Have Outscored the Nation

“.....We were mutually competitive, with an intensity that owed more to joy than to an urge for dominance.”

True Compass, Edward M. Kennedy, a memoir



Motivating Teaching and Learning in a Digital World

An Example in A Massachusetts School

ESE goals

- Educator development
- Curriculum, instruction, and assessment
- Accountability and assistance
- Supports for students and families
- State leadership and operations

RTTT goals

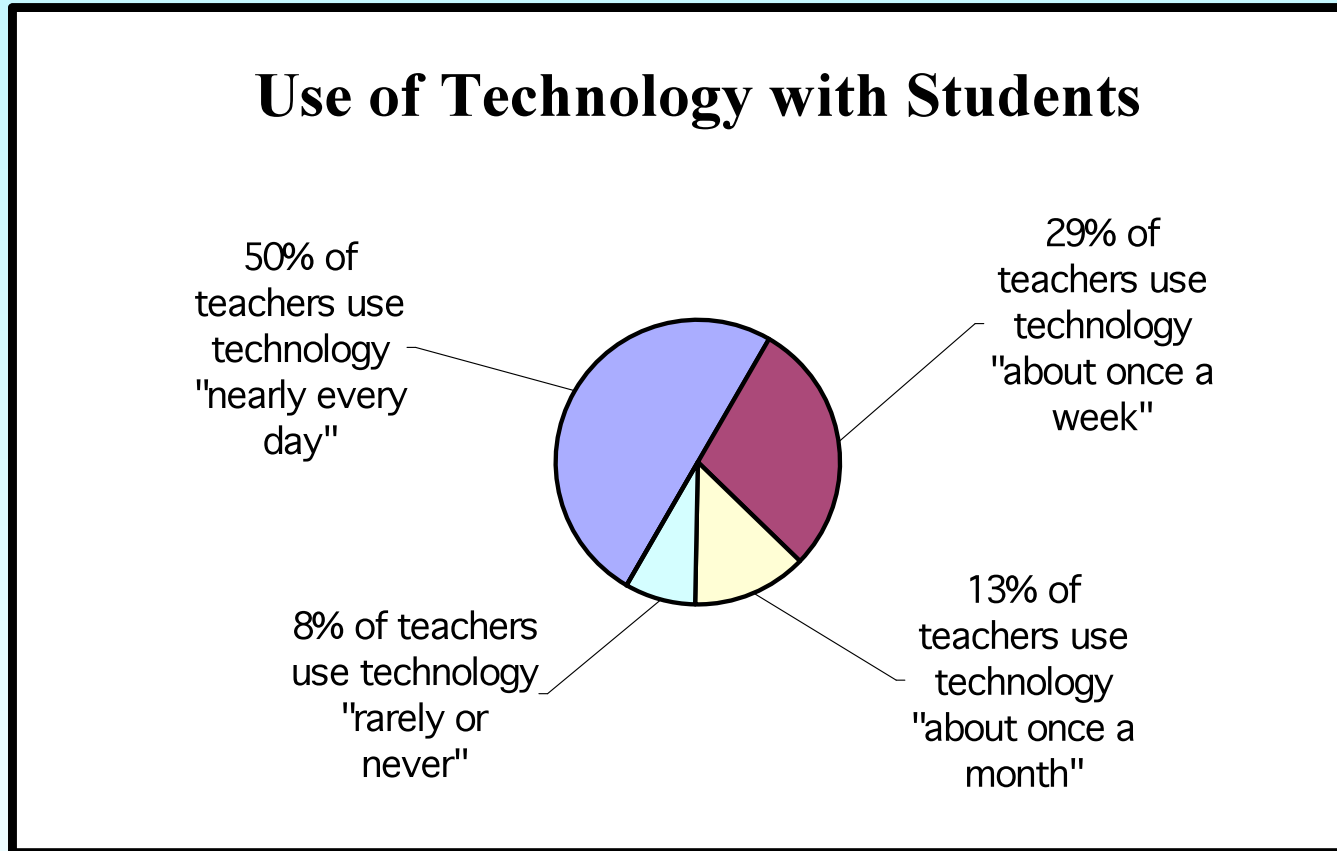
- Standards and assessments
- Collection and use of data
- Supports for struggling schools
- Great teachers and leaders

How do we meet these goals in a digital world?

- Use of Technology in the Classroom
- Technology Literacy
- Access to Modern Technologies
- Instructional Materials in Digital Format
- New Models of Teaching and Learning



Teacher Use of Computers with Students



The Department's technology guidelines recommend that at least 85% of teachers use technology each week with their students.

Student Technology Literacy

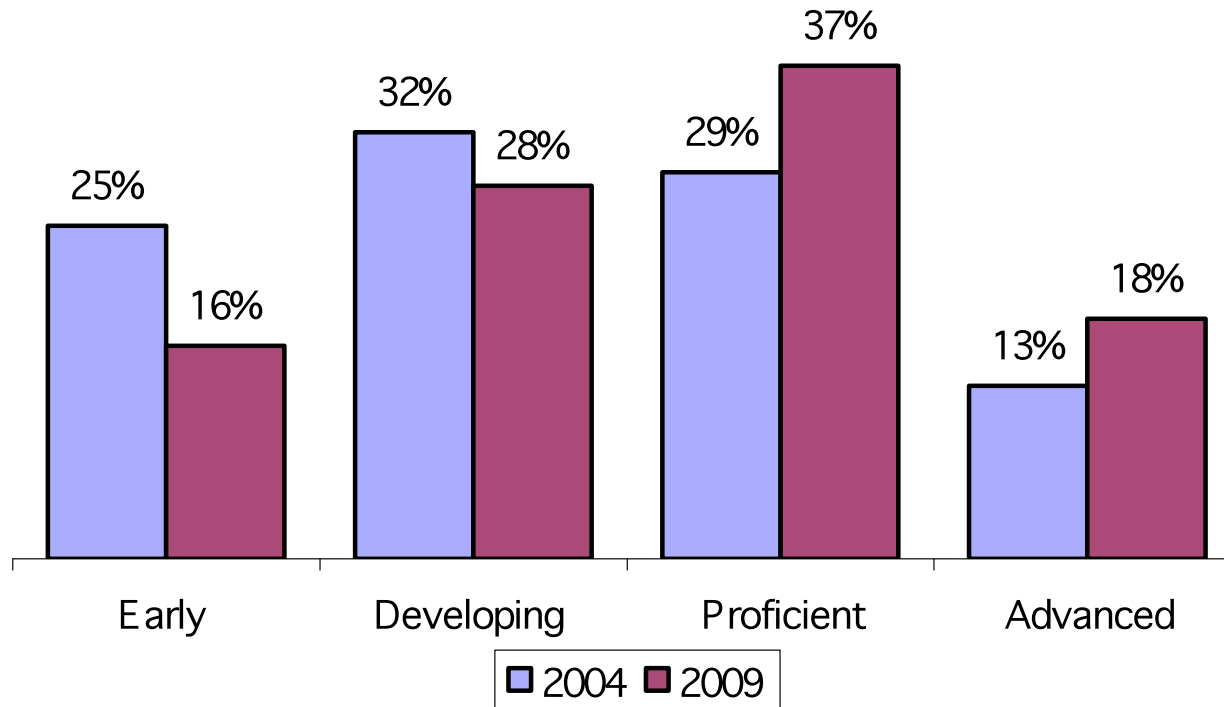
Statewide Averages Based on District Reports

Students have mastered . . .	Percent of grade 8 students
all or nearly all of the skills for their grade span.	58%
half or more than half of the skills for their grade span.	30%
less than half of the skills for their grade span.	13%



Teacher Technology Literacy

Percent of Educators at Each Level



Based on TSAT (Technology Self-Assessment Tool)



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Types of Technology Professional Development Received

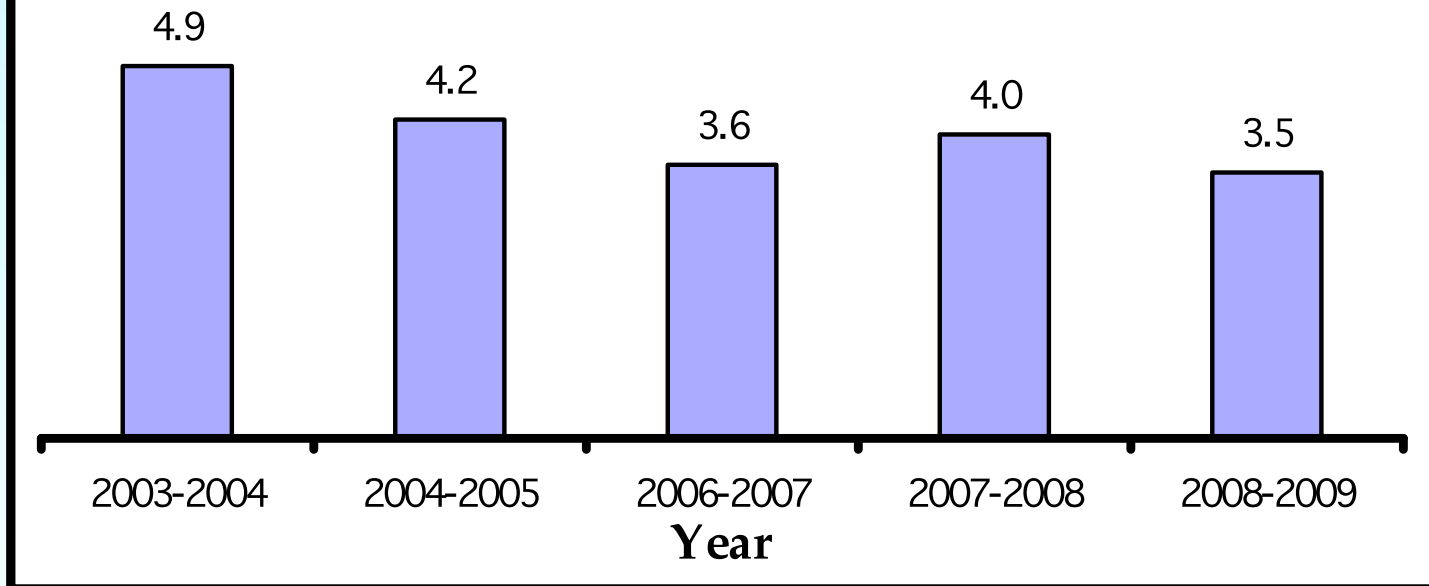
Professional development type	Percent of staff who received it
Formal professional development	51%
Ongoing professional development	61%
Online professional development	12%
Any type of professional development	76%



Computers in MA Schools

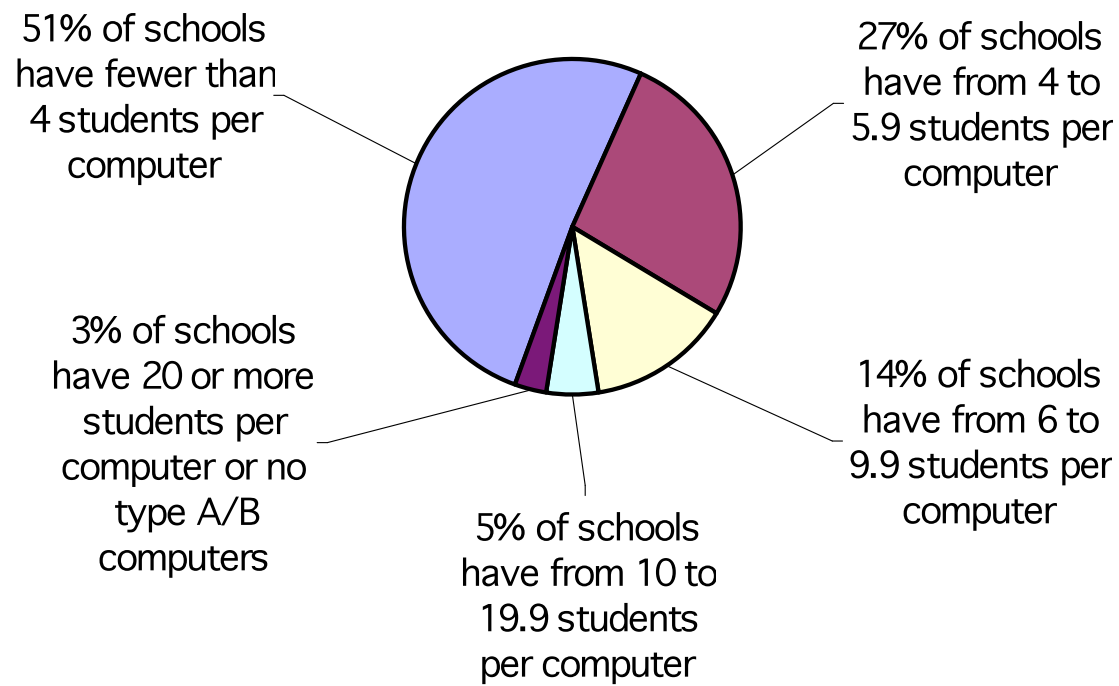
Type of Computer	Specifications for 2008-2011
Type A	<u>Memory</u> : 1 GB RAM <u>Processor</u> : Windows 2.0 GHz CPU single or 1.0 GHz Dual Core or Macintosh G5 or better (or equivalent)
Type B	<u>Memory</u> : 256 RAM <u>Processor</u> : Windows 1.0-2.0 GHz CPU or Macintosh G4 or better running OSX (or equivalent)

Students per Computer Statewide District Averages for High-Capacity (A/B) Computers



Computers in Individual Schools

Ratios of Type A/B Computers to Students



Other Technologies in Schools

Ratios Based on District Reports

Technology device	Ratio of devices to classrooms
Digital projector	one for every 3 classrooms
Interactive whiteboard	one for every 8 classrooms
Video camera	one for every 15 classrooms

Digital Curriculum Materials

- In 2009, 68% of districts indicated that they planned to purchase at least some of their curriculum materials in digital, rather than printed, formats.

Benefits of Using Digital Materials

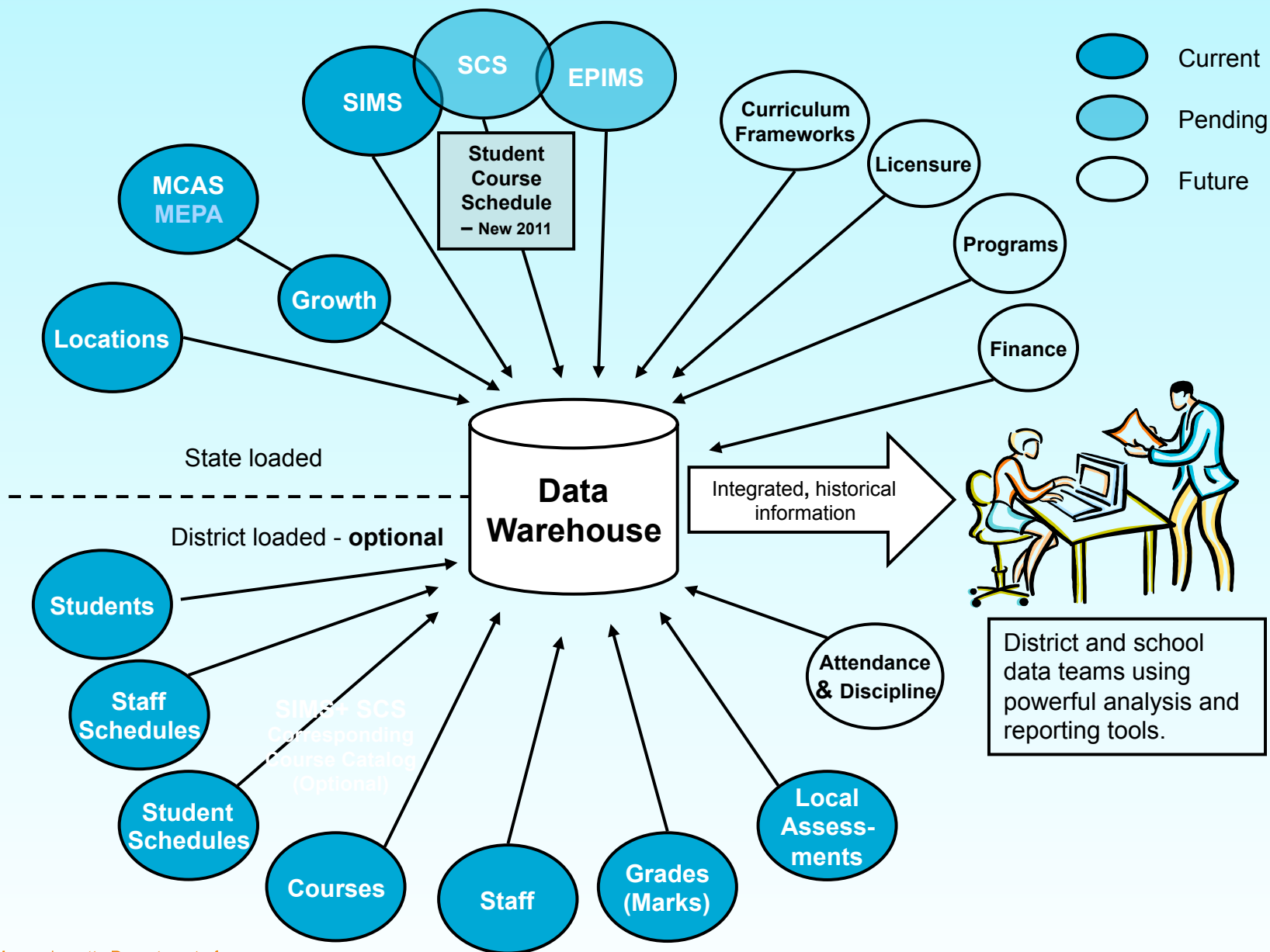
- Engage students with multimedia
- Provide rich interactive resources
- Use of digital text allows students with disabilities to use text-to-speech software, allowing them to hear the text read aloud
- Are available online at no cost
- Easily available to align new standards in Curriculum Frameworks or Common Core

Local Decisions in Acquiring Digital Materials

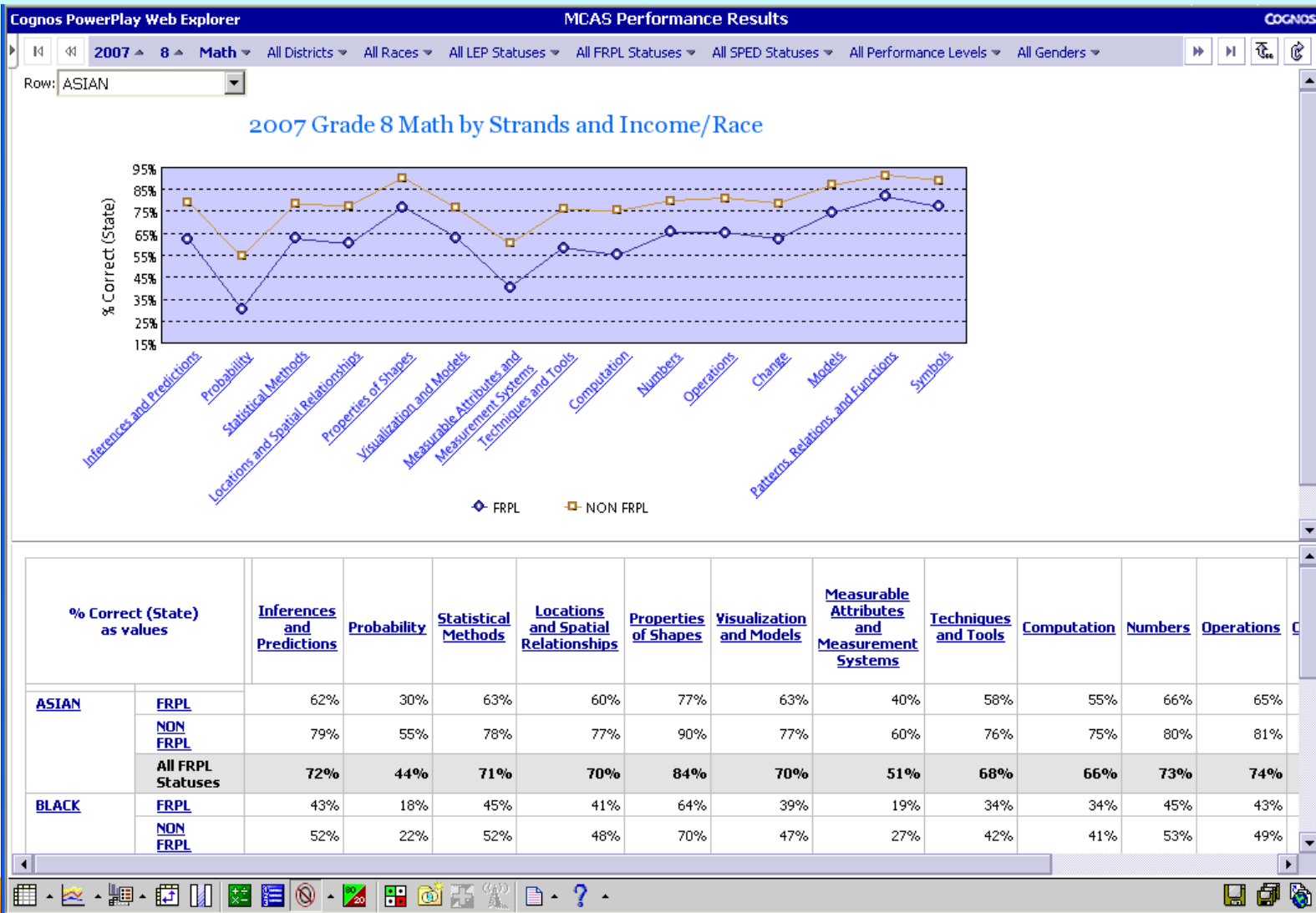
Massachusetts Support for Data Driven Decisions

Massachusetts Data Warehouse

What Is In The Data Warehouse?



Powerful Ad-hoc Analysis and Reporting

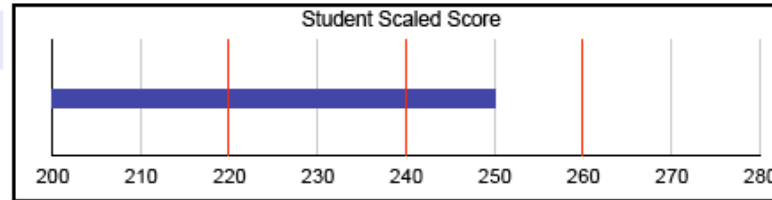


Student Test Results with Standards

_____ Middle - Spring 2008 MCAS Grade 8 Math

Student: _____

Subject	Scaled Score	Perf Level
Math	250	Proficient



MCAS Subject Name	Raw Score	Max Raw Score	Student % Correct	School % Correct	District % Correct	State % Correct	Student-State Diff
Math	43	54	80%	78%	78%	62%	17%

MCAS Question Type	Raw Score	Max Score	Student % Correct	School % Correct	District % Correct	State % Correct	Student-State Diff
Short-Answer	4	5	80%	77%	77%	62%	18%
Open-Response	18	20	90%	73%	73%	57%	33%
Multiple-Choice	21	29	72%	82%	82%	68%	5%

MCAS Strand Name	MCAS Standard Name	Raw Score	Max Score	Student % Correct	School % Correct	District % Correct	State % Correct	Student-State Diff
Data Analysis, Statistics, and Probability		10	11	91%	83%	83%	68%	23%
	Inferences and Predictions	1	2	50%	87%	87%	78%	-28%
	Probability	5	5	100%	78%	78%	59%	41%
	Statistical Methods	4	4	100%	87%	87%	75%	25%
Geometry		5	7	71%	74%	74%	63%	8%
	Locations and Spatial Relationships	0	1	0%	56%	56%	40%	-40%
	Properties of Shapes	1	1	100%	95%	95%	88%	12%
	Transformations and Symmetry	1	1	100%	89%	89%	77%	23%
	Visualization and Models	3	4	75%	69%	69%	60%	15%
Measurement		6	7	86%	72%	72%	53%	33%
	Measurable Attributes and	1	1	100%	81%	81%	65%	35%

Highlighting Areas for Improvement

2008 8 <input type="text" value="District/School"/> Math All Races All LEP Statuses All FRPL Statuses All Performance Levels All SPED Statuses All Migrant Statuses All Title 1 Statuses All Enrollments All Assessments All Genders All Question Types MEASURES					
% Correct as values			% Correct	% Correct (State)	Dif.
Data Analysis, Statistics, and Probability	Inferences and Predictions	Multiple-Choice	69%	77%	-7%
	Probability	Multiple-Choice	44%	45%	-1%
		Open-Response	44%	61%	-17%
	Statistical Methods	Multiple-Choice	61%	72%	-11%
		Short-Answer	67%	79%	-13%
Data Analysis, Statistics, and Probability			56%	67%	-12%
Geometry	Locations and Spatial Relationships	Short-Answer	39%	39%	0%
	Properties of Shapes	Multiple-Choice	78%	87%	-9%
	Transformations and Symmetry	Short-Answer	89%	76%	13%
	Visualization and Models	Open-Response	49%	59%	-10%
	Geometry			57%	63%



Massachusetts Support for Digital Environment

MassONE



Massachusetts Support for Digital Materials

- Partnership with WGBH/WGBY -formal contract
- Massachusetts Teachers' Domain ([MATD](#))
- ESE Online Courses linked to MATD
- ESE and WGBH co-develop online content courses.
- MATD resources are aligned with Massachusetts Curriculum Frameworks.
- ESE digital library will be built on MATD digital library.

Massachusetts Support for Digital Materials

- Partnership with [Verizon/Thinkfinity](#)
- State received 3 years Verizon/Thinkfinity grants for professional development and standards alignment.
- [Certified trainers](#) and field trainers have been trained to provide PD to schools
- 15 districts received \$10,000 grant each in 2009-2010 to use Thinkfinity. (Year 2 has just started.)

Massachusetts Support for Digital Materials

- Resources for students with disabilities
 - Braille and large print (paper and digital)
 - Digital audio books (CDs and MP3 files)
 - Digital text (used with text-to-speech software)
- [Accessible Instructional Materials brochure](#)

New York Times

In a Digital Future, Textbooks Are History



This slide is from the presentation given by Anita Givens, Associate Commissioner, Texas Education Agency.



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New Ways in Teaching and Learning

An Example in
Watertown Public Schools:
[I Am What I Learn](#)