

**UTILIZING TECHNOLOGY TO ENHANCE EARLY
CHILDHOOD TEACHER QUALITY AND STUDENT
ACHIEVEMENT**

**Assessment and Design Strategies for
Improving Student Learning: With
Technology Tools**

University of Maryland

Educational Technology Research and Outreach

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Overview



How Do Schools Improve Student Performance?

- Why the fuss?
- Data: how to analyze/interpret system-wide and classroom data
- Connect data to standards and curriculum
- Connect data to Instructional Strategies to improve student achievement



Objectives For the Grant Initiative



Instructional Strategies to improve student achievement as determined from data analysis

- **Background knowledge:** Data - How your school/classroom fits into the bigger picture
 - Where to find state, district and school data
 - How to collect and analyze classroom data
- **Standards:** What we want students to know – locating and connecting the standards
- **Determining Acceptable Evidence:** Tests/alternative assessments/activities/rubrics - how to ask good questions/write good assessments/collect data and re-teach/reassess
- **Learning Experiences and Instruction:** Lesson plans/lesson units/data collection/re-teaching/ alternative differential instruction

Today We Will Cover Background/Standards/Connecting To Technology



Process For Today

- “Instructor Led” Overview
- Blended Instruction
 - Instructor led
 - Hands-on activities
- Debriefing
- Time to Work on Own
- Online resources/ support
- Follow-up session ????



Today's Outcomes

- Understand the **tie between** data (school/district and classroom) and standards (and instructional design)
- Understand **where** and how to locate MSDE/school data and content standards
- Understand **how** to interpret and analyze data from mock case studies
- Become **familiar** with technology tools, like Excel and the vast features within the application
- Apply new knowledge gained to your **own classroom data**

Ready?





How Do Schools Improve Student Performance?



- **Standards**
 - Understanding Standards, Assessments and AYP
- **Process**
 - Leading the School Improvement Process
- **Data**
 - Analyzing and Using Data
- **Instruction**
 - Teaching and Assessing the Content Standards



Pre-NCLB



- We were familiar with standards
- We collected data
- Data commonly disseminated in paper format
- Data underutilized
- Statistical format with little comparison and planning

How do we compare with other schools?

What is the target goal?



No Child Left Behind Act of 2001 (NCLB)



- A landmark in education reform
- Designed to improve student achievement and change the culture of America's schools
- Passage of *No Child Left Behind*, Congress reauthorized the *Elementary and Secondary Education Act (ESEA)*--the principal federal law affecting education from kindergarten through high school.

In amending *ESEA*, the new law represents a sweeping overhaul of federal efforts to support elementary and secondary education in the United States. It is built on four common-sense pillars:

- Accountability for results
- An emphasis on doing what works based on scientific research
- Expanded parental options
- Expanded local control and flexibility

See Handout



NCLB



- “Although testing may be stressful for some students, testing is a normal and expected way of assessing what students have learned.
- The purpose of state assessments required under *No Child Left Behind* is to provide an independent insight into each child's progress, as well as each school's.
- This information is essential for parents, schools, districts and states in their efforts to ensure that no child--regardless of race, ethnic group, gender or family income--is trapped in a consistently low-performing school.”



NCLB



- *No Child Left Behind* requires
 - By the 2005-06 school year, each state must measure every child's progress in reading and math in each of grades 3 through 8 and at least once during grades 10 through 12.
 - In the meantime, each state must meet the requirements of the previous law reauthorizing *ESEA* (the *Improving America's Schools Act of 1994*) for assessments in reading and math at three grade spans (3-5; 6-9; and 10-12).
 - By school year 2007-2008, states must also have in place science assessments to be administered at least once during grades 3-5; grades 6-9; and grades 10-12.
 - Further, states must ensure that districts administer tests of English proficiency--to measure oral language, reading and writing skills in English--to all limited English proficient students, as of the 2002-03 school year.



NCLB



- Students may still undergo state assessments in other subject areas (i.e., history, geography and writing skills), if and when the state requires it.
- *No Child Left Behind*, however, requires assessments only in the areas of reading/language arts, math and science.
- *No Child Left Behind* requires that all children be assessed. In order to show adequate yearly progress (AYP), schools must test at least 95 percent of the various subgroups of children, including their students with disabilities and those with limited English proficiency.
- States must provide reasonable accommodations for students with disabilities or limited English proficiency.
 - native-language versions of the assessment;
 - however, in the area of reading and language arts, students who have been in U.S. schools for three consecutive years will be assessed in English.



Site Project

<http://www.mdk12.org/>



- Provides a variety of statistical data about Maryland Schools. Information is available on state, district, and school by school basis.
 - **Adequate Yearly Progress**
 - **Maryland School Assessment (MSA) in Reading and Math**
 - **Demographic**
 - **Student Characteristics**



Why NCLB

- Education is inconsistent across school districts, counties, and states
- No common measure of performance
- Apply Business Model
 - Identify schools that need assistance
 - “Take over” schools that continue to be poor performers
 - *If a franchise isn't working – put it under new management.*



Understanding Assessments, Standards, and AYP



- What do students need to know and be able to do?
 - Curriculum Standards-”Voluntary” State Curriculum
- How do we test what students have learned?
- How does MD implement AYP (Adequate Yearly Progress)?

http://www.mdk12.org/data/ayp_analyzing/index.asp



How does MD implement AYP (Adequate Yearly progress)?



- **What is AYP? What does NCLB require?**

NCLB requires that states establish accountability systems designed to:

- Ensure that all students achieve proficiency in reading/language arts and mathematics by the end of school year 2013-2014.
 - Based on state defined content standards in reading and mathematics.
 - Have assessments aligned to the content standards.
 - Defines at least three student achievement levels: Basic, Proficient, and Advanced.
 - Assesses the progress of subgroups, schools, school districts, and the state annually.
 - Must include other academic indicators.



How does MD implement AYP (Adequate Yearly Progress)?



- Must have consequences based on progress. States, school systems, and schools are accountable for:

	Proficiency in Reading/ English Language Arts	Proficiency in Mathematics	Another Academic Indicator for Elementary and Middle Schools	Graduation Rate for High Schools
All Students				
▪ American Indian				
▪ Asian				
▪ African American				
▪ White				
▪ Hispanic				
▪ FARMS				
▪ Sp. Ed.				
▪ LEP				



What are the Federal Requirements of AYP?



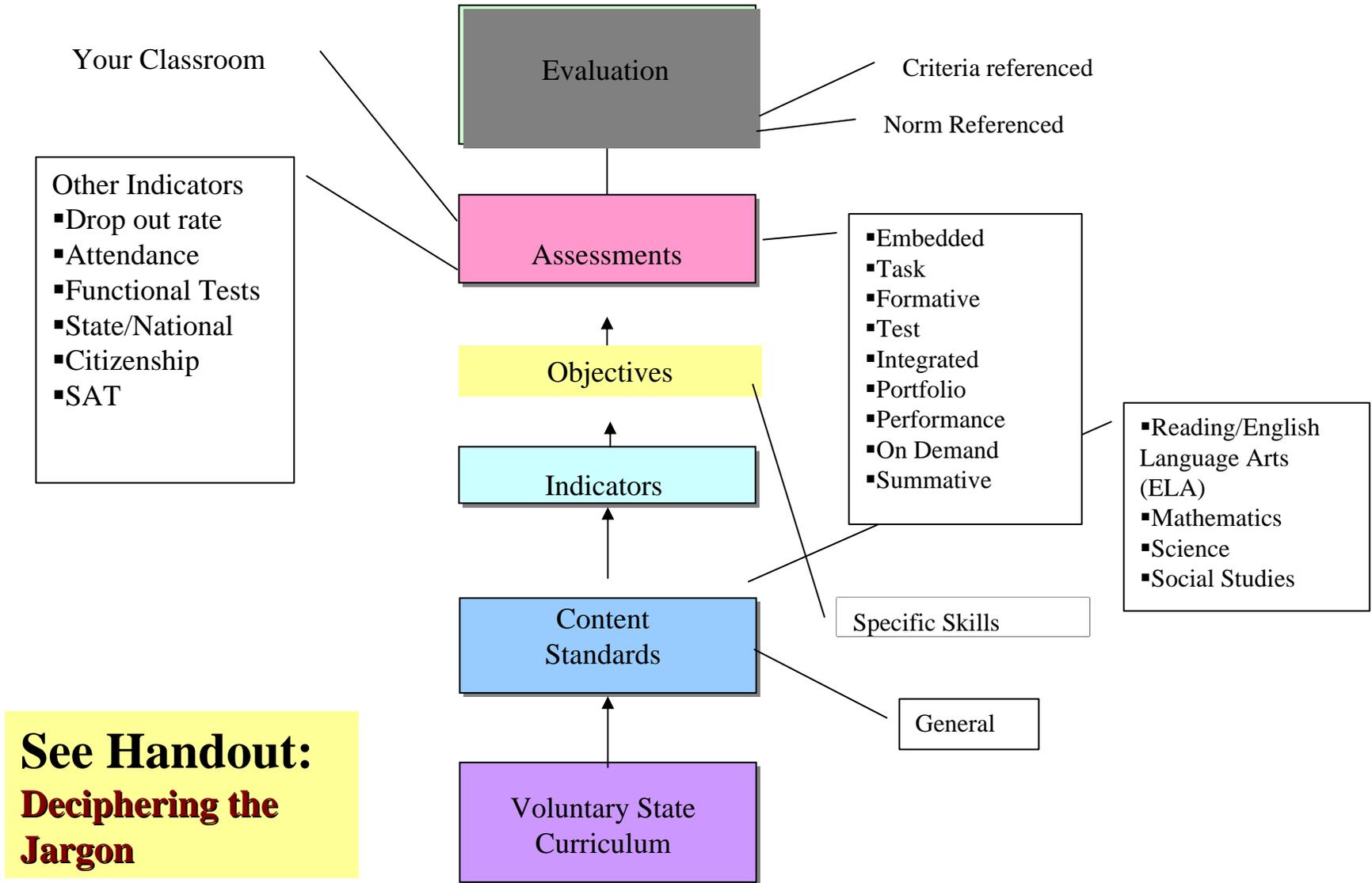
- Adequate yearly progress is designed to ensure continuous improvement each year toward the goal of 100% proficiency in 2014.
 - Improvement targets are particularly focused on subgroups of students who, historically, have the furthest to go.
 - The goal of 100% proficiency ensures that all students not just low performing students are expected to **continuously progress.**



US Department of Education Overview



- The Accountability and AYP PowerPoint and PDF files developed by the US Department of Education describe the federal requirements of AYP:
 - <http://www.mdk12.org/mspp/ayp/accountabilityayp.ppt> (2.1 MB) Downloadable PowerPoint file for high speed connections.
 - <http://www.mdk12.org/mspp/ayp/accountabilityayp.pdf> (388 KB) Printable PDF Acrobat file.





Deciphering the Jargon

Go To: www.edtechoutreach.umd.edu

- First we will take a short pre-assessment survey (on-line)...when finished start
- Exploring School Achievement Scavenger Hunt
 - Break up in small groups
 - Each group should access a computer
 - See handout- **Scavenger Hunt Activity**
 - **Click on the link on the website and download to the floppy (A Drive)**



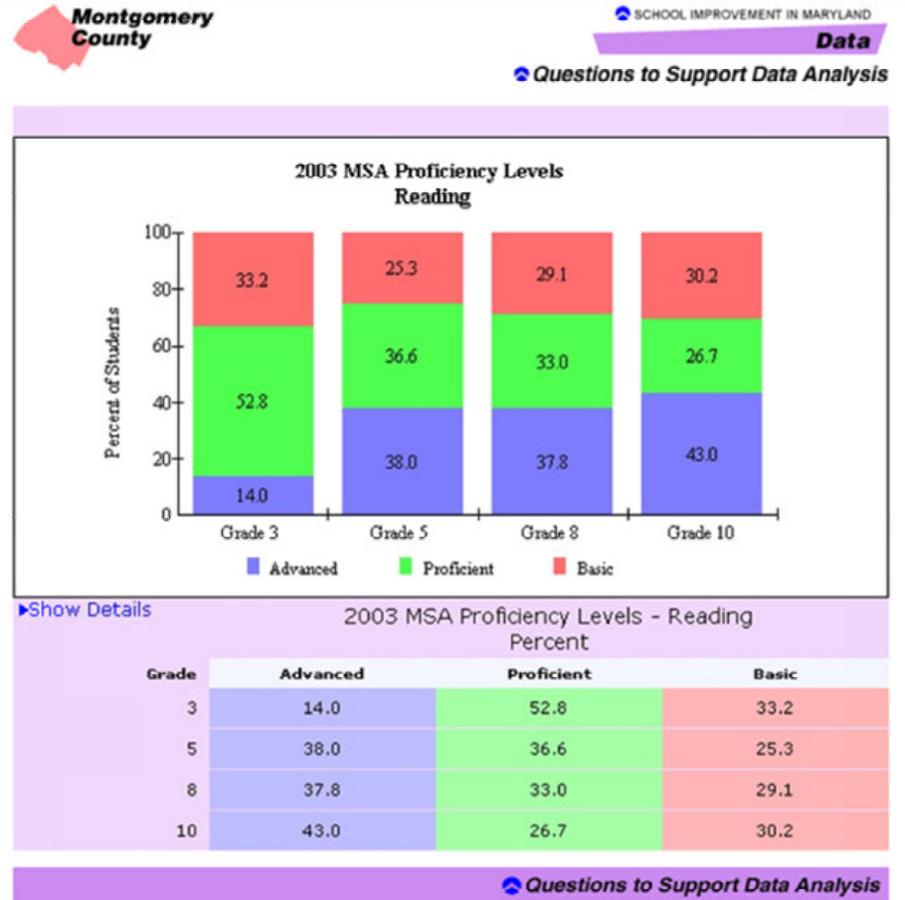
Scavenger Hunt



Debriefing

- MSA Data

http://www.mdk12.org/data/msa_analyzing/index.asp





Maryland Teacher Technology Standards

- Home site

<http://www.mcps.k12.md.us/departments/technology/techstandards/>

The screenshot shows a Netscape browser window displaying the MCPS website. The browser's address bar shows the URL: <http://www.mcps.k12.md.us/departments/technology/techstandards/>. The website header includes the MCPS logo and the text "Montgomery County Public Schools, ROCKVILLE, MARYLAND". A navigation menu contains links for HOME, ABOUT US, SCHOOLS, COMMUNITY, FOR PARENTS, FOR STUDENTS, and FOR STAFF. The main content area is titled "Maryland Teacher Technology Standards" and includes a sidebar with a table of contents, a main text area with an image of two men, and a list of seven standards.

MARYLAND TEACHER TECHNOLOGY STANDARDS

STANDARDS

- > **1: Information Access, Evaluation, Processing, and Application**
- > **2: Communication**
- > **3: Legal, Social, and Ethical Issues**
- > **4: Assessment for Administration and Instruction**
- > **5: Integrating Technology into the Curriculum and Instruction**
- > **6: Assistive Technology**
- > **7: Professional Growth**

TEACHER CHECKLIST

FREQUENTLY ASKED QUESTIONS

MARYLAND ONLINE TECHNOLOGY ASSESSMENT

- > **Activities**
- > **Participants**

RELATED RESOURCES

Maryland Teacher Technology Standards

The Maryland Teacher Technology Standards were developed by a consortium of Maryland school systems, colleges, and universities to ensure that student teachers, classroom teachers, and school staff use technology proficiently. The standards serve as benchmarks for technology proficiency and provide a guideline for basic technology skills that each educator should possess.

The MTTs were originally created as part of the PT3 grant to ensure that student teacher candidates had adequate technology skills. The MTTs are now being used by grant consortium members to develop the Maryland Online Technology Assessment for Teachers and Administrators. Additionally, local school systems are also designing activities to support the grant and align with county initiatives.

This site provides practical examples of the ways school-based staff can meet MTTs standards and indicators by integrating technology in the classroom and using it as a productivity tool. The standards also assist administrators in recognizing best practices of technology in classrooms throughout their building. For more information, read the [Frequently Asked Questions](#).

Seven Standards

- 1:** Access, evaluate, process and apply information efficiently and effectively
- 2:** A: Use technology effectively and appropriately to interact electronically
B: Use technology to communicate information in a variety of formats
- 3:** Demonstrate an understanding of the legal, social, and ethical issues related to technology use
- 4:** Use technology to analyze problems and develop data-driven solutions for instructional and school improvement
- 5:** Design, implement and assess learning experiences that incorporate use of technology in the curriculum-related instructional activity to support understanding, inquiry, problem solving, communication or collaboration
- 6:** Understand human, equity, and developmental issues surrounding the use of assistive technology to enhance student learning performance and apply that understanding to practice
- 7:** Develop professional practices that support continual learning and professional growth in technology

For more information on the standards and the Maryland Online Technology Assessment, contact [Leticia Eng Barr](#), Instructional Technology Specialist, [Office of Global Access Technology](#).

Updated June 20, 2003 | Maintained by [Webmaster](#)

Content Standards

Curriculum: Montgomery County Public Schools - Netscape

Site Search (Advanced) GO

Site Navigation MCPS Home GO

MCPS Curriculum

FEATURED: Curriculum Revision in MCPS An initiative to establish continuity in the curriculum from grade to grade and consistency from school to school, with students acquiring and applying knowledge and skills toward a recognized standard of performance.

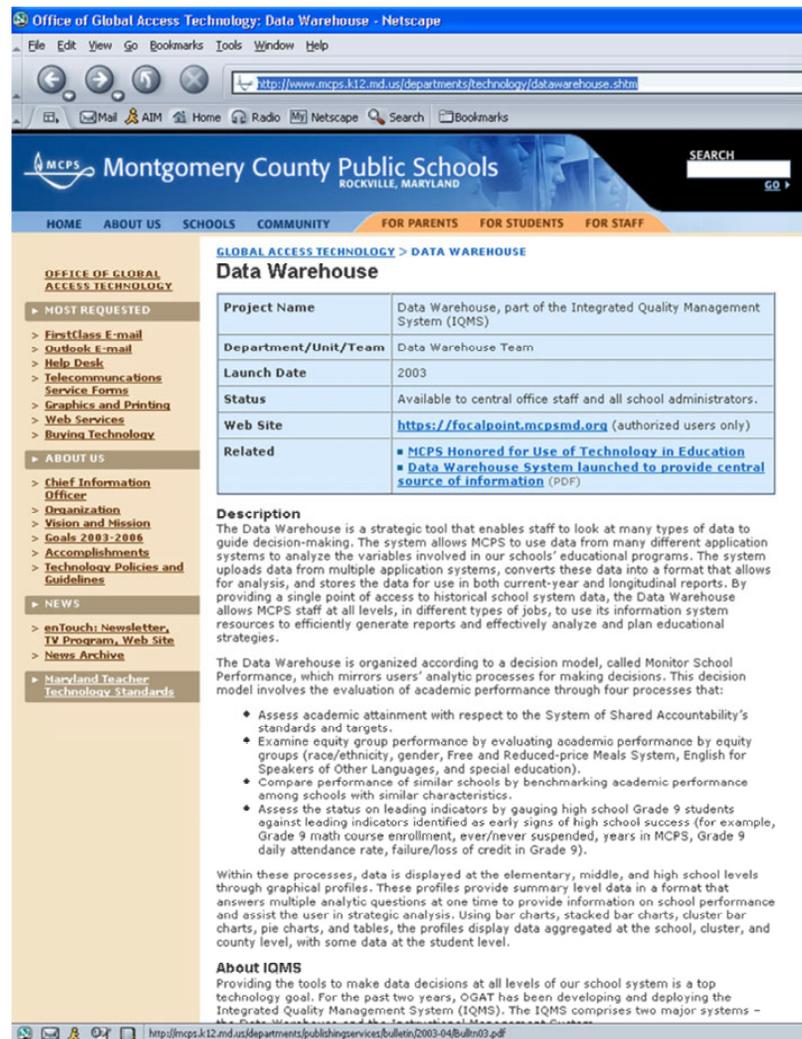
Curriculum and Instruction	Enriched and Innovative Programs	Special Education	Alternative Programs
<p>Office of Curriculum and Instructional Programs</p> <ul style="list-style-type: none"> English/ Language Arts <ul style="list-style-type: none"> Kindergarten - Grade 8 Secondary Mathematics Reading Science <ul style="list-style-type: none"> Event-Based Science Social Studies <ul style="list-style-type: none"> Field Trip Database Special Education Instruction Elementary Instruction Middle School Instruction High School Instruction <ul style="list-style-type: none"> Secondary Literacy Course Bulletin Honors/Advanced Graduation Requirements Student Service-Learning High School Curriculum Framework Arts, Health and Physical Education <ul style="list-style-type: none"> Health Education Safe and Drug-Free Schools Character Education Art <ul style="list-style-type: none"> Visual Arts Center Drama Music <ul style="list-style-type: none"> Choral Instrumental Physical Education Athletics 	<p>Early Childhood Programs and Services</p> <ul style="list-style-type: none"> Title I Head Start Extended Elementary Education Program (EEEP) ESOL/Bilingual Programs Accelerated and Enriched Instruction <ul style="list-style-type: none"> Magnet, Gifted, Foreign Language Immersion, International Baccalaureate Programs <ul style="list-style-type: none"> Elementary Middle High Gifted and Talented/Learning Disabled (GT/LD) William & Mary Language Arts Program PADI Program Career and Technology Education <ul style="list-style-type: none"> Career Futures Community Based Education Information Technology and Business Studies Family and Consumer Science Technical and Technology Education High School Initiatives <ul style="list-style-type: none"> High School Signature Programs Northeast Consortium Downcountry Consortium School Library Media Programs Outdoor Education 	<p>Programs and Services</p> <ul style="list-style-type: none"> Deaf and Hard of Hearing Visually Impaired Physically Disabled Speech and Language Programs School-Based Programs Transition Services Mental Retardation (MR) <ul style="list-style-type: none"> Rock Terrace Center Longview Center Stephen Knolls Center Learning Disabilities (LD) <ul style="list-style-type: none"> Carl Sandburg Center Emotional Disabilities (ED) <ul style="list-style-type: none"> Mark Twain RICA Placement and Assessment <ul style="list-style-type: none"> Child Find Development Evaluation Services for Children (DESC) Infants and Toddlers Program Preschool Education Program - PEP InterACT Autism Program Assessment, Placement, Medical Assistance 	<p>About Special Schools and Alternative Programs</p> <ul style="list-style-type: none"> Adult Education <ul style="list-style-type: none"> Evening High School (113K PDF) SAT Review Course Summer School Alternative Schools <ul style="list-style-type: none"> Calhoun Shelter Home Fleet Street Glenmont Hadley Farms Karma Academy Kingsley Wilderness Project Open Door Phoenix at Emory Grove Center Phoenix at McKenney Hills Center Randolph Academy
Maryland Standards and Assessments		MCPS Instructional Projects and Online Resources	
<p>School Improvement in Maryland web site</p> <ul style="list-style-type: none"> Maryland School Assessment (MSA) in Reading/English Language Arts and Mathematics for Grades 3-8, 10 High School Assessments (HSA) Algebra, English, Government, and Biology for Grades 7-12 Maryland State Content Standards Maryland State Learner Outcomes & Indicators Analyzing MSPAP Data <p>Maryland School Performance Assessment Program (MSPAP)</p> <ul style="list-style-type: none"> MSPAP Web Site Results by School <p>MCPS Assessment Resources</p> <ul style="list-style-type: none"> MSPAP Resource Center High School Assessment Center 		<ul style="list-style-type: none"> Africa Access Review Database: Annotations and critiques of children's materials American Film Institute & MCPS screen education program: A Novel Look at Film —Of Mice and Men Viewing Guide Chesapeake Bay Watershed Digital Vertical File: An in-the-making database of clip art, photos, and more for your web pages, multimedia projects, and other documents! Early Childhood Technology Literacy Grant Electronic Literacy, PreK-12 Interlink Maryland Virtual High School of Science and Mathematics Multicultural Book Database Multimedia Projects: Streaming video and virtual reality Net Investigations Remote Sensing 	

- Curriculum

<http://www.mcps.k12.md.us/curriculum.cfm>

Data Warehouse

- Data Warehouse
<http://www.mcps.k12.md.us/departments/technology/datawarehouse.shtml>
- Limited to central office staff and school administrators



The screenshot shows a Netscape browser window displaying the Data Warehouse page for Montgomery County Public Schools. The page features a navigation menu with options like HOME, ABOUT US, SCHOOLS, COMMUNITY, FOR PARENTS, FOR STUDENTS, and FOR STAFF. The main content area is titled 'GLOBAL ACCESS TECHNOLOGY > DATA WAREHOUSE' and includes a table with project details, a description, and a list of related items.

GLOBAL ACCESS TECHNOLOGY > DATA WAREHOUSE	
Project Name	Data Warehouse, part of the Integrated Quality Management System (IQMS)
Department/Unit/Team	Data Warehouse Team
Launch Date	2003
Status	Available to central office staff and all school administrators.
Web Site	https://focalpoint.mcpsmd.org (authorized users only)
Related	<ul style="list-style-type: none"> ▪ MCPS Honored for Use of Technology in Education ▪ Data Warehouse System launched to provide central source of information (PDF)

Description
 The Data Warehouse is a strategic tool that enables staff to look at many types of data to guide decision-making. The system allows MCPS to use data from many different application systems to analyze the variables involved in our schools' educational programs. The system uploads data from multiple application systems, converts these data into a format that allows for analysis, and stores the data for use in both current-year and longitudinal reports. By providing a single point of access to historical school system data, the Data Warehouse allows MCPS staff at all levels, in different types of jobs, to use its information system resources to efficiently generate reports and effectively analyze and plan educational strategies.

The Data Warehouse is organized according to a decision model, called Monitor School Performance, which mirrors users' analytic processes for making decisions. This decision model involves the evaluation of academic performance through four processes that:

- Assess academic attainment with respect to the System of Shared Accountability's standards and targets.
- Examine equity group performance by evaluating academic performance by equity groups (race/ethnicity, gender, Free and Reduced-price Meals System, English for Speakers of Other Languages, and special education).
- Compare performance of similar schools by benchmarking academic performance among schools with similar characteristics.
- Assess the status on leading indicators by gauging high school Grade 9 students against leading indicators identified as early signs of high school success (for example, Grade 9 math course enrollment, ever/never suspended, years in MCPS, Grade 9 daily attendance rate, failure/loss of credit in Grade 9).

Within these processes, data is displayed at the elementary, middle, and high school levels through graphical profiles. These profiles provide summary level data in a format that answers multiple analytic questions at one time to provide information on school performance and assist the user in strategic analysis. Using bar charts, stacked bar charts, cluster bar charts, pie charts, and tables, the profiles display data aggregated at the school, cluster, and county level, with some data at the student level.

About IQMS
 Providing the tools to make data decisions at all levels of our school system is a top technology goal. For the past two years, OGAT has been developing and deploying the Integrated Quality Management System (IQMS). The IQMS comprises two major systems -



Instructional Management System



- Main Site

<http://www.mcps.k12.md.us/IMS/>

- User Request Form

<http://www.mcps.k12.md.us/IMS/IMSRequest2.pdf>

- By default – each teacher has an account to see *their students only* (no request needed)



Data Shortcomings

- By default – teacher has no access to Data Warehouse
- By default – teacher can only see their current students
- Administrators can see everything

HOW CAN A TEACHER PLAN FOR THE FUTURE?

Break!





Identifying Desired Results



- From your scavenger hunt you also had the chance to visit several background data resources **regarding your school**
- Give **an overview** of the school, student population and academic achievement
- Other possible resources or information not obtainable through the data resources?



“Mock” School Data Interpretation

- **In small groups, prepare a short summary of a "mock" school data interpretation.**
- **We will use XXXXX Elementary School.**
- **Using any or all the sources of data available, prepare a quick overview of your interpretation of this school. For example, what population does this serve? (socio-economic/gender/ethnic/FARMS data) How did this school perform on last year's state technology inventory? Based on last year's performance scores, what areas are of concern for this school? Any other demographics you can pull up (i.e., what's the neighborhood population? what age group? cost of living? educational status? what activities and resources are available for this community).**

See Handout



Mock School



Debriefing



Using Technology to Help !

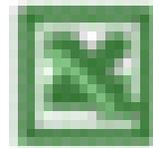


- Excel
 - Grades/Grade book Exercise
 - Differentiated Instructional Strategies



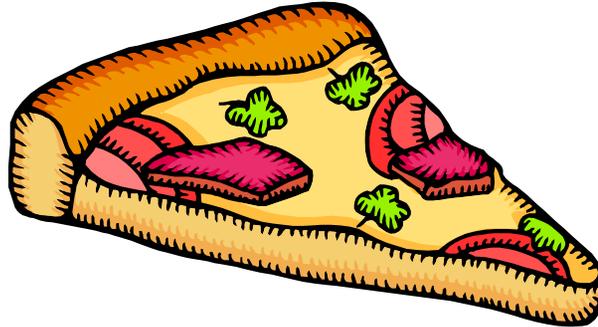
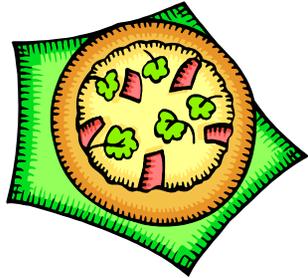
Open Excel

- Educational Technology Outreach Resource Center
- Excel Help
- **Try The Excel Starter Exercise**



www.edtechoutreach.umd.edu

Lunch





With Excel

- Educational Technology Outreach Resource Center
- Excel Help
- **Graphing**
- **Let's Try Some Case Studies**
- **case_studies.xls**

www.edtechoutreach.umd.edu



Excel



- Walk Through With “Advanced Not So Hard Features”
- Work on own
- On-line Post Assessment
- Evaluation Smile Sheet (handout)

Questions?

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