

Introducing...

# **DPI's Education Business Intelligence Solution**

# Today

- DPI's plans for a business intelligence tool
  - Tools
  - Implementation & Timeline
  - Who's involved (for now!)
  - Why business intelligence?
- Introductions
  - Data Warehousing
  - Business Intelligence Tools
- Brief Demo
- Questions

# Data Access & Reporting at DPI

- DPI has purchased a suite of Business Intelligence (BI) tools
  - Data Model & Dashboard from VersiFit Technologies
    - Based in Appleton
    - Serves MMUSD, MPS, Chicago Public Schools, Oregon State, Hawaii, etc.
    - Focus on business intelligence solutions specific to education
    - Contract signed 02/16/11
  - ETL and Reporting tools from Microsoft

# Data Access & Reporting at DPI

- Implementation activities have begun.
  - Architecture
  - Data warehouse
  - Security, access, and administration
  - Communication
  - Analysis and Reporting
- Work groups have been established; membership will change as necessary for future tasks
  - Primary focus: initial deployment

# Implementation Timeline

- August 1<sup>st</sup>, 2011
  - System available for secure (i.e., log in required) use
    - Demo data
    - Supporting resources, training plan
- September 1<sup>st</sup>, 2011
  - System available for secure use populated with district data
  - Characteristics of initial release to be determined
    - Reports/dashboards
    - Professional development

# Why Business Intelligence?

## DPI's Goal

- Provide an integrated educational analysis and reporting system to support
  - School and district staff making decisions to improve student achievement
  - Parents and community members learning more about their schools
  - Accurate and timely data reporting to meet Federal, State, and local requirements
  - Diagnostic and policy-relevant research
- Ultimately, we aim to increase data-informed decision-making at the state, district, school, classroom, and student level

# The VersiFit solution will provide

- Education **data model** structured to enable smart, reporting on education data
- Role based **data access & dashboards**
- **Public & secured reporting** through the same technology to a wide variety of users with a wide variety of data needs
- Pre-packaged business layer and reports
- **Simple ad hoc reporting** functionality (choose a district, choose a demographic)
- **Advanced reporting** capabilities for a limited number of power users at the district and state level to create customizable reports
- Documentation, including professional development resources such as pre-made **workbooks to guide understanding** and use of dashboards and reports

# Defining Business Intelligence

What does a BI solution mean for DPI and the state?

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# What are Business Intelligence Tools?

"A broad category of applications and technologies that gather, store, analyze, share and provide access to data to help enterprise users make better business decisions."

– Gartner

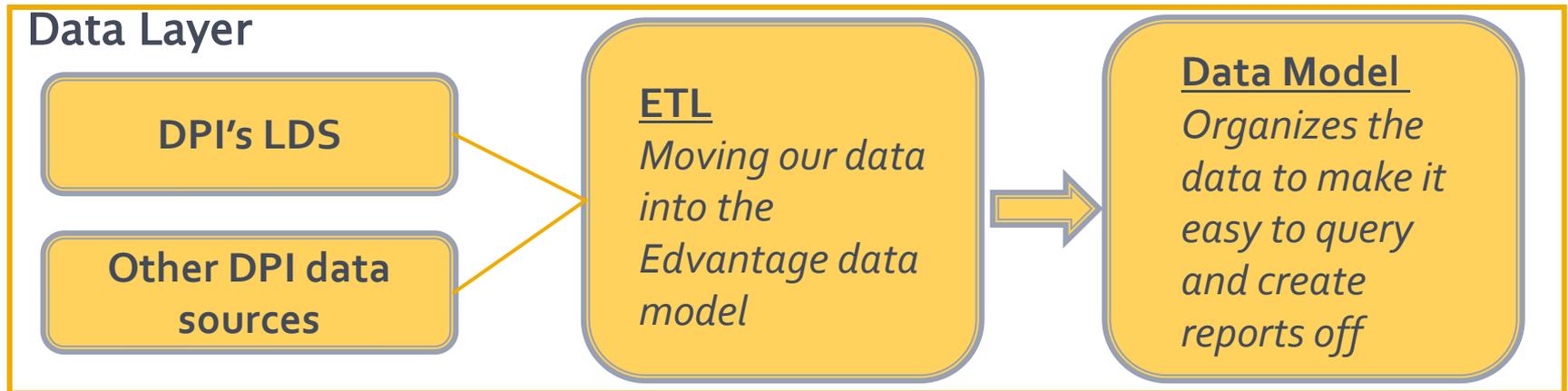


In other words...

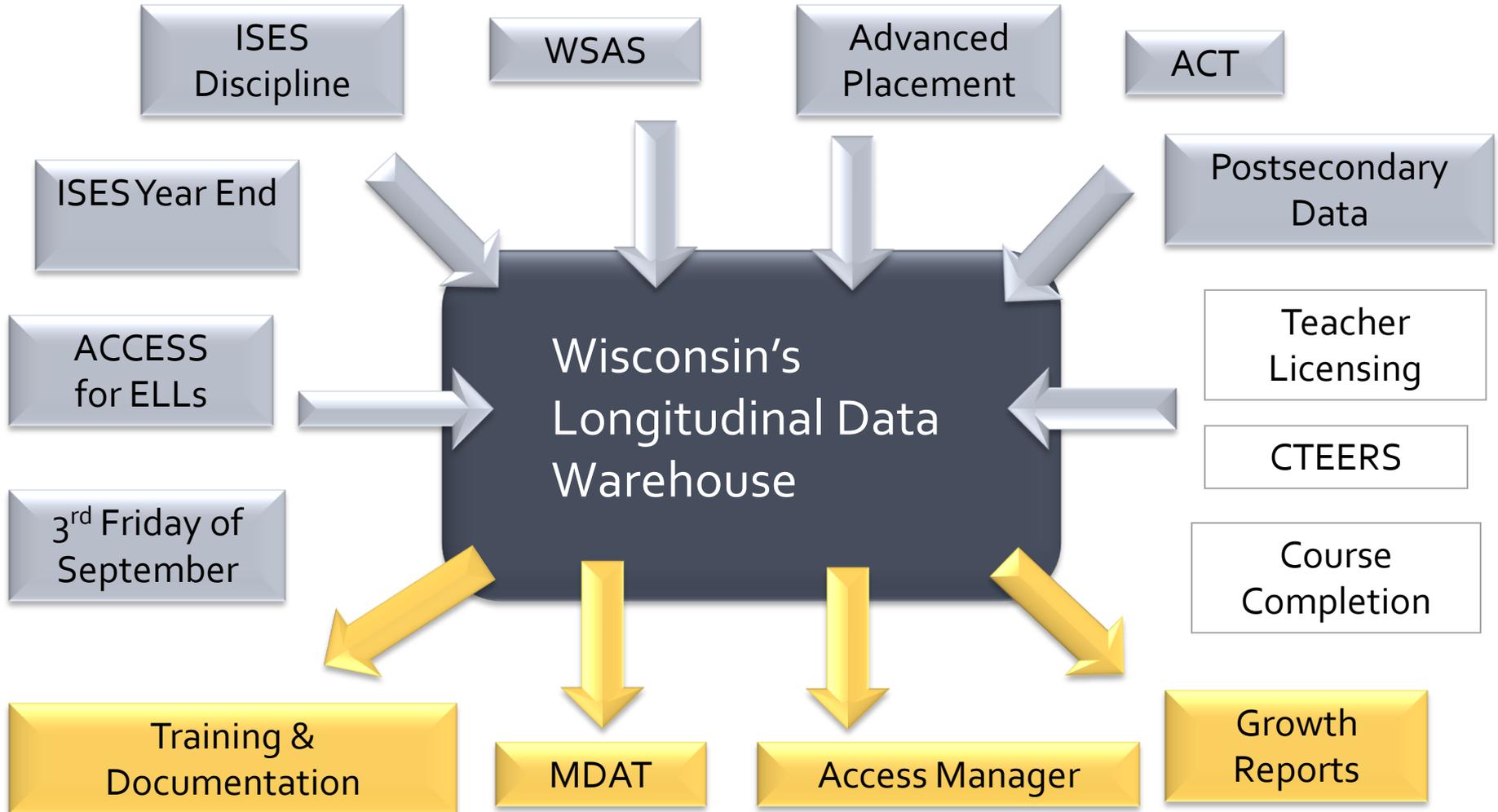


Tools that transform data into information

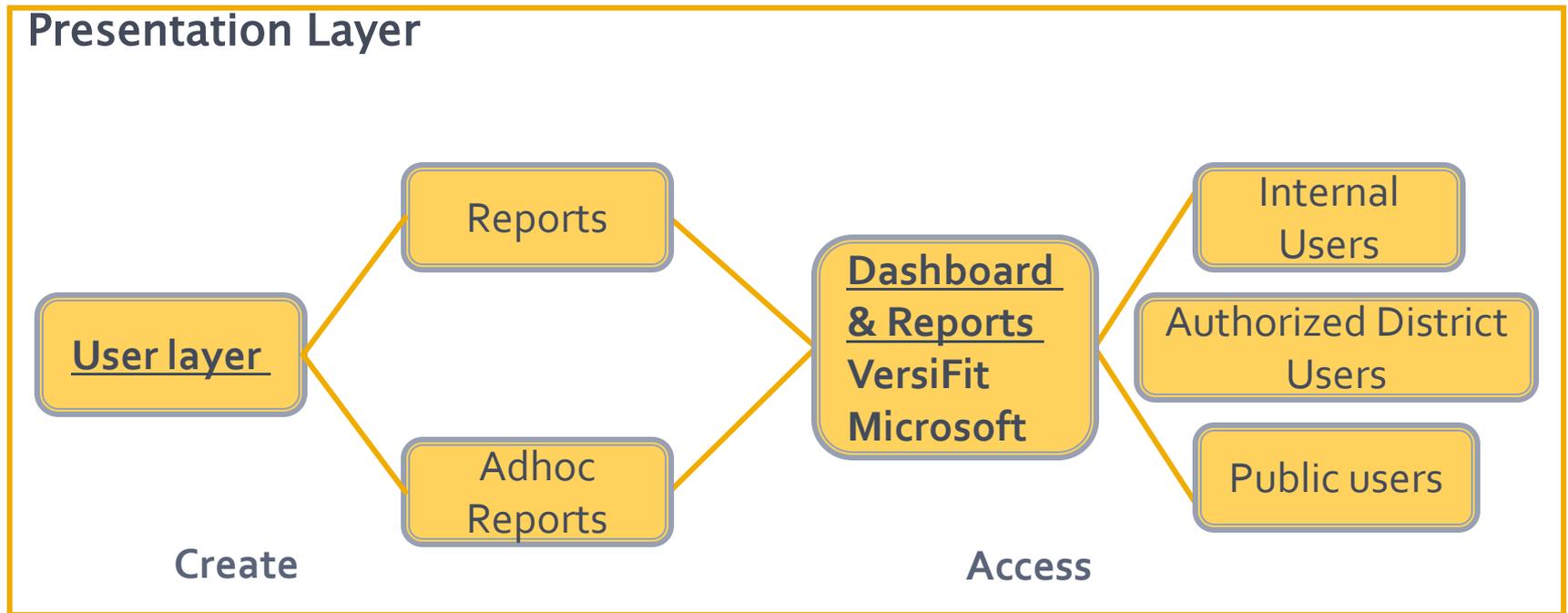
# Data Layer



# Wisconsin's Longitudinal Data System



# Presentation Layer



# Security & Privacy

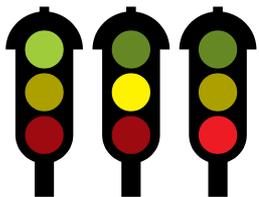
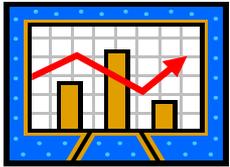
- Security on ALL layers
  - System
  - Authentication
    - User Name and Password
  - Authorization
    - Content
    - Data
    - Functionality
- A secure, well-organized data model and BI reporting system can help encourage proper data use

# Reporting with Business Intelligence

Example Reports & Dashboards

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# Reporting with Business Intelligence



- Many ways to share information
  - Static report viewers and browsers
  - Ad hoc query tools
  - Report writers
  - Modeling applications
  - Scorecard applications
  - Portals and dashboards
- The variety of reports and features will inform school improvement efforts.

Monitor

Analyze

Plan

Why?

What happened?  
What is happening?

What will happen?  
What do I want to happen?



District Dashboard Administration Dashboard



K12 Administration : Administration Dashboard | District Attendance Report | District Software Budget | District System Status

School Year: 2007

District Test Scores

	Math Score		Reading Score	
	Actual	Target	Actual	Target
African American	236.75	300  -21%	238.00	300  -21%
Asian	414.00	300  38%	500.00	300  67%
Hispanic	262.77	300  -12%	238.56	300  -20%
White	310.79	300  4%	332.29	300  11%

District Test Score Detail

Currently Enrolled School	School.Fac Name	Math Scale Score	Reading Scale Score
MAPLE RIDGE MIDDLE SCHOOL		299.33	322.61
OAK PARK HIGH SCHOOL		278.23	273.06
RED CREEK ELEMENTARY		307.73	307.73

District AYP

	Actual	Target	
MAPLE RIDGE MIDDLE SCHOOL			
Meets AYP	347	330	5%
OAK PARK HIGH SCHOOL			
Meets AYP	382	330	16%
RED CREEK ELEMENTARY			
Meets AYP	320	330	-3%

District Absence By School



	Absence Pct		
	Actual	Target	
MAPLE RIDGE MIDDLE SCHOOL	6.68%	6.0%	-11%
F	6.70%	6.0%	-12%
M	6.65%	6.0%	-11%

- Dashboards
- Data Connections
- Libraries
- K12Excel
- PerformancePoint Content
- Recycle Bin
- All Site Content



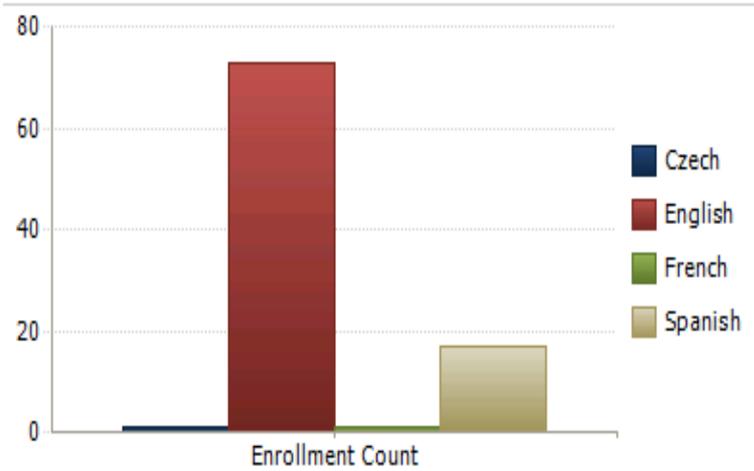
# District Dashboard ▸ District Attendance Report



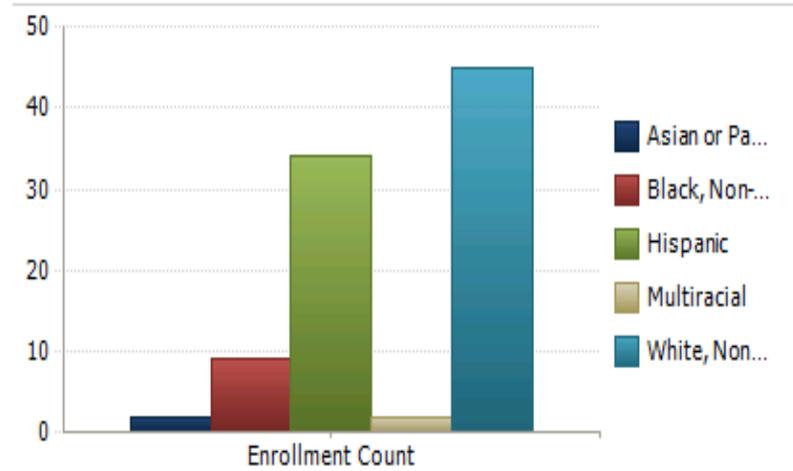
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K12 Administration : Administration Dashboard | **District Attendance Report** | District Software Budget | District System Status

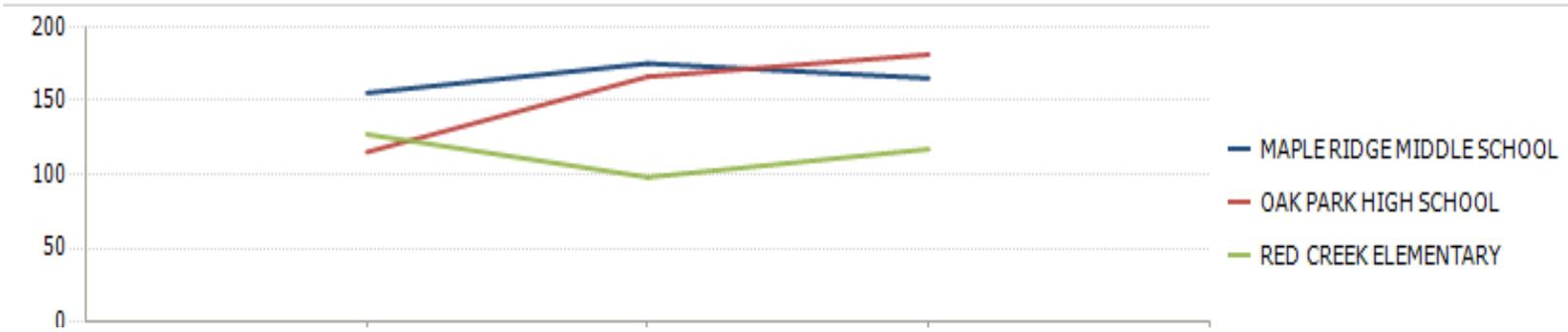
### District Enrollment Primary Language



### District Ethnic Enrollment



### Unexcused Absences Chart by School



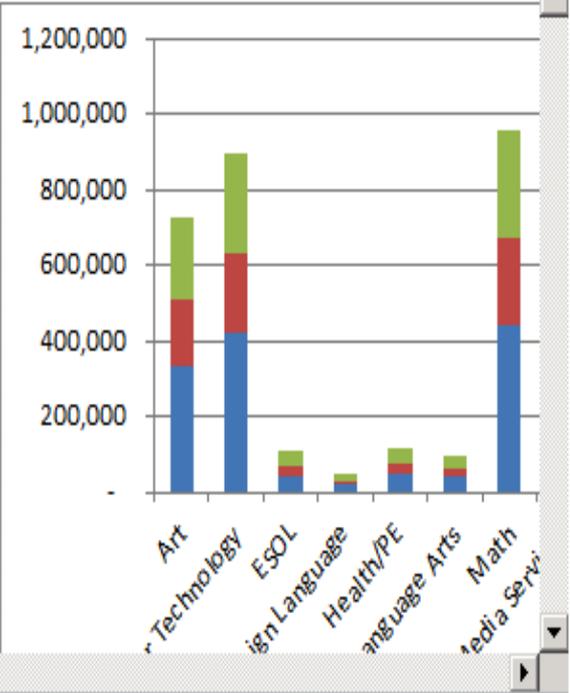


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K12 Administration : Administration Dashboard | District Attendance Report | **District Software Budget** | District System Status

District Software Budget

	A	B	C	D	E	F	G	H	I
Contoso K12 Annual Software Budget									
1									
2	<b>Sum of SchoolBudget</b>								
3		E	HS	MS	Grand Total				
4	+ Art	342,342	171,171	210,672	724,185				
5	+ Career Technology	424,242	212,121	261,072	897,435				
6	+ ESOL	50,778	25,389	31,248	107,415				
7	+ Foreign Language	24,024	12,012	14,784	50,820				
8	+ Health/PE	54,054	27,027	33,264	114,345				
9	+ Language Arts	45,318	22,659	27,888	95,865				
10	+ Math	450,450	225,225	277,200	952,875				
11	+ Media Services	152,334	76,167	93,744	322,245				
12	+ Music	54,054	27,027	33,264	114,345				
13	+ Other	482,664	241,332	297,024	1,021,020				
14	+ Science	279,006	139,503	171,696	590,205				
15	+ Social Studies	180,180	90,090	110,880	381,150				
16	<b>Grand Total</b>	<b>2,539,446</b>	<b>1,269,723</b>	<b>1,562,736</b>	<b>5,371,905</b>				





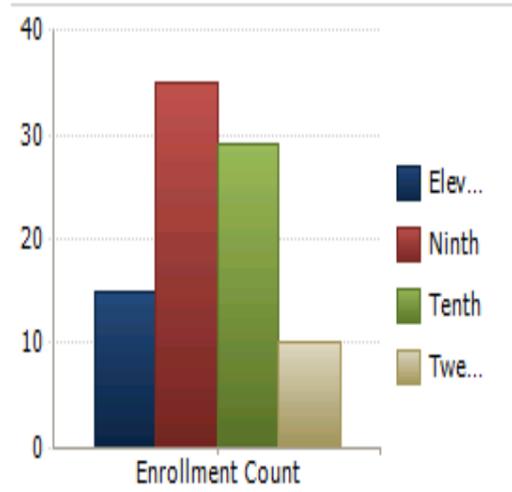
- Dashboards
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K12 Principal Dashboard : **Principal Dashboard** | Oak Brook SAT Ranking | System Status | HS Software Budget

### Principal AYP

	Actual	Target		
Academic Performance	988	900		10%
Attendance Standard	93.66%	94.5%		-1%
Test Participation	94%	90%		4%

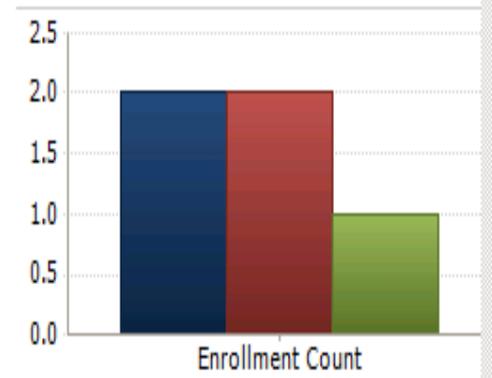
### Total Enrollment



### High School Test Scores

	Math Score			
	Actual	Target		
African American	247.14	300		-18%
Asian	414.00	300		38%
Hispanic	263.77	300		-12%
White	313.60	300		5%

### ESOL Students





I Like It

Tags &  
Notes

Dashboards

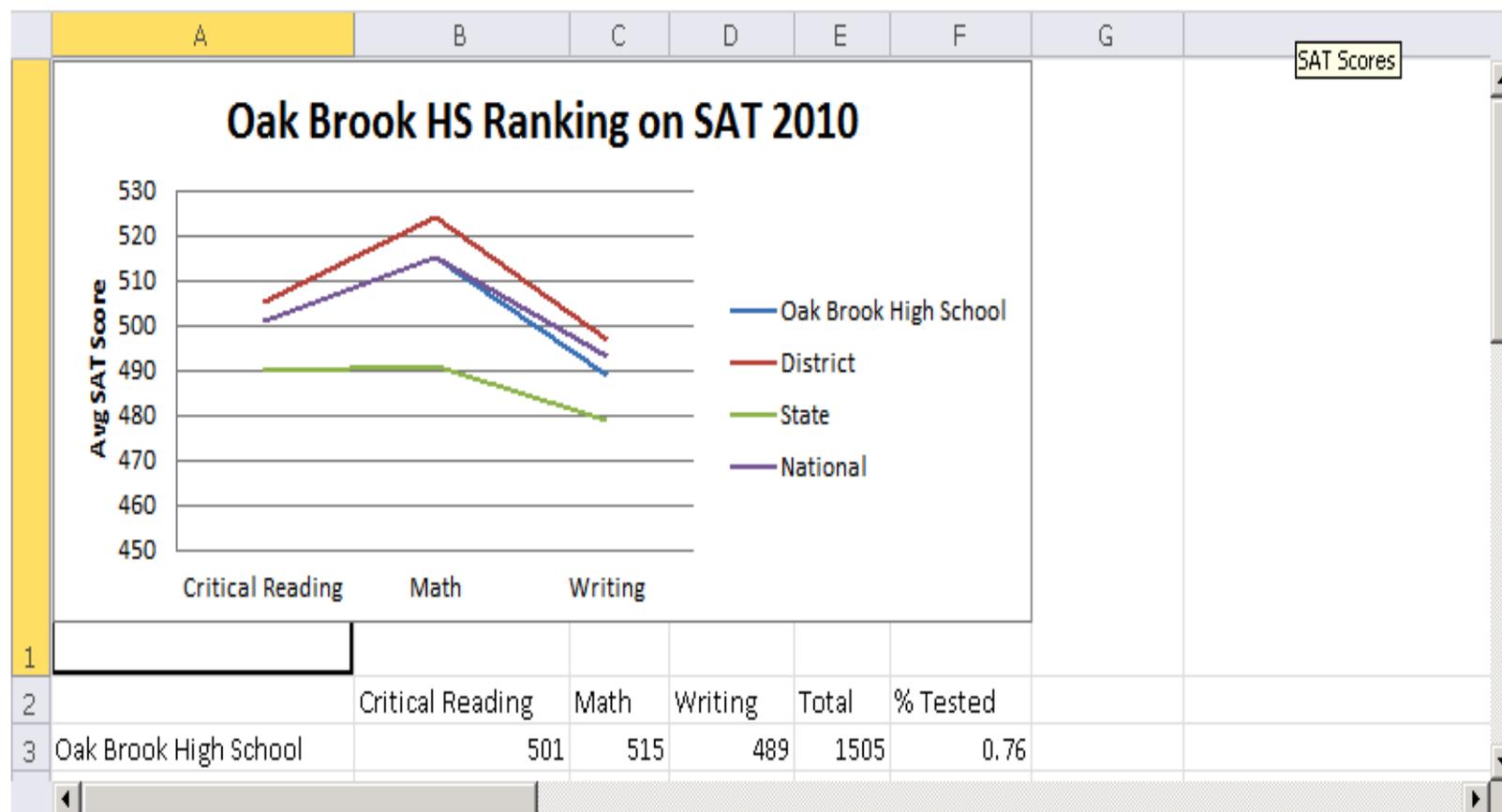
Data Connections

Libraries

K12Excel

PerformancePoint  
Content Recycle Bin All Site ContentK12 Principal Dashboard : [Principal Dashboard](#) | [Oak Brook SAT Ranking](#) | [System Status](#) | [HS Software Budget](#)

## SAT Scores





District Dashboard ▸ Teacher Math KPI Dashboard



- Dashboards
- Data Connections
- Libraries
- K12Excel
- PerformancePoint Content
-  Recycle Bin
-  All Site Content

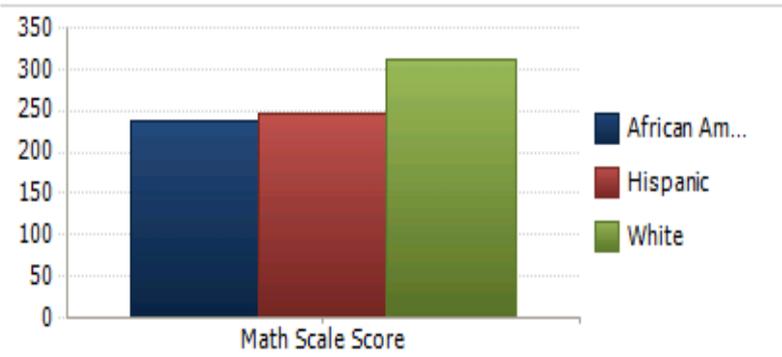
K12 Teacher Dashboard : K12 Teacher Dashboard | **Teacher Math KPI Dashboard**

Math Detail Scorecard

School Year:

	Actual	Target
Math Score KPI	289.97	300  -3%
Algebraic Thinking KPI	4.58	5  -8%
Data Analysis KPI	3.85	5  -23%
Geometry KPI	4.19	5  -16%
Measurement KPI	4.12	5  -18%
Number Sense KPI	5.08	5  2%

Math Test Scores - Ethnic



Math Test Scores: Algebra

Race Desc, Student Full Student Name	Math Scale Score	Math - Algebraic Thinking	Math - Possible Algebraic Thinking Score
African American			
HENRIK P JENSEN	312.00	4.00	14.00
JIAN SHUO WANG	100.00	2.00	14.00
JUNMIN D HAO	288.00	3.00	12.00
KATHERINE BERGER	247.00	3.00	14.00
Hispanic			
BORIS A SCHOU	100.00	1.00	12.00

# Dashboard Demo

- First steps in creating a data portal.
- Customizable
- By Role: District (Administrator), School (Principal), Classroom (Teacher)
- By Subject Area: Assessments, Enrollments, etc.
- Metrics
- Reports
  - Linked from the Dashboard
  - Drillable from a Metric
- Additional information or tools

# Briefing Books

Guided Analysis to Support Professional Development

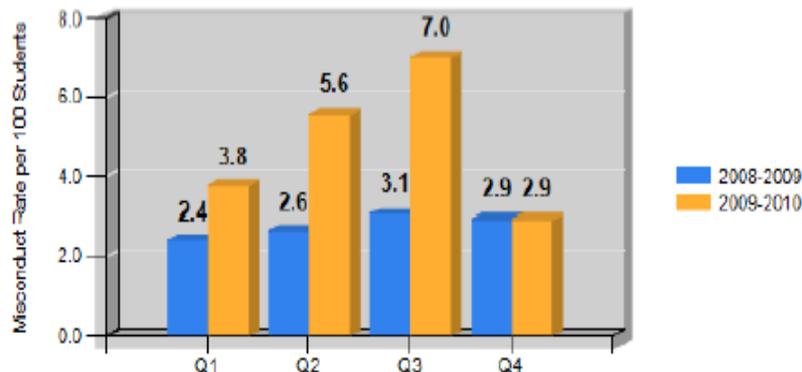
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# Briefing Book

## All High Schools Data Worksheet

### What is our school-wide misconduct rate per 100 students?

Overall School Misconduct Rate (Level 4-6), by Quarter



	Q1	Q2	Q3	Q4
School Rate (2008-2009)	2.4	2.6	3.1	2.9
School Rate (2009-2010)	3.8	5.6	7.0	2.9
Area Rate (2009-2010)				
District Rate (2009-2010)	1.7	2.6	3.6	1.5
School Misconducts (2009-2010)	2370	3555	3076	2752

### Reflections on This Data

- How has our misconduct rate changed since last year?

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

- How has our misconduct rate changed throughout this year?

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

- What other aspects of student behavior may be contributing to misbehavior (eg, low grades, chronic absenteeism, etc.)?

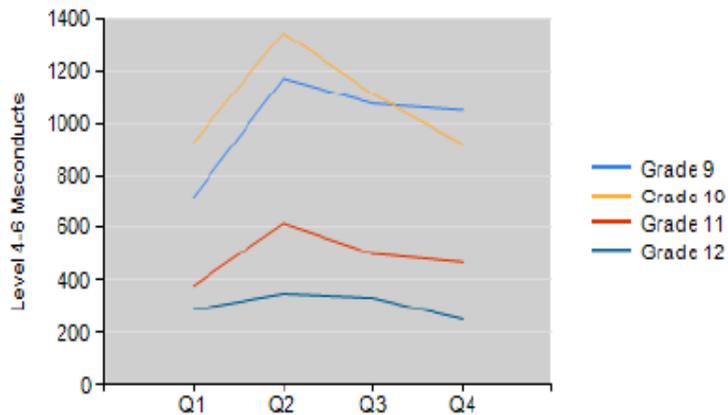
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- \_\_\_\_\_
- \_\_\_\_\_

# Briefing Book

## All High Schools Data Worksheet

At each grade level, how many misconducts changed over time?

Number of Misconducts (Level 4-6) by Grade Level, by Quarter



Grade	Number of Misconducts			
	Q1	Q2	Q3	Q4
<b>9</b>	722	1173	1076	1051
<b>10</b>	930	1347	1112	922
<b>11</b>	377	615	498	466
<b>12</b>	287	349	333	250

### Reflections on This Data

- Do any grades show declining trends? Do any grades show increasing trends?

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

- Are we using any strategies to affect behavior in particular grade levels right now? Are they working?

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

- What new strategies might we use to improve behavior in struggling grade levels?

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**Questions?**

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**Thank you!!**

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