AUSD Board Presentation
District Mathematics Initiative Updates

April 27, 2010

Phil Gonsalves, ACOE, CSUEB

CALIFORNIA STATE UNIVERSITY EAST BAY

1

Updates on AUSD Mathematics Initiatives

- Summary of professional development activities for teachers and administrators
- Strategic and Intensive Mathematics Initiative-Phase 2 (SIMI-2) CaMSP Research Cohort grant
- Summer PD opportunities for AUSD teachers
- Planning 2010-11 mathematics initiatives
- Mathematics Achievement Academies (MAA)

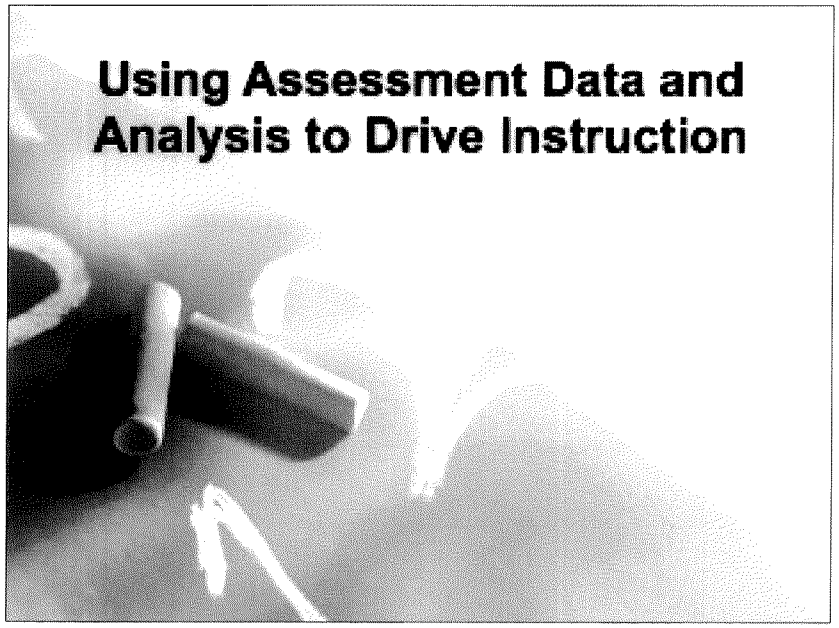
2

Summary of 2009-10 PD Activities

- After school PD sessions focused on:
  - Developing instructional mitigations based on trimester assessment data
  - Revised, and posted online, Grades K-Algebra Pacing Guides for 2010-11
  - Revised Grades K-Algebra assessments
  - 25 AUSD teachers attended the Saturday, October 24 PD
  - 29 AUSD teachers attended the Saturday, March 13 PD
- Support for Principals included:
  - Developing instructional mitigations based on trimester assessment data
  - Elementary site visits and "walk-throughs"

3

Using Assessment Data and Analysis to Drive Instruction

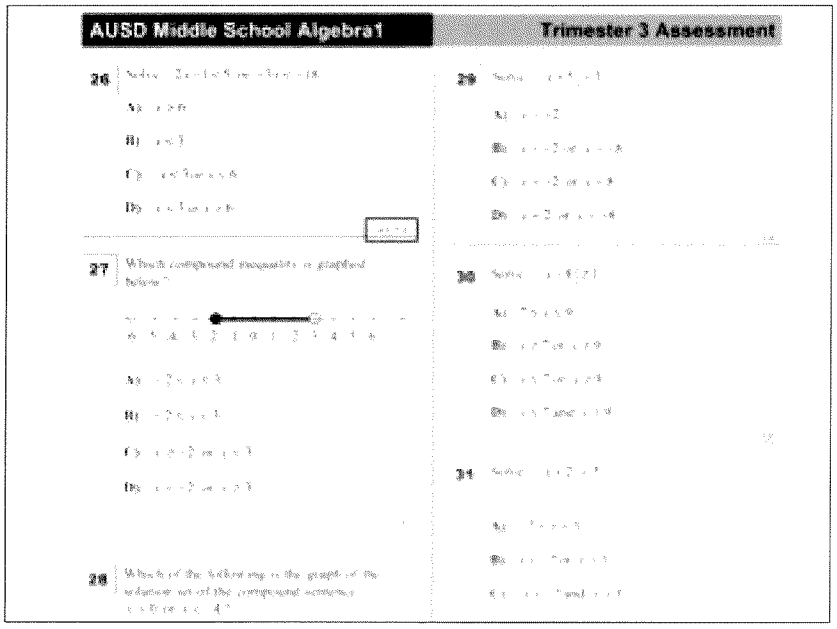


4

Appropriate Use of Formative Assessments:

- To inform practice
- To develop and implement instructional mitigations
- To develop and implement best practices specific to the content
- To inform professional development needs and focus
- To examine general district/site trends — not to use for any type of evaluation

5



6

Item Analysis
Distribution Of Answers

Test Name: AUSD 5th Grade Fall Math Benchmark — Test Date: 11/9/2009

Subject: Math — Test Grade: 05

Question: 1 Question 1

Test Ref:

Number Sense 1.3 — 1.3 Understand and compute positive integer powers of nonnegative integers; compute examples as repeated multiplication.

Correct Answer	Answer	Count	Percent
✓	(A)	588	82.1%
	(B)	20	2.9%
	(C)	95	13.8%
	(D)	7	1.0%
	(E)	1	0.1%
	No Answer	5	0.0%

Question: 2 Question 2

Test Ref:

Number Sense 1.4 — 1.4 Determine the prime factors of all numbers through 50 and write the numbers as the product of their prime factors by using exponents to show multiples of a factor (e.g., $24 = 2 \times 2 \times 2 \times 3 = 23 \times 3$)

Correct Answer	Answer	Count	Percent
	(A)	25	3.6%
	(B)	11	1.6%
✓	(C)	638	92.3%
	(D)	17	2.5%
	No Answer	0	0.0%

7

AUSD Grade 2 Trimester 1 Assessment #6 (n = 737)

6. Find the sum.

$$\begin{array}{r} 67 \\ +\ 14 \\ \hline \end{array}$$

0.3% (2 students) no answer

711 — 81 — 71 — 93

(A) 3.8% — (B) 82.8% key — (C) 11.7% — (D) 1.5%

Possible mitigations:

$$\begin{array}{r} 67 \\ +\ 14 \\ \hline 11 \leftarrow 7+4 \\ +\ 70 \leftarrow 60+10 \\ \hline 81 \end{array}$$

$$\begin{aligned} &60+7+10+4 \\ &=70-7-4 \\ &=70+7+3+1 \\ &=70+10+1 \\ &=80+1=81 \end{aligned}$$

What percent of the students chose A, B, C and D?

What possible errors might students have made to obtain each of the incorrect responses?

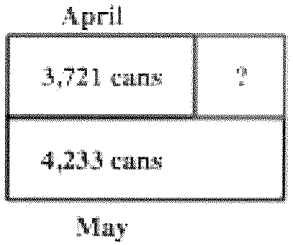
8

AUSD Grade 3 Trimester 1 Assessment #21 (n = 641)

21 In April the school collected 3,721 cans for recycling. In May the school collected 4,233 cans. How many more cans were collected in May than in April?

A	412	5.1%
key B	512	66%
C	1,512	12.5%
D	7,954	16.1%

0.3% (2 students) no answer



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AUSD Grade 5 Trimester 1 Assessment #23 (n = 689)

23 Find the answer in simplest form

A	$\frac{12}{80}$	18.4%
B	$\frac{6}{40}$	7.1%
key C	$\frac{3}{20}$	64.7%
D	$\frac{3}{10}$	8.9%

$$\frac{3}{8} \times \frac{4}{10}$$

$$= \frac{3 \cdot 2 \cdot 2}{2 \cdot 2 \cdot 2 \cdot 2 \cdot 5}$$

$$= \frac{3}{20}$$

0.9% (6 students)
no answer

What percent of the students chose A, B, C and D?

What possible errors might students have made to obtain each of the incorrect responses?

10

AUSD Grade 8 Trimester 1 Assessment #10 (n = 592)

10 Solve $\frac{4x}{5} - 2 = 0$

A)	$x = -12$	3.9%
B)	$x = -2.5$	11.5%
key C)	$x = 2.5$	77.4%
D)	$x = 8$	7.3%

$$\frac{4x}{5} - 2 = 0$$

$$\frac{4x}{5} = 2$$

$$\left(\frac{5}{4}\right)\frac{4x}{5} = \left(\frac{5}{4}\right)2$$

$$x = \frac{5}{2} = 2.5$$

What percent of the students chose A, B, C, and D?

Which ~~possible~~ answer ~~errors~~ might students have made to obtain each of the incorrect responses?

$$\frac{4x}{5} = 2$$

$$x = 2.5$$

11

General Trends/Patterns:

- Need for professional development in the primary grades on rounding
- Need for ongoing professional development for Grades 3-5, and more intensive professional development for Grades 6-8 on implementing best practices — focusing on decomposition, relational thinking & use of alternative algorithms
- Eliminate the number of students omitting questions – direct instruction and monitoring

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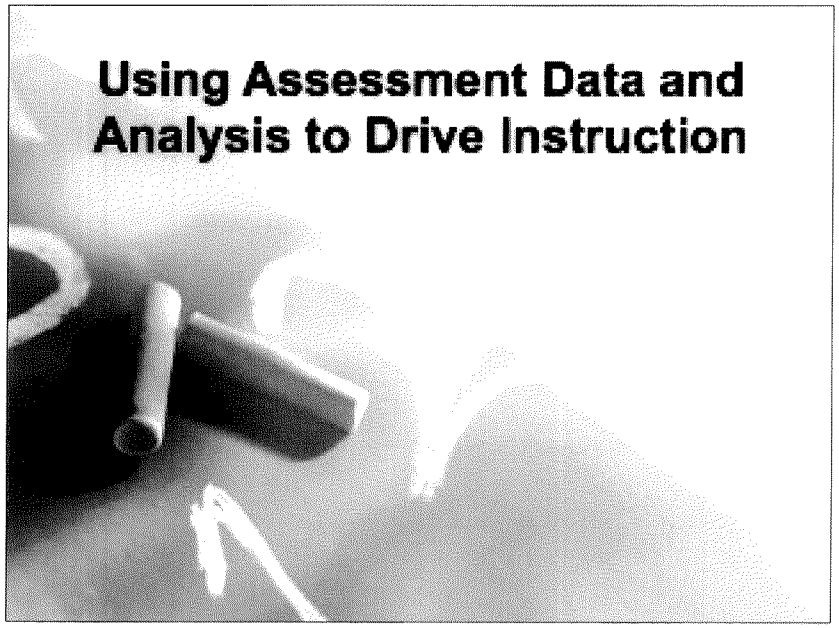

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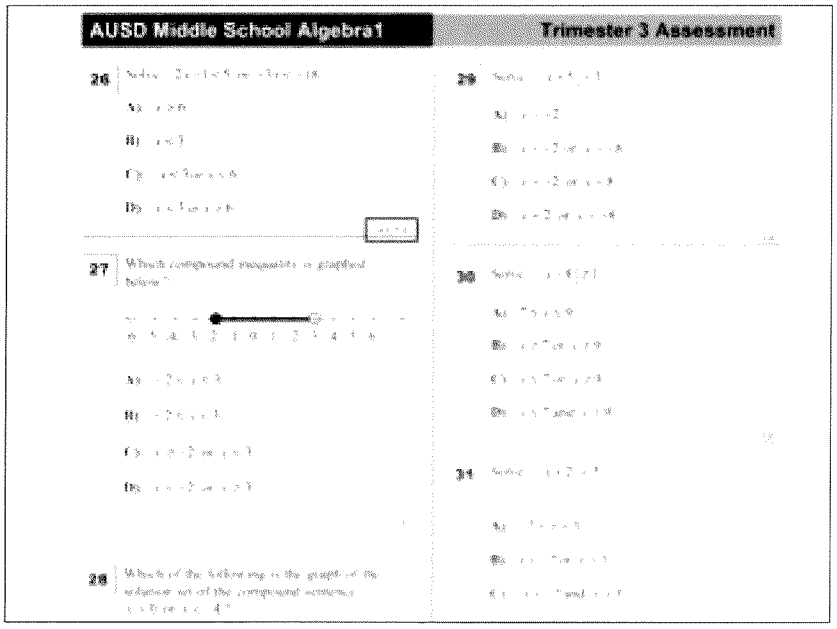

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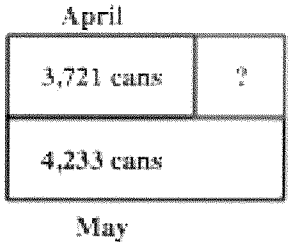

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SIMI-2 CaMSP Research Cohort Grant Updates

- 2010-11 is the final year of the grant
- 2010 Summer Institute – working with district and site administration to increase the number of AUSD participants from previous years and on teacher selection
- SIMI-2 was recommended by CDE to the USDE as a model MSP project

  "the most rigorous and innovative professional development model that could be shared with other projects as models that could potentially be replicated in other areas"

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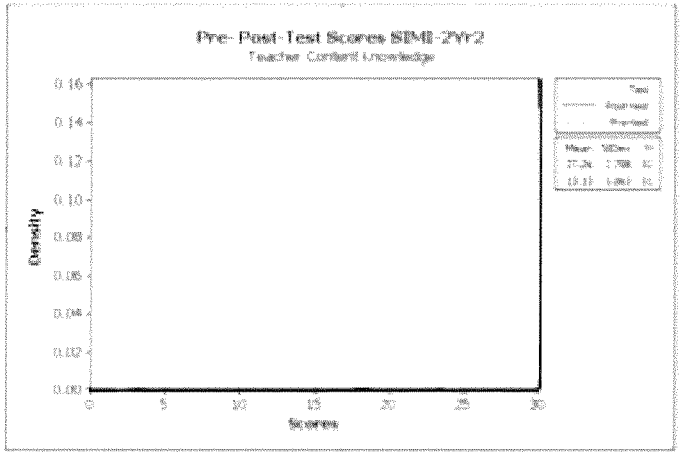
SIMI-2 Data on Strengthening Teacher Content Knowledge



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Summary of Summer 2010 PD Opportunities For AUSD Teachers

- Increase number of SIMI-2 participants
- ACOE sponsored 3-Day Secondary Mathematics Institute
- ACCLAIM Institutes

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Planning for AUSD 2010-11 Mathematics Initiatives

- Based on feedback from teachers & administrators:
  - Provide coaching support to all elementary schools:
    - Aimée Penn, Katherine Crawford, 2 additional AUSD elementary coaches
    - Rick Doran MS coach, Joy Sigmon HS coach
  - Increase the number of elementary teachers receiving coaching support
- Continue with MS and HS coaches
- ACOE contribution, specialist Hilda Aguilar, to secondary coaching

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AUSD Grade 5 Summer Mathematics Camps

- Two one-week mathematics camps
- 50 entering 5th grade students
- Taught by Aimée Penn
- Sponsored by MDC@ACOE
- Starting June 28 and July 12 @ Paden
- Working with district and site administration on selection of students

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Mathematics Achievement Academies (MAA):

- Two sections of a 5-week summer algebra academy for incoming 9th graders
- Taught by AUSD teachers at EHS and coordinated by Shayne Fleming
- Two CSUEB mentors for each section
- Sponsored by MDC@ACOE and CSUEB
- June 21 – July 23
- 2011 — 4 sections (2 Algebra, 2 Geometry)
- 2012 — 6 sections (2 Algebra, 2 Geometry, 2 Algebra II)
- Working with district and site administration on selection of students

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