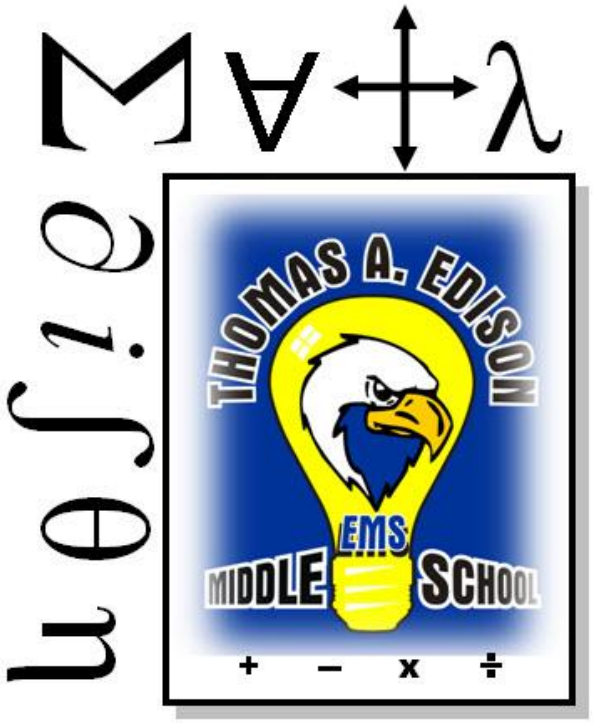

DARTS

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HANDOUTS

DARTS Components & Summary Memo

Los Angeles Unified School District

Edison Middle School

TO: Math Teachers
FROM: Heather Karuza

SUBJECT: DARTS MODEL

The DARTS Model consists of 4 major components:

- **Weekly Diagnostic & Data**
  - Consists of 10 questions multiple choice questions that follow a specific progression.
  - To be given every Tuesday (unless otherwise specified).
  - The diagnostic should be given in a CST-like testing environment.
  - The data is to be submitted by the end of the day Tuesday via the Google Spreadsheet.
  - Teachers are to review the data to see which items/concepts need re-teaching or misconceptions which need to be addressed.
  - Teachers are to instruct students to chart each diagnostic score in their planner using a line-graph.
  - Diagnostics should be kept in the students' portfolios.

- **Rescue Assignment**
  - If a student misses (or does not answer) a problem on the *Diagnostic*, s/he will do ONLY the corresponding set of questions on the *Rescue Assignment*.
  - The *Rescue Assignment* is distributed after the *Diagnostic* is corrected and is due before the following Tuesday to the teacher.
  - It is the teacher's responsibility to collect, check, and review the *Rescue Assignment*.

- **Translations**
  - 10 *Translations* are to be assigned each week. The teacher may choose to split them up a few per day or all at once.
  - *Translations* are NOT to be solved; simply written in mathematical symbols.
  - There can be several correct ways to write a translation:
    - Consider arithmetic properties and discuss why some answers can be equivalent
    - Discuss the different ways to write "times" or "divided by."
    - If a particular variable is not specified, it is up to the students, and they may choose any letter. The teacher may want to discuss the most commonly used letters.

- **Story Problems**
  - *Story Problems* must be given AT LEAST once per week (ideally twice).
  - The students must follow the common graphic organizer (in the planner) every time.
  - Student work/solutions should be shared and reviewed with the class (recommended the same day or the day after), and are encouraged to be posted around the room.
  - To be graded with the common rubric (in the planner).

This model is in addition to the regular curriculum being taught (see the MIG online). All components are done on a weekly basis, and address key standards. Mastery of these components will lead to proficiency. Should you have any questions, you are welcome to contact Heather Karuza.

Name: _____ **Class:** _____ **Date:** _____ **ID: A**

Algebra Diagnostic #2 (Sample)

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. If $x = -4$ and $y = 6$, then $xy - x =$

a. –20
b. –24.
c. 20
d. 24

____ 2. Which property is used in the equation below?

$$7(3z + 2) = 21z + 14$$

a. Associative Property of Addition
b. Commutative Property of Addition
c. Distributive Property
d. Inverse Property of Addition

____ 3. Solve for the value of z: $z - 10 = -2$

a. –12
b. 8
c. –8
d. 12

____ 4. What value of x makes the equation below true?

$$\frac{x}{3} + 5 = 14$$

a. 3
b. 9
c. 27
d. 57

____ 5. $\frac{1}{5} + \frac{1}{4} =$

a. $\frac{9}{20}$
b. $\frac{2}{20}$
c. $\frac{2}{9}$
d. $\frac{1}{9}$

____ 6. Which expression is equivalent to $-(-f)$?

a. $-f$
b. $-\frac{1}{f}$
c. $\frac{1}{f}$
d. f

____ 7. If $\frac{5}{3}a = 1$ is a true statement, what is the value of a?

a. $\frac{5}{3}$
b. $\frac{3}{5}$
c. $-\frac{3}{5}$
d. $-\frac{5}{3}$

Name: _____ **ID: A**

____ 8. Simplify: $-13+3=$

a. -10
b. 16
c. -16
d. 10

____ 9. Simplify: $-2-3=$

a. 1
b. 5
c. -1
d. -5

____ 10. Translate: Thirty-five less than the product of four and a number.

a. $35-4n$
b. $n-35\cdot 4$
c. $4n-35$
d. $n(4-35)$

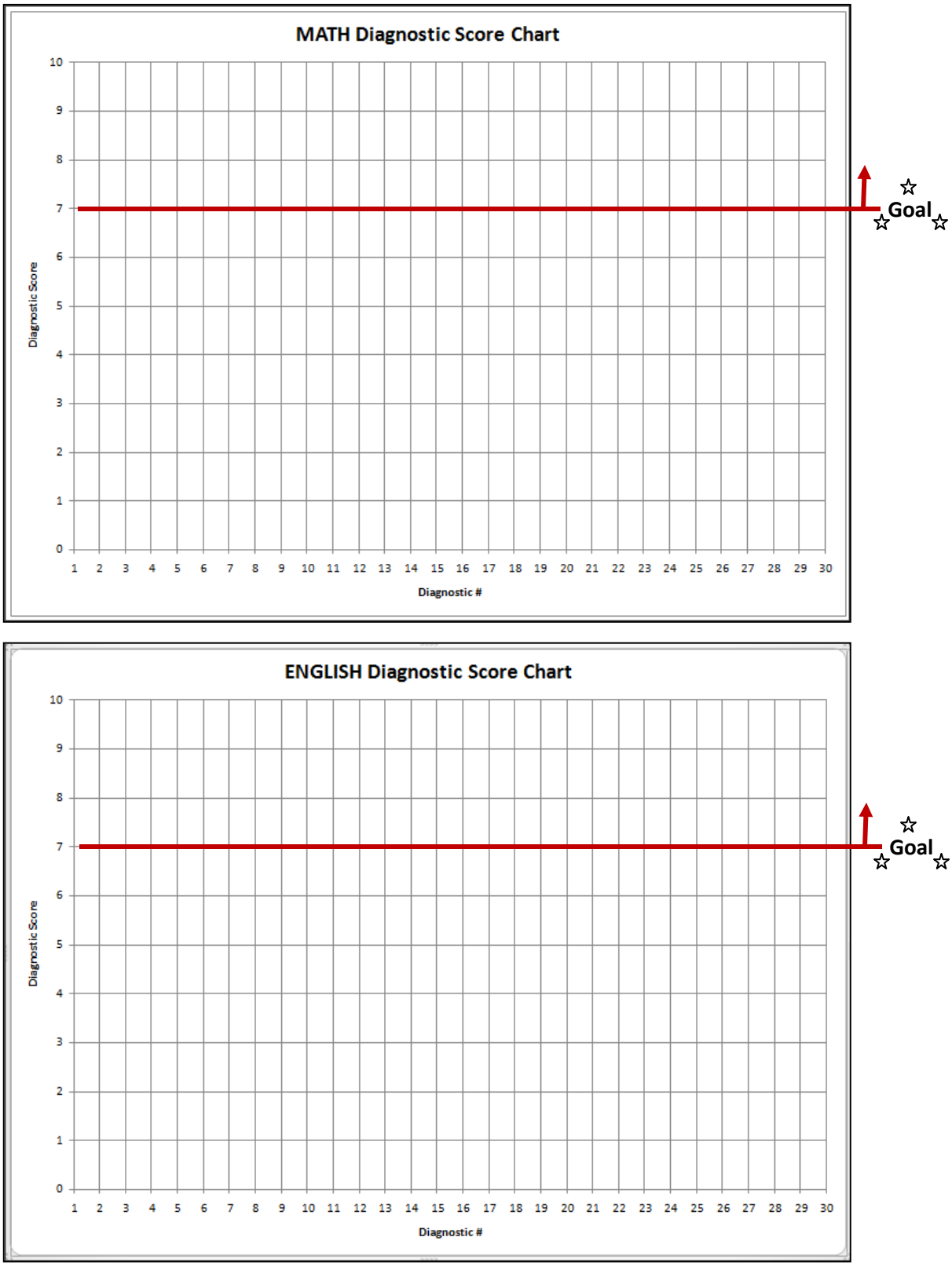
Data

Diagnostic #2: 09/28/10	Content Area	Standard	Total # of students who answered...				Best Distractor	% Students Correct
? Number			a	b	c	d		
1	Evaluate	7AF1.2	219	11	79	7	c	69.30%
2	Distributive Property	7AF1.3	39	15	236	26	a	74.68%
3	Solve 1-Step Eqtn (neg)	7AF4.1	59	208	31	19	a	65.62%
4	Solve 2-Step Eqtn	7AF4.1	21	58	235	1	b	74.60%
5	Add Fractions (unlike)	7NS2.2	251	30	28	7	b	79.43%
6	Opposite	Alg. 2.0	83	59	21	150	a	47.92%
7	Reciprocal	Alg. 2.0	69	172	43	33	a	54.26%
8	Add Integers	7NS1.2	254	4	33	24	c	80.63%
9	Subtract Integers	7NS1.2	40	30	15	231	a	73.10%
10	Translation	7AF1.2	92	12	201	12	a	63.41%
Total # of			316.					68.30%

Diagnostic #2: 09/28/10	Content Area	Standard & Week #	Total % of students who answered...					% Students Correct
? Number			a	b	c	d		
1	Evaluate	7AF1.2	69%	3%	25%	2%		69.30%
2	Distributive Property	7AF1.3	12%	5%	75%	8%		74.68%
3	Solve 1-Step Eqtn (neg)	7AF4.1	19%	66%	10%	6%		65.62%
4	Solve 2-Step Eqtn	7AF4.1	7%	18%	75%	0%		74.60%
5	Add Fractions (unlike)	7NS2.2	79%	9%	9%	2%		79.43%
6	Opposite	Alg. 2.0	27%	19%	7%	48%		47.92%
7	Reciprocal	Alg. 2.0	22%	54%	14%	10%		54.26%
8	Add Integers	7NS1.2	81%	1%	10%	8%		80.63%
9	Subtract Integers	7NS1.2	13%	9%	5%	73%		73.10%
10	Translation	7AF1.2	29%	4%	63%	4%		63.41%
Overall								68.30%

11.

Diagnostic Score Charts

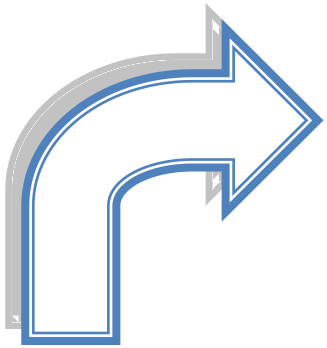


Graph using a dot or line graph.

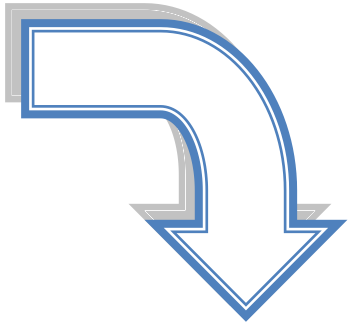
Content Grade Level: _____ Name:_____

Date: _____ Diagnostic #:_____

Directions *(preferably in grade-alike content specific teams)*: Use the diagnostic data to identify the lowest performing content topic. Then come up with specific steps for re-teaching: when you will address it (warm-up, review time), how (mini-lesson), which lesson will be used, etc. Be sure to notice any blatant misconceptions the students have overall.

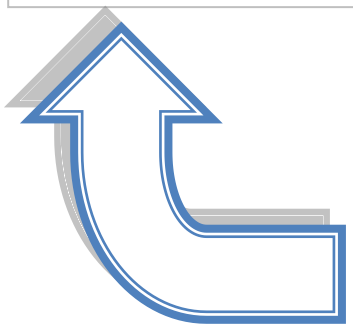


Define the Problem *(What is it we want students to achieve? Which topics did the students struggle with the most?)*:

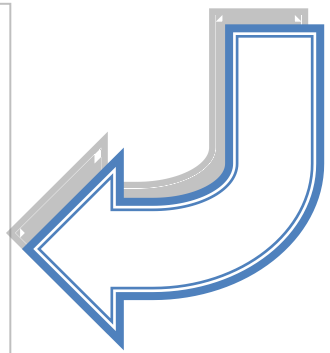


Problem Analysis *(What is the biggest misconception? What do students already know?)*:

Evaluation *(After the next diagnostic, was there improvement? Evaluate and discuss the effectiveness of the implementation.)*:



Implementation *(What will be done about it? What lesson will you use? When will you re-teach this concept?)*:



Name:_____
Period_____ Date_____

Sample Algebra Rescue

Due on or Before: Next Diagnostic

1. Evaluate each of the following, given $a = -2$ and $b = 5$:
    1. $ab =$
    2. $b - a =$
    3. $a - 2b =$
    4. $ab - a =$

2. Is $3(4 + 9)$ equal to $3(4) + 3(9)$? Why? Which property explains your answer?

3. Solve for the given variable:
    1. $x - 8 = -5$
    2. $-2 + z = 13$
    3. $0 = -6 + a$
    4. $b - 9 = -49$

4. What value of *t* makes the equations below true?
    1. $\frac{t}{5} + 9 = 11$
    2. $-3 + \frac{t}{3} = 12$
    3. $\frac{t}{4} - 21 = 7$
    4. $\frac{-t}{2} + 14 = -1$

5. Simplify the following:
    1. $\frac{1}{2} + \frac{1}{3} =$
    2. $\frac{1}{5} + \frac{3}{4} =$
    3. $\frac{2}{9} + \frac{1}{3} =$
    4. $\frac{4}{7} + \frac{3}{2} =$

Name:_____
Period_____ Date_____

6. What is the definition of an *opposite*?

   What is the *opposite* of each of the following?
   1. $\frac{2}{3}$
   2. $-\frac{6}{5}$
   3. $-f$
   4. -2

7. What is the definition of a *reciprocal of a* number?

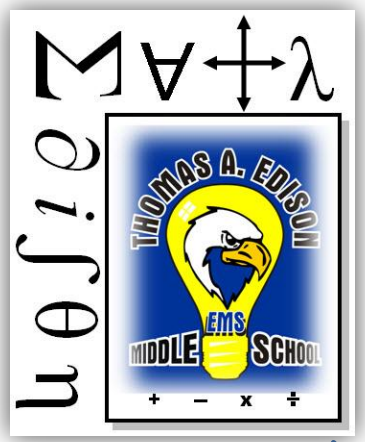
   What is the *reciprocal* of each of the following?
   1. $\frac{5}{3}$
   2. -4
   3. $\frac{1}{f}$
   4. $-x$

8. Simplify the following:
   1. $-4 + 1 =$
   2. $-20 + 5 =$
   3. $-5 + 20 =$
   4. $3 - 17 =$

9. Simplify the following:
   1. $-6 - 8 =$
   2. $-62 - 83 =$
   3. $-74 - 18 =$
   4. $-3 - 3 =$

10. Translate each of the following:
    1. Seven less than a number is twenty
    2. Nine less than five times *x*
    3. One less than the number of marbles
    4. Twenty-two less than the product of six and a number

Diagnostic & Rescue Flow Chart



Provide access to Google Docs by helping teachers create a Google Account

Set up Master Spreadsheet (Annually)

Create Diagnostics & Rescue Assignments (Weekly)

Make Copies & Distribute
Make Diagnostic Tally Google Spreadsheet

Administer Diagnostic to Students

Collect/Input Data

Analyze Data, Grade Diagnostics, Assign Rescue (Next Day)

Modify Lesson Plan, Reteach, Address Misconceptions & Common Mistakes

Teacher Responsibilities

If Diagnostic questions reach 70% proficiency, they are replaced with the next topic/skill in the sequence. If not, then the question is modified and repeated on the next Diagnostic to re-test. This informs teachers whether or not re-teaching is working.

Sample Translations

1. a number is at least ninety
2. the speed limit is seventy mph
3. the absolute value of the sum of twice a number and five is eight
4. the absolute value of three times a number, minus four is negative one
5. a solution set of one and negative four
6. the maximum a score can be is twenty
7. a number
8. an even number
9. an odd number
10. an even number greater than one hundred
11. the sum of two consecutive integers
12. the sum of three consecutive integers is eighty-one
13. the perimeter of a rectangle with length l and width w
14. the perimeter of a rectangle with sides x and three less than x
15. the perimeter of a rectangle where the length is one less than twice the width
16. the sum of three consecutive odd integers
17. fifteen nickels and quarters total $2.75
18. sixteen cows and chickens have forty-two legs
19. the sum of x and four times y is equal to twenty
20. two thirds of a number is negative three fifths
21. the difference of m and thirteen is identical to the square of m
22. the product of a and b is more than three times the sum of a and eight
23. forty-one increased by twice a number is the same as three times the sum of that number and seven
24. the distance between a number and its opposite
25. the sum of a number and half its additive inverse

Sample Translation Key

1. a number is at least ninety $x \geq 90$
2. the speed limit is seventy mph $s \leq 70$
3. the absolute value of the sum of twice a number and five is eight $|2x + 5| = 8$
4. the absolute value of three times a number, minus four is negative one $|3x| - 4 = -1$
5. a solution set of one and negative four $\{1, -4\}$
6. the maximum a score can be is twenty $s \leq 20$
7. a number x
8. an even number $2x$
9. an odd number $2x + 1$ or $2x - 1$
10. an even number greater than one hundred $2x + 100$
11. the sum of two consecutive integers $x + (x + 1)$
12. the sum of three consecutive integers is eighty-one $x + (x + 1) + (x + 2) = 81$
13. the perimeter of a rectangle with length *l* and width *w* $P = 2l + 2w$
14. the perimeter of a rectangle with sides *x* and three less than *x* $P = 2(x) + 2(x - 3)$
15. the perimeter of a rectangle where the length is one less than twice the width $2(w) + 2(2w - 1)$
16. the sum of three consecutive odd integers $(2x - 1) + (2x + 1) + (2x + 3)$
17. fifteen nickels and quarters total $2.75 $\begin{cases} n + q = 15 \\ 0.05n + 0.25q = 2.75 \end{cases}$
18. sixteen cows and chickens have forty-two legs $\begin{cases} x + y = 16 \\ 2x + 4y = 42 \end{cases}$
19. the sum of *x* and four times *y* is equal to twenty $x + 4y = 20$
20. two thirds of a number is negative three fifths $\frac{2}{3}x = -\frac{3}{5}$
21. the difference of *m* and thirteen is identical to the square of *m* $m - 13 = m^2$
22. the product of *a* and *b* is more than three times the sum of *a* and eight $ab > 3(a + 8)$
23. forty-one increased by twice a number is the same as three times the sum of that number and seven $41 + 2x = 3(x + 7)$
24. the distance between a number and its opposite $|x - (-x)|$
25. the sum of a number and half its additive inverse $x + \frac{1}{2}(-x)$

Sample Story Problems

#1 A 120 ft. piece of wood is cut into three pieces. The second piece is twice as long as the first, and the third piece is three times as long as the first piece. How long is the longest piece?

#2 For many years, the tallest building in Los Angeles was City Hall. As "earthquake-proof" construction improved, however, building heights soared. In 2000, the tallest building was the 1,017-ft. Library Tower. It is 565 ft. taller than City Hall.

a. How tall was the tallest building in LA before "earthquake-proof" construction?
b. The Library Tower in LA is shorter than the Sears Tower in Chicago by 437 ft. How tall is the Sears Tower?

#3 Greenwich Mean Time (GMT) is the time at the Royal Observatory in Greenwich, England. A location that is $+n$ hours from GMT is n hours ahead of GMT, and a location that is $-n$ hours from GMT is n hours behind GMT. Costa Rica is -6 hours from GMT, and India is $+5.5$ hours from GMT. If it is 7:45am in India, what time is it in Costa Rica?

#4 Jose and his younger cousin Laura decide to share the cost of buying a new phone for their grandmother that costs $240. If Jose agrees to pay $60 more than Laura, what is the amount that each will pay?

#5 For what values of a is the opposite of a…

a) greater than a?
b) less than a?
c) equal to a?

Sample Story Problems KEY

#1 A 120 ft. piece of wood is cut into three pieces. The second piece is twice as long as the first, and the third piece is three times as long as the first piece. How long is the longest piece? 60 feet

#2 For many years, the tallest building in Los Angeles was City Hall. As "earthquake-proof" construction improved, however, building heights soared. In 2000, the tallest building was the 1,017-ft. Library Tower. It is 565 ft. taller than City Hall.

a. How tall was the tallest building in LA before "earthquake-proof" construction? 452 ft.
b. The Library Tower in LA is shorter than the Sears Tower in Chicago by 437 ft. How tall is the Sears Tower? 1454 ft.

#3 Greenwich Mean Time (GMT) is the time at the Royal Observatory in Greenwich, England. A location that is $+n$ hours from GMT is n hours ahead of GMT, and a location that is $-n$ hours from GMT is n hours behind GMT. Costa Rica is -6 hours from GMT, and India is $+5.5$ hours from GMT. If it is 7:45am in India, what time is it in Costa Rica? 8:15pm

#4 Jose and his younger cousin Laura decide to share the cost of buying a new phone for their grandmother that costs $240. If Jose agrees to pay $60 more than Laura, what is the amount that each will pay? Jose: $150, Laura: $90

#5 For what values of a is the opposite of a

a) greater than a? $a < 0$ or a is negative
b) less than a? $a > 0$ or a is positive
c) equal to a? $a = 0$

Name
Date
Class

Restate Problem

Restate the problem in your own words. Be sure to include all (only) relevant information. Make sure you are clear about what the problem is asking.

Model/Graph

Make a model, picture, or graphical representation of the problem. Be sure to label everything accurately and clearly.

Problem

Copy the problem exactly how it is stated.

Show Work

Solve the problem and show all of your work. Be neat, and show step by step. Use correct mathematical notation.

Solution

Write the solution to the problem in a complete sentence.

Reflection

Reflect on what you have learned. Write at least 3 sentences.

Name: _____
Period: _____

Story Problem Rubric

Category \ Score	4	3	2	1
Restate Problem	The problem is restated correctly using complete sentences, in the student's own words. All relevant information is included.	The problem is restated correctly using mostly complete sentences, in the student's own words. Most relevant information is included.	The problem is restated (may not be using complete sentences) in the student's own words. Some relevant information is included.	The problem is simply copied. OR The problem is restated, but not correctly. The problem is not restated at all. (0)
Make a Model	A model (picture, table, number line, graph, etc.) is used to correctly demonstrate the problem. The model is properly labeled and easy to understand.	A model (picture, table, number line, graph, etc.) is used to demonstrate the problem (few errors). The model may not be properly labeled, but is easy to understand.	A model (picture, table, number line, graph, etc.) is somewhat used to demonstrate the problem. The model is not properly labeled, nor is it easy to understand.	There is an attempt to make a model to demonstrate the problem, but it is incorrect. The model is not properly labeled. No attempt at a model (0).
Show Work	All work is shown neatly and correctly. Thought process is easy to follow (explained). Proper labels and mathematical notation are used.	Most work is shown neatly and most is correct. Thought process is ok. Some proper labels and mathematical notation are used.	Some work is shown (may not be neat) and some is correct. Thought process is not clear. Proper labels and mathematical notation are not used.	Little or no (0) work is shown. Thought process is not clear and no labels are used. Incorrect use of proper mathematical notation.
Answer	Answer(s) stated in a complete sentence with proper units and labeling. All answers are mathematically correct.	Answer(s) stated in a complete sentence (may not have proper units or labeling). Most answers are mathematically correct.	Answer(s) not stated in complete sentences, but are correct (may not have proper units or labeling). Answers are mostly incorrect.	Answer(s) not stated in complete sentences AND lack proper units or labeling. Answer(s) completely incorrect or absent(0).
Overall Presentation & Reflection	Story problem is neatly written or typed. Easy to read and follow. Reflection has at least 3 sentences	It is written, but not very neatly. Some work is hard to understand. Reflection has only 2 sentences.	It is sloppily written without much care for neatness. Some work is shown but it is sloppy.	Work is not neat at all. Work is too messy to read and/or follow. Reflection is 1 sentence. No reflection (0).

Story Problem #_____ Total Score: _____

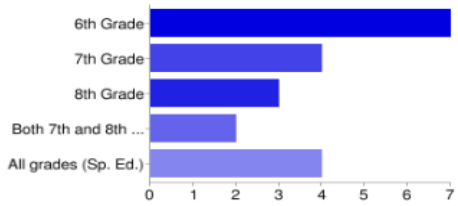
DARTS Teacher Survey Results

20 responses

Summary

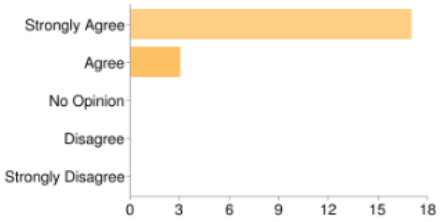
See complete responses

What grade level do you teach?



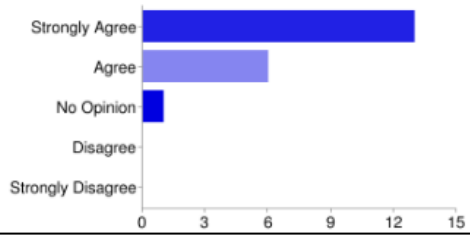
6th Grade	7	35%
7th Grade	4	20%
8th Grade	3	15%
Both 7th and 8th Grades	2	10%
All grades (Sp. Ed.)	4	20%

Please state how much you agree or disagree with the following statements. - 1. I am comfortable administering and collecing data from the diagnostics.



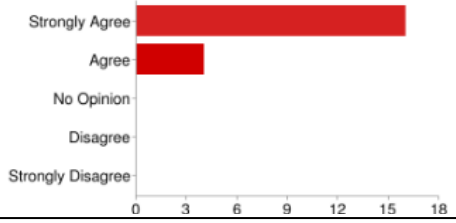
Strongly Agree	17	85%
Agree	3	15%
No Opinion	0	0%
Disagree	0	0%
Strongly Disagree	0	0%

Please state how much you agree or disagree with the following statements. - 6. I use data on a consistent basis to drive my instruction.



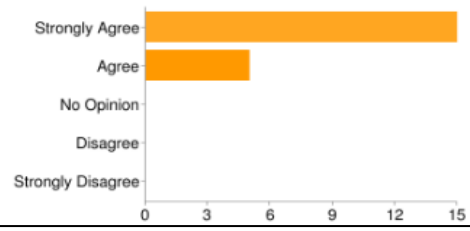
Strongly Agree	13	65%
Agree	6	30%
No Opinion	1	5%
Disagree	0	0%
Strongly Disagree	0	0%

Please state how much you agree or disagree with the following statements. - 2. I am comfortable accessing Google Spreadsheets and entering in data.



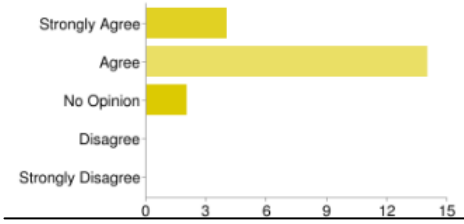
Strongly Agree	16	80%
Agree	4	20%
No Opinion	0	0%
Disagree	0	0%
Strongly Disagree	0	0%

Please state how much you agree or disagree with the following statements. - 7. Data from the diagnostic helps me know what I need to re-teach.



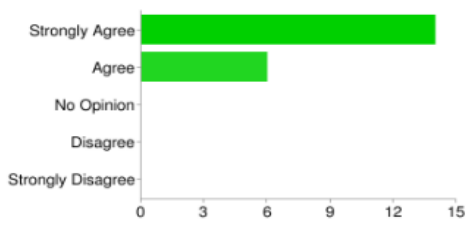
Strongly Agree	15	75%
Agree	5	25%
No Opinion	0	0%
Disagree	0	0%
Strongly Disagree	0	0%

Please state how much you agree or disagree with the following statements. - 3. My students monitor their own progress using the diagnostic.



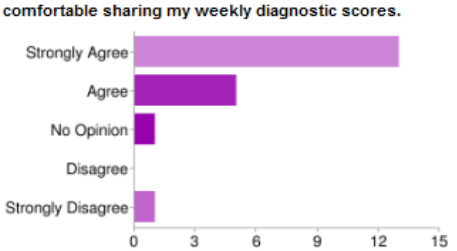
Strongly Agree	4	20%
Agree	14	70%
No Opinion	2	10%
Disagree	0	0%
Strongly Disagree	0	0%

Please state how much you agree or disagree with the following statements. - 4. I am comfortable analyzing data.



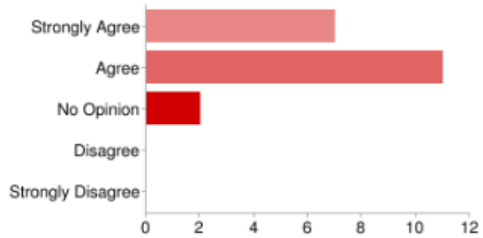
Strongly Agree	14	70%
Agree	6	30%
No Opinion	0	0%
Disagree	0	0%
Strongly Disagree	0	0%

Please state how much you agree or disagree with the following statements. - 5. I am comfortable sharing my weekly diagnostic scores.



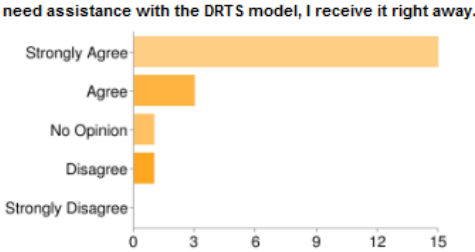
Strongly Agree	13	65%
Agree	5	25%
No Opinion	1	5%
Disagree	0	0%
Strongly Disagree	1	5%

Please state how much you agree or disagree with the following statements. - 14. I can see the difference DRTS has made in student scores and comprehension.



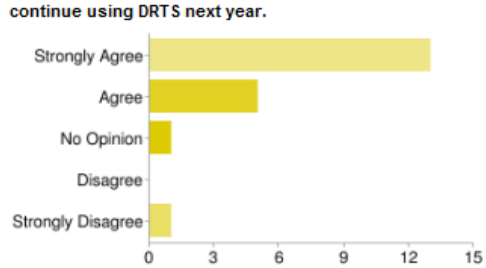
Strongly Agree	7	35%
Agree	11	55%
No Opinion	2	10%
Disagree	0	0%
Strongly Disagree	0	0%

Please state how much you agree or disagree with the following statements. - 13. When I need assistance with the DRTS model, I receive it right away.



Strongly Agree	15	75%
Agree	3	15%
No Opinion	1	5%
Disagree	1	5%
Strongly Disagree	0	0%

Please state how much you agree or disagree with the following statements. - 15. I want to continue using DRTS next year.



Strongly Agree	13	65%
Agree	5	25%
No Opinion	1	5%
Disagree	0	0%
Strongly Disagree	1	5%

Teacher: _____ Observer:_____

Course: _____ Period: _____ Date: _____

DARTS Implementation Observed

Diagnostic	Data	Rescue Assignment	Translations	Story Problem
❒ CST-like environment ❒ Students show work ❒ All students using pencil ❒ Teacher monitors test ❒ Data collected accurately ❒ Answers not given until Wed. Data Collection Method: _____ _____	❒ Data is shared with the students (projected) ❒ Students analyze class data ❒ Diagnostic scores charted in student planner	❒ Only assigned problems missed on diagnostic ❒ Reviewed some problems ❒ Gave credit/collected for previous week	❒ Correct translation #'s ❒ Students share answers with class ❒ Answers corrected ❒ Multiple representations shown ❒ Mathematical discussion ❒ Correct vocabulary used ❒ Correct vocabulary enforced ❒ Teachable moments used	❒ Used Graphic Organizer ❒ Students shared answers with class ❒ Reviewed different possible answers ❒ Teachable moments used ❒ All parts of graphic organizer used ❒ Assessed with rubric
Notes:	Notes:	Notes:	Notes:	Notes:

DARTS
Mathematics Model

Heather Karuza, Administrator of Curriculum & Instruction
Thomas Alva Edison Middle School – LAUSD, ESC South

Edison Middle School Demographics

1,871 Students in 08-09
3 Tracks

Subgroup	Percentage	Proficient in Math 2009	Met AYP Growth Target
Whole School	100%	11.8%	NO
Socioeconomically Disadvantaged	99%	11.9%	NO
Hispanic/Latino	97%	12.1%	NO
African American	3%	2.3%	N/A
ELL's	40%	9.3%	NO
Students with Disabilities	11%	2.1%	NO

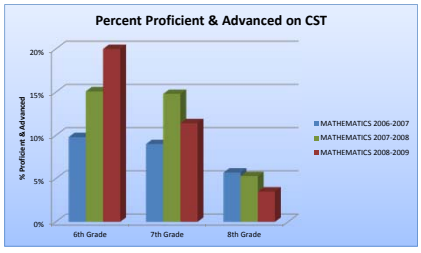
Source: CDE

Edison Middle School Mathematics

The Need:

7th and 8th Grade Math Scores were the only levels to decline in 08-09

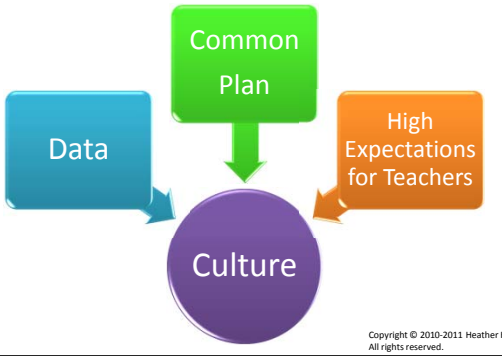
8th Grade Math has been on a negative trend for the past three years.



Vision: To have 8th Graders prepared for Algebra using early intervention

Source: CDE & MyData

Behavioral Changes



D.A.R.T.S.

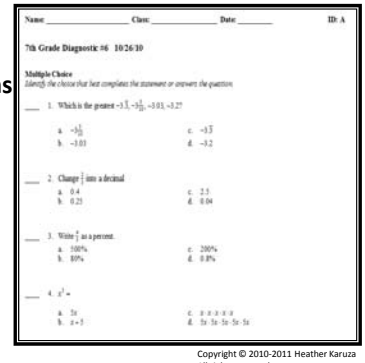
- Diagnostic
- Assessment (Periodic)
- Rescue Assignment
- Translations
- Story Problems

(Handout)

Diagnostic

- **10 Multiple Choice questions**
- **Given to all students every Tuesday**
- **Copies put in teacher's boxes every week**

(Handout)


Name _____ Class: _____ Date: _____ ID: A

7th Grade Diagnostic #6 10/26/10

Multiple Choice
Identify the choice that best completes the statement or answers the question.

1. Which is the greatest $-3\frac{1}{3}, -3\frac{1}{10}, -3.01, -3.27$

a. $-3\frac{1}{10}$ c. $-3\frac{1}{3}$
b. -3.01 d. -3.2

2. Change $\frac{1}{4}$ into a decimal

a. 0.4 c. 2.5
b. 0.25 d. 0.04

3. Write $\frac{1}{5}$ as a percent.

a. 100% c. 200%
b. 10% d. 0.8%

4. $x^5 =$

a. $5x$ c. $x \cdot x \cdot x \cdot x \cdot x$
b. $x + 5$ d. $5x \cdot 5x \cdot 5x \cdot 5x \cdot 5x$

Diagnostic

- Goal: 70% or higher
- Multiple choice answers target common student errors
- Dynamic

Diagnostic Data

- Data gathered instantly (4 corners / GradeCam)
- Easy to use
- Internet based – easy to access

TEACHER 5	Diagnostic #2 09/28/10		Only enter data in the PEACH area!											
			Period 1/2						Period 3					
Question #	Content Area	Standard & Week #	Number of students who answered...					% Students Correct	Number of students who answered...					% Students Correct
			a	b	c	d	Total		a	b	c	d	Total	
1	Evaluate	7AF1.2	16	3	2	0	21	76.19%	15	1	5	0	21	71.43%
2	Distributive Property	7AF1.3	3	1	8	9	21	38.10%	2	1	17	0	21	80.95%
3	Solve 1-Step Eqtn (neg)	7AF4.1	8	10	3	0	21	47.62%	0	16	3	2	21	76.19%
4	Solve 2-Step Eqtn	7AF4.1	0	4	17	0	21	80.95%	0	2	19	0	21	90.48%
5	Add Fractions (unlike)	7NS2.2	15	5	1	0	21	71.43%	19	1	1	0	21	90.48%
6	Opposite	Alg. 2.0	7	5	1	7	21	33.33%	7	4	1	9	21	42.86%
7	Reciprocal	Alg. 2.0	7	7	7	0	21	33.33%	6	12	3	0	21	57.14%
8	Add Integers	7NS1.2	13	1	6	1	21	61.90%	18	0	0	3	21	85.71%
9	Subtract Integers	7NS1.2	3	1	1	16	21	76.19%	4	0	0	17	21	80.95%
10	Translation	7AF1.2	3	1	15	2	21	71.43%	1	1	19	0	21	90.48%
Overall Percent Correct			59.05%						76.67%					
Total Students		87												

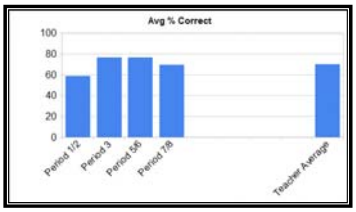
Diagnostic Data

- Teachers and students get instant feedback
- Find common errors
- Instruction can be targeted for each class

Question #	Content Area	Standard	Period 1/2: Percent of students who answered...					% Students Correct	Period 3: Percent of students who answered...					% Students Correct
			a	b	c	d	Best Distract		a	b	c	d	Best Distrac	
1	Evaluate	7AF1.2	76%	14%	10%	0%	b	76.19%	71%	5%	24%	0%	c	71.43%
2	Distributive Property	7AF1.3	14%	5%	38%	43%	d	38.10%	14%	5%	81%	0%	a	80.95%
3	Solve 1-Step Eqtn (neg)	7AF4.1	38%	48%	14%	0%	a	47.62%	0%	76%	14%	10%	c	76.19%
4	Solve 2-Step Eqtn	7AF4.1	0%	19%	81%	0%	b	80.95%	0%	10%	90%	0%	b	90.48%
5	Add Fractions (unlike)	7NS2.2	71%	24%	5%	0%	b	71.43%	90%	5%	5%	0%	b	90.48%
6	Opposite	Alg. 2.0	33%	29%	5%	33%	a	33.33%	33%	19%	5%	43%	a	42.86%
7	Reciprocal	Alg. 2.0	33%	33%	33%	0%	a	33.33%	29%	57%	14%	0%	a	57.14%
8	Add Integers	7NS1.2	62%	5%	29%	5%	c	61.90%	86%	0%	0%	14%	d	85.71%
9	Subtract Integers	7NS1.2	14%	5%	5%	76%	a	76.19%	19%	0%	0%	81%	a	80.95%
10	Translation	7AF1.2	14%	5%	71%	10%	a	71.43%	5%	5%	90%	0%	a	90.48%
Overall Percent Correct			59.05%						76.67%					

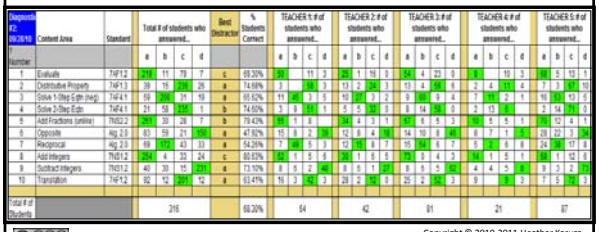
Diagnostic Data

- Classes are graphed for instant comparison
- Competition → Effort & Motivation



Diagnostic Data

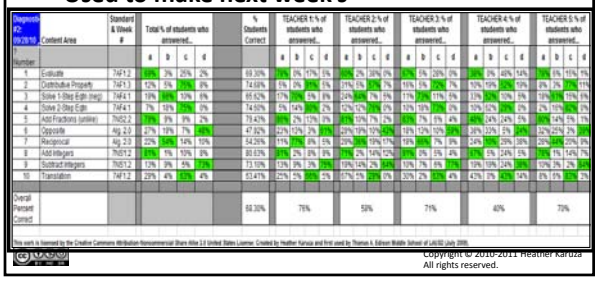
- Collected in real time using Google Spreadsheets
- Shows best distractor
- Whole grade analysis down to individual classes



Diagnostic #2: 09/28/10	Content Area	Standard	Total # of students who answered...				Best Distractor	% Students Correct	TEACHER 1: # of students who answered...				TEACHER 2: # of students who answered...				TEACHER 3: # of students who answered...				TEACHER 4: # of students who answered...				TEACHER 5: # of students who answered...			
Number			a	b	c	d			a	b	c	d	a	b	c	d	a	b	c	d	a	b	c	d	a	b	c	d
1	Evaluate	7AF1.2	218	11	79	7	c	69.30%	53		11	3	25	1	16	3	54	4	23	0	8		10	3	18	5	13	1
2	Distributive Property	7AF1.3	39	14	236	26	a	74.68%	9	3	36	1	13	2	39	3	13	4	68	6	4	4	71	4	0	1	28	2
3	Solve 1-Step Eqtn (neg)	7AF4.1	59	20	21	10	a	65.62%	11	4	3	5	10	3	2	3	8	4	3	4	7	3	2	1	14	9	13	2
4	Solve 2-Step Eqtn	7AF4.1	21	59	216	1	b	74.65%	3	9	44	1	5	5	39	1	8	14	58	0	2	13	6		3	14	31	0
5	Add Fractions (unlike)	7NS2.2	26	20	28	7	b	79.43%	6	1	8		34	4	3	1	47	6	5	3	10	5	5	1	13	12	4	1
6	Opposite	Alg. 2.0	63	59	21	150	a	47.92%	15	8	2	38	12	6	4	16	14	10	8	46	8	7	1	5	20	22	3	34
7	Reciprocal	Alg. 2.0	69	172	43	33	a	54.26%	7	38	5	3	12	15	8	7	15	54	6	7	5	12	6	8	23	38	17	8
8	Add Integers	7NS1.2	254	4	33	24	c	80.63%	52	1	5	4	39	1	6	6	51	3	4	3	14	1	5	1	18	1	12	3
9	Subtract Integers	7NS1.2	40	33	15	231	d	73.10%	8	5	2	46	8	5	1	27	8	5	5	45	4	4	5	6	9	3	2	37
10	Translation	7AF1.2	92	12	201	12	a	63.41%	16	3	42	3	28	2	34	1	25	2	52	3	9		3	3	7	1	32	1
Total # of Students			216					68.30%	64				42				81				21				87			

Diagnostic Data

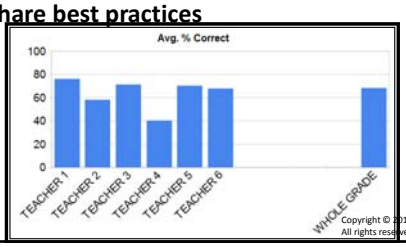
- Instant information
- Analyzed that day and next
- Used to make next week's



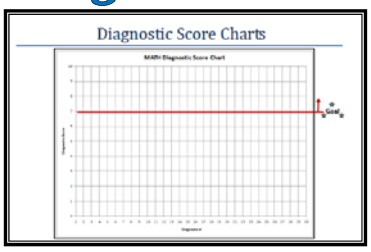
Diagnostic #2: 09/28/10	Content Area	Standard & Week #	Total % of students who answered...					% Students Correct	TEACHER 1: % of students who answered...				TEACHER 2: % of students who answered...				TEACHER 3: % of students who answered...				TEACHER 4: % of students who answered...				TEACHER 5: % of students who answered...			
Number			a	b	c	d			a	b	c	d	a	b	c	d	a	b	c	d	a	b	c	d	a	b	c	d
1	Evaluate	7AF1.2	69%	3%	25%	2%		69.30%	76%	8%	17%	5%	69%	2%	30%	0%	67%	5%	28%	0%	38%	0%	48%	14%	79%	6%	15%	1%
2	Distributive Property	7AF1.3	12%	5%	76%	8%		74.68%	6%	0%	35%	5%	21%	5%	63%	7%	15%	5%	72%	7%	10%	10%	72%	10%	6%	2%	71%	11%
3	Solve 1-Step Eqtn (neg)	7AF4.1	19%	34%	10%	6%		65.62%	17%	70%	5%	8%	24%	64%	7%	5%	11%	73%	11%	5%	33%	52%	10%	5%	19%	41%	11%	6%
4	Solve 2-Step Eqtn	7AF4.1	7%	18%	75%	0%		74.65%	5%	5%	14%	80%	2%	12%	12%	0%	10%	19%	73%	0%	10%	62%	28%	0%	6%	10%	84%	0%
5	Add Fractions (unlike)	7NS2.2	79%	9%	9%	2%		79.43%	88%	2%	11%	0%	81%	10%	7%	2%	82%	7%	6%	4%	66%	24%	24%	5%	90%	4%	5%	1%
6	Opposite	Alg. 2.0	27%	18%	7%	48%		47.92%	22%	13%	3%	61%	29%	19%	10%	43%	18%	12%	10%	59%	38%	33%	5%	24%	32%	25%	3%	39%
7	Reciprocal	Alg. 2.0	22%	54%	14%	10%		54.26%	11%	77%	8%	5%	29%	36%	19%	17%	19%	66%	7%	9%	24%	55%	29%	38%	26%	44%	20%	9%
8	Add Integers	7NS1.2	81%	1%	10%	8%		80.63%	81%	2%	8%	5%	71%	2%	14%	12%	81%	5%	6%	4%	67%	5%	24%	5%	78%	1%	14%	7%
9	Subtract Integers	7NS1.2	13%	9%	5%	73%		73.10%	13%	9%	3%	75%	19%	14%	2%	64%	10%	7%	6%	77%	19%	19%	24%	38%	10%	2%	2%	86%
10	Translation	7AF1.2	29%	4%	63%	4%		63.41%	22%	5%	33%	5%	67%	5%	0%	0%	30%	2%	63%	4%	42%	0%	42%	14%	0%	5%	30%	5%
Overall Percent Correct								68.30%	76%				59%				71%				40%				70%			

Diagnostic Data

- Teacher results are graphed for quick monitoring & comparison
- Classes compete
- Teachers can collaborate with each other to share best practices



Diagnostic Data

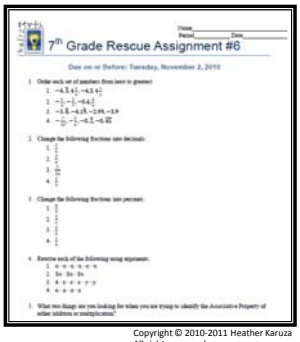


- Students chart their progress
- Celebrate successes
- Parent involvement

Rescue Assignment

- Targeted Intervention for all students
- Correspond to diagnostic questions
- Based on diagnostic questions they missed
- Motivation
- Information for students – "Now I know what I don't know!"

(Handout)

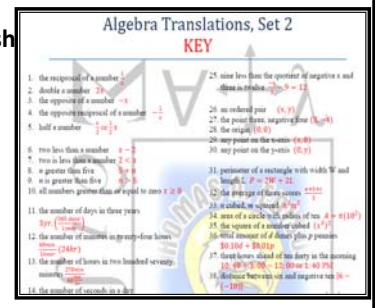


Data Driven Instruction: Discussion

- How is this useful for teachers?
- How is this useful for students?
- What elements make it so effective?
- How does this model address gaps, interdependent collaboration, and open doors for students?

Translations

- 10 per week
- Translate English into mathematics (symbols)
- Helps with vocabulary and word problems
- Builds conceptual understanding

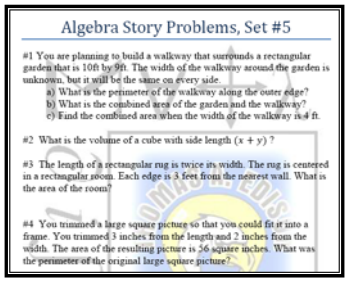

Algebra Translations, Set 2
KEY

(Handout)

Story Problems

- Word Problems
- At least 1 per week

Same Graphic Organizer


Algebra Story Problems, Set #5

#1 You are planning to build a walkway that surrounds a rectangular garden that is 10ft by 9ft. The width of the walkway around the garden is unknown, but it will be the same on every side.
a) What is the perimeter of the walkway along the outer edge?
b) What is the combined area of the garden and the walkway?
c) Find the combined area when the width of the walkway is 4 ft.

#2 What is the volume of a cube with side length $(x + y)$?

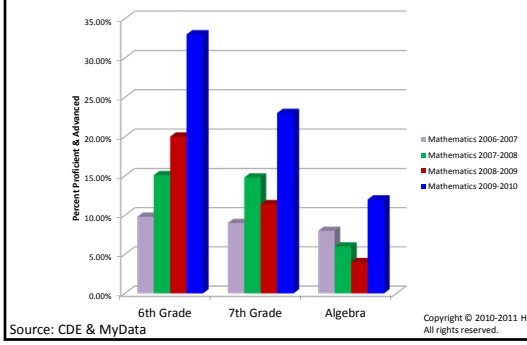
#3 The length of a rectangular rug is twice its width. The rug is centered in a rectangular room. Each edge is 3 feet from the nearest wall. What is the area of the room?

#4 You trimmed a large square picture so that you could fit it into a frame. You trimmed 3 inches from the length and 2 inches from the width. The area of the resulting picture is 36 square inches. What was the perimeter of the original large square picture?

Graded with rubric (Handout)

Edison's CST Data

1st Year



Source: CDE & MyData

Edison's CST Data

1st Year

- Edison's Math Department had a net gain of 33% Proficient & Advanced.
- English: net gain of 1%
- Science: net gain of 4%
- History: net gain of 0%

- Edison's Math Department had a net LOSS of 34% Below Basic & Far Below Basic.
- English: net gain of 2%
- Science: net loss of 1%
- History: net gain of 5%

Source: CDE & MyData

Edison Middle School Demographics

1,763 Students in 09-10
3 Tracks

Subgroup	Percentage	Proficient in Math 2010	Met AYP Growth Target
Whole School	100%	21.9%	YES
Socioeconomically Disadvantaged	98%	21.9%	YES
Hispanic/Latino	97%	21.1%	YES
African American	3%	12.2%	N/A
ELL's	33%	16.1%	NO
Students with Disabilities	11%	4%	NO

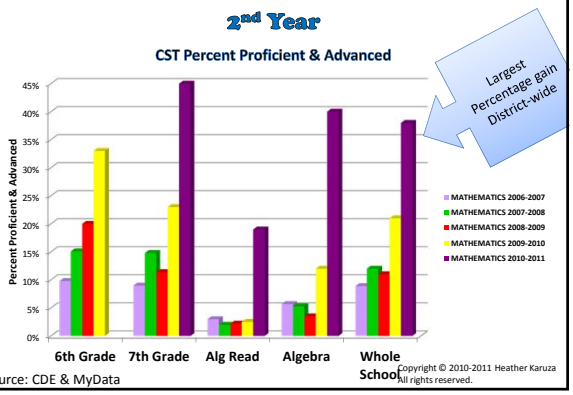
Source: CDE

Safe Harbor Targets 2010

Source: MyData

Edison's CST Data

2nd Year



Source: CDE & MyData

Edison's CST Data

2nd Year

Increase in Proficient & Advanced	Reduction in Below Basic & Far Below Basic
• 7th Grade: 22% (to 46%)	• 7th Grade: 18% (to 29%)
• Alg. Read.: 17% (to 19%)	• Alg. Read.: 26% (to 51%)
• Algebra 1: 28% (to 40%)	• Algebra 1: 33% (to 35%)

Significant gains happen after successive years of program implementation. Our Algebra Proficiency Rate went from 4% to 40% in only 2 years!

Source: CDE & MyData

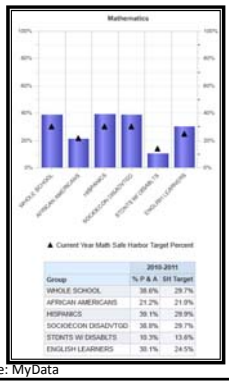
Edison Middle School Demographics

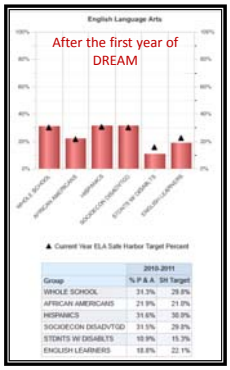
1,162 Students in 10-11 Traditional

Subgroup	Percentage	Proficient in Math 2011	Met AYP Growth Target
Whole School	100%	38.6%	YES
Socioeconomically Disadvantaged	99%	38.8%	YES
Hispanic/Latino	97%	39.1%	YES
African American	3%	21.2%	N/A
ELL's	30%	30.1%	YES
Students with Disabilities	10%	10.3%	NO

Source: CDE

Safe Harbor Targets 2011



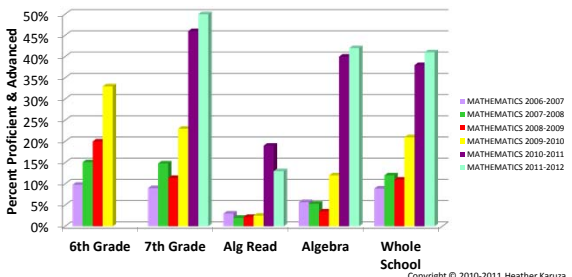


Source: MyData

Edison's CST Data

3rd Year

Edison Middle School Math Department
CST Percent Proficient & Advanced



Source: CDE & MyData