

Elementary Math Pilot

Report to Board of School Directors
Dr. Diane Barrie, Curriculum Coordinator

May, 2016



Statement of the Problem

- Existing math textbook out of date (2007)
 - Did not reflect the realignment of math content in standards
 - No mention of Standards of Mathematical Practice
 - Make sense of problems and persevering in solving them
 - Attend to precision
 - Reason abstractly and quantitatively
 - Construct viable arguments and critique the reasoning of others
 - Model with mathematics
 - Use appropriate tools strategically
 - Look for and make sense of structure
 - Look for and express regularity in repeated reasoning

Statement of the Problem

- Data Trends:
 - Grades 3-8 PSSAs Math averaged 82% (2011-2014)
 - Grades 6-8 not making adequate growth (PVAAS)
 - High School PSATs and Keystones show lack of solid foundation in math, particularly Algebra

Of Greatest Concern...

- Secondary teachers have noted:
 - steady decline in students' ability to transfer knowledge
 - lack of conceptual understanding of mathematics
 - Inability to persevere and problem-solve
 - No AP Chemistry in 2016/17 (linked to math weaknesses)

2014/2015 Elementary Math Pilots

- Fall 2014: Principals, Curriculum Coordinator, K-5 Math Department Leader met to discuss feedback from teachers on math needs
- January 2015: Math Text Review
 - Team of teachers from each grade level, along with administrators and community members
 - Examined enVision, MyMath, Singapore Math, and Go Math
- March 2015: Program training & start of implementation
- Evaluation (mid-May 2015)
 - Student surveys
 - Parent surveys
 - Teachers completed Textbook Review Form

2014/2015 Pilot Outcome (5/20/15)

- Grade level groups listed pros and cons of each program
- Chart papers were posted in cafeteria for all teachers to review
- Consensus: neither program would meet our needs
- An elementary principal and teacher had visited Upper Dublin S.D. to learn more about Eureka Math - shared with staff
- Teachers returned to grade level meetings to discuss experience with Eureka/Engage NY (same curriculum)
- Teachers provided time to review Eureka videos, website, materials
- All but one teacher voted "Yes" to pilot Eureka

Professional Development - Summer 2015

- All teachers provided access to Teach Eureka Video Series
- Teachers started video PD/met in grade level groups for planning
- August 14-16: Initial Training (3-day Institute in Delaware)
 - Eleven teachers representing each grade level
 - K-5 Math Department Leader
 - Both principals
 - Curriculum Coordinator
- Principals conducted turnaround training with all teachers on August 19 and 20, 2015

SY 2015/2016 Professional Development

- No new initiatives presented to teachers
- Four Act 80 half-days focused on Eureka Math
- Teachers met during/after school to collaborate on lesson planning and create common assessments
- Teachers had full-year access to Teach Eureka Video Series

Decision Time

The decision to recommend the adoption of any program will be an administrative team decision (Principals, Curriculum Coordinator, Assistant Superintendent, Superintendent) based upon the following:

- Teacher Evaluation Forms
- Student Surveys
- Parent Survey
- Alignment to District Goals
- Budget Implications

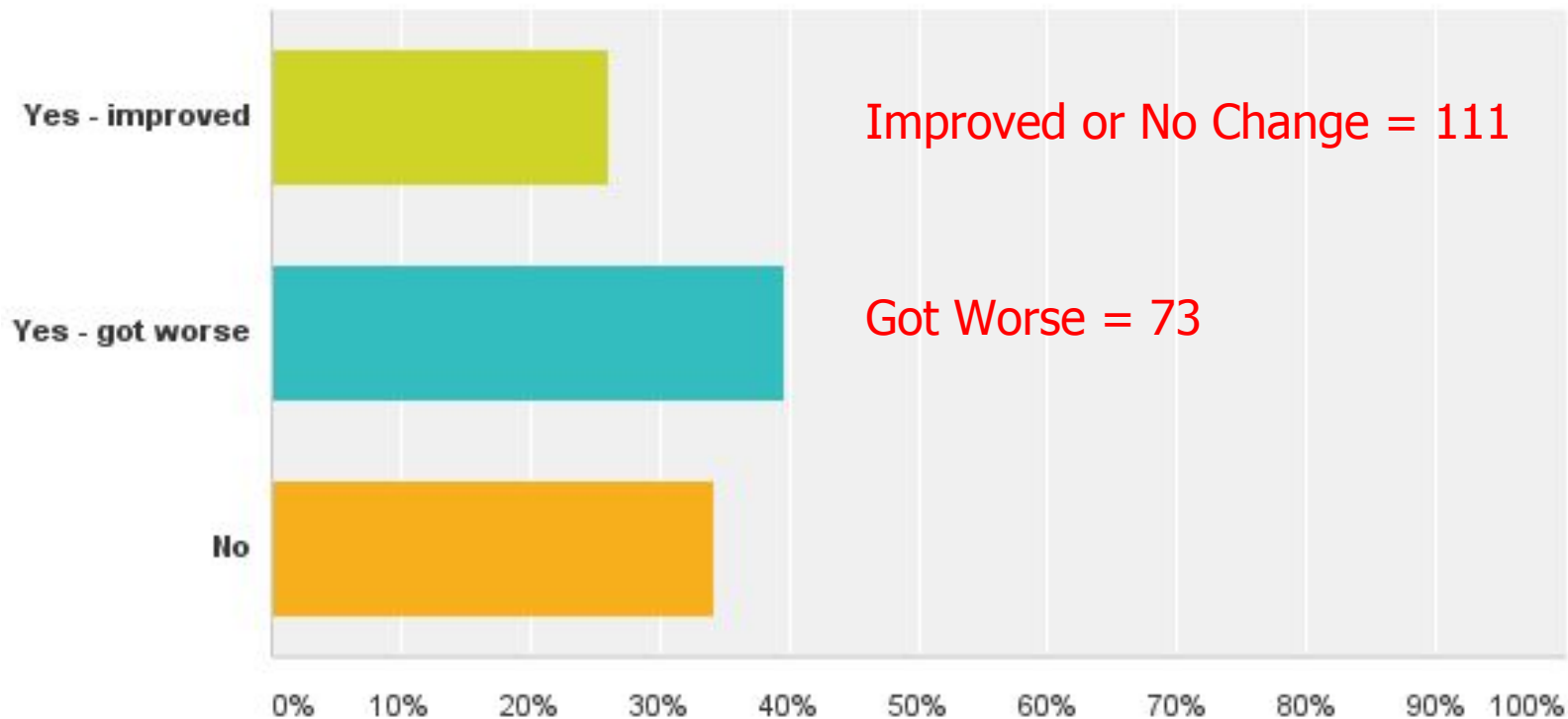
The Data

Parent Surveys

- Links to survey sent home via newsletters, posting on website, ConnectEd calls
- 196 parent surveys returned (out of 561 students)
 - 152 from KES; 44 from GES
- 78% from parents of 2nd, 3rd, and 4th graders

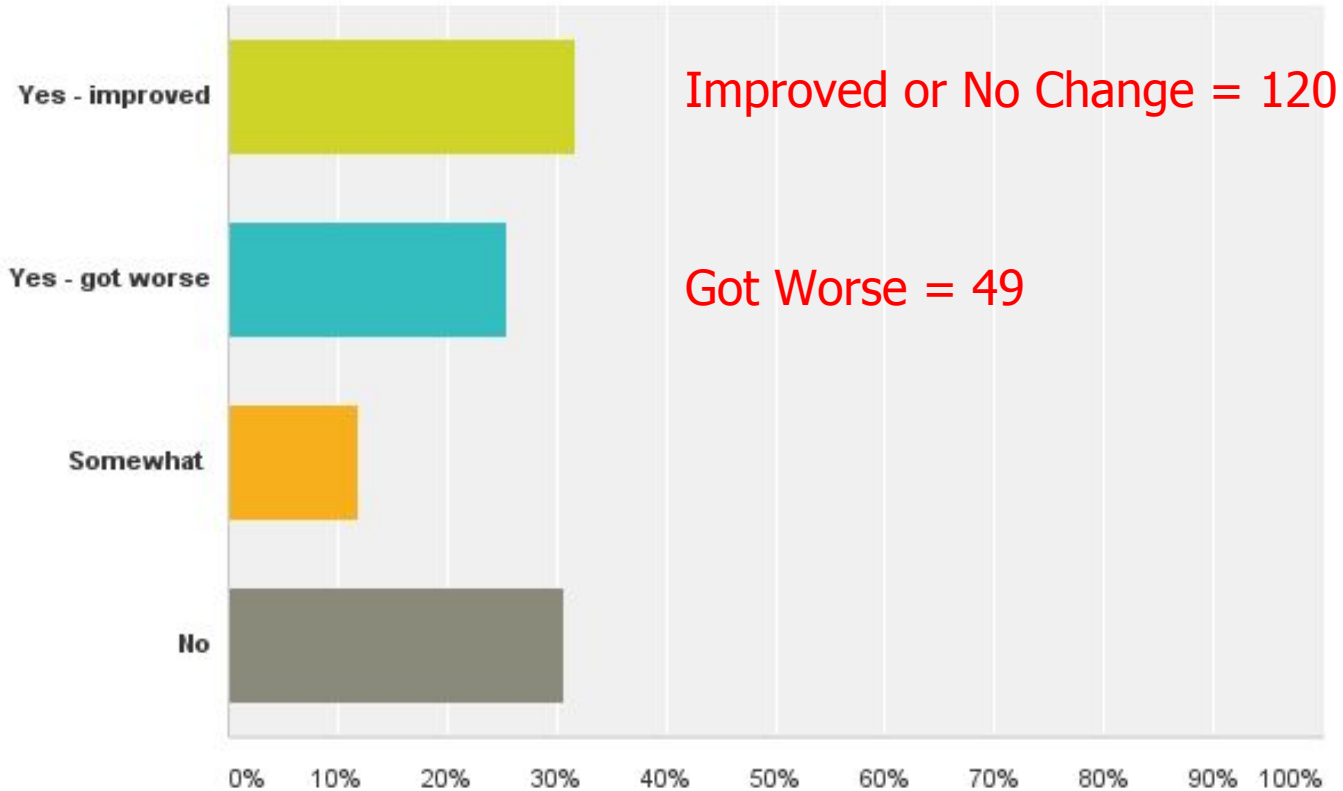
Q3 Did you notice any change in your child's **PERSPECTIVE/ATTITUDE** about math this year?

Answered: 184 Skipped: 13



Q4 Did you notice any change in your child's ACHIEVEMENT/UNDERSTANDING of math?

Answered: 192 Skipped: 5



Student Surveys

431 out of 561 surveys returned

What did you like MOST about Eureka Math?

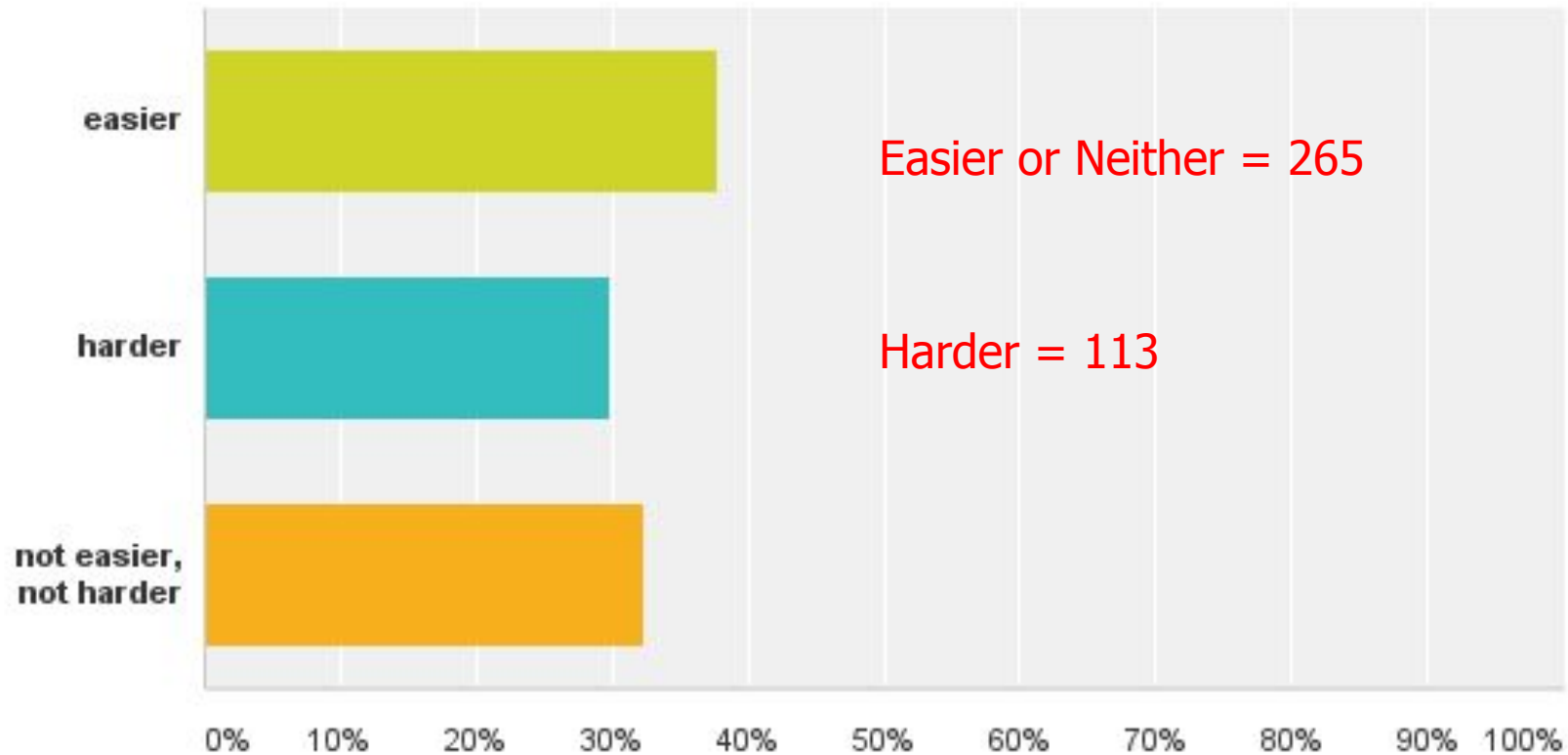
Division Number Lines Challenge Angles
White Boards Arrow Way Games Think
Fractions Counting Sprints Not Eureka
Problems Number Bonds
Eureka Math Tape Diagrams Zearn
Strategies Easier Arrays Learn Book Fun Kind

What did you like LEAST about Eureka Math?

Number Bond Math Book Takes Steps Explain Love
Confusing Dislike Understand Book
Tape Diagrams Number Lines Hard
Subtraction Problems Models
Eureka Math Think Boring Write
Lessons Boards Harder Extra Work Sprints

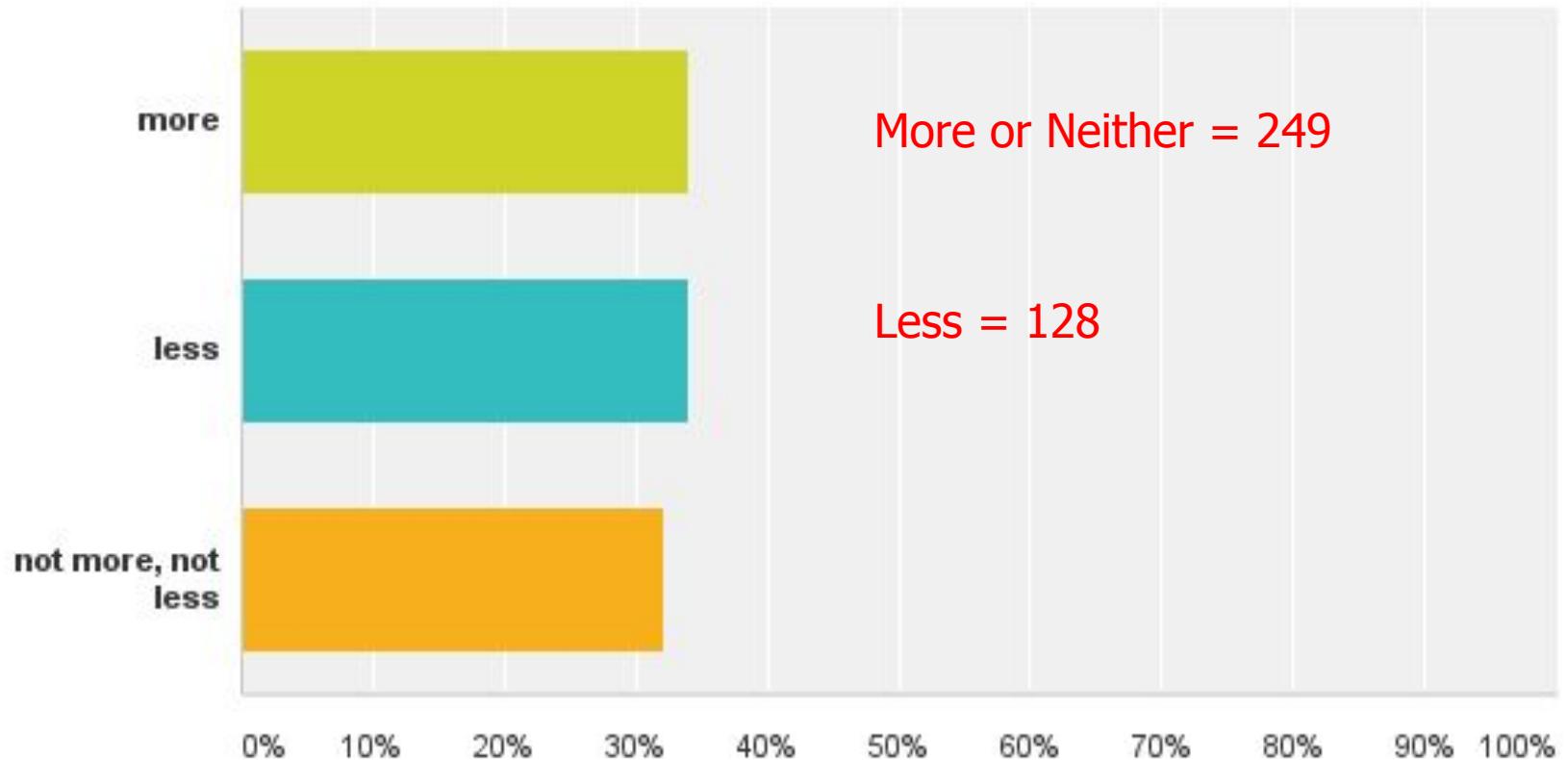
Q3 With Eureka Math, math is _____ to learn.

Answered: 378 Skipped: 53



Q4 With Eureka Math, I like math _____.

Answered: 377 Skipped: 54



Teacher Textbook Evaluations

32 Teachers and 1 Para Returned Surveys

- 21 Teachers = Yes
- 8 Teachers = No
- 4 Teachers = In the middle

| Cons (multiple responses) | |
|--|---|
| Did not allow for differentiation - 7 | Very little real world application - 2 |
| Not engaging for students/decrease in student motivation - 7 | Not able to explore true understanding of skills/concepts - 2 |
| Lessons take too long to complete/pacing is too fast - 6 | Too much teacher talk - 2 |
| Assessments needed revision/more - 6 | Did not allow for Checks for Understanding - 2 |
| Directions are unclear and too small - 5 | Problem sets not appropriate for Kinder - 2 |
| Not enough repetition/practice - 3 | Too much whole group - 2 |
| Boring text - 3 | Too little use of manipulatives/not discovery learning - 2 |
| Too many steps to solve problems - 3 | Doesn't prepare for PSSA - 2 |
| Modules don't show true order of skills - 2 | |

Pros (multiple responses)

Helped students understand mathematical concepts better - 6

As a teacher I understand concepts better - 4

Helped students discuss solutions to problems - 3

Success with student achievement - 3

Allows students to use different strategies - 3

Students felt positive about math - 2

Content is “fairly sound” - 2

Common vocabulary - 2

Pros (single responses)

Better prepared for PSSAs

Promotes math discourse

We need this continuity from one grade to next

Appropriate for the “average” learner

Lessons easily adapted

Students are using strategies in Daily Math

Consistent lesson structure

Students learning material more quickly

Better mental math

Zearn is great

Hands-on manipulatives/charts

Recommendations

Want to have freedom to add/modify/change pace - 5

Want to use fluencies and strategies as needed - 3

Parent support needed - 3

Our grading system needs to be addressed

Program must be accepted by everyone

Had to task analyze problems

Need to develop structured sentence starters