



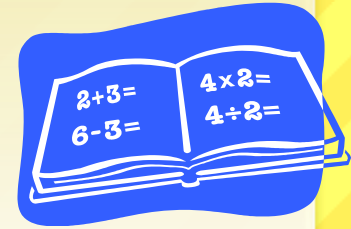
Math Adoption Curriculum Review

October, 2011
Sarah Hanchey, Ed. S.,
Curriculum Director

History of the Math Adoption

Report from Cindy Bechinski, Ph. D.

MATH SUBJECT AREA COMMITTEE MEMBERS 2009-10



1. Dale Kleinert
2. Julie Spangler
3. Martha Zirker
4. Glenn Adams
5. Rachel Aiello
6. Stacy Albrecht
7. Lisa Belknap
8. Brent Belschner
9. Lee Berg
10. Susan Boehne
11. Thomas Brandt
12. Michelle Charles
13. Nikki Cox
14. Kathy Dickerson
15. Sally Druffel
16. Cyndi Faircloth
17. Kristine Fitze
18. Karen Flom
19. Matthew Foss
20. Lance Hamma
21. Ellen Johansen
22. Sydney Maillot
23. Blanche McKennon
24. Judy Mock
25. Heidi Palmer
26. Pat Rush
27. Ron Seaman
28. Gail Sipe GT
29. Tiffany Trojanowski
30. Kathy Vietmeier
31. Dean Walker
32. Gretchen Wissner

History of the Math Adoption

2009-2010

- **Curricular materials reviewed by Math Subject Area Committee.**
- **Materials piloted in select classrooms.**
- **Adoption recommendation made by Math Subject Area Committee, approved by DCAC, & forwarded to the Board of Trustees by Curriculum Director.**
- **Materials purchased in Spring, 2010.**

Adopted Math Materials

Elementary

K-3 Pearson Investigations, *all schools*

4-5 Pearson Investigations, *McDonald*

4-5 Pearson Envisions, *Russell & Lena*

6 Pearson Prentice Hall Course 1 & 2, *all schools*

Adopted Math Materials

MJHS

Course

Math Foundations 7

Math 7 & Math 7 Enriched

Math Foundations 8

Applied Math

*Algebra Part 1, Algebra
Part 2, & Algebra
Geometry*

Textbook

*Prentice Hall Course 1
& Connected Math 2 Grade 6*

Prentice Hall Course 3

*Prentice Hall Course 2
& Connected Math 2 Grade 7*

*Prentice Hall Pre-Algebra
& Connected Math 2 Grade 8*

Prentice Hall Algebra I

*Discovering Geometry,
Key Curriculum Press.*

Adopted Math Materials

MHS

Course

Textbook

Geometry

Discovering Geometry, Key Curriculum Press.

Algebra 2

Glencoe, Algebra 2

Applied Math II

Glencoe, Algebra Concepts & Application, Vol 1

Applied Algebra

*Glencoe, Algebra Concepts & Application, Vol 2
& Cengage Learning, Financial Algebra*

Trigonometry

Pearson, Trigonometry: A Unit Circle Approach

Calculus

Single Variable Calculus: Early Transcendentals

Statistics

Pearson, Modeling the World, AP Edition

Business Math

Cengage Learning, Business Math

Adopted Math Materials

PCR

Course

Textbook

Applied Algebra I *Glencoe Algebra Concepts & Application Vol.1*

Applied Math II *Glencoe Algebra Concepts & Application Vol. 2
& Cengage Learning, Financial Algebra.*

Personal Finance *Personal Finance: A Lifetime Responsibility*

Algebra *Polya online algebra classes through UI*

FAQ

Q: Can't a district adopt whatever they want?

A: No! There are parameters set by the State that districts must comply with.

- State's list of approved materials.
- Extensive review ensures reliability, validity, solid research base, and alignment to learning standards.

It all starts in Idaho Code!

- 33-118. COURSES OF STUDY - CURRICULAR MATERIALS. The state board shall prescribe the minimum courses to be taught in all public elementary and secondary schools, and shall cause to be prepared and issued, such syllabi, study guides and other instructional aids The board shall also determine how and under what rules curricular materials shall be adopted for the public schools...

33-118A

- CURRICULAR MATERIALS – ADOPTION PROCEDURES. All curricular materials adoption committees appointed by the state board of education shall contain at least two (2) persons who are not public educators or school trustees. All meetings of curricular materials adoption committees shall be open to the public. Any member of the public may attend such meetings and file written or make oral objections to any curricular materials under consideration. A complete and cataloged library of all curricular materials adopted and used in Idaho public schools is to be maintained at the state department of education at all times and open to the public. “Curricular materials” is defined as textbook and instructional media including software, audio/visual media and internet resources.



Programs & Research

All of MSD's Math Programs are...

- On the State's list of approved materials.

Aligned with:

- Idaho State Standards
- National Standards (CCSS)
- 21st Century Learning Standards
- National Council of Teaching Mathematics (NCTM) focal points
- MTI course

Math Program Philosophy...

- Building deep mathematical understanding.
- Developing problem solving & reasoning skills.
- The ability to see math conceptually.
- Strong foundational understanding to arm students with tools to tackle any kind of math.
- Critical thinking, inquiry and solution-building skills.
- Skillful ability to manipulate numbers in different ways and to understand their relationships.

Adults & Math...

- Math is taught much differently today from how adults learned as children.

Traditional Algorithm:

$$\begin{array}{r} 1\ 1 \\ 978 \\ +192 \\ \hline \underline{1,170} \end{array}$$



Another way to solve the problem.....

Add the **hundreds** (200 + 400) →

Add the **tens** (60 + 80) →

Add the **ones** (8 + 3) →

Add the place value sums (600 + 140 + 11) →

$$\begin{array}{r} 268 \\ + 483 \\ \hline 600 \\ 140 \\ + 11 \\ \hline 751 \end{array}$$

To find 67×53 , think of

67 as $60 + 7$ and

53 as $50 + 3$.

Then multiply each part of one by each part of the other and add the results.

This is the distributive property.

$$\begin{array}{r} 67 \\ \times 53 \\ \hline \end{array}$$

Calculate 50×60

$$3,000$$

Calculate 50×7

$$350$$

Calculate 3×60

$$180$$

Calculate 3×7

$$+ 21$$

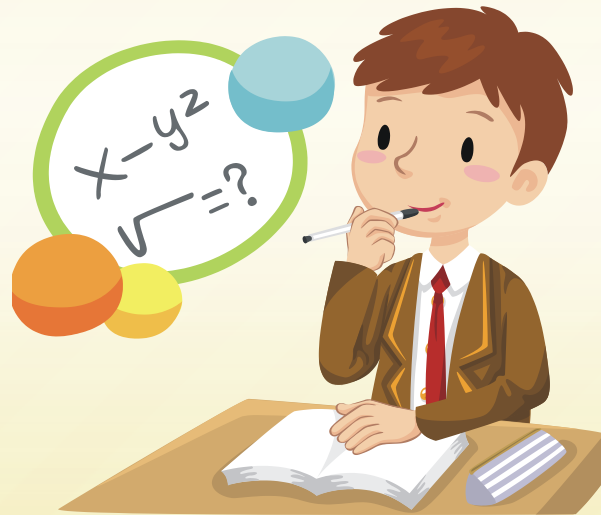
Add the *partial* products

$$\begin{array}{r} 3,000 \\ 350 \\ 180 \\ + 21 \\ \hline 3,551 \end{array}$$

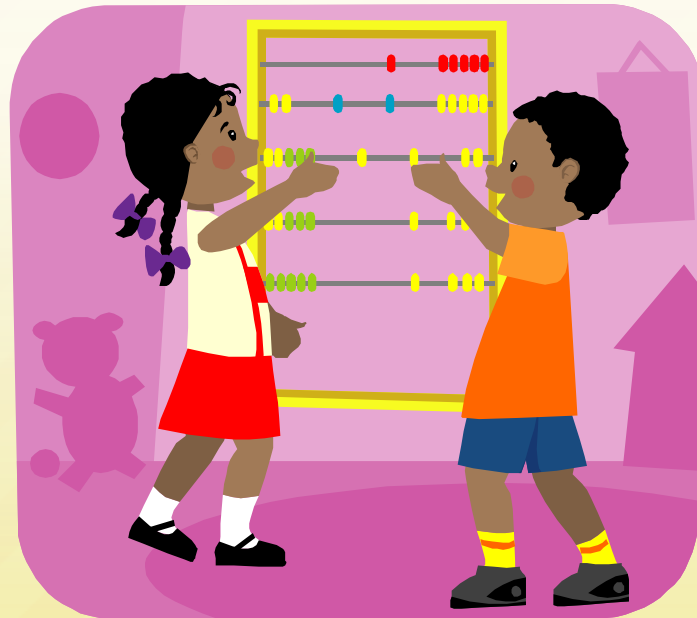
The Traditional Algorithm...

- How would you solve this...

$$5/3 \div 1/2 =$$



- So...what does it mean to “invert the divisor” and which fraction is that and why do we multiply if we’re supposed to be dividing?
- The Traditional Algorithm is a mystery to some elementary students because it is so abstract!



How do kids learn math best?

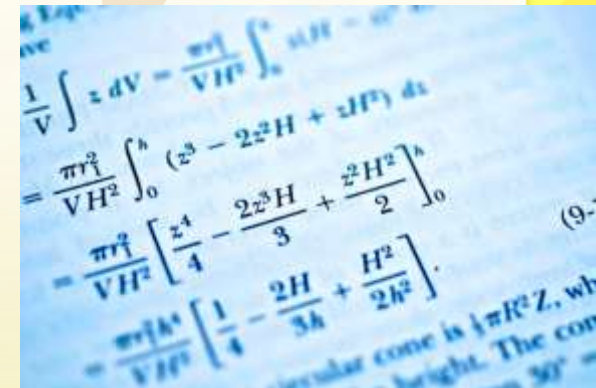
Concrete



Iconic



Abstract

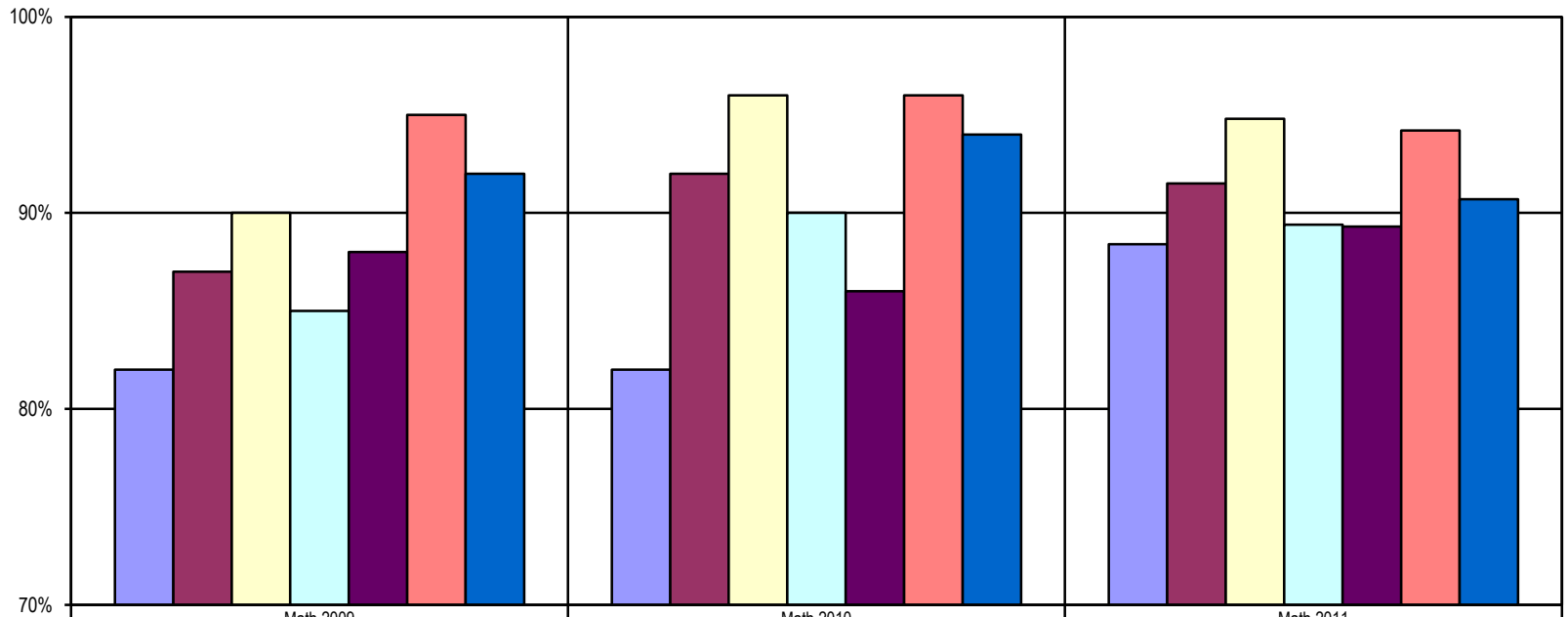


2010-11 Accomplishments...

- First year of all math programs being implemented in all (math) classrooms.
- District-wide training -Investigations, Envisions, & Prentice Hall.
- The learning curve.
- Nearly all of our certified staff has taken the MTI course.

How are we doing?

Mathematics



	Math 2009	Math 2010	Math 2011
State	82%	82%	88.4%
District	87%	92%	91.5%
Lena	90%	96%	94.8%
McDonald	85%	90%	89.4%
Russell	88%	86%	89.3%
West Park	95%	96%	94.2%
Moscow Charter	92%	94%	90.7%



Math ISAT

Proficient & Adv.

State

MSD

2008-09

82%

87%

2009-10

82%

92%

2010-11

88.4%

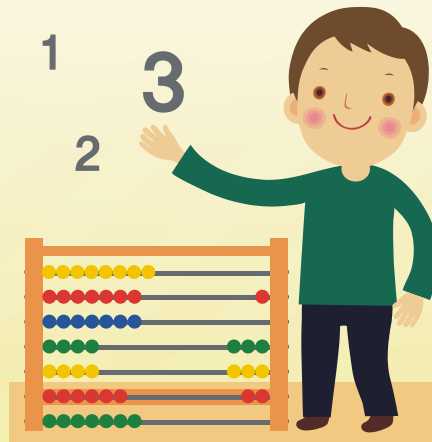
91.5%

What are we doing now?

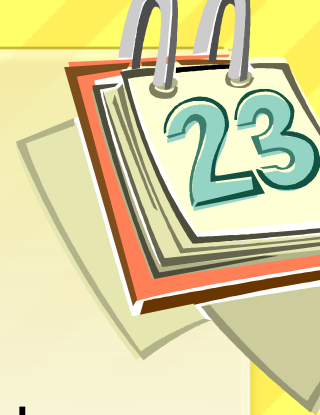
- Math committee met on Oct. 5 to compare the CCSS with MSD's essential math skills.
- Secondary staff received CCSS Training (including Math) on Oct. 6 & 7.
- Administration of the *NWEA Measures of Academic Progress* test to assess Math more than annually, grades 3-9. Almost done!

What are we doing now?

- Regional Math Coordinator currently working with 4th & 5th McDonald teachers on a monthly basis.
- Nov. 23--Math consultant meeting with 3rd & 4th grade teachers, West Park & Russell.



What are our plans?



- It takes time to develop a strong math foundation. Most of our students have used our new programs for only one year. We will continue to monitor student progress & mathematical growth.
- Review & align math vocabulary that needs to be taught in each grade level.
- Coordinate with secondary math.
- NWEA student reports will be sent home.
- District newsletter article for parents.

Our Focus:

- Students are the reason for **everything** we do!
- We make decisions based on what research says is best for kids.
- Student success is our goal!

