ELEMENTARY MATHEMATICS
Parent Presentation

NORWOOD

December 1, 2015

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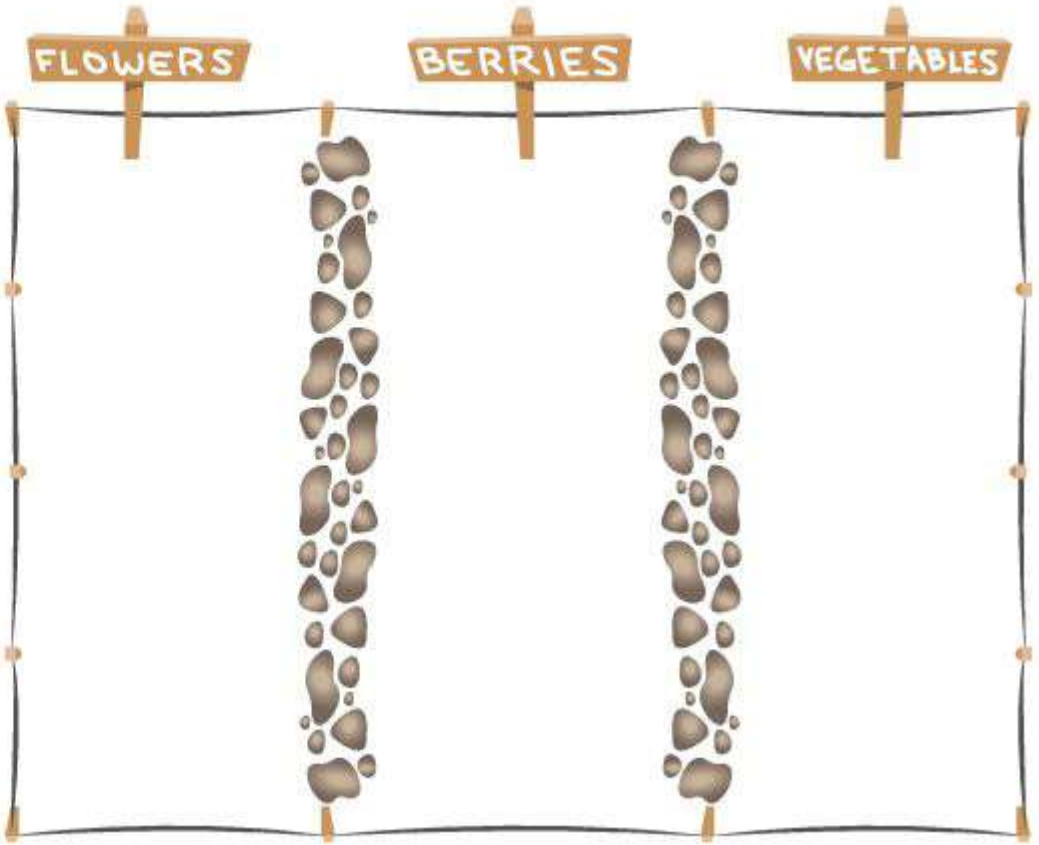
ELEMENTARY MATH COORDINATOR, PreK-5

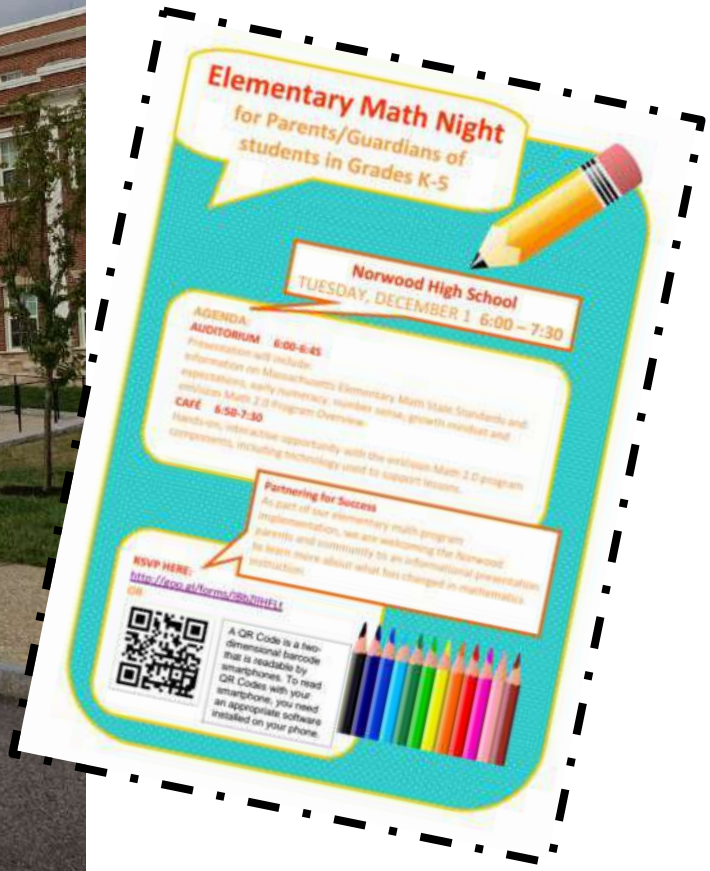
NORWOOD PUBLIC SCHOOLS

Solve & Share

The Brown family is planting $\frac{1}{3}$ of their garden with flowers, $\frac{1}{3}$ with berries, and $\frac{1}{3}$ with vegetables. The vegetable section has equal parts of carrots, onions, peppers, and tomatoes. What fraction of the garden is planted with carrots?



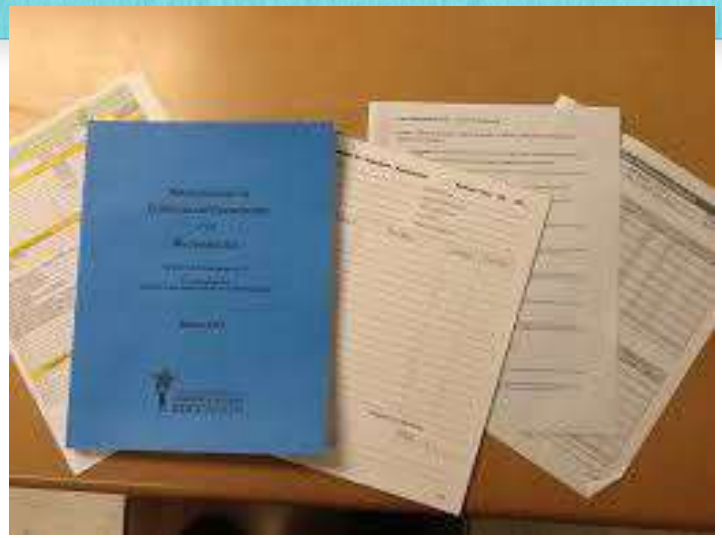

NORWOOD HIGH SCHOOL
MUSTANGS


Elementary Math Night
for Parents/Guardians of students in Grades K-5
Norwood High School
TUESDAY, DECEMBER 1 6:00 – 7:30
AGENDA:
AUDITORIUM 6:00-6:45
CAFÉ 6:50-7:30
Partnering for Success
RSVP HERE:
A QR Code is a two-dimensional barcode that is readable by smartphones. To read QR Codes with your smartphone, you need an appropriate software installed on your phone.

Partnering for Success

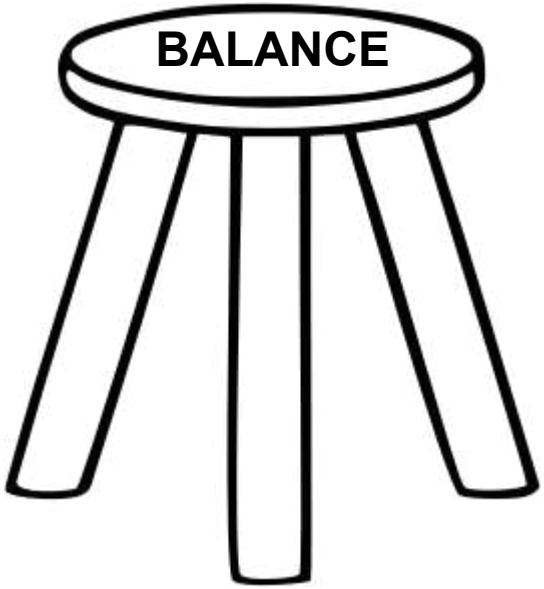
As part of our elementary math program implementation, we thank **you** the Norwood parents and community for attending our informational presentation to learn more about what has changed in mathematics instruction.

Massachusetts Department of
ELEMENTARY & SECONDARY
EDUCATION



In March 2011, that state of Massachusetts joined the vast majority of states in the country in adopting a new set of standards in the area of Mathematics based on the Common Core State Standards.

Math as a 3 legged stool



Conceptual

Application

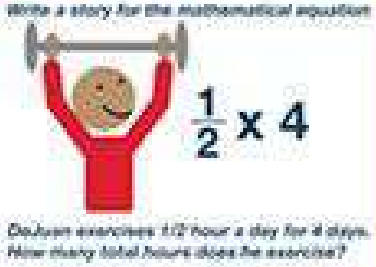
Procedural

Standards for Student Mathematical Practice

1 Make sense of problems and persevere in solving them.

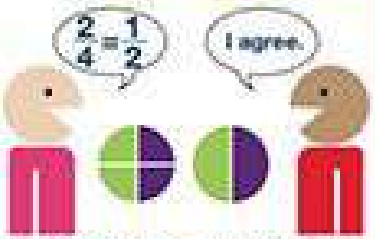
Keep on going !

2 Reason abstractly and quantitatively.



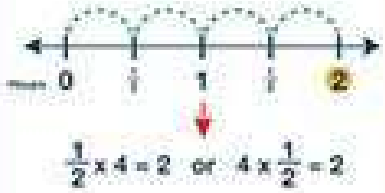
Think what makes sense.

3 Construct viable arguments and critique the reasoning of others.



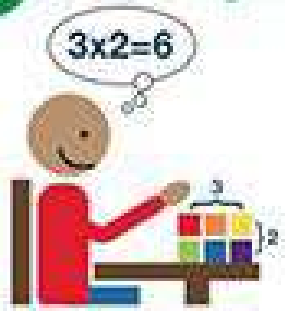
Talk and explain.

4 Model with mathematics.



Show your thinking.

5 Use appropriate tools strategically.

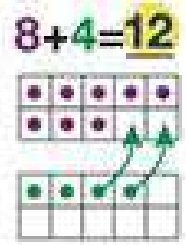


Use the right tools.

6 Attend to precision.

Check your work.

7 Look for and make use of structure.



See the pattern or connection.

8 Look for and express regularity in repeated reasoning.

See the pattern or connection.

Common Core is not a curriculum

There are consistent "standards" – which refer to the skill and knowledge a student should know.

- For example: Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

Curriculum involves classroom lessons and how the material is taught in the classroom.

- enVision Math 2.0
- Guided Math Workshop

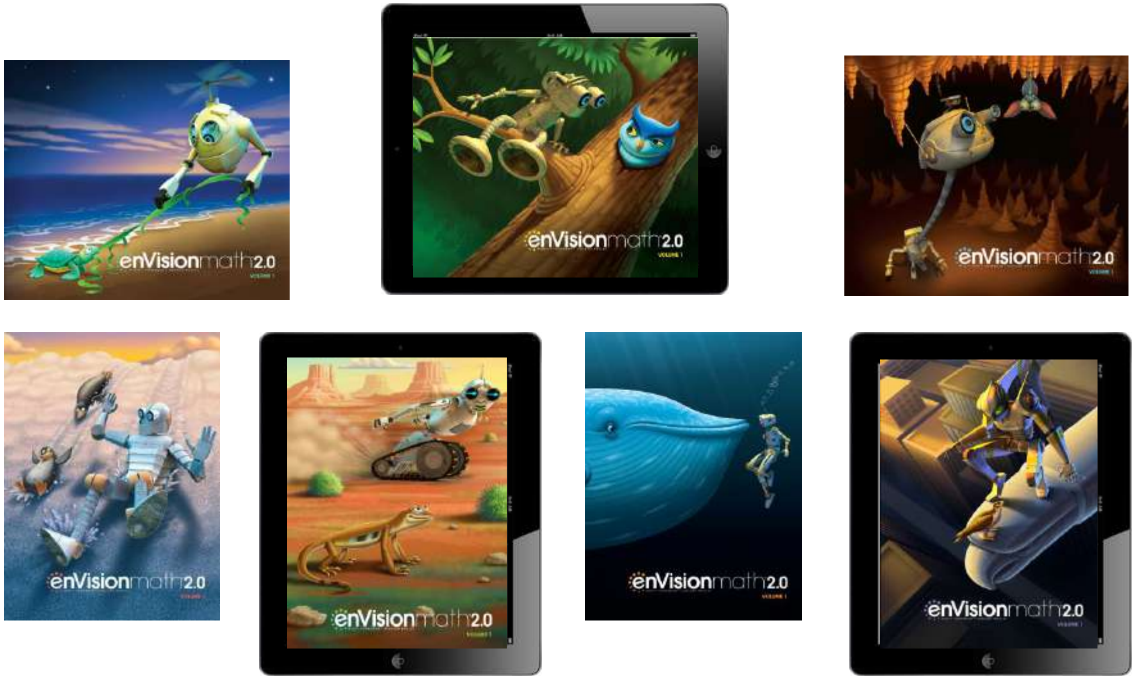
Decisions about how the Massachusetts Curriculum Framework For Mathematics standards are taught are made locally.

- Elementary Math Program Review Committee
  - 42 pilot classrooms during the 2014-15 school year

enVisionmath®2.0

SCOTT FORESMAN • ADDISON WESLEY

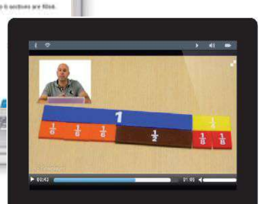
Components



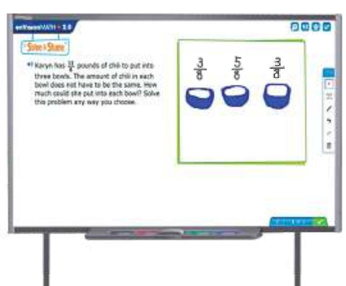
- Student's Edition, 2-Volume
- Teacher's Edition, 2-Volume
- Teacher's Edition Program Overview
- Teacher's Resource Masters, 2-Volume
- Math Practices Posters
- Problem-Solving Reading Mats with Activity Masters and Activity Guide
- Today's Challenge Teacher's Guide
- ELL Toolkit
- Assessment Sourcebook
- Math Diagnosis and Intervention System 2.0
- Interactive Math Story Books and Animated Stories (K-2)
- Animated Glossary
- Math Tools
- Math Games
- Listen and Look For Lesson Videos
- Topic Overview Professional Development Videos
- eText Student Editon
- eText Teacher Edition
- Online Assessments
- Online Assessment Handbook (3-6)
- ExamView Test Generator CD-ROM
- Daily Common Core Review Editable Files
- Math Practices Animations
- Offline Teacher Resource DVD-ROM
- Centers Manipulative Kit
- Teacher Demonstration Manipulatives Kit
- Individual Student Manipulatives Kit
- Quick and Easy Centers Kit for Differentiated Instruction

Visual Learning Animations Plus

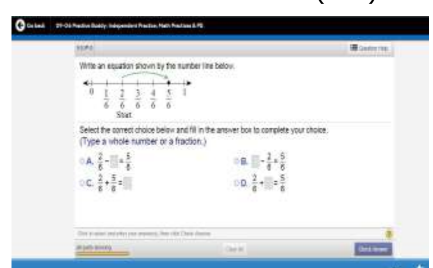
Another Look Homework Video



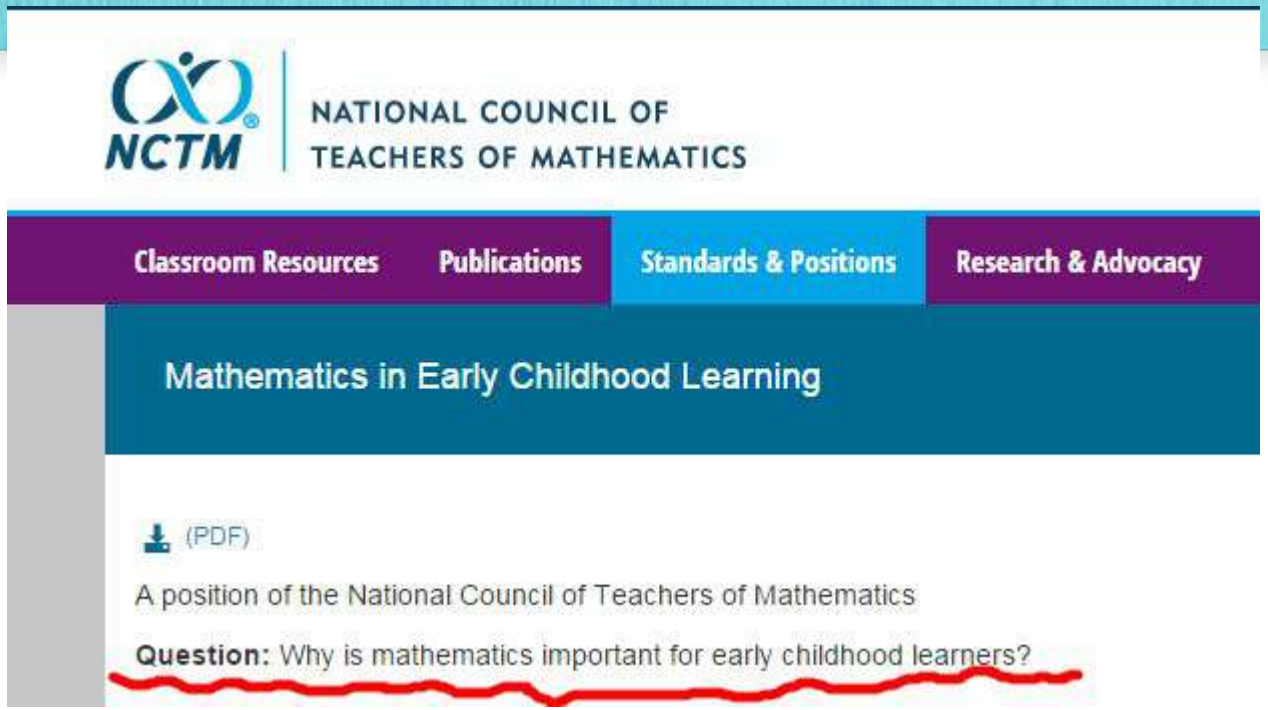
Solve & Share



Practice Buddy Personalized Practice (3-6)



Today's Challenge and Teacher Guide



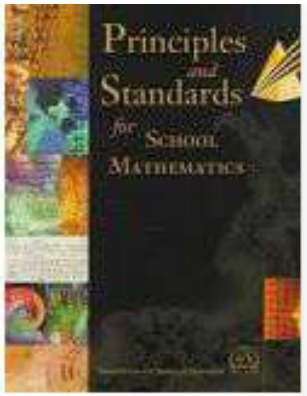
NCTM Position

Young learners' future understanding of mathematics requires an early foundation based on a high-quality, challenging, and accessible mathematics education. Young children in every setting should experience mathematics through effective, research-based curricula and teaching practices. Such practices in turn require that teachers have the support of policies, organizational structures, and resources that enable them to succeed in this challenging and important work.

Principles and Standards for School Mathematics

Book

Principles and Standards for School Mathematics are guidelines produced by the National Council of Teachers of Mathematics in 2000, setting forth recommendations for mathematics educators.



Principles and Standards calls for all partners—students, teachers, administrators, community leaders, and parents—to contribute to building a high-quality mathematics program for all students.

Partnering for Success

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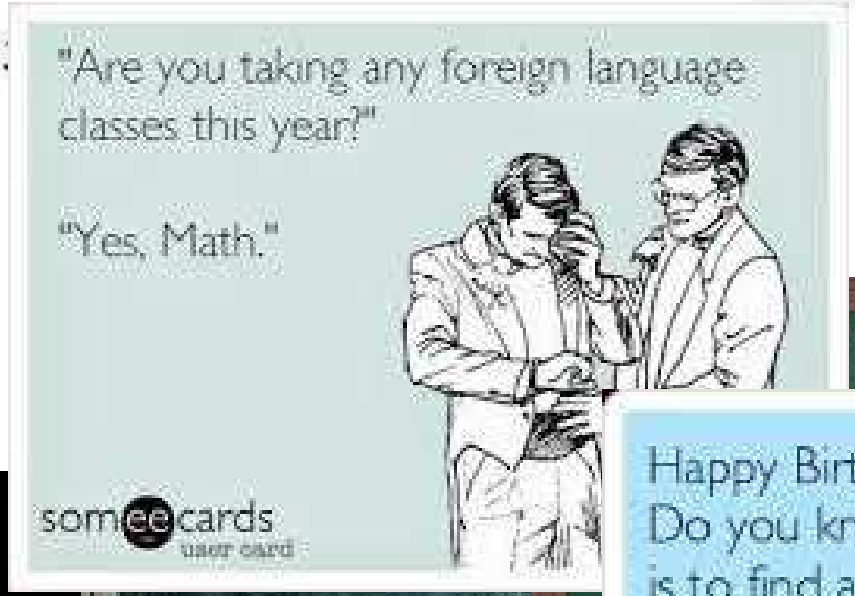
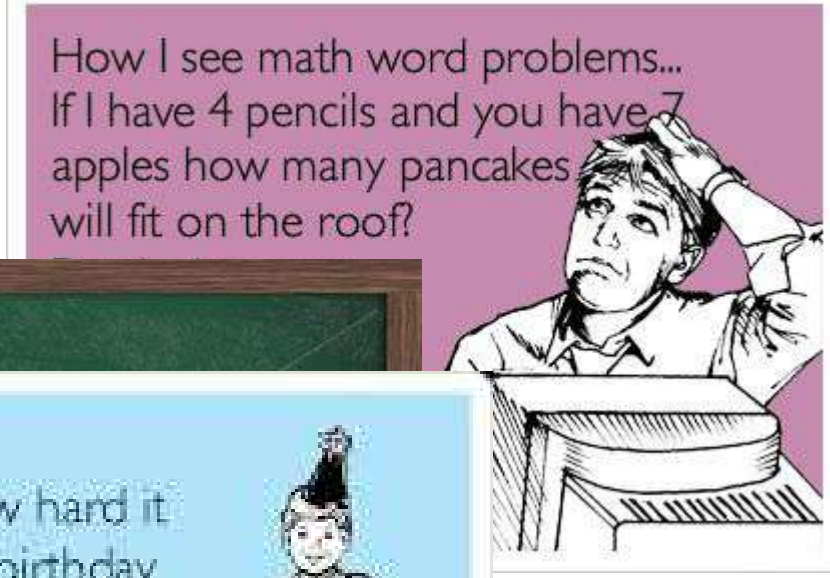
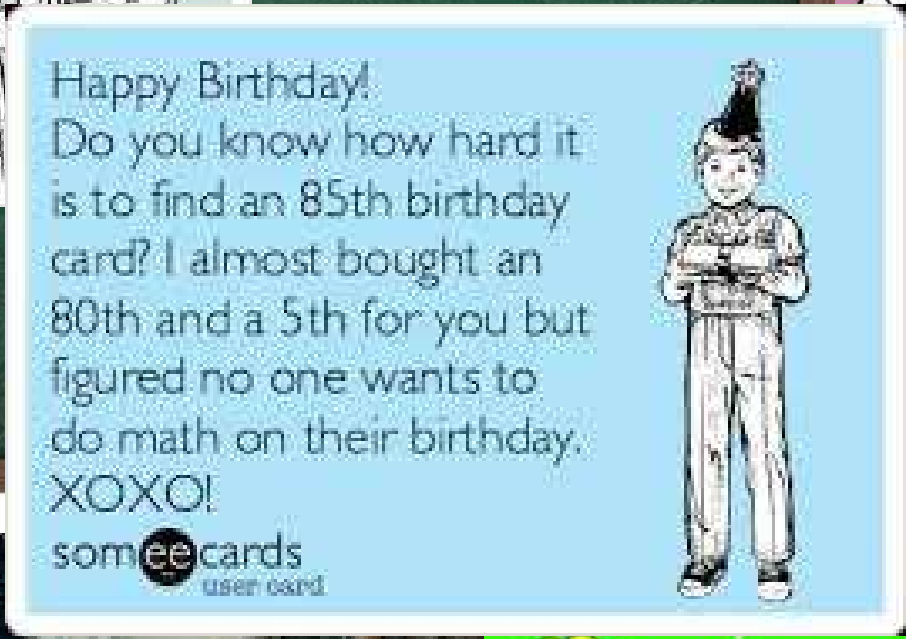
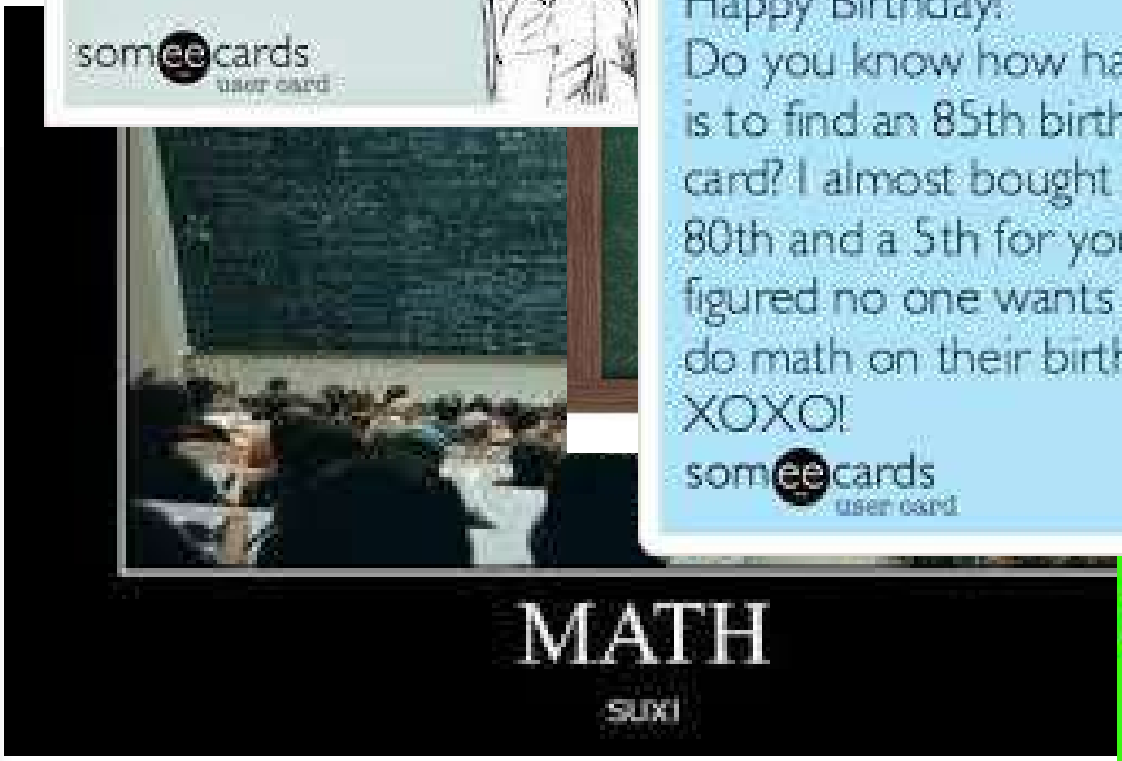
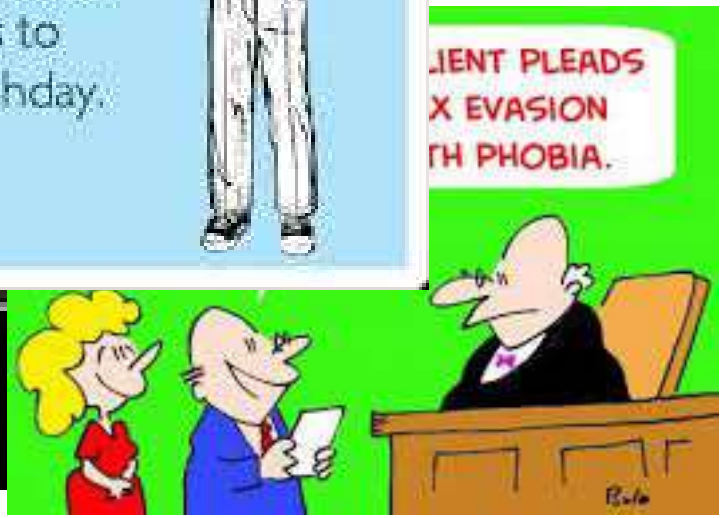

"Are you taking any foreign language classes this year?"
"Yes, Math."
someecards
user card


How I see math word problems...
If I have 4 pencils and you have 7 apples how many pancakes will fit on the roof?


Happy Birthday!
Do you know how hard it is to find an 85th birthday card? I almost bought an 80th and a 5th for you but figured no one wants to do math on their birthday.
XOXO!
someecards
user card


MATH
SUX!


IENT PLEADS
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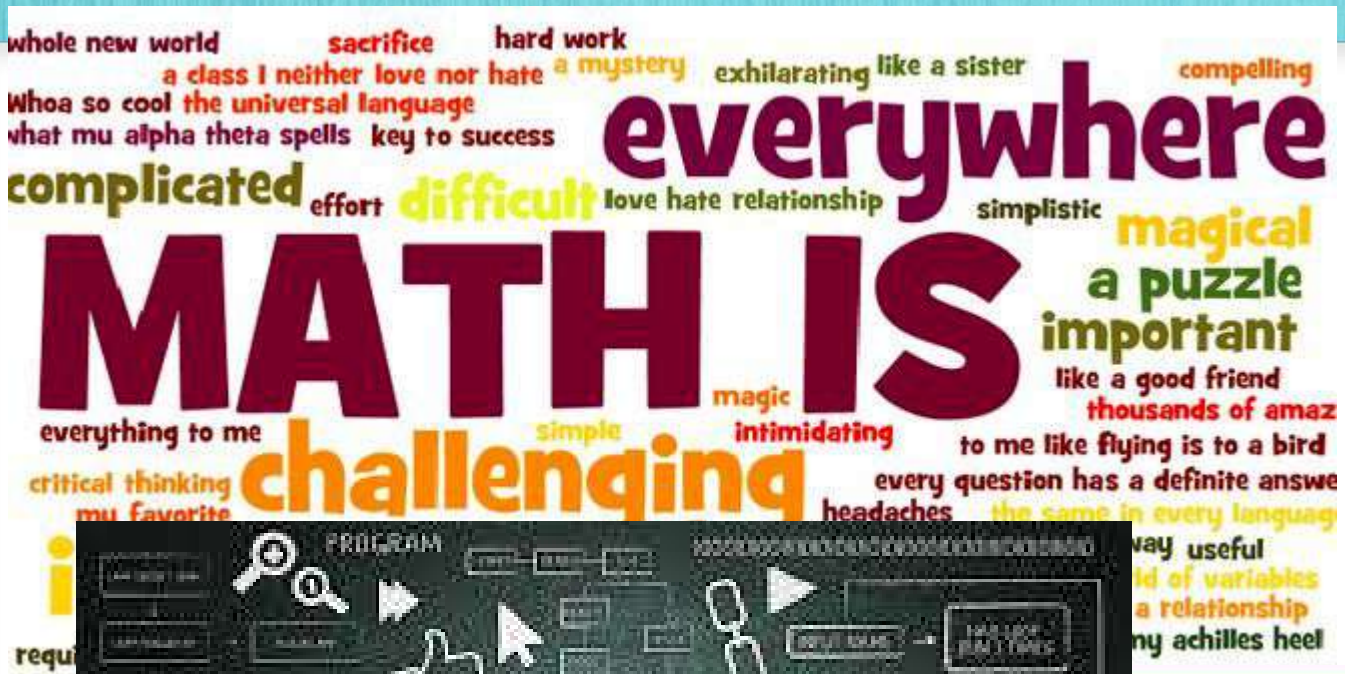
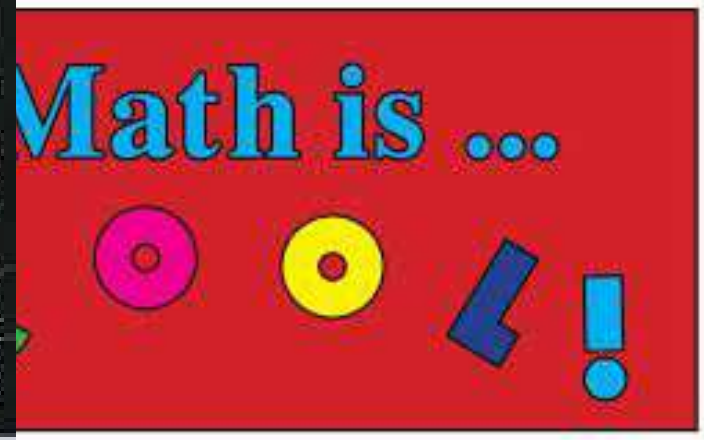
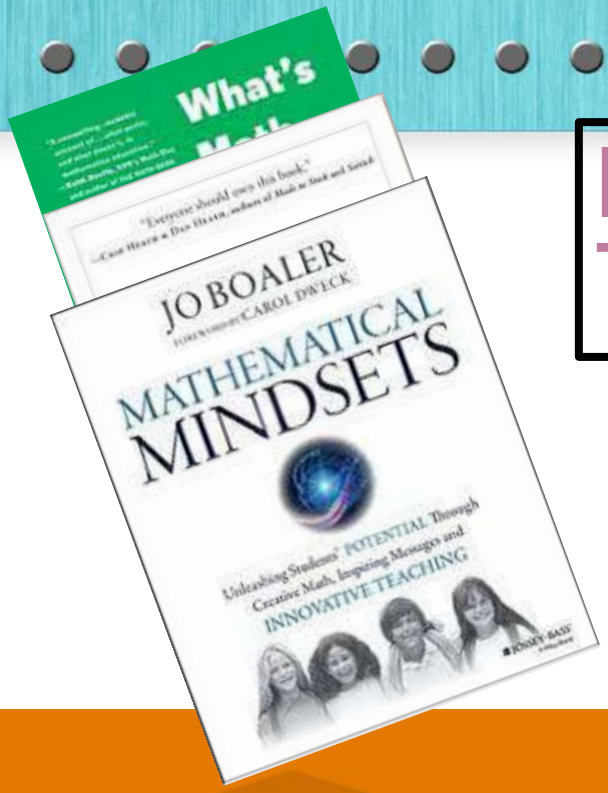

whole new world
sacrifice
hard work
a class I neither love nor hate
a mystery
exhilarating
like a sister
compelling
Whoa so cool
the universal language
what mu alpha theta spells
key to success
everywhere
complicated
effort
difficult
love hate relationship
simplistic
magical
MATH IS
a puzzle
important
like a good friend
magic
thousands of amaz
everything to me
simple
intimidating
to me like flying is to a bird
critical thinking
challenging
every question has a definite answe
headaches
useful
a relationship
achilles heel


PROGRAM
COMPUTER
CHAT
WWW
SOFTWARE
LOADING


KEEP
CALM
AND
LOVE
MATH


Math is ...
COOL!


IKE
ATH



Follow Jo Boaler on Twitter @joboaler

youcubed at Stanford University

Anyone Can Learn to High Levels

Mistakes Grow Your Brain

When You Believe In Yourself Your Brain Operates Differently

Ideas of "Giftedness" Hurt Students

Speed and Time Pressure Block Working Memory

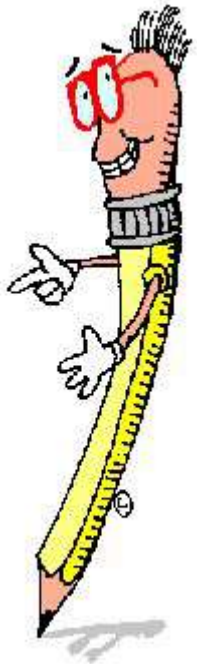
Visual Math Improves Math Performance

When You Believe In Your Students They Do Better

Parents' Beliefs about Math Change Their Children's Achievement

Aligning Assessment to Brain Science

I used to think mathematicians were super smart people who knew everything but now I think they are everyone who does math.

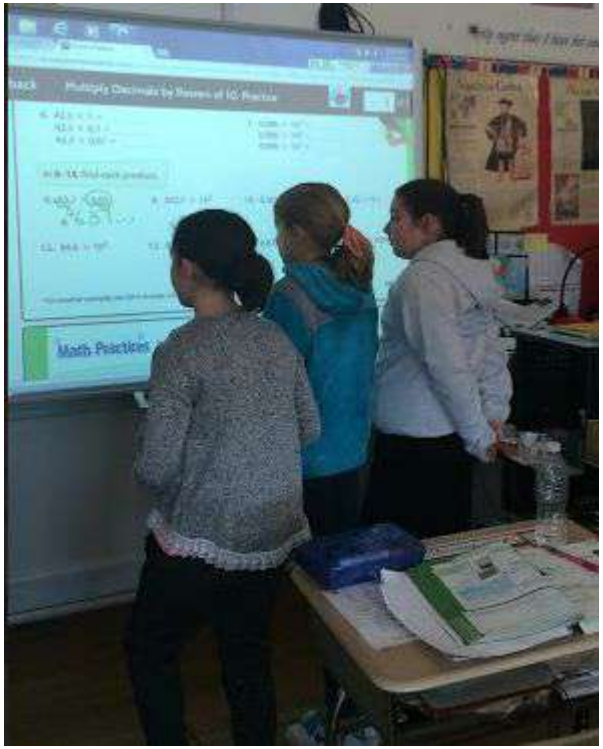


Derek Pipkorn @mrpipkorn · May 12

A student thanked me in class today for not providing the formula, but instead allowing her to explore. Win! #edchat #MTBoS #MSMathChat

5 18 ...

We have an opportunity to make learning math concepts a better experience for our children.



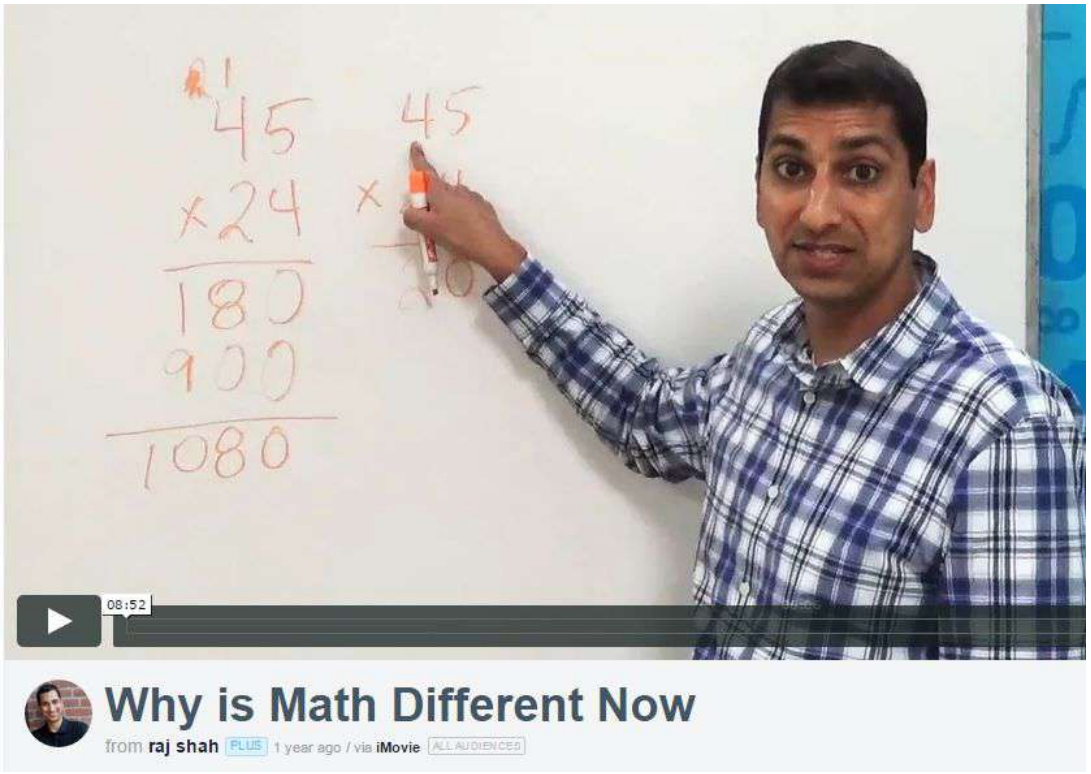
try this problem...

45 x 24

Why is Math Taught So Differently Now?

LINK:

[How to help your child with mathematics at home]



The Math isn't New

The math is the same; students are just being taught to understand math concepts more deeply.

Instead of rote memorization, the new standards push students to understand why the right answers are right and why the math works.

When students just learn tips and tricks for getting the right answer, those tricks break down when they do more advanced math in later grades.

A few more things to know….

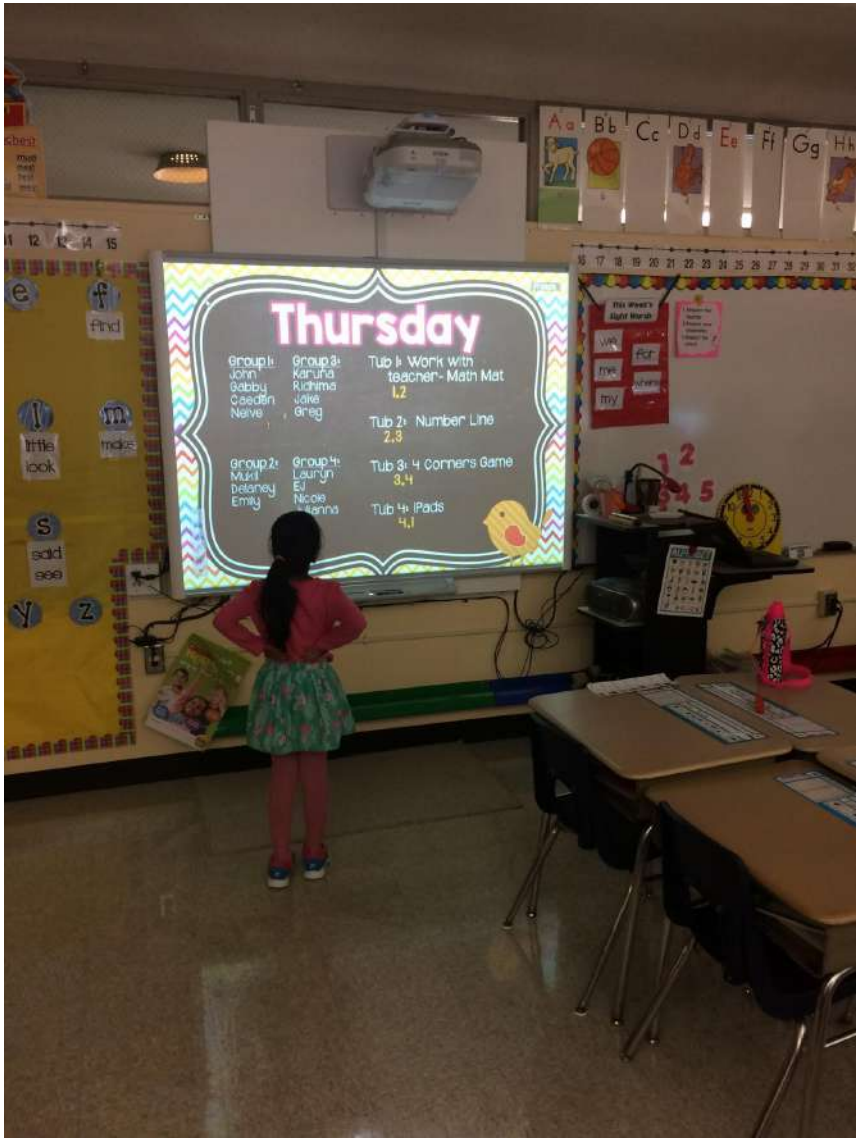
the standards expect students to understand what they are doing so they are able to use and apply mathematics when they leave the classroom

children in elementary school still have to learn to add, subtract, multiply and divide, the same way their parents did

Learning how to add and subtract with manipulatives, drawings, visual models and equations strengthens a student's understanding of what is happening and why.

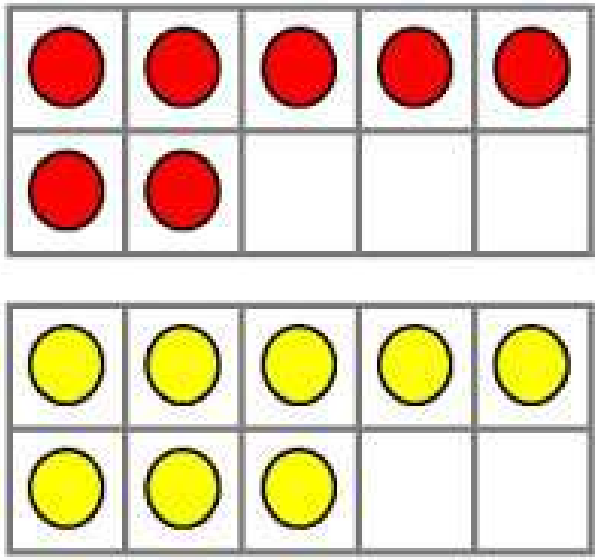
This stand on sense-making verse traditional solution methods is critical to your child developing a solid understanding of numbers…. and hopefully a love for math.

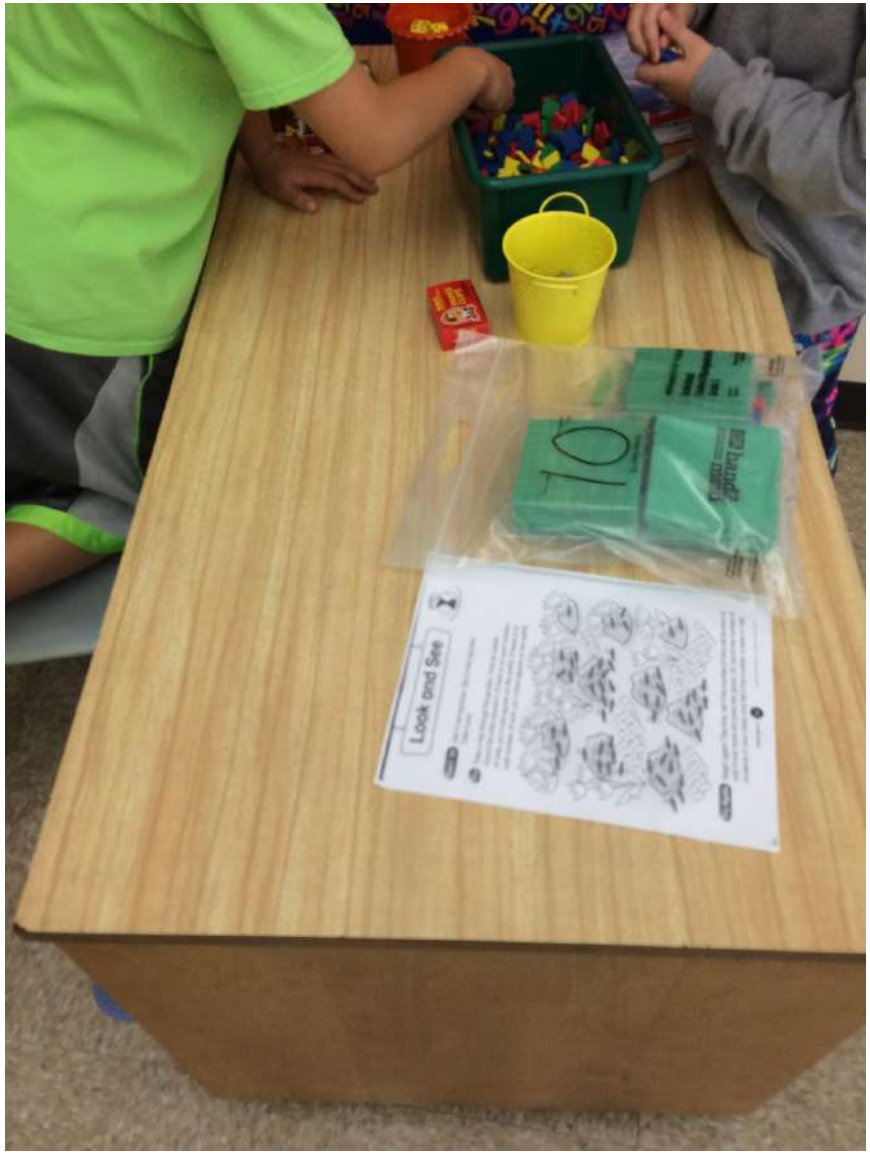
If not a love of math, maybe just a little less frustration.



What would you tell a friend who was having difficulty with this addition fact 7+8?

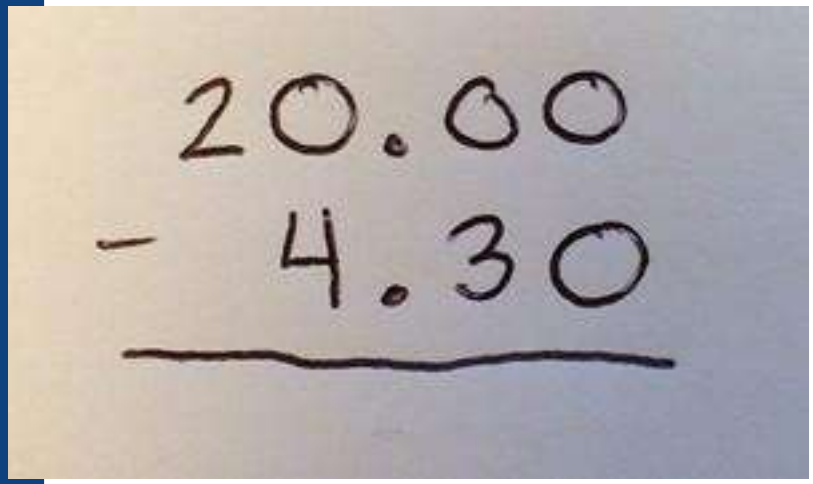
Grade 2 student





When we teach children basic facts, we teach them to understand what is happening, it is not just memorization process.

We must continue to build understanding for our students when they work with multi-digit numbers.



Suppose you buy coffee and it costs $4.30 but all you have is a $20 bill. How much change should the barista give you back?

(Assume for a second the register is broken.)

"….take 70 cents to get to $5… and another $10 to get up to $20… so you should get back $15.70"

By developing problem solving skills, we learn not only how to tackle math problems, but also how to logically work our way through any problems we may face.

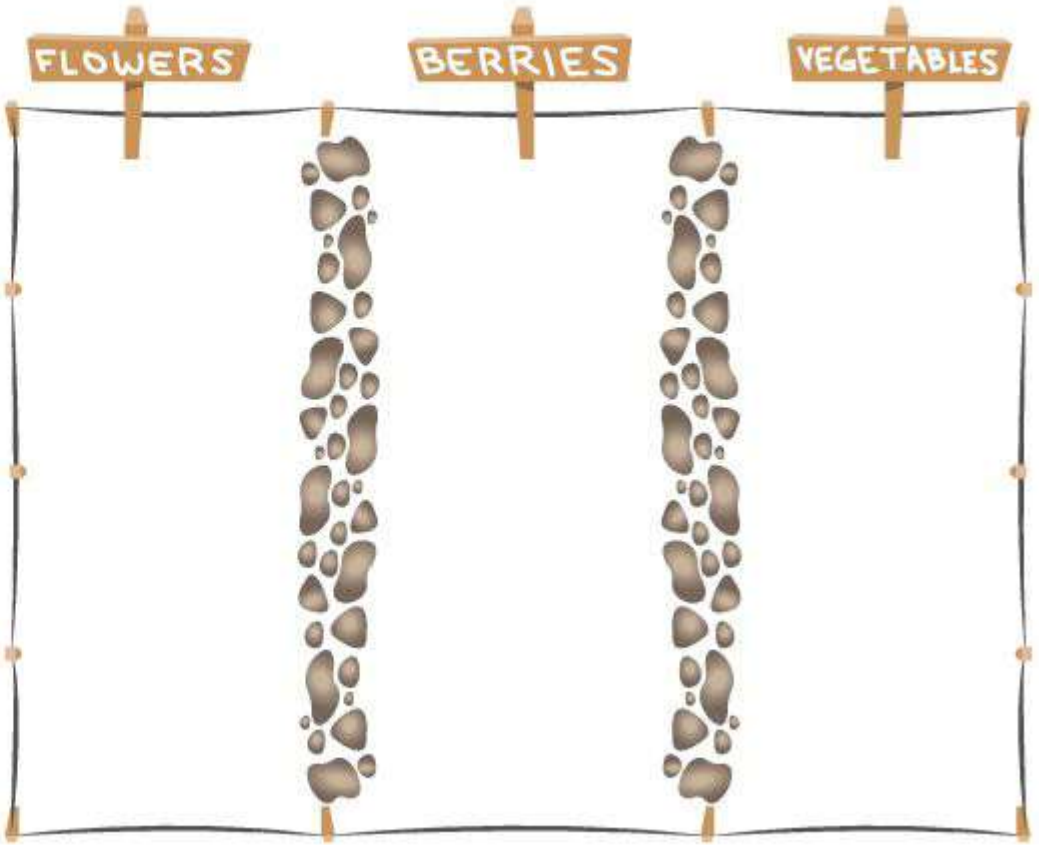
The memorizer can only solve problems they've encountered already, but the problem solver can solve problems they've never seen before.

The problem solver is flexible; they can diversify. Above all, they can create.

~ Richard Rusczyk, Founder, Art of Problem Solving Company

Solve & Share

The Brown family is planting $\frac{1}{3}$ of their garden with flowers, $\frac{1}{3}$ with berries, and $\frac{1}{3}$ with vegetables. The vegetable section has equal parts of carrots, onions, peppers, and tomatoes. What fraction of the garden is planted with carrots?



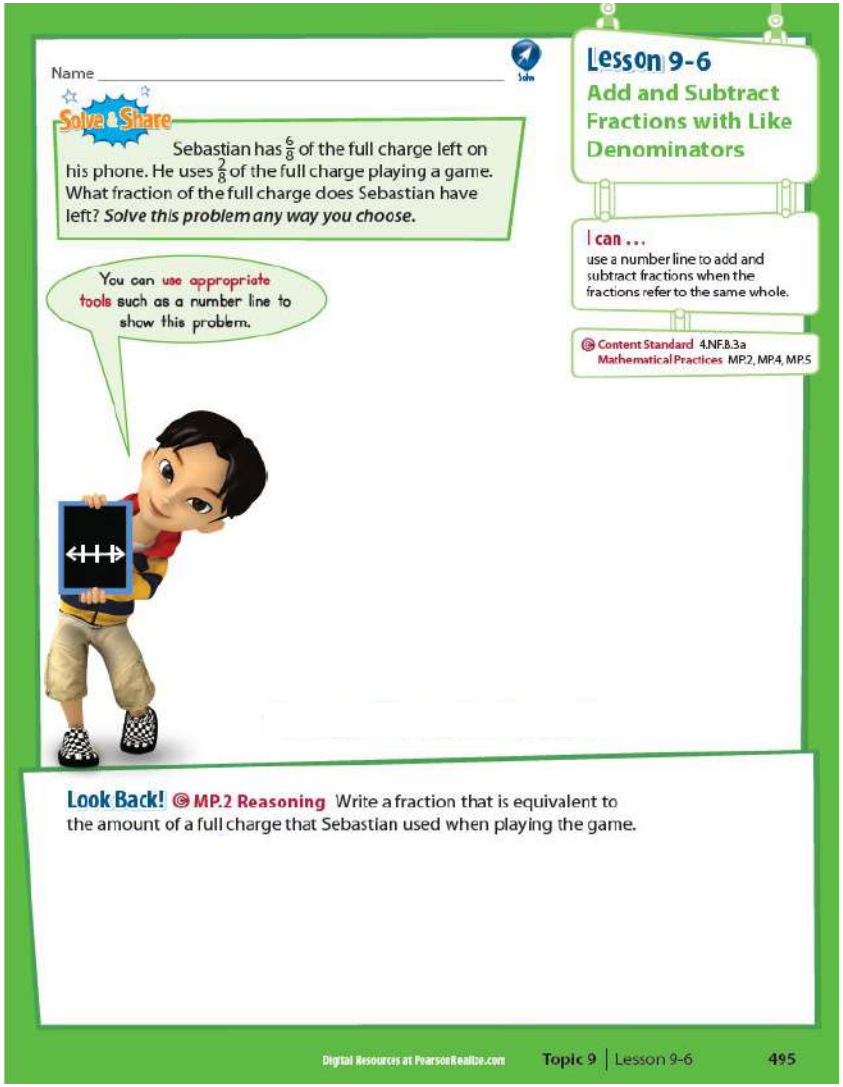
Share solutions

Step 1: Problem-Based Learning

Solve and Share

Problem-Based Learning

- Step 1 of every lesson
- New math ideas are embedded
- Connect prior knowledge to new ideas
- Solve in multiple ways


Name _____

Solve & Share

Sebastian has $\frac{6}{8}$ of the full charge left on his phone. He uses $\frac{2}{8}$ of the full charge playing a game. What fraction of the full charge does Sebastian have left? *Solve this problem any way you choose.*

You can use appropriate tools such as a number line to show this problem.

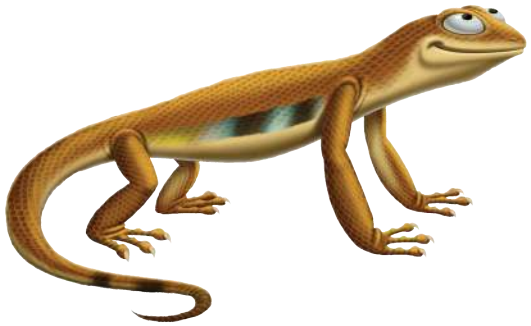
Lesson 9-6
Add and Subtract Fractions with Like Denominators

I can . . .
use a number line to add and subtract fractions when the fractions refer to the same whole.

Content Standard 4.NF.B.3a
Mathematical Practices MP.2, MP.4, MP.5

Look Back! MP.2 Reasoning Write a fraction that is equivalent to the amount of a full charge that Sebastian used when playing the game.

Digital Resources at PearsonRealize.com Topic 9 | Lesson 9-6 495



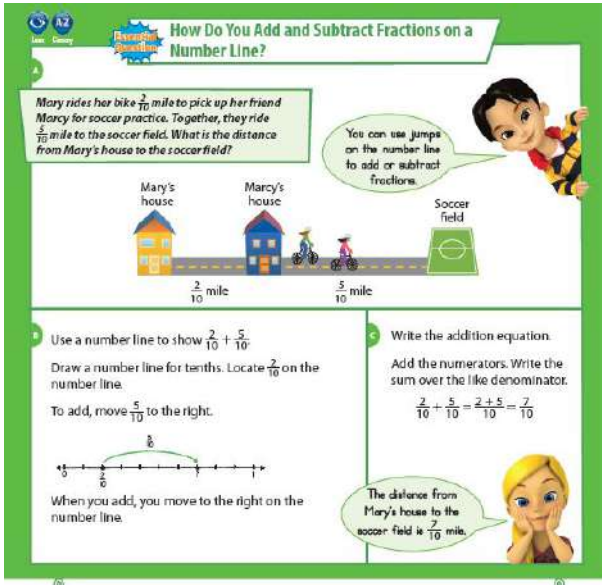
enVisionmath2.0

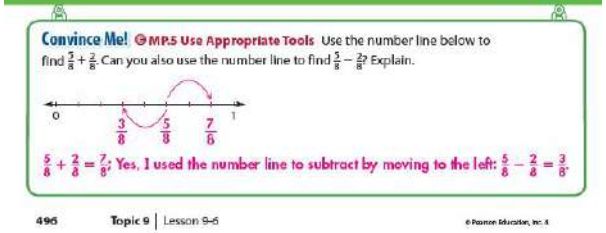
effective

Visual learning

LESSON STEP 2

- Visual instruction on student page allows concepts to be accessed by more students.
- **Interactive animations** engage learners, deepen understanding, and make important lesson concepts explicit.



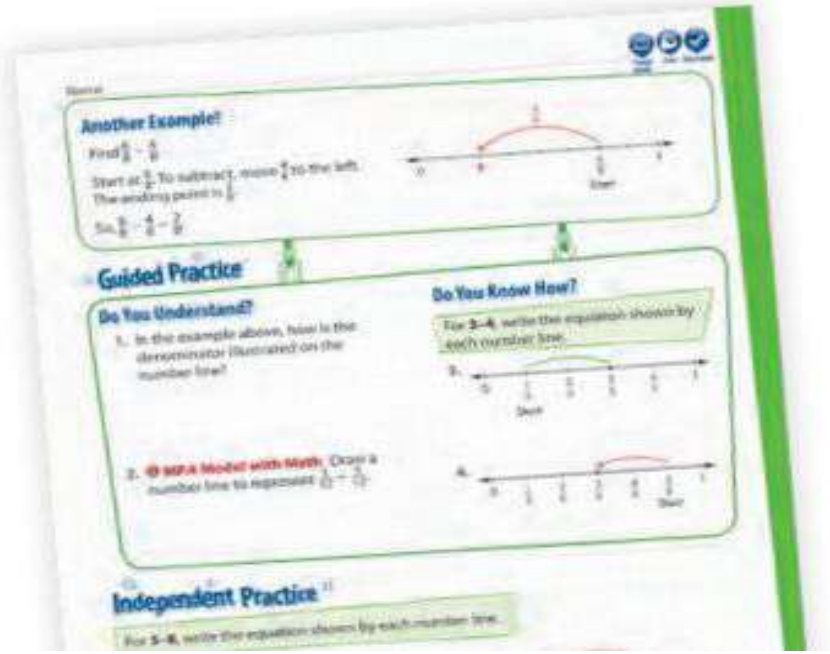


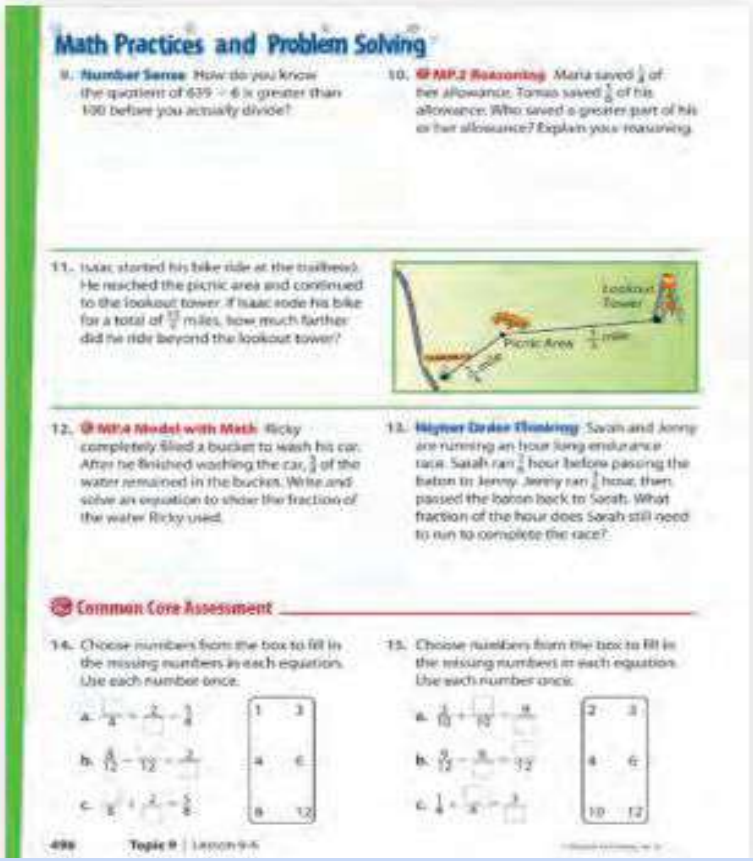
Learn

Visual Learning Animation Plus

Independent Practice – Math Practices and Problem Solving

- Every lesson in Student's Edition
- Builds proficiency
- Higher Order Thinking
- Enhanced items target Common Core Standards.





Students may be working alone, in pairs, or in small groups.

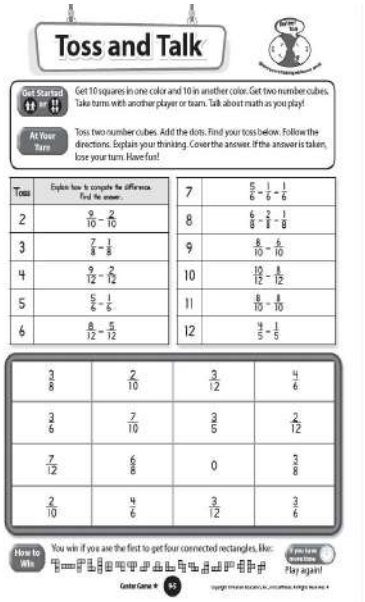
Students who finish early may be working in differentiated centers.

Step 3: Assess and Differentiate

Quick Check, Intervention Activity, Centers and Technology integration

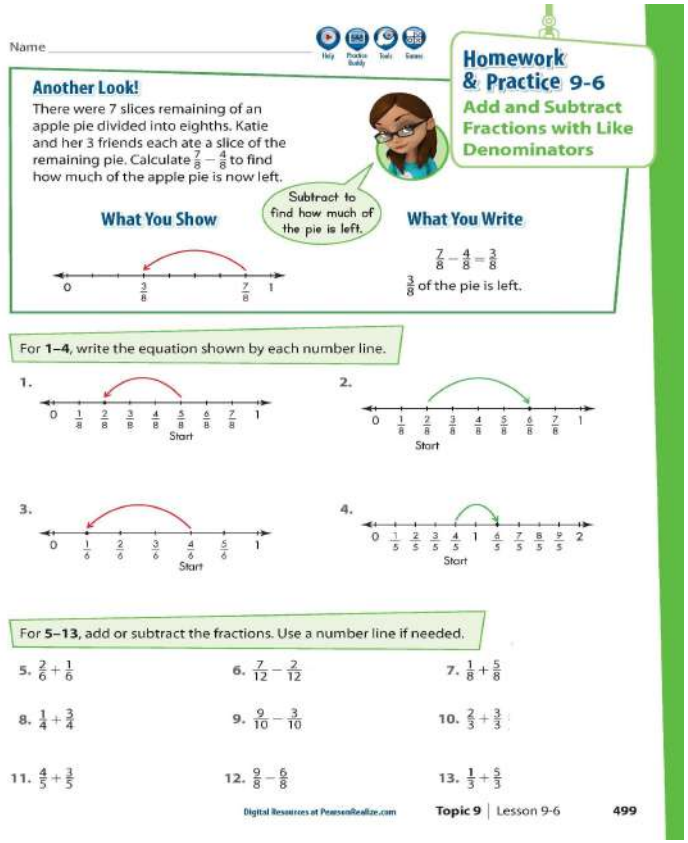
enVisionmath2.0

engaging



Helping at home:

Homework, Home-School Connection activity



Name _____

Another Look!

There were 7 slices remaining of an apple pie divided into eighths. Katie and her 3 friends each ate a slice of the remaining pie. Calculate $\frac{7}{8} - \frac{4}{8}$ to find how much of the apple pie is now left.

What You Show

Subtract to find how much of the pie is left.

What You Write

$\frac{7}{8} - \frac{4}{8} = \frac{3}{8}$

$\frac{3}{8}$ of the pie is left.

Homework & Practice 9-6
Add and Subtract Fractions with Like Denominators

For **1–4**, write the equation shown by each number line.

1. 2. 3. 4.

For **5–13**, add or subtract the fractions. Use a number line if needed.

5. $\frac{2}{6} + \frac{1}{6}$ 6. $\frac{7}{12} - \frac{2}{12}$ 7. $\frac{1}{8} + \frac{5}{8}$

8. $\frac{1}{4} + \frac{3}{4}$ 9. $\frac{9}{10} - \frac{3}{10}$ 10. $\frac{2}{3} + \frac{3}{3}$

11. $\frac{4}{5} + \frac{3}{5}$ 12. $\frac{9}{8} - \frac{6}{8}$ 13. $\frac{1}{3} + \frac{5}{3}$

Digital Resources at PearsonRealize.com Topic 9 | Lesson 9-6 499

Name _____

Home-School Connection Topic 1

Understand Multiplication and Division of Whole Numbers

Topic 1 Standards

3.OA.A.1, 3.OA.A.2, 3.OA.A.3, 3.OA.B.5

See the front of the Student's Edition for complete standards.

Dear Family,

Your child is learning how to multiply. Help him or her think of multiplication as joining equal groups. For example, 5×2 is 5 groups of 2. So, $5 \times 2 = 10$.

Your child is also learning how to divide. Help him or her think of division as sharing equally. For example, $42 \div 7$ can be thought of as 42 crayons and 7 boxes. Each box has an equal number of crayons. There are 6 crayons in each box.

Do the activities below with your child to help him or her learn multiplication and division concepts and facts.

Multiplication Stories

Give your child a multiplication fact, such as 4×3. Have your child tell you a multiplication story for that fact. Sample story: Jake has 4 bags of apples. There are 3 apples in each bag. How many apples does Jake have in all? Repeat the activity with a different multiplication problem.

Division Stories

Give your child a division fact, such as $32 \div 8$. Have your child tell you a division story for that fact. Sample story: Sally has 32 pictures. She puts an equal number of pictures on 8 pages. How many pictures does Sally put on each page? Repeat the activity with a different division problem.

Observe Your Child

Focus on Mathematical Practice 8

Look for and express regularity in repeated reasoning.

Help your child become proficient with Mathematical Practice 8. Ask your child to explain the relationship of the factors in multiplication to the number of equal groups and the number in each group.

Use the online components:

-Another Look Video

-Visual learning Animation

-Student e-text to frame the homework within the lesson

Helping at home:

Homework

Home-School Connection

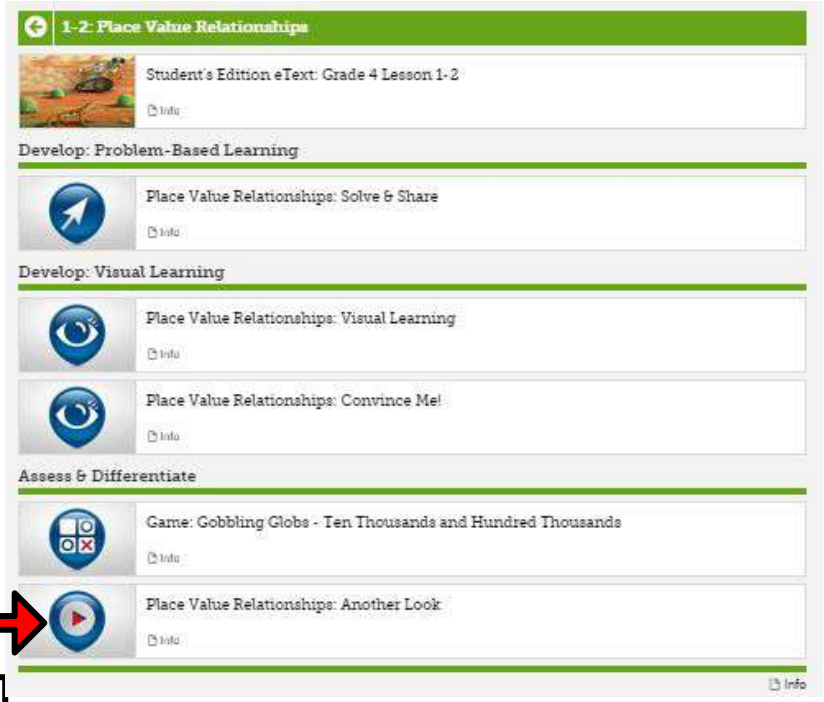
Ask -- What do you think you know…

Watch the spent on the amount of **time** spent on the assignment and stick to the handbook guidelines

Write a note to the teacher

Another Look

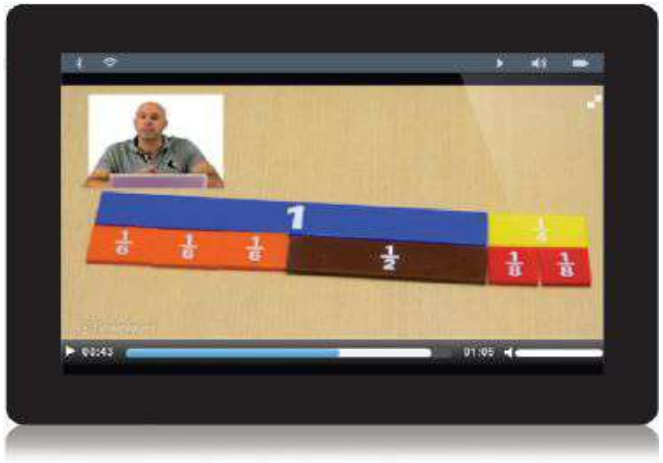
Homework Video - available through student account access



Daily video for students and parents.

Presents an example as a lesson refresher.

Reviews the math strategy taught in class.



NORWOOD PUBLIC SCHOOLS
275 Prospect Street, PO Box 67
Norwood, MA 02062
781.762.6804 Phone

Students

- Big Ideas Math
- Elementary Library
- Elementary Science Center
- Google Drive
- Google Apps For Education Resources
- High School Guidance
- High School Library
- High School Program of Studies
- Lexia Core5
- Lexia Strategies
- Pearson Realize Math
- Summer Math
- Summer Reading
- Working Papers

LOG ON AT HOME!

You and your child can access the new math program online at www.pearsonrealize.com and sign-in using the username and password was sent home by the teacher.

PEARSON realize.

PROGRAMS CLASSES DATA CENTERS

enVisionmath2.0 Common Core Grade 4 2016

View program

0 New assignment(s) submitted
Grade 4 Kelly

0 New attachment(s) submitted
Grade 4 Kelly

View class

1 of your 18 students have signed in
Grade 4 Kelly

0 New test score(s)
Grade 4 Kelly

View class

Ways to help at home

Practice counting money with real coins

Let your child help you cook -- cooking involves counting and measuring

Help your child learn the math vocabulary -- academic vocabulary

Point out math in our everyday lives

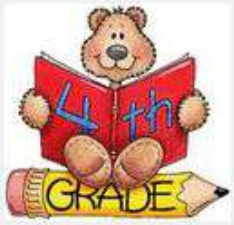
Provide paper or a whiteboard for your child to work on when you ask them difficult questions.

Study basic facts - 5 to 10 minutes a day -- establish a routine

There are two important documents that guide student's participation in summer math this year. The first document is the **Summer Math Activity Menu**. This document will guide students in choosing math activities that will keep their skills sharp! Students will keep track of their hard work on the second document, the **Summer Math Log**. These documents were sent home with students. Additional copies may be downloaded by clicking the blue boxes above.

Addition flash cards may be downloaded **here.** Multiplication flash cards may be downloaded **here**.

Click on your child's next year's grade level to download a special summer math game!



http://www.norwood.k12.ma.us/curriculum/Summer-Math.cfm

Ways to build a math culture

Be positive and supportive

Try to set aside your distaste for math and encourage your children as much as possible.

Remember young children are eager to learn.

ADDITION STRATEGIES:

Count on 1, 2 or 3 YELLOW

Doubles GREEN

Combination of TEN RED

Add onto 10

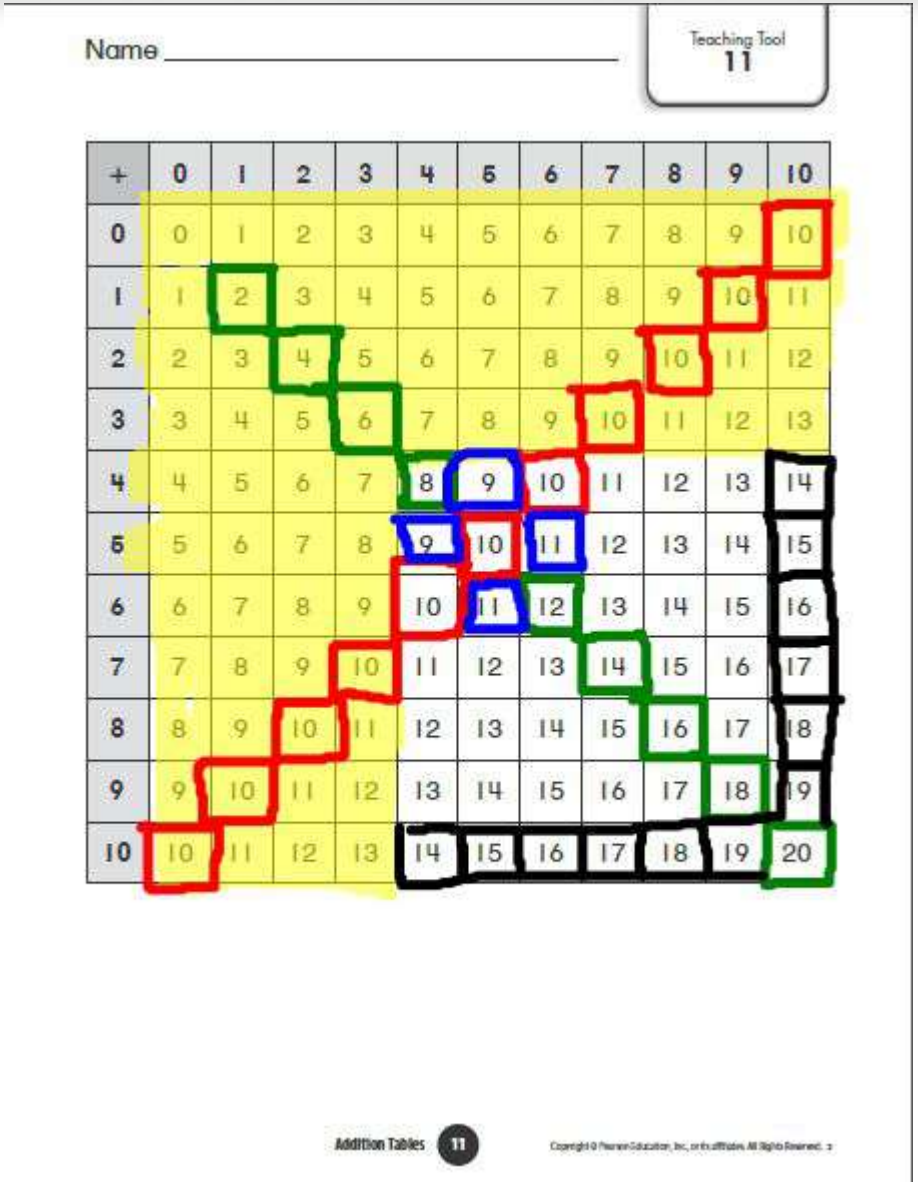
Near Doubles (7+8)

Doubles plus 2 (5+7 = 5+5+2)

Making Ten and add the rest (9+5)

Building on Known Facts

Having fluency with addition supports the knowledge of subtraction facts



Name _____

Teaching Tool
11

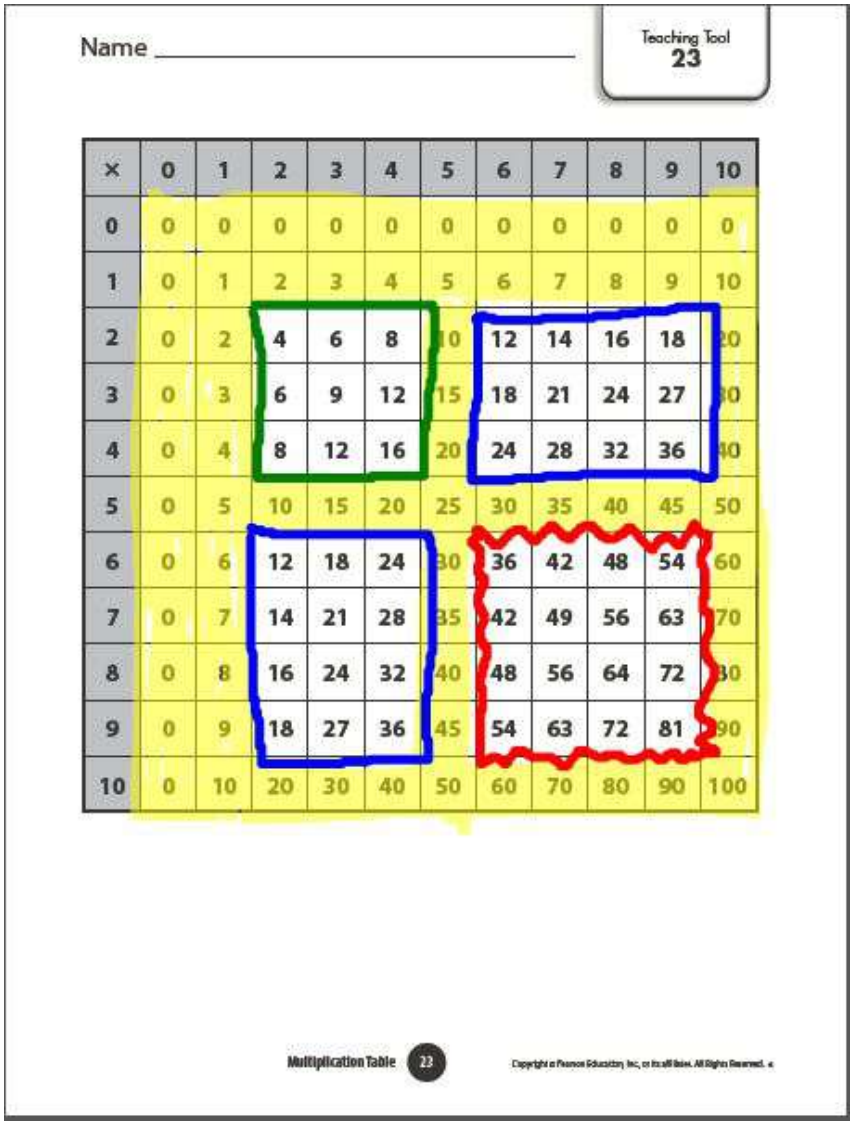
+	0	1	2	3	4	5	6	7	8	9	10
0	0	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10	11
2	2	3	4	5	6	7	8	9	10	11	12
3	3	4	5	6	7	8	9	10	11	12	13
4	4	5	6	7	8	9	10	11	12	13	14
5	5	6	7	8	9	10	11	12	13	14	15
6	6	7	8	9	10	11	12	13	14	15	16
7	7	8	9	10	11	12	13	14	15	16	17
8	8	9	10	11	12	13	14	15	16	17	18
9	9	10	11	12	13	14	15	16	17	18	19
10	10	11	12	13	14	15	16	17	18	19	20

Here's what I already know!

Use your highlighter to mark the problems you already know quickly. As you learn new facts, highlight them!

MULTIPLICATION STRATEGIES:

Zero Property
Identity Property
Doubles
Clock 5s
Nine facts
Doubles Doubled
Doubles Plus One
Set
Fives Plus One Set



Name _____

Teaching Tool 23

×	0	1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10
2	0	2	4	6	8	10	12	14	16	18	20
3	0	3	6	9	12	15	18	21	24	27	30
4	0	4	8	12	16	20	24	28	32	36	40
5	0	5	10	15	20	25	30	35	40	45	50
6	0	6	12	18	24	30	36	42	48	54	60
7	0	7	14	21	28	35	42	49	56	63	70
8	0	8	16	24	32	40	48	56	64	72	80
9	0	9	18	27	36	45	54	63	72	81	90
10	0	10	20	30	40	50	60	70	80	90	100

Multiplication Table 23

Will my child ever learn Math the way I did?

traditional algorithms “carrying” in addition and “borrowing” in subtraction are now introduced after students have built a strong understanding using place value strategies.

When it takes your child longer than '*just solving it the real way*' try not to get frustrated and worried.

Think about the deep mathematical understanding your child is developing while thinking about what they are doing, not just applying rules to numbers.

THE BIG TAKEAWAY

Elementary math strategies are built for understanding, not efficiency.


IT'S ON
enVisionmath2.0
4th GRADE
ZERO

Please join us in the cafeteria for an opportunity to interact with the enVision 2.0 Math components and ask questions.

Each station is set up by GRADE LEVEL

- ➔ student workbooks
- ➔ game with materials
- ➔ chrome book to explore the online dashboard and play an online envision game
- ➔ student manipulative kit
- ➔ Problem Solving Reading mat
- ➔ scope and sequence

Jill Milton -- jmilton@norwood.k12.ma.us

Jill Milton -- jmilton@norwood.k12.ma.us

Elementary Math Coordinator, Norwood Public Schools

In addition,

- Looney Math Consulting, Instructor
- Board member with MassMATE (Math Assoc of Math Teachers)
- Board member with MACS (Math and Computer Science @ Bridgewater State University

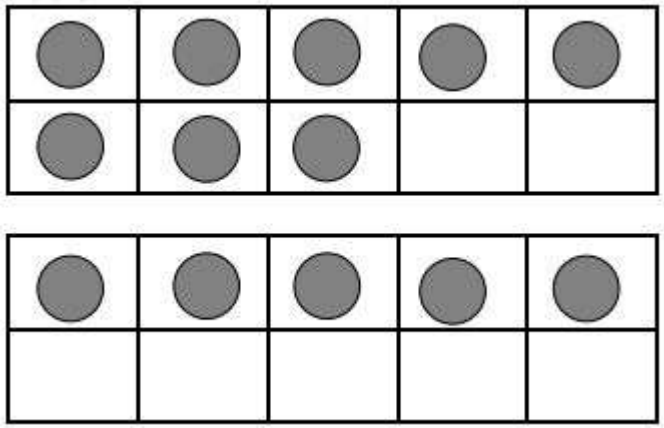
➔ Classroom Teacher - K, 1, 2, 3, 4

➔ Math Specialist - K-5

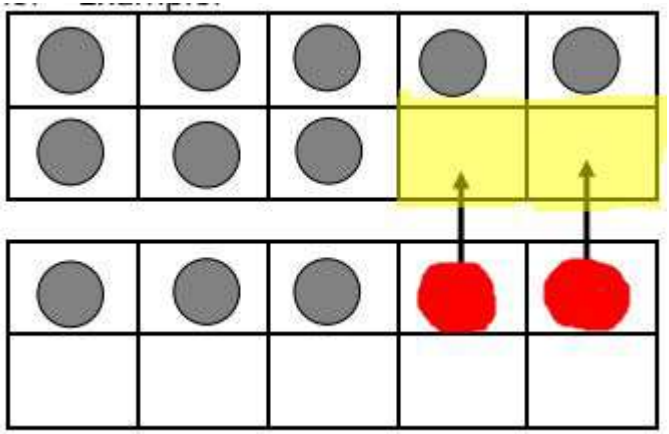
➔ Private Tutor

Future Presentations

Teaching basic facts to young children

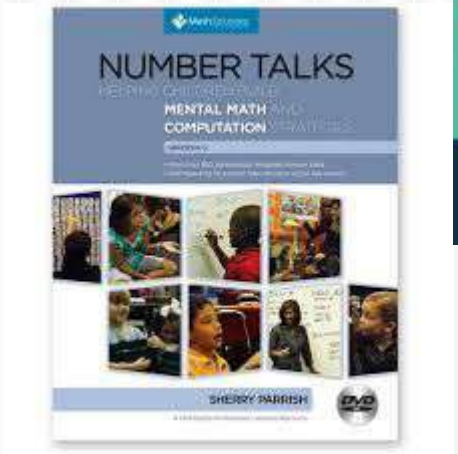


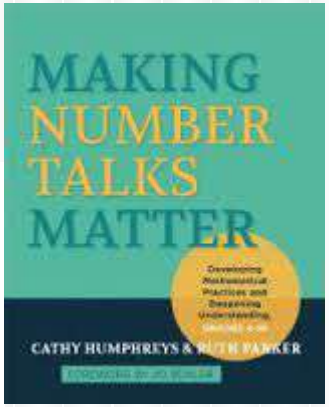
8 + 5 =



8 + 2 + 3 =

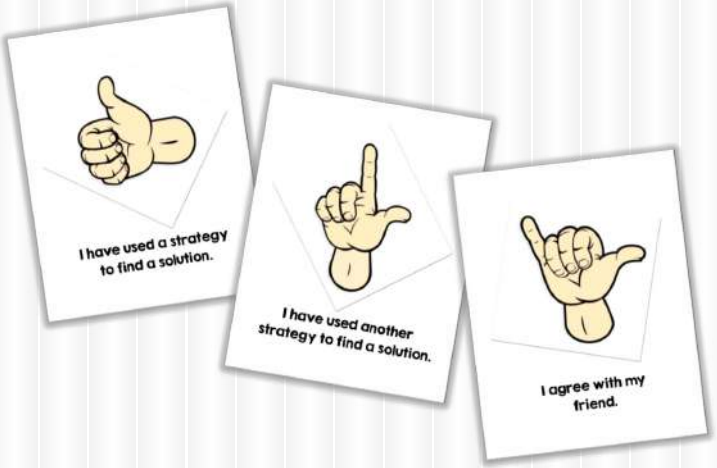
10 + 3 =





An intentionally planned **Talk**

A powerful tool for helping students develop computational fluency because the expectation is that they will use **Number** relationships and the structures of **Numbers** to add, subtract, multiply and divide.



NUMBER TALKS

GRADES K-5

Why Number Talks?
View Intro Again
Subtitle Options
Credits

Classroom Clips Teacher Clips Author Clips

3.2 Addition: 59 + 13 (2:38)

5.6 Subtraction: 1000 – 674 (3:19)