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?
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.
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

Procedural

Application

BALANCE
Standards for Student Mathematical Practice

1. Make sense of problems and persevere in solving them.
   - Make sense of the problem and persevere in solving it.
   - Keep on going!

2. Reason abstractly and quantitatively.
   - Reason abstractly and quantitatively.
   - Write a story for the mathematical equation $\frac{1}{2} \times 4$.
   - Think what makes sense.

3. Construct viable arguments and critique the reasoning of others.
   - Construct viable arguments and critique the reasoning of others.
   - Talk and explain.

4. Model with mathematics.
   - Model with mathematics.
   - Show your thinking.

5. Use appropriate tools strategically.
   - Use appropriate tools strategically.
   - Use the right tools.

6. Attend to precision.
   - Attend to precision.
   - Check your work.

7. Look for and make use of structure.
   - Look for and make use of structure.
   - See the pattern or connection.

8. Look for and express regularity in repeated reasoning.
   - 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
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 Edition
- 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

Another Look
Homework Video

Solve & Share

Practice Buddy
Personalized Practice (3-6)

Today’s Challenge
and Teacher Guide
A position of the National Council of Teachers of Mathematics

**Question:** Why is mathematics important for early childhood learners?

**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 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
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.
"Are you taking any foreign language classes this year?"
"Yes, Math."

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!

MATH
SUX!
Follow Jo Boaler on Twitter @joboaler

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 @mrpipkom · May 12
A student thanked me in class today for not providing the formula, but instead allowing her to explore. Win! #edchat #MTBoS #MSMathChat
We have an opportunity to make learning math concepts a better experience for our children.
try this problem...
45 x 24
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.
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
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?
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
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.

**Visual Learning Animation Plus**
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
Helping at home:
Homework, Home-School Connection activity

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 $\frac{1}{8} \div 3$ to find how much of the apple pie is now left.

What You Show
What You Write

Subtract to find how much of the pie is left.

$\frac{7}{8} - \frac{3}{8}$ of the pie is left.

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. $\frac{5}{8} + \frac{1}{6}$
6. $\frac{7}{12} - \frac{7}{12}$
7. $\frac{8}{1} + \frac{8}{1}$
8. $\frac{4}{4} + \frac{3}{4}$
9. $\frac{9}{10} - \frac{1}{10}$
10. $\frac{3}{3} + \frac{3}{3}$
11. $\frac{4}{3} + \frac{3}{5}$
12. $\frac{9}{8} - \frac{6}{8}$
13. $\frac{1}{3} + \frac{1}{3}$
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.
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.
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.
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](http://www.norwood.k12.ma.us/curriculum/Summer-Math.cfm). Multiplication flash cards may be downloaded [here](http://www.norwood.k12.ma.us/curriculum/Summer-Math.cfm).

Click on your child’s next year’s grade level to download a special summer math game!
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
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
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.
Elementary math strategies are built for understanding, not efficiency.
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
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
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.