

Grade	Key Areas of Focus in Mathematics
K	Counting, comparing numbers, understanding of addition & subtraction
1	Addition & subtraction, place value (tens & ones), measurement
2	Addition and subtraction fluency, using properties, place value
3	Multiplication & division, fractions
4	Multi-digit multiplication & division, equivalent fractions, +/- fractions with like denominators, whole # x fraction
5	Decimal place value, operations with fractions and decimals

Grade	Fact Fluency	Procedural Fluency
K	Add and subtract within 5	
1	Add and subtract within 10	
2	Add and subtract within 20 using strategies	Add and subtract within 100
3	Multiply and divide within 100	Add and subtract within 1,000
4		Add and subtract multi-digit whole numbers Add and subtract within 1,000,000
5		Multiply multi-digit whole numbers

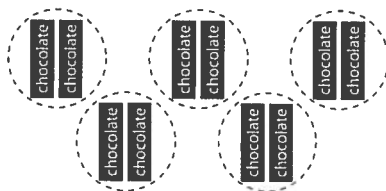
Standards for Mathematical Practice and Mathematical Content

The Common Core State Standards (CCSS) for mathematics include two types of standards: one for mathematical practice (how students are able to apply and extend math principles) and one for mathematical content (what students know about math). The two are linked together while students are learning.

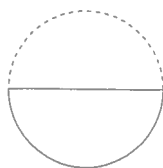
The Standards for Mathematical Practice are listed at the end of this section. Let's look at how a student might learn to "model with mathematics" (Practice Standard 4). This means students can use the math they know to solve problems they encounter every day. For a fifth-grade student, the following sample problems might be used to see whether he or she can model mathematical content that relates to dividing fractions. (The mathematics content standard for this new knowledge is shown in the box at top right. The practice standard shown in the sample problems is "model with mathematics.")

Students understand division with whole numbers from previous grades. Problems 1 and 3 review this understanding, and then extend the same thinking in problems 2 and 4 to divide a unit fraction (e.g., $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{8}$) by a whole number or vice versa.

1. (Division using whole numbers): Louis has 10 chocolate bars. He wants to share them fairly with his four friends and himself. How many chocolate bars will each person get? ($10 \div 5 = ?$) (Think: Divide 10 into 5 equal shares.)



2. (Division of a unit fraction by a whole number): The Jonas family has half of a large pizza. There are three people in the family. They want equal shares of the pizza.



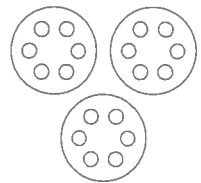
Example Standard for Fifth-Grade Mathematics

Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.

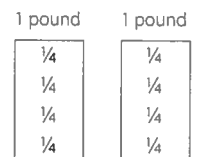
- Interpret division of a unit fraction by a nonzero whole number, and compute such quotients.
- Interpret division of a whole number by a unit fraction, and compute such quotients.
- Solve real-world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions.

What part of a pizza will each person get? ($\frac{1}{2} \div 3 = ?$) (Think: Divide $\frac{1}{2}$ into 3 equal shares.)

3. (Division using whole numbers): Eva has 18 cupcakes. She wants to have enough plates so that she can put 6 cupcakes on a plate. How many plates will she need? ($18 \div 6 = ?$) (Think: How many 6s are there in 18?)



4. (Division of a whole number by a unit fraction): Juan has 2 pounds of raisins and wants to put them into bags with $\frac{1}{4}$ pound of raisins in each bag. How many bags will he need? ($2 \div \frac{1}{4} = ?$) (Think: How many $\frac{1}{4}$ s are there in 2?)



Standards for Mathematical Practice

- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.

MATHEMATICS

To improve student learning, the new Common Core State Standards are different from the old ones. These changes are called shifts. The chart below shows what is shifting, what you might see in your child's backpack and what you can do to help your child. Again, if your child's assignments do not reflect the shifts, then talk to your child's teacher.

What's Shifting?	What to Look for in the Backpack?	What Can You Do?
<ul style="list-style-type: none"> Your child will work more deeply in fewer topics, which will ensure full understanding. (less is more!) 	<ul style="list-style-type: none"> Look for assignments that require students to show their work and explain how they arrived at an answer. 	<ul style="list-style-type: none"> Know what concepts are important for your kids based on their grade level and spend time working on those concepts.
<ul style="list-style-type: none"> Your child will keep building on learning year after year, starting with a strong foundation. 	<ul style="list-style-type: none"> Look for assignments that build on one another. For example, students will focus on adding, subtracting, multiplying and dividing. Once these areas are mastered, they will focus on fractions. Building on that, they will then focus on Algebra. You should be able to see the progression in the topics they learn. 	<ul style="list-style-type: none"> Be aware of what concepts your child struggled with last year and support your child in those challenge areas moving forward.
<ul style="list-style-type: none"> Your child will spend time practicing and memorizing math facts. 	<ul style="list-style-type: none"> Look for assignments that ask your child to master math facts such as addition groupings up to 20 or multiplication tables. 	<ul style="list-style-type: none"> Help your child know and memorize basic math facts. Ask your child to "do the math" that pops up in daily life.
<ul style="list-style-type: none"> Your kids will understand why the math works and be asked to talk about and prove their understanding. 	<ul style="list-style-type: none"> Your children might have assignments that ask them to show or explain their mathematical thinking - to SAY why they think their answer is the right one. 	<ul style="list-style-type: none"> Talk to your children about their math homework and ask them to teach you new concepts. Help them figure out ways to explain their thinking.
<ul style="list-style-type: none"> Your child will now be asked to use math in real-world situations. 	<ul style="list-style-type: none"> Look for math assignments that are based on the real world. For instance, homework for 5th graders might include adding fractions as part of a dessert recipe or determining how much pizza friends ate based on fractions. 	<ul style="list-style-type: none"> Provide time every day for your child to work on math at home.

TALKING TO YOUR CHILD'S TEACHER

When talking to your child's teacher, try to keep the conversation focused on the most important topics that relate to your child. This means asking the teacher how your child is performing based on grade-level standards and expectations.

Also, ask to see a sample of your child's work. Compare your child's samples to those found at <http://www.engageny.org/resource/new-york-state-common-core-sample-questions>. Also, feel free to bring those samples to your child's teacher and ask the teacher to explain how the samples are used in the classroom.

This information will enable you to make important adjustments at home that can help your child achieve success in the classroom.

For more information, please visit: www.engageny.org or contact your local principal or superintendent.

Common Core Resources for Parents

Where to Learn More and Get More

NATIONAL RESOURCES

National PTA Parent's Guides for Student Success

<http://pta.org/parents/content.cfm?ItemNumber=2583>

The site contains a suite of materials, including short guides explaining changes in standards in English language arts (ELA) and Mathematics. Guides are available for each grade K-8 and for high school by subject.

The guides are available in English and Spanish and include:

- What children should be learning in English language arts and mathematics in each grade with the new standards.
- Activities that parents can do at home to support their child's learning.
- Methods for helping parents build stronger relationships with their child's teacher.
- Tips for planning for college and career readiness.

Council of Great City Schools Parent Roadmap

<http://www.cgcs.org/Domain/36>

The site provides individual road maps in English and Spanish for ELA and mathematics for each of grades K-8. These maps help guide parents through what their children will be learning and how they can support that learning. They also provide timelines showing how selected standards change from year to year so that students will be college- and career-ready upon their graduation from high school.

The Council of Great City Schools has also produced a parent-friendly three minute video explaining the Common Core, available at: <http://www.commoncoreworks.org>

Stand for Children Web site

<http://stand.org/national/blog/2012/09/10/common-core-standards-building-strong-foundation-our-childrens-success>

The Stand for Children web site includes a brief and parent-friendly description about why states have adopted CCSS, what the shifts are and what will change for students.

NEW YORK RESOURCES

Engage New York Parent and Family Resources

<http://engageny.org/parent-and-family-resources>

Additional Parent Resources

Topic	Site
“The Common Core makes simple math more complicated. Here’s Why	http://www.vox.com/2014/4/20/5625086/the-common-core-makes-simple-math-more-complicated-heres-why
“Making Math Facts Fun”	http://www.scholastic.com/parents/blogs/scholastic-parents-learning-toolkit/making-math-facts-fun
“Eureka Math Tips for Parents”	http://greatminds.net/parents
“Supporting Your child in __ Grade Mathematics” “Roadmaps” by grade	http://www.cgcs.org/site/Default.aspx?PageID=244
Educational Math Activities for parents and Students	https://www.engageny.org/educational-activities-for-parents-and-students
EngageNY Parent and Family Resources	http://www.engageny.org/parent-and-family-resources
PTA-created parent guides by grade level	http://pta.org/parents/content.cfm?ItemNumber=2583
Video explaining how to use a Rekenrek	https://www.youtube.com/watch?v=Hu4kfZS4U1Y
Video explaining how to make a Rekenrek at home	https://www.youtube.com/watch?annotation_id=annotation_1619958691&feature=iv&src_vid=2Sa-G3OO99c&v=XzzpgEmpacU
Math resources for parents by grade level and module, including newsletter, videos, and activities (Eureka Math)	http://www.lpssonline.com/site5523.php
Family support resources by grade, including suggestions for activities and learning links	http://www.wsfcs.k12.nc.us/site/Default.aspx?PageID=615
Common Core math videos for parents of students in grades Pre-K to 1	http://wskg.org/program/good-to-know/