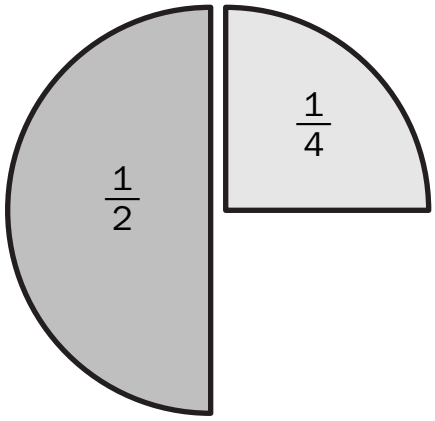
LETTER HOME

Fractions

Dear Family Member:

The activities in this unit will help your child better understand and use fractions. Your child will identify, name, and represent fractions including improper fractions and mixed numbers using concrete models, number lines, and symbols. He or she will use these representations to compare and order fractions and to find equivalent fractions. Your child will extend his or her understanding by using multiplication and division strategies to find common denominators.

Your child will also begin to solve problems that involve adding and subtracting fractions. To do this, he or she uses circle pieces to show what the problem looks like. Working with these pieces helps build mental pictures of fractions so that your child can add and subtract them more easily.



A circle model shows $\frac{1}{2} + \frac{1}{4} = \frac{3}{4}$

You can help your child to learn more about fractions with the following activities:

Look for Fractions. Point out places where fractions are used outside of school. Examples include preparing a recipe, dividing a pan of brownies into equal shares, or in sales advertisements.

Play Fraction Fill Games. The *Fraction Fill Games* 1–3 are played in Lesson 4. Directions, game boards, and spinners are in the *Student Activity Book*. In these games, teams try to earn 6 points by filling 6 unit wholes with fraction pieces. Players practice finding equivalent fractions and breaking fractions into the sums of smaller fractions to strategically fill each unit whole.

Play Fraction Trails Games. Ask your child to play the *Fraction Trails Games* 1–3 with you. These games use number lines to provide practice breaking fractions into the sums of smaller fractions and finding equivalent fractions. Players earn a point each time they move their marker to 1 on a number line. Directions, game boards, and spinners are in the *Student Activity Book* in Lesson 6.

Math Facts and Mental Math

This unit begins a systematic review and assessment of the multiplication and division facts.

Multiplication Facts. Students review all the multiplication facts to maintain and increase fluency and to learn to apply multiplication strategies to larger numbers.

You can help your child review these facts using the flash cards that are sent home or by making a set of flash cards from index cards or scrap paper. Study facts in small groups each night and focus on only those facts your child needs to learn. As your child goes through the flash cards, put the cards in three stacks: Facts I Know Quickly, Facts I Can Figure Out, and Facts I Need to Learn.

For the Facts I Need to Learn, work on strategies for figuring them out. If there are many multiplication facts that your child still needs to learn, divide them into smaller groups of facts. Choose groups of facts that lend themselves to the use of the same strategy and focus on one group at a time.

For Facts I Can Figure Out, use the flash cards to practice the facts for fluency.

For Facts I Know Quickly, help your child use mental math strategies to multiply 10s and 100s. You can also help your child extend and deepen their understanding by asking him or her to choose a multiplication fact that was difficult to learn and describe the strategies used for learning the fact.

Division Facts. Students review the division facts for 5s and 10s to maintain and increase fluency and to learn to apply multiplication and division strategies to larger numbers.

You can help your child review these facts using the flash cards that are sent home or by making a set of flash cards from index cards or scrap paper. Study facts in small groups each night. As your child goes through the flash cards, put the cards in three stacks: Facts I Know Quickly, Facts I Can Figure Out, and Facts I Need to Learn.

For the Facts I Need to Learn, work on strategies for figuring them out. Good strategies include:

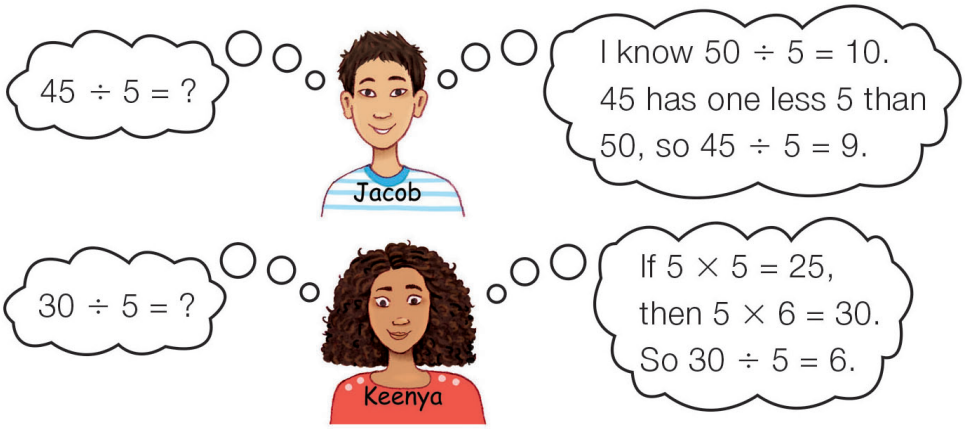
Skip counting. To solve 40 ÷ 5, skip count: 5, 10, 15, 20, 25, 30, 35, 40 and count the skips. It took 8 skips to land on 40. 40 ÷ 5 = 8.

Reasoning from known facts. To solve 40 ÷ 5: 20 ÷ 5 is 4, so 40 ÷ 5 is double 4. 40 ÷ 5 = 8.

Turn-around facts. 80 ÷ 10 = 8 because I know 10 × 8 = 80.

For Facts I Can Figure Out, use the flash cards to practice the facts for fluency.

For Facts I Know Quickly, help your child use mental math strategies to multiply 10s and 100s:
600 ÷ 10 = 60; 350 ÷ 5 = 70; 10,000 ÷ 5000 = 2

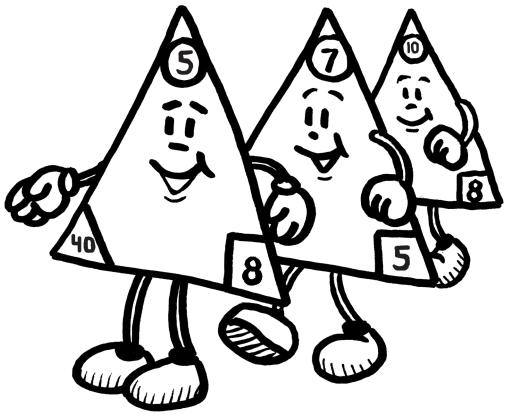


Grade 5 Math Facts Overview

The goal of the math facts development in *Math Trailblazers* is for students to learn the basic facts efficiently, gain fluency with their use, and retain that fluency over time. A large body of research supports an approach in which students develop strategies for figuring out the facts rather than relying on rote memorization. This not only leads to more effective learning and better retention, but also to the development of mental math skills. In fact, too much drill before conceptual understanding may interfere with a child's ability to understand concepts at a later date. Therefore, the teaching of the basic facts in *Math Trailblazers* is characterized by the following elements:

Use of Strategies. Students first approach the basic facts as problems to be solved rather than as facts to be memorized. In all grades, students are encouraged to use strategies to find facts, so they become confident that they can find answers to fact problems that they do not immediately recall. In this way, students learn that math is more than memorizing facts and rules which "you either get or you don't."

Distributed Facts Practice. Students study small groups of facts that can be found using similar strategies. In fifth grade, they review division facts (fact families) to maintain or gain fluency starting in Unit 2. See Figure 1.



Unit	Multiplication and Division Facts Group
2	5s and 10s
3	2s and 3s
4	9s
5	Square Numbers
6	Last Six Facts
7	Last Six Facts
8	Review all facts

Figure 1: *Development of division facts in Grade 5*

Practice in Context. Students continue to practice the facts as they use them to solve problems, investigate math concepts, and play math games.

Appropriate Assessment. Students are regularly assessed to see if they can find answers to facts problems quickly and accurately and retain this skill over time. They take a short quiz on each group of facts. Students record their progress on *Facts I Know* charts and determine which facts they need to study.

A Multiyear Approach. In Grades 1 and 2, the curriculum emphasizes the use of strategies that enable students to develop proficient strategies for the addition and subtraction facts by the end of second grade. In Grade 3, students review the subtraction facts and develop proficiency with the multiplication facts. In Grade 4, the addition and subtraction facts are checked, the multiplication facts are reviewed, and students develop fluency with the division facts. In Grade 5, students review the multiplication and division facts.

Facts Will Not Act as Gatekeepers. Use of strategies and calculators allows students to continue to work on interesting problems and experiments while learning the facts. They are not prevented from learning more complex mathematics because they do not have quick recall of the facts.

Thank you for taking time to talk with your child about what he or she is doing in math.

Sincerely,