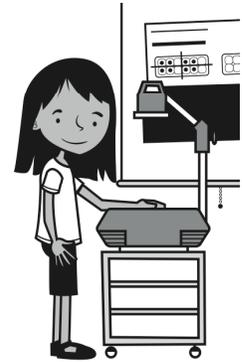


Grade 4, Unit Three: Fractions & Division

In this unit your child will:

- draw pictures to show fractions
- write numbers to name pictures of fractions
- identify equivalent fractions
- identify which of two fractions is greater
- solve problems involving division with remainders
- divide 2-digit numbers by 1-digit numbers
- solve story problems about fractions and dividing whole numbers



Your child will learn and practice these skills by solving problems like those shown below. Keep this sheet for reference when you're helping with homework.

Problem	Comments
<p>Write four different fraction names to show how much of the egg carton is filled in. Draw lines each time to divide the carton into equal parts.</p>	<p>Students use pictures to see that a single amount can be assigned many different fractional names. In this example, half of the egg carton is filled. By dividing the carton into different numbers of equal parts, students see that $1/2$ is equal to $2/4$, $3/6$, and $6/12$. These are all equivalent fractions.</p>
<p>Draw a picture to show which is greater: $2/3$ or $5/6$.</p>	<p>By drawing pictures, students show they understand that when comparing fractions, the wholes must be the same size. (After all, $2/3$ of a king-size chocolate bar is larger than $5/6$ of a bite-sized candy bar.) The pictures help students compare fractions with unlike denominators (thirds and sixths in this case).</p>
<p>There will be 13 people altogether at Nora's family dinner. She wants each person to have a bottle of juice. The juice comes in packs of 4. How many packs of juice will Nora need to buy?</p> <p>3 packs \times 4 bottles per pack = 12 bottles</p> <p>← This 1 bottle is for the 13th person.</p> <p>3 packs is 12 bottles of juice. That is not enough, so she needs 4 packs. That would be 16 bottles of juice, so she would have 3 more bottles than she needs.</p>	<p>You could begin solving this problem by dividing 13 by 4. The answer would be 3, remainder 1. This is mathematically correct, but it is not a sensible answer in this context. To solve story problems like this one, students apply their mastery of basic facts, knowledge of the relationship between multiplication and division, and understanding of the problem situation. In this way, the remainder is not just something left over, but something to take into account when solving real-world problems.</p>

Solve the division problem $52 \div 4$.

One Way	Another Way
$52 \div 2 = 26$ $26 \div 2 = 13$ so $52 \div 4 = 13$	$4 \times 10 = 40$ 10 groups of 4 make $40 + 4 = 44$ 40. Then add 3 more $44 + 4 = 48$ groups to make 52. So $48 + 4 = 52$ $52 \div 4 = 13$ because 13 groups of 4 make 52.

There are many ways to solve this problem. In fifth grade, students will learn formal methods for solving long division problems, including the one shown at right. For now, however, we want them to select strategies that make sense to them. Strategies like the two at left show a good understanding of the process of division and lend themselves well to mental computation, which is an important skill.

$$\begin{array}{r} 13 \\ 4 \overline{) 52} \\ \underline{- 4} \\ 12 \\ \underline{- 12} \\ 0 \end{array}$$

Frequently Asked Questions about Unit Three

Q: I had a hard time with fractions in school. What can I do to help my child anyway?

A: Remember that there are two parts to any fraction: the total number of equal parts in the whole (the denominator or bottom number) and the number of those equal parts you're considering (the numerator or top number). Here's a picture:

The whole is divided into 3 equal parts. 2 of those parts are shaded.

$\frac{2}{3}$

numerator
how many parts are being considered

denominator
number of equal parts



You don't have to have all the answers to help your child. Be open to the possibility that your child can teach you something about fractions that you hadn't thought of before. You can help by working with your child on homework: if you both get stuck, help your child write a clear note to the teacher about what is confusing.

Q: When will students learn more about fractions?

A: Students will learn more about fractions in Unit Six, which focuses on both fractions and decimals. Fractions are also addressed regularly in Number Corner, the part of the Bridges curriculum in which students practice and reinforce key skills. In Grade 5 Bridges, students will do more complex work with fractions, including adding and subtracting them.

Q: When will students learn long division?

A: Students will learn how to do long division in fifth grade.