

Core Focus

- Division: Working with the standard algorithm, making estimates to solve problems, and using partitioning strategies to divide dollars and cents

Division

- Students have developed a firm foundation in the place-value strategies for division due to the work covered in Grade 4 and are now ready to explore the procedure for the standard algorithm.

12.4 Division: Working with the standard algorithm

Step In A rope that is 645 centimeters long is cut into three equal parts.

How would you calculate the length of each part?

Lisa decided to use the standard division algorithm to calculate each length.

What steps has she completed?
What does she need to do next?

Complete Lisa's calculation.

	H	T	O
3	2	1	5
-	6	4	
	0		
		3	
		1	

In this lesson, students use the standard algorithm to solve division problems.

- In this module students work with the standard algorithm for division, with and without remainders.

Step Up I. Complete these calculations using the standard division algorithm. Record the remainder as a whole number.

a.	H	T	O	R
5	6	3	7	

b.	H	T	O	R
3	2	0	9	

c.	H	T	O	R
4	6	5	5	

- The importance of estimation for approximating solutions and checking the sensibility of answers is stressed. Not only can estimation provide a quick and broad solution to a problem, it can also point out when an answer is not quite on the mark.

12.9 Division: Making estimates to solve problems

Step In Four friends share the cost of this gift.

About how much money should each person pay?

\$10 is not enough and \$15 is too much. The amount that each person pays must be somewhere between these two amounts.

In this lesson, students use the estimation strategy to help solve division problems.

Ideas for Home

- When shopping, find packs of multiple items (e.g. a six-pack of paper towels) and ask your child to estimate the cost of one of the items. Encourage them to explain their thinking.


Glossary

- ▶ The **dividend** is the number that is split into lesser equal parts when division is performed.
- ▶ The **divisor** is the number that indicates how many parts the dividend is to be split into, or the number in each part.
- ▶ The **quotient** is the missing information in a division problem (the answer).

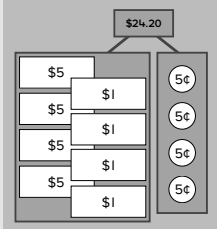
- Money provides context for the last few lessons involving decimal fractions. Decimal money values lend themselves to partitioning strategies, because students can split dollars and cents to divide separately as shown below.

12.10 Division: Partitioning dollar-and-cent amounts

Step In How can you split the cost of this meal equally among four people?



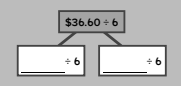
You could break \$24.20 into dollars and cents. This diagram makes the division easier.



How much is each person's share?
 What fraction of one dollar is one cent?
 How would you write that as a decimal fraction?
 What fraction of one dollar is five cents?
 How would you write that as a decimal fraction?

Complete this diagram to show how you could break \$36.60 into two parts to make it easier to divide by 6. What is the answer?

$\$36.60 \div 6$



This lesson reinforces partitioning strategies that support both mental and written calculations.

- The **partial-quotient strategy** helps establish that there are two parts, dollars and cents, that are being divided.
- Dividends can be split into these parts to make division easier. The Glossary shows an example of this by splitting 32.80 into a whole number, 32, and a decimal part, 0.80, because both parts are easily divisible by 4.

Ideas for Home

- When shopping, choose gift items that are less than \$50 and ask your child, "If 4 people equally contributed to the cost of this gift, how much would they each pay?" Allow time for them to figure out the shares, and if necessary give an answer that makes sense of the remainder. Encourage them to partition the price and explain their thinking.

Glossary

- The **partial-quotient strategy** helps make division easier.

$$\begin{aligned} 32.80 \div 4 \\ (32 \div 4) + (0.80 \div 4) \\ 8 + 0.20 = 8.20 \end{aligned}$$

$$\begin{aligned} 46.90 \div 7 \\ (42 + 4.90) \div 7 \\ (42 \div 7) + (4.90 \div 7) \\ 6 + 0.7 = 6.7 \end{aligned}$$