LESSON MAKER PRO

Quotient Quest

Estimate first, then divide with confidence.

GRADE 5 · 5.CE.3.c.i

5.CE.3.c.i "Estimate and determine the quotient of two numbers using strategies and algorithms, including the standard algorithm, in which:* quotients do not exceed four digits with or without a decimal point;"

NAME _____ DATE _____

ESTIMATE AND DIVIDE

First, choose compatible numbers to make a quick estimate. Then use the standard algorithm: divide, multiply, subtract, and bring down. When the dividend has a decimal point, place the decimal point straight up in the quotient.

WORKED EXAMPLE

$864 \div 6$

1. Estimate: $840 \div 6 = 140$.
2. 6 goes into 8 once. Write 1, then subtract 6 to leave 2.
3. Bring down 6 to make 26. Write 4, subtract 24, and leave 2.
4. Bring down 4 to make 24. $24 \div 6 = 4$. The quotient is 144.

Answer: 144

PRACTICE 6 problems

1 Use compatible numbers to estimate. Then divide: $735 \div 5$

ANSWER _____

2 Use compatible numbers to estimate. Then divide: $1{,}428 \div 6$

ANSWER _____

3 Use compatible numbers to estimate. Then divide: $3{,}276 \div 7$

ANSWER _____

4 Use compatible numbers to estimate. Then divide: $9.6 \div 3$

ANSWER _____

5 Use compatible numbers to estimate. Then divide: $7.56 \div 6$

ANSWER _____

6 Use compatible numbers to estimate. Then divide: $4{,}536 \div 9$

ANSWER _____

APPLY IT Show your work

1 The media club has 1,536 photos to place on digital slideshow pages. Each page holds 6 photos. Estimate how many pages they will need, then find the exact number of full pages.

WORK SPACE

ANSWER _____

2 The art club has 18.9 meters of ribbon. They cut it into 7 equal strips for spirit banners. Estimate the length of each strip, then find the exact length.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A robotics team has 2,475.2 centimeters of wire. They cut it into 8 equal pieces. Estimate and find the exact length of each piece. Explain how you can check your quotient.

WORK SPACE AND ANSWER

ANSWER KEY # Quotient Quest

GRADE 5 · 5.CE.3.c.i

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Use compatible numbers to estimate. Then divide: 735 ÷ 5	**Estimate: 700 ÷ 5 = 140; quotient: 147**
2	Use compatible numbers to estimate. Then divide: 1,428 ÷ 6	**Estimate: 1,440 ÷ 6 = 240; quotient: 238**
3	Use compatible numbers to estimate. Then divide: 3,276 ÷ 7	**Estimate: 3,360 ÷ 7 = 480; quotient: 468**
4	Use compatible numbers to estimate. Then divide: 9.6 ÷ 3	**Estimate: 9 ÷ 3 = 3; quotient: 3.2**
5	Use compatible numbers to estimate. Then divide: 7.56 ÷ 6	**Estimate: 7.2 ÷ 6 = 1.2; quotient: 1.26**
6	Use compatible numbers to estimate. Then divide: 4,536 ÷ 9	**Estimate: 4,500 ÷ 9 = 500; quotient: 504**

PART 2 · APPLY IT

1. **Estimate: 250 pages; exact: 256 full pages** Choose 1,500 as a compatible number: 1,500 ÷ 6 = 250. Then 1,536 ÷ 6 = 256 full pages.
2. **Estimate: 2.5 meters; exact: 2.7 meters** Use 17.5 as a compatible number: 17.5 ÷ 7 = 2.5. Then divide 18.9 ÷ 7 to get 2.7.

CHALLENGE

Estimate: 310 centimeters from 2,480 ÷ 8; exact: 309.4 centimeters. Check: 309.4 × 8 = 2,475.2.

Accept reasonable compatible-number estimates that are close to the exact quotient. Require correct quotient placement of the decimal point and standard-algorithm work for each division problem.