

Quotient Quest

Estimate, divide, and check whole-number quotients.

GRADE 4 • 4.CE.2.i

4.CE.2.i "Apply strategies (e.g., rounding, compatible numbers, place value) and algorithms, including the standard algorithm, to estimate and determine the quotient of two whole numbers, given a one-digit divisor and a two- or three-digit dividend..."

NAME _____

DATE _____

ESTIMATE THEN DIVIDE

Use compatible numbers to make a quick estimate before you divide. Then use the standard algorithm, dividing from left to right. A remainder must be less than the divisor.

WORKED EXAMPLE

Estimate and solve: $864 \div 4$

1. Estimate: $800 \div 4 = 200$.
2. 4 goes into 8 two times.
3. Bring down 6. 4 goes into 6 one time, with 2 left over.
4. Bring down 4. 4 goes into 24 six times.

Answer: Estimate: 200; $864 \div 4 = 216$

PRACTICE 6 problems

1 Estimate, then solve: $372 \div 3$

ANSWER _____

2 Estimate, then solve: $548 \div 4$

ANSWER _____

3 Estimate, then solve: $695 \div 5$

ANSWER _____

4 Estimate, then solve: $827 \div 6$

ANSWER _____

5 Estimate, then solve: $263 \div 7$

ANSWER _____

6 Estimate, then solve: $918 \div 8$

ANSWER _____

APPLY IT Show your work

- 1** The school art club has 286 stickers to share equally among 4 tables. First estimate how many stickers each table will get. Then find how many stickers each table gets and how many are left over.

WORK SPACE

ANSWER _____

- 2** A game club has 735 tokens. They put 6 tokens in each prize bag. First estimate how many full prize bags they can make. Then find the number of full bags and leftover tokens.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Mia says $754 \div 6 = 125 \text{ R}4$ because $6 \times 125 = 750$. Is Mia correct? Explain how you know.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Estimate, then solve: $372 \div 3$	Estimate: 120; $372 \div 3 = 124$
2	Estimate, then solve: $548 \div 4$	Estimate: 140; $548 \div 4 = 137$
3	Estimate, then solve: $695 \div 5$	Estimate: 140; $695 \div 5 = 139$
4	Estimate, then solve: $827 \div 6$	Estimate: 140; $827 \div 6 = 137 \text{ R}5$
5	Estimate, then solve: $263 \div 7$	Estimate: 40; $263 \div 7 = 37 \text{ R}4$
6	Estimate, then solve: $918 \div 8$	Estimate: 110; $918 \div 8 = 114 \text{ R}6$

PART 2 • APPLY IT

1. **Estimate: about 70 stickers per table; 71 stickers per table, 2 stickers left over.** Use $280 \div 4 = 70$ for an estimate. Then divide 286 by 4 to get 71 R2.
2. **Estimate: about 120 bags; 122 full bags, 3 tokens left over.** Use $720 \div 6 = 120$ for an estimate. Then divide 735 by 6 to get 122 R3.

CHALLENGE

Yes. $6 \times 125 = 750$, and $754 - 750 = 4$. Since 4 is less than 6, $754 \div 6 = 125 \text{ R}4$.

Accept reasonable compatible-number estimates that are close to the exact quotient. For word problems, students should name both the equal groups and the leftover amount.