3 Develop the Concept: Visual

ELL STRATEGY Visual Learning

Visual Learning

Estimating Quotients with 2-Digit Divisors

How can you use compatible numbers to estimate quotients?

Betty made $159 by selling 75 bracelets. Each bracelet costs the same. About how much did each bracelet cost?

Choose an Operation We know the total amount made and the number of bracelets. Divide to find the price.

What division sentence can you write to find how much Betty charged for each bracelet? [159 ÷ 75 = ?]

The question asks, "About how much?" So, an estimate is enough.

Use compatible numbers to estimate 159 ÷ 75.

1 Visual Learning

Set the Purpose Call students' attention to the **Visual Learning Bridge** at the top of the page. *In this lesson you will learn how to use compatible numbers when estimating quotients of problems with two-digit divisors.*

2 Guided Practice

Formative Assessment

Remind students that a good estimate is an answer that is close to the exact answer. When estimating, try to use compatible numbers that are as close to the original numbers as possible.

Exercise 8

Error Intervention

If students have difficulty finding compatible numbers,

then suggest they round the divisor to the nearest 10 and then change the dividend to a number compatible with the rounded divisor. *What is 20 rounded to the nearest 10?* [20] *What number can be divided evenly by 2 and also be used in a number that is near 425?* [42, 420]

Reteaching Model using compatible numbers to estimate 9,864 ÷ 51, such as 10,000 ÷ 50. For another example and more practice, assign **Reteaching** Set B on p. 142.

3 Independent Practice

Remind students that if they are having problems finding compatible numbers, they should round the divisor to the nearest 10 and then change the dividend to a number compatible with the rounded divisor. Use Exercise 10 as an example. *37 rounded to the nearest 10 is 40. 28 can be divided evenly by 4. You can use 280 and 40 as compatible numbers.*

Lesson 5-2

Understand It! There are different ways to adjust whole numbers to estimate quotients.

Estimating Quotients with 2-Digit Divisors

How can you use compatible numbers to estimate quotients?

Betty made $159 by selling 75 bracelets. Each bracelet costs the same. About how much did each bracelet cost?

Choose an Operation We know the total amount made and the number of bracelets. Divide to find the price.

Guided Practice*

Do you know HOW?

In **1** through **6**, estimate using compatible numbers. **Sample answers given.**

1. 287 ÷ 42 — 7
2. 320 ÷ 11 — 30
3. 208 ÷ 72 — 3
4. 554 ÷ 62 — 9
5. 1,220 ÷ 59 — 20
6. 3,390 ÷ 42 — 80

Do you UNDERSTAND?

7. **Writing to Explain** If you use rounding to estimate in the example above, can you divide easily? Explain. **See margin.**
8. **Reasonableness** Betty has 425 more bracelets to sell. She wants to store these in plastic bags that hold 20 bracelets each. She estimates she will need about 25 bags. Is she right? Why or why not? **See margin.**

Independent Practice

In **9** through **26**, estimate using compatible numbers. **Sample answers given.**

9. 412 ÷ 84 — 5
10. 288 ÷ 37 — 7
11. 2,964 ÷ 73 — 40
12. 228 ÷ 19 — 10
13. 1,784 ÷ 64 — 30
14. 7,620 ÷ 53 — 150
15. 2,280 ÷ 12 — 200
16. 485 ÷ 92 — 5
17. 540 ÷ 61 — 9
18. 1,710 ÷ 32 — 60
19. 2,740 ÷ 67 — 40
20. 4,322 ÷ 81 — 50
21. 5,700 ÷ 58 — 100
22. 7,810 ÷ 44 — 200
23. 6,395 ÷ 88 — 80
24. 4,877 ÷ 74 — 70
25. 2,495 ÷ 48 — 50
26. 6,284 ÷ 93 — 70

124 *For another example, see Set B on page 142.

7. Yes. The rounded numbers 160 and 80 are also compatible.
8. Yes. 425 is close to 420, which is compatible with 20. 420 ÷ 20 = 21. So, 25 bags is enough.