Visual Learning Animation

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You can use rounding to estimate.

$525 rounds to $500.

31 rounds to 30.

Find 30 × 500.

30 × 500 = 15,000

Think I know that 3 × 5 = 15.

Why were 30 and 500 used to estimate the solution to the problem? [30 is 31 rounded down to the nearest 10, and 500 is 525 rounded down to the nearest 100.]

Both numbers used to estimate were less than the actual numbers, so 15,000 is an underestimate. The store will actually take in more than $15,000.

So, the store will make a profit in March.

Based on the estimate, will the store make a profit? [Yes] *How do you know?* [Since both numbers were rounded down, the actual sales will be greater than the estimate.]

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Independent Practice

In **7** through **18**, estimate each product. **Sample answers are given.**

7. 75 × 28 **2,400**	**8.** 3 × 118 **300**	**9.** 39 × 58 **2,400**	**10.** 97 × 15 **1,500**
11. 513 × 19 **10,000**	**12.** 64 × 55 **3,600**	**13.** 286 × 9 **2,700**	**14.** 11 × 83 **800**
15. 10 × 66 **700**	**16.** 26 × 29 × 41 **29,000**	**17.** 18 × 586 **12,000**	**18.** 26 × 3 × 101 **7,500**

Problem Solving

19. Reasoning Estimate 53 × 375. Is the estimated product closer to 15,000 or 20,000? **Sample answer: 20,000; 50 × 400 = 20,000**

21. Writing to Explain Samuel needs to estimate the product of 95 × 23 × 4. Explain two different methods Samuel could use to estimate. **See margin.**

22. Give two factors whose estimated product is about 800. **Sample answer: 19 × 39**

23. Jacque uses 11 sheets of notebook paper each day at school. If he has a package of 150 sheets, will that be enough paper for him to use for 3 weeks at school? Use an estimate to find out. **No; 10 × 5 × 3 = 150, which is an underestimate.**

20. Kilauea has been active since 1983. About how many cubic meters of lava is discharged in one minute? **About 420 m^3 per minute**

Lava is discharged from the volcano at about 7 cubic meters per second.

21. Samuel could round: 100 × 20 × 4 = 8,000.
He could also use compatible numbers:
95 × 25 × 4 = 9,500

3 Independent Practice

Remind students that sometimes they should use compatible numbers instead of rounding. *In Exercise 8, what are two different ways to round 118?* [100 or 120] *How can you use compatible numbers in Exercise 18?* [Change 26 to 25, then multiply (25 × 3) × 100.]

Problem Solving

Exercise	Content
19	Estimate Products
20	Multiplication (7 × 60)
21	Communicate Math Understanding Use Rounding and Compatible Numbers
22	Use Reasoning Estimate Products
23	Estimate Products Underestimate

Students use underlying processes and mathematical tools for Exercises 19–23. Remind students to check for reasonableness when solving each problem.

Exercise 20

Language of Math: Everyday Vocabulary *The word "about" is a signal that the exact amount of lava is not required. An estimate is expected.*

Early Finishers *Write a word problem that requires estimating the product of 3 numbers. Decide whether an underestimate or an overestimate is appropriate and explain your reasoning.*