LESSON MAKER PRO

Smart Calculation Choices

Choose a method, find the answer, and explain your choice.

GRADE 6 · 6.NOS.B.2.d

6.NOS.B.2.d "Determine and explain when a strategy or algorithm is most efficient."

NAME _____ DATE _____

CHOOSE THE EASIER PATH

Before you calculate, look for friendly numbers, fractions, or decimal places that can make the work shorter. Choose a shortcut when it saves steps, or use a standard algorithm when the steps are clearer. Explain why your method works.

WORKED EXAMPLE

Find 29 * 8. Choose an efficient method.

1. 29 is 1 less than 30, so use (30 - 1) * 8.
2. Multiply: 30 * 8 = 240.
3. Subtract the extra group of 8: 240 - 8 = 232.

Answer: 232. Using 30 makes the multiplication easier.

PRACTICE 6 problems

1 Find 48 * 25. Choose an efficient method and explain why it helps.

ANSWER _____

2 Find 3.6 + 4.99. Choose an efficient method and explain why it helps.

ANSWER _____

3 Find 12.4 - 5.98. Choose an efficient method and explain why it helps.

ANSWER _____

4 Find 5/6 + 1/3. Choose an efficient method and explain why it helps.

ANSWER _____

5 Find 7.2 / 0.6. Choose an efficient method and explain why it helps.

ANSWER _____

6 Find 23 * 17. Use a standard multiplication algorithm and explain why it is a clear choice here.

ANSWER _____

APPLY IT Show your work

1 You buy three items for a game night. They cost $12.75, $7.25, and $9.50. What is the total? Choose an efficient way to add and explain your choice.

WORK SPACE

ANSWER _____

2 In a game, you earn 64 points and then get a bonus equal to 25% of those points. What is your new score? Choose an efficient way to find the bonus and explain your choice.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Find 19 * 24 two ways: use compensation, then use a standard multiplication algorithm. Which way is more efficient for you? Explain using your steps.

WORK SPACE AND ANSWER

ANSWER KEY

Smart Calculation Choices

GRADE 6 · 6.NOS.B.2.d

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find 48 * 25. Choose an efficient method and explain why it helps.	**1,200. Divide 48 by 4 and multiply 25 by 4 to get 12 * 100, which is easier to calculate.**
2	Find 3.6 + 4.99. Choose an efficient method and explain why it helps.	**8.59. Add 5 instead of 4.99, then subtract 0.01: 3.6 + 5 - 0.01 = 8.59.**
3	Find 12.4 - 5.98. Choose an efficient method and explain why it helps.	**6.42. Subtract 6 instead of 5.98, then add back 0.02: 12.4 - 6 + 0.02 = 6.42.**
4	Find 5/6 + 1/3. Choose an efficient method and explain why it helps.	**7/6, or 1 1/6. Change 1/3 to 2/6, then add 5/6 + 2/6. Only one fraction needs to change.**
5	Find 7.2 / 0.6. Choose an efficient method and explain why it helps.	**12. Multiply both numbers by 10 to get 72 / 6 = 12. Dividing whole numbers is easier here.**
6	Find 23 * 17. Use a standard multiplication algorithm and explain why it is a clear choice here.	**391. The partial products are 23 * 7 = 161 and 23 * 10 = 230; 161 + 230 = 391. Neither factor gives an obvious one-step shortcut.**

PART 2 · APPLY IT

1. **$29.50. Add $12.75 and $7.25 first because they make $20.00.** $12.75 + $7.25 = $20.00, then $20.00 + $9.50 = $29.50.
2. **80 points. Use 25% = 1/4, so the bonus is 64 / 4 = 16 points.** A quarter of 64 is 16. Add the bonus to the original score: 64 + 16 = 80.

CHALLENGE

456. Compensation: 20 * 24 - 24 = 480 - 24 = 456. Standard algorithm: 19 * 4 = 76 and 19 * 20 = 380, then 76 + 380 = 456. Compensation may be more efficient because multiplying by 20 is quick and requires only one subtraction afterward.

Accept equivalent exact answers and other valid efficient methods when students explain why their choice helps. For the challenge, accept either method as the more efficient choice if the student's steps support it.