

Rounding & Estimation Reasoning

Rounding • Estimation • Number Sense • Mathematical Reasoning

Benchmark • Round • Estimate • Check • Apply

UK & US Editions

70
pages

Rounding & Estimation Reasoning

Math Number Sense • Approximation • Reasoning
BENCHMARK • ROUND • ESTIMATE • CHECK • APPLY

88 reasoning challenges	44 activity pages
22 worked-solution pages	5 learning stages

US Edition • Grades 3-5

NUMBER	NEAREST 10	NEAREST 100	ESTIMATE	CHECK
3,487	3,490	3,500	≈ 3,500	Is it reasonable?
start value	round	round	approximate	compare size

Nearest 10 • Nearest 100 • Nearest 1,000 • Compatible Numbers • Reasonableness
Round with purpose, estimate efficiently and use approximate values to check exact calculations.

ROUND WITH BENCHMARKS	ESTIMATE WITH PURPOSE	CHECK MAGNITUDE
Find the two surrounding multiples, locate the midpoint and decide which benchmark is closer.	Choose a rounding place or compatible number that makes the calculation useful and manageable.	Compare the estimate with the exact answer. A sensible exact result should be close in size.

KEY IDEA The best estimate is not always the most detailed one - it is the one that fits the purpose.

SKILLS ACROSS THE PACK

Nearest 10 & 100	Nearest 1,000 & 10,000	Rounding ranges	Missing digits
Estimate sums & differences	Estimate products	Compatible division	Reasonableness checks

KOUJIPATH • US Edition • Math Rounding & Estimation Reasoning

Rounding • Estimating • Compatible Numbers • Reasonableness

What's Included

A Look Inside Both 70-Page Editions

- 44 Activity Pages in Each Edition
- 88 Rounding & Estimation Challenges
- 5 Learning Stages
- Round to 10, 100, 1,000 & 10,000
- Estimate Sums, Differences, Products & Quotients
- Compatible Numbers & Reasonableness Checks
- 22 Full Worked-Solution Pages in Each Edition

Nearest 10 on a Number Line
Locate the number between its two nearest tens. REASONABLE

A2 • 1. 629 lies between 620 and 630. Round 629 to the nearest 10.
WORK / ANSWER

REASON / EXPLAIN: Which benchmark is 629 closer to?

A2 • 2. 1,243 lies between 1,240 and 1,250. Round 1,243 to the nearest 10.
WORK / ANSWER

Same Rounded Value
Compare sets of numbers that collapse to one rounded result. ROUND

A15 • 1. Which pairs round to the same hundred? A) 4,241 & 4,249 B) 5,349 & 5,351 C) 6,450 & 6,549. Select all that work.
WORK / ANSWER

REASON / EXPLAIN: Round both numbers in each pair.

A15 • 2. Give any three different whole numbers that round to 9,000 to the nearest 1,000.
WORK / ANSWER

True or False? Rounding Claims
Decide whether each statement is mathematically correct. ROUND

A17 • 1. True or false: 6,450 rounds to 6,400 to the nearest 100 because the tens digit is 5.
WORK / ANSWER

REASON / EXPLAIN: Correct the statement if it is false.

A17 • 2. True or false: 124,499 rounds to 124,000 to the nearest 1,000.
WORK / ANSWER

Estimate Larger Differences
Round to a place that makes large subtraction manageable. ESTIMATE

A27 • 1. Estimate $67,500 - 43,499$ by rounding both numbers to the nearest 1,000.
WORK / ANSWER

REASON / EXPLAIN: Compare with the exact difference.

A27 • 2. Estimate $324,999 - 149,201$ by rounding both numbers to the nearest 10,000.
WORK / ANSWER

Build Strong Rounding & Estimation Reasoning

What Are the Benchmarks?



Reason About Hundreds	
Identify every value that meets the rounding condition.	
BENCHMARK	
A8 • 1 Which of these round to 37,200 to the nearest 100: 37,149; 37,150; 37,249; 37,250? Select all that work.	
WORK / ANSWER	
REASON / EXPLAIN: What is the complete interval for numbers that round to 37,200?	
A8 • 2 A number rounds to 6,800 to the nearest 100. Could the number be 6,749? Explain.	
WORK / ANSWER	
REASON / EXPLAIN: Use the midpoint between 6,700 and 6,800.	
K5-PAF1v1-10 Edition—Math Rounding & Estimation Reasoning	

What Should I Round To?



Estimate Differences to the Nearest 100	
Use rounded hundreds to simplify subtraction.	
ESTIMATE	
A28 • 1 Estimate $4,349 - 1,751$ by rounding both numbers to the nearest 100.	
WORK / ANSWER	
REASON / EXPLAIN: Compare with the exact difference.	
A28 • 2 Estimate $18,751 - 6,284$ by rounding both numbers to the nearest 100.	
WORK / ANSWER	
REASON / EXPLAIN: How close is the estimate?	
K5-PAF1v1-10 Edition—Math Rounding & Estimation Reasoning	

Does My Estimate Make Sense?



Estimate Products with Compatible Factors	
Choose nearby numbers that are easier to multiply.	
ESTIMATE	
A30 • 1 Estimate 198×49 using compatible factors.	
WORK / ANSWER	
REASON / EXPLAIN: Choose nearby values that make the multiplication mental.	
A30 • 2 Estimate 603×19 using compatible factors.	
WORK / ANSWER	
REASON / EXPLAIN: What nearby numbers make the product simple?	
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BENCHMARK • ROUND • ESTIMATE • CHECK • APPLY

Full Worked Solutions

Question • Reasoning • Answer

QUESTION A41 • 1
You need an estimate of $6,382 + 2,719$ to the nearest 1,000. Which is best: 9,000; 9,100; or 10,000?

REASONING

- $6,382 \rightarrow 6,000$
- $2,719 \rightarrow 3,000$
- $6,000 + 3,000 = 9,000$.

ANSWER 9,000.

QUESTION A41 • 2
You need a quick estimate of 9,000; 12,000; or 15,000.

REASONING

- $298 \approx 300$
- $41 \approx 40$
- $300 \times 40 = 12,000$.

ANSWER 12,000.

QUESTION A5 • 1
Round 4,349 to the nearest 100.

REASONING

- Benchmarks: 4,300 and 4,400
- Midpoint: 4,350
- 4,349 is below the midpoint.

ANSWER 4,300

QUESTION A5 • 2
Round 18,751 to the nearest 100.

REASONING

- Benchmarks: 18,700 and 18,800
- Midpoint: 18,750
- 18,751 is above the midpoint.

ANSWER 18,800

Worked Solutions 09
Question • Reasoning • Answer

QUESTION A17 • 2
True or false: 124,499 rounds to 124,000 to the nearest 1,000.

REASONING

- 124,499 is below the midpoint 124,500.
- So it is closer to 124,000.

ANSWER True.

Worked Solutions 15
Question • Reasoning • Answer

QUESTION A15 • 1
Which pairs round to the same hundred? A) 4,241 & 4,249 B) 5,349 & 5,351 C) 6,450 & 6,549. Select all that work.

REASONING

- A: both round to 4,200.
- B: 5,349 rounds to 5,300; 5,351 rounds to 5,400.
- C: both round to 6,500.

ANSWER A and C.

QUESTION A16 • 1
A whole number rounds to 52,000 to the nearest 1,000. Write the complete interval of possible values.

REASONING

- Lower midpoint: 51,500
- Upper boundary: 52,500 rounds to 53,000
- Possible values: 51,500 through 52,499.

ANSWER 51,500 to 52,499.

QUESTION A29 • 1
Estimate 47×21 by rounding both factors to the nearest 10.

REASONING

- $47 \rightarrow 50$
- $21 \rightarrow 20$
- $50 \times 20 = 1,000$
- Exact product: 987.

ANSWER About 1,000.

QUESTION A29 • 2
Estimate 83×38 by rounding both factors to the nearest 10.

REASONING

- $83 \rightarrow 80$
- $38 \rightarrow 40$
- $80 \times 40 = 3,200$
- Exact product: 3,154, so 3,200 is close enough to check the magnitude.

ANSWER About 3,200.

QUESTION A30 • 1
Estimate 198×49 using compatible factors.

REASONING

- 198 is close to 200.
- 49 is close to 50.
- $200 \times 50 = 10,000$
- Exact product: 9,702.

ANSWER About 10,000.

QUESTION A30 • 2
Estimate 603×19 using compatible factors.

REASONING

- 603 is close to 600.
- 19 is close to 20.
- $600 \times 20 = 12,000$
- Exact product: 11,457.

ANSWER About 12,000.

Worked Solutions 04
Question • Reasoning • Answer

QUESTION A7 • 2
Round 90,050 to the nearest 100.

REASONING

- Benchmarks: 90,000 and 90,100
- 90,050 is exactly halfway.
- Round to the higher multiple.

ANSWER 90,100

QUESTION A8 • 2
A number rounds to 6,800 to the nearest 100. Could the number be 6,749? Explain.

REASONING

- 6,749 is below 6,750.
- So it is closer to 6,700 than 6,800.

ANSWER No; 6,749 rounds to 6,700.

See the Strategy • Follow the Reasoning • Check the Answer