Name _____ Date _____

Multiplication as a Way to Compare Quantities

Multiplication can help us compare amounts. If one number is many times bigger than another, we can use multiplication to show that. For example, if there are 35 apples and 5 apples, we can say that 35 is 7 times as many as 5 because 7 × 5 = 35. We can also say that 5 is 7 times less than 35. That means 5 is 1/7 as much as 35.

Fill in the Blank: Fill in the blank with the correct numbers.

Number bank (choose from these numbers): 3, 6, 4, 7, 5

1. If Sarah has 24 pencils and Mike has 6 pencils, Sarah has _____times as many pencils as Mike.
2. 8 is _____times as much as 2.
3. If one box has 9 candies and another box has 3 candies, the first box has _____times as many candies as the second box.
4. 42 is _____times as much as 7.
5. If a tree is 5 meters tall and a bush is 1 meter tall, the tree is _____times as tall as the bush.

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. Which statement is true?
   - ☐ A) 30 is 2 times as much as 15
   - ☐ B) 15 is 3 times as much as 45
   - ☐ C) 12 is 4 times as much as 3
   - ☐ D) 5 is 10 times as much as 50
2. If a book has 28 pages and another book has 7 pages, how many times as many pages does the first book have?
   - ☐ A) 2
   - ☐ B) 5
   - ☐ C) 4
   - ☐ D) 7
3. What does it mean to say “20 is 5 times as much as 4”?
   - ☐ A) (20 + 5 = 25)
   - ☐ B) (4 times 5 = 20)
   - ☐ C) (5 + 4 = 9)
   - ☐ D) (20 - 4 = 16)
4. If a dog weighs 36 pounds and a cat weighs 6 pounds, how many times as heavy is the dog as the cat?
   - ☐ A) 6
   - ☐ B) 5
   - ☐ C) 4
   - ☐ D) 3

Name _____ Date _____

5. Which number sentence shows “9 is 3 times as much as 3”?
   - ☐ A) (9 ÷ 3 = 3)
   - ☐ B) (3 × 3 = 9)
   - ☐ C) (9 - 3 = 6)
   - ☐ D) (3 + 3 = 6)

Open-Ended Questions: Answer the following questions in complete sentences.

1. If a jug holds 18 cups of water and a glass holds 3 cups, how can you use multiplication to compare their sizes?

2. Explain in your own words what it means when we say “one number is 4 times as much as another number.”

3. Give an example of two quantities where one is a certain number of times as much as the other. Write a multiplication sentence to show this.

Reflection Question:

How does using multiplication help you figure out how much bigger or smaller one amount is compared to another? Write about a time you noticed this in real life.

Name _____ Date _____

ANSWER KEY: Multiplication as a Way to Compare Quantities

Fill in the Blank Answers:

1. 4
2. 4
3. 3
4. 6
5. 5

Word bank: 3, 6, 4, 7, 5

Multiple Choice Answers:

1. C) 12 is 4 times as much as 3
2. C) 4
3. B) (4 \times 5 = 20)
4. A) 6
5. B) (3 \times 3 = 9)

Open-Ended Answers (examples):

1. I can say the jug holds 6 times as much water as the glass because (3 \times 6 = 18).
2. It means if you have a number, you multiply it by 4 to get the other number.
3. If one box has 10 marbles and another has 2 marbles, the first box has 5 times as many marbles. The multiplication sentence is (2 \times 5 = 10).

Name _____ Date _____

Solving Comparison Word Problems with Multiplication

Sometimes we compare numbers by asking how many times bigger one number is than another. For example, if one tree is 4 times as tall as a tree that is 6 feet tall, the taller tree is 4 × 6 = 24 feet tall. You can use multiplication to help figure out the bigger number in these kinds of problems.

Fill in the Blank: Fill in the blank with the correct words.

Word Bank: 16, 24, $10, 2, 32, $12, 48, 72, 36

1. If a pencil costs $2 and a pen costs 5 times as much, the pen costs ____.
2. Sarah read 8 pages. Her brother read 3 times as many pages. Her brother read ____pages.
3. A toy car weighs 7 ounces. A robot weighs 4 times as much as the toy car. The robot weighs ____ounces.
4. A book has 12 chapters. That is 6 times as many chapters as a magazine. The magazine has ____chapters.
5. A pizza has 8 slices. A cake has twice as many slices as the pizza. The cake has ____slices.

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. Emily has 9 stickers. Her friend has 4 times as many stickers. How many stickers does her friend have?
   - ☐ a) 13
   - ☐ b) 36
   - ☐ c) 45
   - ☐ d) 5
2. A dog weighs 6 times as much as a cat. If the cat weighs 5 pounds, how much does the dog weigh?
   - ☐ a) 11 pounds
   - ☐ b) 30 pounds
   - ☐ c) 36 pounds
   - ☐ d) 25 pounds
3. One movie ticket costs $8. How much would 3 movie tickets cost?
   - ☐ a) $24
   - ☐ b) $11
   - ☐ c) $18
   - ☐ d) $32
4. A tree in the park is 7 meters tall. This is 7 times as tall as a small bush. How tall is the bush?
   - ☐ a) 49 meters
   - ☐ b) 14 meters
   - ☐ c) 1 meter
   - ☐ d) 6 meters
5. Anna bought 4 packs of gum. Each pack has 5 sticks. How many sticks of gum does she have in total?
   - ☐ a) 9
   - ☐ b) 15
   - ☐ c) 20
   - ☐ d) 25

Name _____ Date _____

Open-Ended Questions: Answer the following questions in complete sentences.

1. If a backpack costs 3 times as much as a lunchbox that costs $7, how much does the backpack cost? Explain your thinking.

2. Mike ran 4 miles. His sister ran twice as far as Mike. How many miles did his sister run? Show your work.

3. A classroom has 6 rows of desks. Each row has 5 desks. How many desks are there in total? Explain how you found your answer.

Reflection Question:

When you read a word problem, how can you tell if you should use multiplication to compare the amounts? Try to explain it in your own words and give an example.

Name _____ Date _____

Recognizing and Describing Patterns in Numbers and Shapes

Patterns are a sequence of numbers or shapes that follow a specific rule. Recognizing these rules helps us predict what comes next and describe how the pattern changes. Some patterns repeat, while others grow or shrink by a certain amount each time. When you find a pattern, ask yourself: What is repeating? What is changing? How is it changing? Can you describe the rule that continues the pattern?

***Fill in the Blank**: Fill in the blank with the correct words.*

1. *A pattern is a sequence that follows a specific ____*
2. *If a shape pattern repeats every three shapes, the ____is "repeat every three."*
3. *In the pattern 2, 4, 6, 8, the rule is "add ____each time."*
4. *The feature of the pattern 5, 10, 15, 20 is that the numbers are ____by 5 each time.*
5. *If the pattern is square, triangle, square, triangle, the next shape will be a ____*

***Word bank**: rule, increasing, 2, square, multiplied*

***Multiple Choice Questions**: Choose the correct answer from the choices for each question.*

1. *What is the next number in the pattern: 7, 14, 21, 28, _?*
    - *a) 32*
    - *b) 35*
    - *c) 40*
    - *d) 30*
2. *Which rule describes the pattern: circle, square, square, circle, square, square, _?*
    - *a) Add a new shape each round*
    - *b) Repeat: circle, square, square*
    - *c) Repeat: square, circle*
    - *d) Only circles*
3. *What changes in the pattern: 3, 6, 9, 12, _?*
    - *a) Add 1 each time*
    - *b) Add 2 each time*
    - *c) Add 3 each time*
    - *d) Multiply by 2 each time*
4. *If the number pattern is 1, 2, 4, 8, 16, what is the rule?*
    - *a) Add 1*
    - *b) Multiply by 2*
    - *c) Subtract 2*
    - *d) Divide by 2*
5. *Which of these describes a repeating pattern?*
    - *a) 2, 4, 8, 16*
    - *b) red, blue, green, red, blue, green*
    - *c) 5, 10, 15, 20*
    - *d) 1, 4, 9, 16*

***Open-Ended Questions**: Answer the following questions in complete sentences.*

1. *What do you notice repeating in the pattern: star, heart, circle, star, heart, circle?*
2. *Describe the rule for the number pattern: 10, 15, 20, 25, 30.*
3. *If the shape pattern is triangle, square, triangle, square, what would the next three shapes be? Explain your thinking.*

Name ____ Date ___________________________

Name _____ Date _____

ANSWER KEY

Reminder: For math questions, always check AI-generated answers for accuracy.

Fill in the Blank:

1. *rule*
2. *rule*
3. *2*
4. *increasing*
5. *square*

Multiple Choice:

1. *b) 35*
2. *b) Repeat: circle, square, square*
3. *c) Add 3 each time*
4. *b) Multiply by 2*
5. *b) red, blue, green, red, blue, green*

Open-Ended Example Responses:

1. *The pattern repeats every three shapes: star, heart, circle.*
2. *The rule is to add 5 to each number to get the next number.*
3. *The next three shapes would be triangle, square, triangle, because the pattern repeats every two shapes.*

Name _____ Date _____

ANSWER KEY

(Teachers: Please always review AI generated math answers for accuracy before using this worksheet in class.)

Fill in the Blank Answers:

1. $10
2. 24
3. 28
4. 2
5. 16

Multiple Choice Answers:

1. b) 36 ((9 \times 4 = 36))
2. b) 30 pounds ((6 \times 5 = 30))
3. a) $24 ((3 \times 8 = 24))
4. c) 1 meter ((7 \div 7 = 1))
5. c) 20 ((4 \times 5 = 20))

Open-Ended Example Responses:

1. The backpack costs $21 because (3 \times 7 = 21). I multiplied the cost of the lunchbox by 3 to find the cost of the backpack.
2. Mike's sister ran 8 miles because (4 \times 2 = 8). I multiplied the number of miles Mike ran by 2 to find out how far his sister ran.
3. There are 30 desks in total because (6 \times 5 = 30). I multiplied the number of rows by the number of desks in each row.

Name _____ Date _____

Factors and Multiples: Understanding Embedded Numbers and Patterns

Factors and multiples are important building blocks in math. A factor is a number you can multiply by another number to get a product. For example, the factors of

12

12 are

1,2,3,4,6,

1,2,3,4,6, and

12

12, because you can multiply certain pairs of these numbers to make

12

12. A multiple is the result of multiplying a number by whole numbers. For example, multiples of

4

4 are

4,8,12,16,

4,8,12,16, and so on. Understanding factors and multiples helps you see how numbers are put together and how they can be broken into equal groups.

Fill in the Blank: Fill in the blank with the correct words.

1. The number
2. 6
3. 6 can be made by multiplying
4. 2
5. 2 and ____
6. A number that can be divided evenly into another number is called a ____
7. The number
8. 24
9. 24 is a multiple of _, because
10. 6×4=24
11. 6×4=24.
12. If you break
13. 18
14. 18 into equal groups of
15. 3
16. 3, you will have ____groups.
17. The numbers
18. 1
19. 1,
20. 2
21. 2,
22. 4

Name _____ Date _____

23. 4,
24. 8
25. 8, and
26. 16
27. 16 are all ____of
28. 16
29. 16.

Word bank: factors, factor, 4, 6, 8

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. Which number is NOT a factor of
2. 20
3. 20?
    - A)
    - 2
    - 2
    - B)
    - 4
    - 4
    - C)
    - 5
    - 5
    - D)
    - 7
    - 7
4. Which of the following is a multiple of
5. 9
6. 9?
    - A)
    - 36
    - 36
    - B)
    - 15
    - 15
    - C)
    - 29
    - 29
    - D)
    - 8
    - 8
7. How many equal groups of

Name _____ Date _____

8. 5
9. 5 are in
10. 35
11. 35?
    - A)
    - 5
    - 5
    - B)
    - 6
    - 6
    - C)
    - 7
    - 7
    - D)
    - 8
    - 8
12. What are the factors of
13. 15
14. 15?
    - A)
    - 1,3,5,15
    - 1,3,5,15
    - B)
    - 1,2,3,5,15
    - 1,2,3,5,15
    - C)
    - 1,5,15
    - 1,5,15
    - D)
    - 1,2,7,15
    - 1,2,7,15
15. Which number is a multiple of both
16. 2
17. 2 and
18. 3
19. 3?
    - A)
    - 5
    - 5
    - B)

Name _____ Date _____

- 6
- 6
- C)
- 8
- 8
- D)
- 9
- 9

Open-Ended Questions: Answer the following questions in complete sentences.

1. What patterns do you notice in the factors of even numbers?
2. How can you tell if a number is a multiple of
3. 4
4. 4?
5. Explain how you can break
6. 24
7. 24 into equal groups in more than one way.

Reflection Question:

How do factors and multiples help you see how numbers are built and broken apart? Can you explain using an example of a number you know?

Name _____ Date _____

Prime and Composite Numbers: Finding Factors

A prime number is a number that has exactly two factors: 1 and itself. This means it can only be divided evenly by 1 and itself. For example, 7 is a prime number because it can only be divided by 1 and 7. A composite number is a number with more than two factors. This means it can be divided evenly by numbers other than just 1 and itself. For example, 12 is a composite number because it can be divided by 1, 2, 3, 4, 6, and 12. Understanding the difference helps us know which numbers can be split into equal groups and which cannot.

Fill in the Blank: Fill in the blank with the correct words.

1. A ____number has exactly two factors: 1 and itself.
2. A ____number has more than two factors.
3. The number 5 is a ____because it can only be divided by 1 and 5.
4. The number 8 is a ____because it can be divided by 1, 2, 4, and 8.
5. If a number can only be split into groups of 1 or itself, it is called ____

Word bank: prime, composite, prime, composite, prime

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. Which of the following numbers is a prime number?
   a) 9
   b) 6
   c) 13
   d) 12
2. What are the factors of 10?
   a) 1 and 10 only
   b) 1, 2, 5, 10
   c) 1, 5, 10
   d) 2, 5, 10
3. Why is 11 a prime number?
   a) It is an odd number
   b) It has only two factors
   c) It is larger than 10
   d) It can be divided by many numbers
4. Which number is composite?
   a) 17
   b) 23
   c) 14
   d) 7
5. How many factors does a prime number have?
   a) 1
   b) 2
   c) 3
   d) 4

Open-Ended Questions: Answer the following questions in complete sentences.

1. What makes a number a composite number? Give an example.

---

1. Can the number 19 be divided into equal groups other than 1 and 19? Explain your answer.

---

1. Why is it important to know if a number is prime or composite?

Name ______________________________________ Date __________________________

Name _____ Date _____

ANSWER KEY

Teachers: For math answers, please review for accuracy as AI-generated responses may contain errors.

Fill in the Blank

1. prime
2. composite
3. prime
4. composite
5. prime

Multiple Choice

1. c) 13
2. b) 1, 2, 5, 10
3. b) It has only two factors
4. c) 14
5. b) 2

Open-Ended Sample Responses

1. A composite number has more than two factors. For example, 8 is composite because its factors are 1, 2, 4, and 8.
2. No, 19 cannot be divided into equal groups other than 1 and 19. This is because 19 is a prime number and only has two factors.
3. It is important to know if a number is prime or composite because it helps in finding factors and can be useful in math problems like division or finding patterns.

Reflection Question:

How does knowing if a number is prime or composite help you understand how numbers can be compared using multiplication? Can you give an example?

Name ______________________________________ Date __________________________

Name _____ Date _____

Understanding Place Value: Each Digit's Value in Multi-Digit Numbers

Place value helps us understand the value of each digit in a number. In our base ten number system, each place is worth ten times as much as the place to its right. For example, in the number 4,235, the digit 2 is in the hundreds place and represents 200, while the digit 3 is in the tens place and represents 30. If you move a digit one place to the left, its value becomes ten times greater. Tools like base ten blocks and place value charts can help us see and understand this idea.

Fill in the Blank: Fill in the blank with the correct words.

1. In the number 5,482, the digit 8 is in the ____place and is worth ____
2. Each time a digit moves one place to the left, its value becomes ____times greater.
3. In the number 7,391, the digit 3 is in the ____place and represents ____
4. The value of a digit in the tens place is ____times greater than in the ones place.
5. In a place value chart, the place immediately to the right of the thousands place is the ____place.

Word Bank: tens, hundreds, 10, 90, 800, ones, ten, 10, hundreds, 100

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. What does the digit 6 represent in the number 6,204?
    - a) 6
    - b) 600
    - c) 6,000
    - d) 60
2. If the digit 4 in 4,528 moves from the hundreds place to the thousands place, its value becomes:
    - a) 4 times greater
    - b) 10 times greater
    - c) 100 times greater
    - d) 1,000 times greater
3. In the number 3,679, how many times greater is the value of the digit 6 in the hundreds place than the digit 7 in the tens place?
    - a) 2 times greater
    - b) 5 times greater
    - c) 10 times greater
    - d) 100 times greater
4. Which of the following shows the correct use of a place value chart for the number 2,340?
    - a) 2 in the hundreds, 3 in the thousands, 4 in the tens, 0 in the ones
    - b) 2 in the thousands, 3 in the hundreds, 4 in the tens, 0 in the ones
    - c) 2 in the tens, 3 in the thousands, 4 in the ones, 0 in the hundreds
    - d) 2 in the ones, 3 in the tens, 4 in the hundreds, 0 in the thousands
5. Which tool can help you see that the value of a digit increases by ten times as you move left?
    - a) Number line
    - b) Place value chart
    - c) Calendar
    - d) Ruler

Open-Ended Questions: Answer the following questions in complete sentences.

Name _____ Date _____

1. Explain how you know the value of the digit 9 in the number 9,512.
2. If you move the digit 7 from the tens place to the hundreds place in a number, how does its value change? Show your thinking.
3. Draw or describe how base ten blocks would represent the number 1,243.

Name _____ Date _____

ANSWER KEY

Teachers: Please review all AI generated math answers for accuracy.

Fill in the Blank Answers:

1. hundreds, 800
2. 10
3. hundreds, 300
4. 10
5. hundreds

Multiple Choice Answers:

1. c) 6,000
2. b) 10 times greater
3. c) 10 times greater
4. b) 2 in the thousands, 3 in the hundreds, 4 in the tens, 0 in the ones
5. b) Place value chart

Open-Ended Example Responses:

1. The digit 9 in the number 9,512 is in the thousands place, so it represents 9,000.
2. If you move the digit 7 from the tens place (which is worth 70) to the hundreds place, its value becomes 700, which is ten times more.
3. To show 1,243 using base ten blocks, you would use 1 thousand block, 2 hundred blocks, 4 ten blocks, and 3 one blocks.

Reflection Question:

How does place value help you use multiplication to compare the value of digits in a big number? Can you explain using an example?

Name ______________________________________ Date __________________________

Name _____ Date _____

Understanding Multi-Digit Numbers: Reading, Writing, Comparing, and Rounding

Multi-digit numbers can be broken down into different units, such as ones, tens, hundreds, thousands, and so on. Each digit in a number has a value based on its place (place value). We can write numbers in different forms, like standard form (56,432), expanded form (50,000 + 6,000 + 400 + 30 + 2), or word form (fifty-six thousand, four hundred thirty-two). When we compare numbers, we look at the largest place value first. Rounding helps us find about how much a number is, focusing on a specific unit, like the nearest ten or hundred.

Fill in the Blank: Fill in the blank with the correct words.

1. The number 4,582 has ____in the hundreds place.
2. Writing 7,204 as 7,000 + 200 + 4 is called ____form.
3. When rounding 3,786 to the nearest hundred, we focus on the ____place.
4. In the number 9,306, the digit 9 shows ____thousands.
5. The value of the digit 5 in 25,489 is ____

Word Bank: expanded, five hundred, hundreds, 9, fifty thousand

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. What is the value of the underlined digit in 62,**3**15?
    - A) 3
    - B) 300
    - C) 30
    - D) 3,000
2. Which number is written in expanded form?
    - A) 14,628
    - B) Fourteen thousand, six hundred twenty-eight
    - C) 10,000 + 4,000 + 600 + 20 + 8
    - D) 1,4628
3. Which number is greater?
    - A) 52,789
    - B) 52,879
    - C) 52,798
    - D) 52,780
4. What is 7,492 rounded to the nearest hundred?
    - A) 7,400
    - B) 7,490
    - C) 7,500
    - D) 7,000
5. Which number has a 6 in the tens place?
    - A) 3,682
    - B) 3,826
    - C) 3,268
    - D) 3,862

Open-Ended Questions: Answer the following questions in complete sentences.

Name _____ Date _____

1. Explain how you know which digit to look at when rounding a number to the nearest hundred.
2. Write 8,105 in word form and expanded form.
3. Compare the numbers 24,609 and 24,690. Which is greater and why?

Name _____ Date _____

ANSWER KEY

Please review all math answers for accuracy before distributing to students.

Fill in the Blank:

1. five hundred
2. expanded
3. hundreds
4. 9
5. fifty thousand

Multiple Choice Questions:

1. D) 3,000
2. C) 10,000 + 4,000 + 600 + 20 + 8
3. B) 52,879
4. C) 7,500
5. A) 3,682

Open-Ended Questions (Example Responses):

1. When rounding to the nearest hundred, I look at the hundreds place to see which digit is there, and the tens place to decide whether to round up or down.
2. 8,105 in word form is "eight thousand, one hundred five." In expanded form: 8,000 + 100 + 5.
3. 24,690 is greater than 24,609 because the digits in the tens place are compared, and 9 tens (90) is more than 0 tens (0).

Reflection Question:

How does breaking a big number into its parts help you compare it to another number or round it more easily? Can you give an example?

Name ____________________________________ Date ________________________

Name _____ Date _____

Adding and Subtracting Multi-Digit Numbers: Understanding Quantity and Operations

When we add or subtract multi-digit numbers, we use strategies that help us solve problems quickly and accurately. Addition joins quantities together, while subtraction finds the difference between amounts. The way we arrange numbers does not change the total amount (conservation of quantity). Breaking numbers into parts, like tens and ones, can help us solve problems more efficiently. When we add or subtract, think about what the numbers mean and what the operation represents.

Fill in the Blank: Fill in the blank with the correct words.

1. When we add two numbers, we are finding the ____
2. Subtraction helps us find out how much is ____between two numbers.
3. Breaking numbers into tens and ones can make addition and subtraction more ____
4. If we rearrange the parts of a number, the total ____the same.
5. The answer to a subtraction problem is called the ____

Word Bank: difference, stays, sum, easier, left

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. What does the sum of (458 + 273) represent?
    - a) The total amount when you combine 458 and 273
    - b) The amount left after taking away 273 from 458
    - c) The largest number
    - d) The number of digits in both numbers
2. If you rearrange the numbers in (245 + 371), does the sum change?
    - a) Yes, the sum changes
    - b) No, the sum stays the same
    - c) Only if the numbers are even
    - d) Only if the numbers are odd
3. What is the difference when you subtract (682 - 459)?
    - a) 1,141
    - b) 223
    - c) 241
    - d) 153
4. When solving (324 + 178), what could you do to make it easier?
    - a) Break 178 into 100 and 78, then add in parts
    - b) Multiply the numbers
    - c) Ignore the ones place
    - d) Subtract 324 from 178
5. Which of the following is an efficient method to subtract (504 - 298)?
    - a) Add 2 to both numbers, so (506 - 300)
    - b) Add the numbers
    - c) Multiply both numbers by 2
    - d) Change the numbers to single digits

Open-Ended Questions: Answer the following questions in complete sentences.

1. What does subtraction represent when you solve a problem like (730 - 455)?

Name _____ Date _____

2. Why is it helpful to break numbers into tens and ones before adding or subtracting?
3. If you rearrange the order of numbers in an addition problem, do you still get the same answer? Explain why or why not.

Name _____ Date _____

ANSWER KEY

Teachers: Please review all math answers for accuracy before using with students.

Fill in the Blank Answers

1. sum
2. left
3. easier
4. stays
5. difference

Multiple Choice Answers

1. a) The total amount when you combine 458 and 273
2. b) No, the sum stays the same
3. b) 223 (682-459=223)
4. a) Break 178 into 100 and 78, then add in parts
5. a) Add 2 to both numbers, so (506 - 300) (this keeps the difference the same and makes subtraction easier)

Open-Ended Example Responses

1. Subtraction represents finding out how much more or less one number is compared to another.
2. Breaking numbers into tens and ones helps because it makes big numbers easier to work with, and you can add or subtract in smaller steps.
3. Yes, you still get the same answer because addition is commutative, which means the order of numbers doesn't change the sum.

Reflection Question:

How does thinking about what the numbers really mean help you decide if you should add or subtract? Can you explain using an example?

Name ______________________________ Date ____________________

Name _____ Date _____

Understanding, Comparing, and Operating with Fractions

Fractions are numbers that represent equal parts of a whole. The number on the top is called the numerator, and it tells how many parts you have. The number on the bottom is called the denominator, and it tells how many equal parts the whole is divided into. Sometimes, we need to compare fractions, find equivalent fractions, or add and subtract them. Understanding what unit (like thirds, fourths, or eighths) we are working with helps us see if fractions are the same size or how much space they take up.

Fill in the Blank: Fill in the blank with the correct words.

1. When we talk about fractions, the ____tells us how many equal parts the whole is divided into.
2. The fraction \frac{2}{4} takes up the same space as ____
3. To compare fractions, we sometimes need to change them so they have the same ____
4. If we have \frac{3}{6}, we are working with ____as the unit.
5. The fraction \frac{1}{3} is ____than \frac{1}{4}.

Word Bank: denominator, fourths, equivalent to \frac{1}{2}, larger, denominator

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. Which fraction is equivalent to \frac{2}{4}?
    - A) \frac{1}{2}
    - B) \frac{2}{3}
    - C) \frac{3}{4}
    - D) \frac{1}{4}
2. If you have \frac{1}{6} and \frac{1}{3}, which is bigger?
    - A) \frac{1}{6}
    - B) \frac{1}{3}
    - C) They are equal
    - D) It depends on the whole
3. How many thirds make a whole?
    - A) 2
    - B) 3
    - C) 4
    - D) 6
4. What do you call \frac{2}{8} and \frac{1}{4} since they take up the same amount of space?
    - A) Mixed numbers
    - B) Equivalent fractions
    - C) Improper fractions
    - D) Decimals
5. To add \frac{1}{4} and \frac{2}{4}, what unit are we working with?
    - A) Thirds
    - B) Fourths
    - C) Fifths
    - D) Halves

Open-Ended Questions: Answer the following questions in complete sentences.

1. How can you tell if two fractions are equivalent? Give an example.

Name _____ Date _____

2. Why is it important to know what unit (thirds, fourths, etc.) you are working with when comparing fractions?
3. Draw or describe a model that shows \frac{2}{3} and \frac{4}{6} are equivalent.

Name _____ Date _____

ANSWER KEY

Teachers: Please review AI-generated math answers for accuracy before using with students.

Fill in the Blank Answers:

1. denominator
2. equivalent to \frac{1}{2}
3. denominator
4. sixths
5. larger

Word Bank Matching:

- denominator (used for #1 and #3)
- fourths (not used)
- equivalent to \frac{1}{2} (#2)
- larger (#5)
- denominator (#1 and #3)

Multiple Choice Answers:

1. A) \frac{1}{2}
2. B) \frac{1}{3}
3. B) 3
4. B) Equivalent fractions
5. B) Fourths

Open-Ended Example Responses:

1. You can tell if two fractions are equivalent by making their denominators the same or by simplifying them. For example, \frac{2}{4} and \frac{1}{2} are equivalent because they take up the same space.
2. It is important to know the unit because fractions with different denominators are different sizes and cannot be compared or added easily unless you use the same unit.
3. If you draw a rectangle and divide it into 3 equal parts, shading 2 parts gives \frac{2}{3}. If you divide the same rectangle into 6 equal parts and shade 4, that gives \frac{4}{6}. Both show the same area shaded, so they are equivalent.

Reflection Question:

How does thinking about the size of the parts (like halves, thirds, or fourths) help you compare fractions or decide if they are the same? Can you give an example?

Name ______________________________________ Date __________________________

Name _____ Date _____

Multiplying Fractions by Whole Numbers: Understanding Units and Conservation of Quantity

When you multiply a fraction by a whole number, you are combining several equal pieces to make a larger amount. The size of each piece (the unit) stays the same, but you have more of them. For example, multiplying \frac{1}{4} by 3 means you have three pieces, each the size of \frac{1}{4}. You can use pictures, like shaded parts of shapes, to show this. Remember, multiplying does not change the size of each piece, just how many you have. The total amount can change depending on how many pieces you put together.

Fill in the Blank: Fill in the blank with the correct words.

1. When you multiply a fraction by a whole number, you are finding out how many ____of the fraction you have.
2. The size of the ____does not change when multiplying by a whole number.
3. Multiplying \frac{1}{3} by 4 means you have ____pieces, each one third in size.
4. A visual model can help you ____how the multiplication works.
5. The total amount can be different, but the size of each ____stays the same.

Word Bank:

unit, show, pieces, unit, pieces

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. What is 3 \times \frac{1}{5}?
    - a) \frac{3}{5}
    - b) \frac{1}{15}
    - c) \frac{5}{3}
    - d) \frac{1}{2}
2. If you have 6 groups of \frac{1}{4}, how much do you have?
    - a) \frac{1}{24}
    - b) \frac{6}{4}
    - c) \frac{4}{6}
    - d) \frac{1}{10}
3. Which equation shows 5 times \frac{2}{3}?
    - a) \frac{2}{3} \times 5 = \frac{10}{3}
    - b) \frac{2}{3} + 5 = \frac{7}{3}
    - c) \frac{5}{2} \times 3 = \frac{15}{2}
    - d) 5 + 2 = 7
4. When you multiply a fraction by a whole number, what changes?
    - a) Only the size of each unit
    - b) Only the number of units
    - c) Both the size and number of units
    - d) Nothing changes
5. If you use a rectangle to show 4 \times \frac{1}{6}, how many parts are shaded?
    - a) 4 out of 6
    - b) 6 out of 4
    - c) 1 out of 4
    - d) 4 out of 1

Name _____ Date _____

Open-Ended Questions: Answer the following questions in complete sentences.

1. How can you use a visual model to show 3 \times \frac{1}{2}? Draw or describe your model.
2. Explain what happens to the total amount when you multiply a fraction by a whole number.
3. If you have 5 times \frac{1}{8}, what does the 5 mean in this problem?

Name _____ Date _____

ANSWER KEY

Teachers: Always review AI-generated math answers for accuracy before using them with students.

Fill in the Blank:

1. pieces
2. unit
3. 4
4. show
5. unit

Word Bank:

unit, show, pieces, unit, pieces

Multiple Choice Questions:

1. a) \frac{3}{5}
2. b) \frac{6}{4}
3. a) \frac{2}{3} \times 5 = \frac{10}{3}
4. b) Only the number of units
5. a) 4 out of 6

Open-Ended Questions Example Responses:

1. You can draw three rectangles, each split in half, and shade one half of each. This shows three groups of one half, which together make \frac{3}{2}.
2. When you multiply a fraction by a whole number, the total amount becomes larger because you have more pieces, but each piece is still the same size as the original fraction.
3. The 5 means you have five equal parts, each the size of \frac{1}{8}, so you are adding five one-eighths together.

Reflection Question:

How does multiplying a fraction by a whole number help you compare how much you have now to how much you started with? Can you explain using an example?

Name _____ Date _____

Understanding and Using Decimal Notation: Fractions as Units and Space on the Number Line
Decimals and fractions are two ways to represent parts of a whole. For example, 0.4 is the same as \frac{4}{10}, because both show four out of ten equal parts. You can also rename decimals. For example, 0.4 can be written as \frac{40}{100}, or 0.40, which shows forty out of one hundred parts. When placing numbers on a number line, the larger the number, the more space it takes up. Understanding how to show decimals and fractions on models and number lines helps us see how they are the same or different.

Fill in the Blank: Fill in the blank with the correct words.

1. The decimal 0.4 is the same as the fraction ____
2. The fraction \frac{7}{10} can also be written as the decimal ____
3. The decimal 0.35 can be renamed as ____hundredths.
4. On a number line, 0.8 takes up ____space than 0.3.
5. The fraction \frac{25}{100} is equal to the decimal ____

Word bank: 0.25, 4/10, more, 35, 0.7

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. Which decimal is equivalent to \frac{9}{10}?
    - a) 0.09
    - b) 0.90
    - c) 0.9
    - d) 9.0
2. How can you write 0.6 as a fraction?
    - a) \frac{6}{100}
    - b) \frac{6}{10}
    - c) \frac{60}{10}
    - d) \frac{1}{6}
3. Which of these decimals takes up the least space on the number line?
    - a) 0.12
    - b) 0.21
    - c) 0.3
    - d) 0.4
4. What is another way to write 0.5 using hundredths?
    - a) 0.50
    - b) 0.05
    - c) 5.0
    - d) 0.500
5. Which two numbers are equivalent?
    - a) \frac{9}{10} and 0.19
    - b) \frac{1}{10} and 0.10
    - c) \frac{4}{10} and 0.14
    - d) \frac{7}{10} and 0.07

Open-Ended Questions: Answer the following questions in complete sentences.

Name _____ Date _____

1. Explain how you know that 0.4 and \frac{4}{10} are the same. Show your thinking with a model or picture.
2. Can 0.6 be renamed using hundredths? If so, how? Explain your answer.
3. Which is greater on the number line: 0.53 or 0.35? Why?

Name _____ Date _____

ANSWER KEY

Teachers: Please review all math answers for accuracy before distributing to students.

Fill in the Blank Answers:

1. 4/10
2. 0.7
3. 35
4. more
5. 0.25

Multiple Choice Answers:

1. c) 0.9
2. b) \frac{6}{10}
3. a) 0.12
4. a) 0.50
5. b) \frac{1}{10} and 0.10

Open-Ended Sample Answers:

1. 0.4 and \frac{4}{10} are the same because 0.4 means four-tenths, which is the same as \frac{4}{10}. If you shade four out of ten equal parts on a model, it shows both 0.4 and \frac{4}{10}.
2. Yes, 0.6 can be renamed using hundredths. 0.6 is the same as 0.60, which is sixty out of one hundred, or \frac{60}{100}.
3. 0.53 is greater than 0.35 because 53 hundredths is more than 35 hundredths. On the number line, 0.53 is to the right of 0.35.

Reflection Question:

How does thinking about the size of pieces help you understand why 0.4 and 0.40 take up the same space on the number line? Can you give an example?

Name ______________________________________ Date _________________________

Name _____ Date _____

Understanding and Solving Measurement Problems: Units, Equivalence, and Real-World Applications
Measurement is all about finding out how much, how long, how heavy, or how much space something takes up. We use different units like inches, feet, centimeters, grams, and liters to measure things. Sometimes, we need to change from bigger units to smaller units or the other way around, but the total amount doesn't change—only the way we describe it. For example, 1 meter is the same as 100 centimeters. Equations and tables can help us show how we change from one unit to another and solve real-world problems.

Fill in the Blank: Fill in the blank with the correct words.

1. There are ____centimeters in 1 meter.
2. If you have 2 liters of water, that is the same as ____milliliters.
3. When you change 5 feet to inches, you are using a ____unit.
4. The total amount stays ____when you change from one unit to another.
5. An equation like 12 \times 3 = 36 can show how many ____are in 3 feet.

Word Bank: centimeter, 1000, the same, smaller, inches, 100

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. Which is the biggest unit?
    - a) centimeter
    - b) meter
    - c) millimeter
    - d) inch
2. If you have 3 kilograms, how many grams do you have?
    - a) 30
    - b) 300
    - c) 3,000
    - d) 300,000
3. What does the equation 60 \div 12 = 5 show if you are measuring inches and feet?
    - a) 60 inches is 5 feet
    - b) 5 inches is 60 feet
    - c) 12 feet is 60 inches
    - d) 60 feet is 12 inches
4. Which table could show a conversion from meters to centimeters?
    - a) 1 meter | 10 centimeters
    - b) 1 meter | 100 centimeters
    - c) 1 meter | 1,000 centimeters
    - d) 1 meter | 50 centimeters
5. If you pour 500 milliliters of juice into a 1-liter bottle, how much more can the bottle hold?
    - a) 250 milliliters
    - b) 1,000 milliliters
    - c) 500 milliliters
    - d) 100 milliliters

Open-Ended Questions: Answer the following questions in complete sentences.

1. Explain why the amount does not change when you convert from meters to centimeters.

Name _____ Date _____

2. Give an example of a real-world problem where you would have to change from a bigger unit to a smaller unit.
3. What does a table showing conversions between units help you do? Give an example.

Name _____ Date _____

ANSWER KEY

Teachers: Please review AI-generated math answers for accuracy.

Fill in the Blank:

1. 100
2. 2000
3. smaller
4. the same
5. inches

Word Bank (for reference):

centimeter, 1000, the same, smaller, inches, 100

Multiple Choice Questions:

1. b) meter
2. c) 3,000
3. a) 60 inches is 5 feet
4. b) 1 meter | 100 centimeters
5. c) 500 milliliters

Open-Ended Questions (sample answers):

1. The amount does not change when you convert from meters to centimeters because you are just using different units to measure the same length.
2. If you have a ribbon that is 3 meters long and need to cut it into pieces measured in centimeters, you must convert meters to centimeters to know how many pieces you can cut.
3. A table showing conversions helps you quickly see how to change one unit to another. For example, it can show that 2 meters is 200 centimeters.

Reflection Question:

How does changing the unit (like from meters to centimeters) help you compare measurements using multiplication? Can you explain with an example?

Name ____________________________________ Date ________________________

Name _____ Date _____

Understanding and Measuring Angles: Degrees and Rotation

Angles help us describe how much something turns or rotates. We measure angles using a unit called degrees (°). A full circle is made up of 360 degrees. When we talk about turning an angle, a one-degree turn is a very small rotation. More degrees mean a bigger turn. We use a tool called a protractor to measure how many degrees an angle is. Angles can be found everywhere, like in the corners of a triangle, the hands of a clock, or when you open a door. Understanding how to measure angles helps us describe shapes and movements in math and in real life.

Fill in the Blank: Fill in the blank with the correct words.

1. The unit we use to measure angles is called ____
2. A full circle has ____degrees.
3. A tool used to measure angles is called a ____
4. If you turn an angle more, the number of degrees will ____
5. An angle that measures 90 degrees is called a ____angle.

Word Bank: right, protractor, degrees, increase, 360

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. What do we use to measure how much an angle turns?
    - A) Inches
    - B) Degrees
    - C) Meters
    - D) Seconds
2. If you have an angle that makes a straight line, how many degrees does it have?
    - A) 90 degrees
    - B) 180 degrees
    - C) 360 degrees
    - D) 45 degrees
3. Which tool would you use to measure an angle in your math class?
    - A) Ruler
    - B) Calculator
    - C) Protractor
    - D) Compass
4. If you turn an angle from 0 degrees to 120 degrees, how many one-degree turns have you made?
    - A) 60
    - B) 100
    - C) 120
    - D) 240
5. What happens to the angle's measurement if you keep turning it more?
    - A) It decreases
    - B) It stays the same
    - C) It increases
    - D) It disappears

Open-Ended Questions: Answer the following questions in complete sentences.

Name _____ Date _____

1. Explain what a protractor is and how you would use it to measure an angle.

1. Why do you think it's important to measure angles in real life? Give one example.

1. Imagine you open a door, and it forms an angle with the wall. Describe how you could find out how many degrees the door is open.

Name _____ Date _____

ANSWER KEY

Reminder: Always review AI-generated math answers for accuracy.

Fill in the Blank Answers:

1. degrees
2. 360
3. protractor
4. increase
5. right

Multiple Choice Answers:

1. B) Degrees
2. B) 180 degrees
3. C) Protractor
4. C) 120
5. C) It increases

Open-Ended Example Responses:

1. A protractor is a tool shaped like a half circle or circle that helps us measure angles in degrees. To use it, you line up one side of the angle with the zero line on the protractor and see where the other side points to read the angle's measurement.
2. It's important to measure angles in real life because angles are everywhere, like when building things, making art, or even playing sports. For example, a carpenter needs to measure angles to make sure furniture pieces fit together correctly.
3. To find out how many degrees the door is open, I would place the center of a protractor at the hinge and line up the base with the wall. Then, I would look at the measurement where the edge of the door crosses the protractor to see the number of degrees.

Reflection Question:

How does using multiplication help you figure out how big a turn or rotation is when you measure angles? Can you explain using an example?

Name ______________________________ Date ____________________

Name _____ Date _____

Exploring and Classifying Two-Dimensional Shapes

Two-dimensional shapes, also called 2D shapes, are flat figures that have only length and width. Some common 2D shapes include squares, rectangles, triangles, circles, and hexagons. When we look at these shapes, we can notice different parts inside them, like sides, angles, and lines of symmetry. A line of symmetry is a line that divides a shape into two equal parts that are mirror images of each other. Understanding the properties of each shape helps us classify them—for example, knowing what makes a rectangle different from other quadrilaterals. We also explore what happens when we flip (reflect) or rotate (turn) a shape: does it look the same or different?

Fill in the Blank: Fill in the blank with the correct words.

1. A rectangle has ____sides and ____right angles.
2. The shape that has all sides equal and four right angles is a ____
3. The line that divides a shape into two equal mirror images is called a line of ____
4. A quadrilateral is a shape that has ____sides.
5. When you rotate a circle, it ____the same.

Word bank: rectangle, 4, remains, symmetry, square

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. Which shape has exactly one line of symmetry?
    - a) Rectangle
    - b) Equilateral triangle
    - c) Isosceles triangle
    - d) Circle
2. Which of these is NOT a quadrilateral?
    - a) Square
    - b) Pentagon
    - c) Rectangle
    - d) Parallelogram
3. How many sides does a hexagon have?
    - a) 5
    - b) 6
    - c) 7
    - d) 8
4. What makes a rectangle different from a general quadrilateral?
    - a) Four equal sides
    - b) Four right angles
    - c) Three sides
    - d) No lines of symmetry
5. If you flip a rectangle over its line of symmetry, what happens?
    - a) It looks different
    - b) It disappears
    - c) It remains the same
    - d) It becomes a triangle

Name _____ Date _____

Open-Ended Questions: Answer the following questions in complete sentences.

1. What parts can you see inside a regular hexagon? Draw or describe them.
2. How do you know if a shape is a rectangle and not just any quadrilateral?
3. If you rotate a square by 90 degrees, what do you notice about its appearance?

Name _____ Date _____

ANSWER KEY

Always review AI-generated math answers for accuracy.

Fill in the Blank:

1. four, four
2. square
3. symmetry
4. four
5. remains

Multiple Choice:

1. c) Isosceles triangle
2. b) Pentagon
3. b) 6
4. b) Four right angles
5. c) It remains the same

Open-Ended Example Answers:

1. Inside a regular hexagon, you can see six equal sides and six equal angles. If you draw lines connecting opposite corners, you get lines of symmetry and smaller triangles inside.
2. A rectangle is a quadrilateral with four right angles and opposite sides that are equal in length. Not all quadrilaterals have these properties.
3. When you rotate a square by 90 degrees, it looks the same because all sides are equal and all angles are right angles, so its appearance does not change.

Reflection Question:

How do the parts of a shape—like sides, angles, and lines of symmetry—help you figure out what kind of shape it is? Can you explain using an example?

Name ______________________________________ Date __________________________

Name _____ Date _____

Estimating and Checking Reasonableness with Mental Math, Estimation, and Rounding

Estimating is a powerful math skill that helps you decide if your answer makes sense. When you estimate, you use mental math, rounding, or compatible numbers (numbers that are easy to work with together) to quickly find about how much an answer should be. This helps you check your work and see if your answer is reasonable before you solve a problem exactly. Sometimes, a quick mental calculation or rounding can help you catch mistakes or make solving problems easier!

Fill in the Blank: Fill in the blank with the correct words.

1. When you want to find about how much an answer should be, you can use ____
2. If you round 47 to the nearest ten, you get ____
3. Using ____numbers makes adding and subtracting in your head easier.
4. To check if your answer is reasonable, you can do a quick ____
5. Rounding 268 to the nearest hundred gives you ____

Word bank: estimation, mental math, compatible, 50, 300

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. Which of the following is the best estimate for 399 + 202 ?
    - a) 500
    - b) 600
    - c) 700
    - d) 800
2. You solved 61 \times 8 and got 480 . Which estimation can help you check if your answer is reasonable?
    - a) 60 \times 10 = 600
    - b) 60 \times 8 = 480
    - c) 60 \times 5 = 300
    - d) 70 \times 8 = 560
3. What is \(152) rounded to the nearest ten?
    - a) 100
    - b) 150
    - c) 160
    - d) 200
4. Which is a reasonable estimate for 290 + 310 ?
    - a) 600
    - b) 500
    - c) 700
    - d) 400
5. If you want to quickly check 49 + 51 , what is a good estimate?
    - a) 50 + 50 = 100
    - b) 40 + 40 = 80
    - c) 60 + 60 = 120
    - d) 45 + 55 = 100

Open-Ended Questions: Answer the following questions in complete sentences.

Name _____ Date _____

1. Why is it helpful to use estimation or rounding before solving a math problem?
2. Describe a time when mental math helped you find an answer quickly.
3. If you solved 243 + 157 and got 490 , how could you check if your answer is reasonable using estimation?

Name _____ Date _____

ANSWER KEY

Teachers: Please review all math answers closely for accuracy before sharing with students, as AI-generated math answers may contain mistakes.

Fill in the Blank Answers

1. estimation
2. 50
3. compatible
4. mental math
5. 300

Multiple Choice Answers

1. a) and ; 400 + 200 = 600 , but the closest estimate from the choices is a) 600 .
2. b) 60 \times 8 = 480 (closest to 61 \times 8)
3. b) 150
4. a) 290 + 310 = 600
5. a) 50 + 50 = 100 (best quick estimate)

Open-Ended Answers (example responses)

1. It is helpful to use estimation or rounding because it helps you check if your final answer makes sense and helps you solve problems faster.
2. One time, I used mental math at the store to quickly add up the prices of things I wanted to buy to make sure I had enough money.
3. I could round 243 to 240 and 157 to 160 . 240 + 160 = 400 , so 490 is too high and my answer is not reasonable.

Reflection Question:

How does using estimation or rounding before solving help you decide if your answer makes sense? Can you explain with an example?

Name ______________________________________ Date _________________________

Name _____ Date _____

Solving Real-World Problems with Distance, Time, Volume, Mass, and Money

Understanding how to solve word problems involving distance, time, volume, mass, and money is an important math skill. We use these measurements every day, like figuring out how long a trip will take, how much water is in a bottle, or how much something costs. When solving problems, pay close attention to the units (like meters, minutes, liters, grams, or dollars) and use addition, subtraction, multiplication, or division to find the answer. You can draw a picture or use a diagram to help you understand what's happening in the problem. Sometimes, you might need to change units, but remember—the total amount stays the same even if the units change.

Fill in the Blank: Fill in the blank with the correct words.

1. When solving word problems, it is important to identify the correct ____to use, like liters or kilograms.
2. To find the total amount spent, you can use ____to add up the cost of each item.
3. If you want to know how long a trip will take, you need to know both the distance and the ____
4. Multiplication can be used to find the ____of several items with the same mass or price.
5. When switching units, you must keep the ____amount the same.

Word bank: multiplication, total, time, units, addition

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. Sara jogged 3 kilometers in 30 minutes. How many minutes would it take her to jog 6 kilometers at the same speed?
    - a) 45
    - b) 60
    - c) 90
    - d) 15
2. A box holds 2 liters of juice. If you pour out 0.5 liters, how much juice is left?
    - a) 2.5 liters
    - b) 1.5 liters
    - c) 1 liter
    - d) 0.5 liters
3. Ben has 400 grams of apples. He eats 150 grams. How many grams does he have left?
    - a) 250
    - b) 150
    - c) 350
    - d) 100
4. You buy 3 pencils for $0.75 each. How much do you spend in total?
    - a) $2.00
    - b) $2.25
    - c) $2.50
    - d) $1.50
5. Which operation would you use to find out how many 250 mL cups you can fill from a 2 liter bottle?
    - a) Addition
    - b) Multiplication
    - c) Division
    - d) Subtraction

Name _____ Date _____

Open-Ended Questions: Answer the following questions in complete sentences.

1. Describe how you would solve a problem where you need to find out how much money you have left after buying two items.
2. Draw a diagram or picture to show how you would find out how many 500 mL bottles can be filled from a 3 liter container.
3. Explain why it is important to use the same units when adding or subtracting measurements.

Name _____ Date _____

ANSWER KEY

Teachers: For math questions, always review AI-generated answers for accuracy before using with students.

Fill in the Blank Answers:

1. units
2. addition
3. time
4. multiplication
5. total

Multiple Choice Answers:

1. b) 60
2. b) 1.5 liters
3. a) 250
4. b) $2.25
5. c) Division

Open-Ended Example Answers:

1. I would add the prices of the two items together and then subtract the total from the amount of money I started with to find out how much I have left.
2. (Sample diagram: Draw a large container labeled "3 L" and smaller bottles labeled "500 mL" each, then show that 3 liters = 3000 mL, and 3000 \div 500 = 6 bottles.)
3. It is important to use the same units when adding or subtracting so that the amounts are measured in the same way and the answer is accurate.

Reflection Question:

How does paying attention to the units in a problem help you figure out the best way to solve it? Can you explain using an example from real life?

Name ______________________________ Date ____________________

Name _____ Date _____

Area and Perimeter of Rectangles: Understanding and Solving Problems

When we talk about rectangles, two important ideas are area and perimeter. The *length* and *width* are the sides of a rectangle. The *area* tells us how much space is inside the rectangle. We find the area by multiplying the length by the width: \text{Area} = l \times w . The *perimeter* tells us the distance all around the outside of the rectangle. We find the perimeter by adding all the sides together: \text{Perimeter} = 2l + 2w . Area and perimeter help us describe different things about a shape. Changing the shape (like rearranging the sides) could change the perimeter, but the area stays the same if we keep the size the same.

Fill in the Blank: Fill in the blank with the correct words.

1. The formula l \times w gives us the ____of a rectangle.
2. The distance around the outside of a rectangle is called the ____
3. In a rectangle, the two sides that are not the same length are called the length and the ____
4. The formula 2l + 2w is used to find the ____of a rectangle.
5. If you rearrange the sides of a rectangle but keep the length and width the same, the ____stays the same.

Word bank: area, width, perimeter, perimeter, area

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. What does the "l" stand for in the formula l \times w ?
    - a) Length
    - b) Left
    - c) Level
    - d) Line
2. If a rectangle has a length of 8 units and a width of 3 units, what is its area?
    - a) 24 square units
    - b) 22 square units
    - c) 11 square units
    - d) 16 square units
3. Which formula would you use to find how much fencing is needed to go around a garden shaped like a rectangle?
    - a) l \times w
    - b) l + w
    - c) 2l + 2w
    - d) l - w
4. If the area of a rectangle is 30 square units and the length is 5 , what is the width?
    - a) 6
    - b) 25
    - c) 35
    - d) 5
5. Which statement is true?
    - a) The perimeter tells us the space inside a shape.
    - b) The area tells us how far it is around the shape.
    - c) The area and perimeter always have the same value.

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- d) The area tells us the space inside the shape.

Open-Ended Questions: Answer the following questions in complete sentences.

1. Explain what the length and width represent in a rectangle.

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1. How are area and perimeter different when describing a rectangle?

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1. If you rearrange the sides of a rectangle but keep the same length and width, will the area or perimeter change? Explain your answer.

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ANSWER KEY

Teachers: Please review all AI-generated math answers for accuracy before using.

Fill in the Blank

1. area
2. perimeter
3. width
4. perimeter
5. area

Multiple Choice Questions

1. a) Length
2. a) 24 square units
3. c) 2l + 2w
4. a) 6
5. d) The area tells us the space inside the shape.

Open-Ended Questions (Example Responses)

1. The length and width are the two sides of a rectangle. The length is usually the longer side, and the width is the shorter side.
2. The area tells how much space is inside the rectangle, while the perimeter tells how far it is around the outside of the rectangle.
3. No, if you keep the same length and width, the area and perimeter will stay the same, even if you rearrange the rectangle. Only the way it looks will change, not the measurements.

Reflection Question:

How do area and perimeter help you describe different things about the same rectangle? Can you give an example of when you might need to know one but not the other?

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Making and Using Line Plots with Fractions

Line plots are a great way to organize and display data, especially when the data includes fractions. A line plot uses a number line and Xs to show how many times each measurement appears. In this worksheet, you'll learn how to make and use line plots with fractional measurements like halves, fourths, or eighths. You'll also practice adding and subtracting these measurements and thinking about whether the total amount changes if we move the data around.

Fill in the Blank: Fill in the blank with the correct words.

1. A line plot shows data along a ____
2. Fractional measurements like (\frac{1}{2}), (\frac{1}{4}), and (\frac{1}{8}) are called ____
3. Each X on a line plot stands for ____measurement.
4. To find the total, you can ____all the measurements shown on the line plot.
5. The total amount on a line plot stays the same even if you ____the Xs to different spots.

Word Bank: move, number line, units, add, one

Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. What kind of units can you use on a line plot for fractional data?
    - a) Only whole numbers
    - b) Only tenths
    - c) Fractions like halves, fourths, or eighths
    - d) Only decimals
2. If you see three Xs above (\frac{1}{2}), what does it mean?
    - a) Only one person measured (\frac{1}{2})
    - b) Three measurements of (\frac{1}{2})
    - c) Half of the measurements are (\frac{1}{2})
    - d) The total is three
3. In a line plot, if you move the Xs around but keep the same number of Xs, what happens to the total amount?
    - a) It increases
    - b) It decreases
    - c) It stays the same
    - d) It doubles
4. What is the sum of three measurements of (\frac{1}{4}) each?
    - a) (\frac{3}{4})
    - b) (\frac{1}{2})
    - c) (1)
    - d) (\frac{1}{4})
5. Why is it important to know the fraction unit (halves, fourths, eighths) on a line plot?
    - a) So you know what numbers to count by
    - b) So you can make up any number
    - c) It doesn't matter
    - d) To skip numbers

Open-Ended Questions: Answer the following questions in complete sentences.

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1. Explain how you could use a line plot to solve a problem about measuring the lengths of pencils in your class.
2. If you see a line plot with five Xs above (\frac{1}{8}) and two Xs above (\frac{1}{2}), how could you find the total length?
3. Describe what would happen to the total amount if you moved one X from (\frac{1}{4}) to (\frac{3}{4}) on the line plot, and explain why.

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ANSWER KEY

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Fill in the Blank Answers:

1. number line
2. units
3. one
4. add
5. move

Multiple Choice Answers:

1. c) Fractions like halves, fourths, or eighths
2. b) Three measurements of $\frac{1}{2}$
3. c) It stays the same
4. a) $\frac{3}{4}$
5. a) So you know what numbers to count by

Open-Ended Example Responses:

1. You could use a line plot to show how long each pencil is by marking Xs above the correct fraction for each pencil's length. This helps you see which lengths are most common and allows you to add up the lengths if needed.
2. To find the total length, multiply $5 \times \frac{1}{8} = \frac{5}{8}$ and $2 \times \frac{1}{2} = 1$. Then add the two totals: $\frac{5}{8} + 1 = \frac{13}{8}$ or $1 \frac{5}{8}$.
3. If you move one X from $\frac{1}{4}$ to $\frac{3}{4}$, the total amount changes because you are removing a $\frac{1}{4}$ measurement and adding a $\frac{3}{4}$ measurement, which increases the total by $\frac{1}{2}$.

Reflection Question:

How does a line plot help you see and add fractional measurements easily? Can you explain using an example?

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