


Chapter 3: Addition and Subtraction Strategies

Dear Family,

During the next few weeks, our math class will be learning to estimate and solve addition and subtraction problems using numbers through hundreds. We will also learn to identify number patterns and round numbers to the nearest ten and hundred.

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- **Homework due date:**
Sunday, September 22nd
(Please upload homework on Archie)
 - **Feel free to contact me with any questions or concerns at**
diana.charaf@archimede-an.org

Please complete homework daily based on the schedule provided below:

Monday, Sept. 16th
Tuesday, Sept. 17th
Wednesday, Sept. 18th
Thursday, Sept. 19th
Friday, Sept. 20th

Complete pages: 75-76
Complete pages: 81-82
Lessons 8XG and QU2 on IXL
Lessons GF2 and NY2 on IXL
Lessons HRT and 3Y9 on IXL

The identity property

What is the identity property of addition?

The identity property of addition says that any number plus **0** is equal to that number. Because of this, **0** is called the **additive identity**.

$$5 + 0 = 5$$

$$32 + 0 = 32$$

So, $a + 0 = a$.

The additive identity works for subtraction, too! Any number minus **0** is equal to that number.

$$7 - 0 = 7$$

$$120 - 0 = 120$$

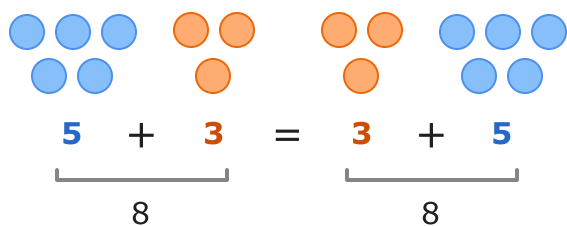
So, $a - 0 = a$.

The commutative property

The commutative property says that you can add or multiply numbers in any order without changing the answer. You can use the commutative property for addition and multiplication, but be careful not to use it for subtraction or division!

What is the commutative property of addition?

The commutative property of addition says that you can add numbers in any order. Here is an example:



You can change the order of the addends, and the sum will remain the same.

So, $a + b = b + a$.



Tip

You can think of the commutative property of addition as the flip-flop property. It says you can flip-flop the addends without changing the sum.

The associative property

The associative property says that you can group numbers in different ways without changing the answer. You can use the associative property for addition and multiplication, but be careful not to use it for subtraction or division!

What is the associative property of addition?

The associative property of addition says that you can group addends in different ways without changing the sum.

Let's try $4 + 6 + 2$ as an example.

You can group $4 + 6$ together and complete that addition first.

$$\begin{aligned}(4 + 6) + 2 \\ 10 + 2 \\ 12\end{aligned}$$

Or you can group $6 + 2$ together and complete that addition first.

$$\begin{aligned}4 + (6 + 2) \\ 4 + 8 \\ 12\end{aligned}$$

Both ways give you the same answer! Look at the picture to see why.

$$\begin{aligned} & \left[\begin{array}{c} \bullet \\ \bullet \\ \bullet \\ \bullet \end{array} + \begin{array}{cc} \bullet & \bullet \\ \bullet & \bullet \\ \bullet & \bullet \end{array} + \begin{array}{c} \bullet \\ \bullet \end{array} \right] = \left[\begin{array}{c} \bullet \\ \bullet \\ \bullet \\ \bullet \end{array} + \begin{array}{cc} \bullet & \bullet \\ \bullet & \bullet \\ \bullet & \bullet \end{array} + \begin{array}{c} \bullet \\ \bullet \end{array} \right] \\ & (4 + 6) + 2 = 4 + (6 + 2) \\ & 10 + 2 = 4 + 8 \\ & 12 = 12 \end{aligned}$$

The addends are grouped differently, but the sum is the same.

Identify Number Patterns on the Addition Table

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Interactive Examples

1. Write a rule for the pattern. Then write the sixth and seventh numbers.

6, 13, 20, 27, 34, _____, _____ Rule: _____

2. Write a rule for the pattern. Then write the second number.

21, _____, 17, 15 Rule: _____

3. Create a pattern that uses the rule *Subtract 9*. Write the first, second, third, fourth, and fifth numbers. Circle the fourth number.

Is the sum even or odd? Write *even* or *odd*.

4. $5 + 2$ _____

5. $6 + 4$ _____

6. $1 + 0$ _____

7. $5 + 5$ _____

8. $3 + 8$ _____

9. $7 + 7$ _____

Problem Solving


10. Ada writes two patterns.

24, 27, _____, 33, 36

50, 42, 34, _____, 18

Maria creates a pattern. The first number of Maria's pattern is the difference between the missing numbers in Ada's first and second patterns. What is the first number of Maria's pattern?

11. Verlin says he has an odd number of model cars. He has 6 cars on one shelf and 8 cars on another shelf. Is Verlin correct? Explain.

12.  **WRITE** *Math* Write the definition of the Identity Property of Addition. Use the addition table to provide examples.

Lesson Check

13. Marvella adds an odd number to an even number. Is the sum even or odd?
14. Write the rule. Then write the fourth number in the pattern.

17, 14, 11, _____, 5, 2

Rule:_____

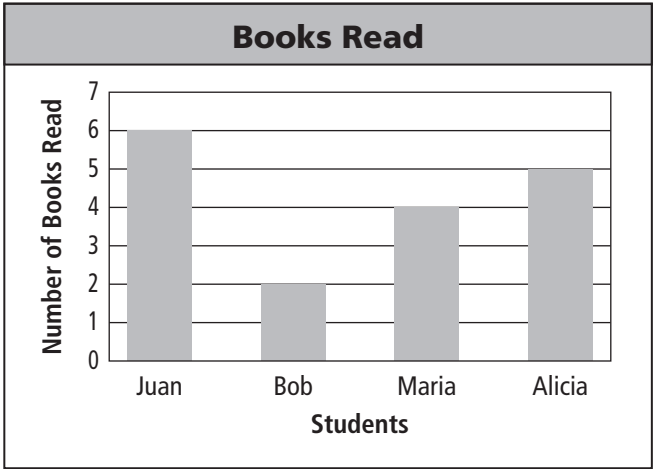
Spiral Review

15. Zachriel has 2 quarters, 1 dime, and 3 pennies. How much money does Zachriel have?
16. Oria estimates the height of his desk. What is a reasonable estimate?

Use the bar graph for problems 17–18.

17. Who read the most books?

18. Who read 3 more books than Bob?



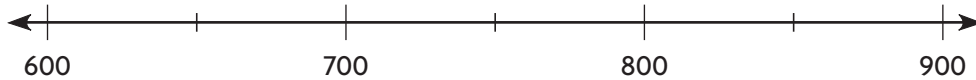
Round to the Nearest Ten or Hundred

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Interactive Examples

Locate and label 739 on the number line.

Round to the nearest hundred.



- 739 is between 700 and 800.
- 739 is closer to _____ than it is to _____.
- 739 rounded to the nearest hundred is _____.


Round to the nearest ten and hundred.

- | | | |
|-----------------------|-----------------------|-----------------------|
| 4. 66 _____
_____ | 5. 829 _____
_____ | 6. 572 _____
_____ |
| 7. 209 _____
_____ | 8. 663 _____
_____ | 9. 949 _____
_____ |

Problem Solving

- The baby elephant weighs 435 pounds. What is its weight rounded to the nearest hundred pounds?

- Jayce sold 218 cups of lemonade at his lemonade stand. What is 218 rounded to the nearest ten?

-  Describe how to round 678 to the nearest hundred.

Lesson Check

13. One day, 758 people visited the Monkey House at the zoo. What is 758 rounded to the nearest hundred?
14. Sami ordered 132 dresses for her store. What is 132 rounded to the nearest ten?

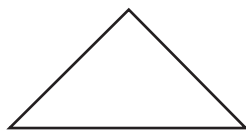
Spiral Review

15. What property describes the equation?
16. Is the sum even or odd?

$$6 + 0 = 6$$

$$2 + 6$$

17. What name describes this shape?



18. What word describes the equal shares of the shape?