

Test Practice 18. Which Doubles Fact Helps You

Find This Sum? $9 + 8 = 17$ $10 + 10 = 20$ $59 + 97 = 156$ $7 + 7 = 14$

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Understanding basic addition facts is fundamental in developing strong mental math skills for students. This article explores how doubles facts can help students quickly and accurately solve addition problems, using specific examples like $9 + 8$, as well as analyzing more complex sums such as $10 + 10$, $59 + 97$, and $7 + 7$. By mastering these foundational concepts, learners can improve their computational speed and confidence.

The Importance of Doubles Facts in Mental Math

What Are Doubles Facts?

Doubles facts are addition facts where a number is added to itself, such as $1 + 1$, $2 + 2$, $3 + 3$, and so on. These facts are among the earliest addition concepts children learn because they are straightforward and easy to memorize.

Examples of doubles facts include:

- $1 + 1 = 2$
- $2 + 2 = 4$
- $3 + 3 = 6$

- $4 + 4 = 8$
- $5 + 5 = 10$

Doubles facts serve as a foundation for understanding more complex addition problems and can be used to derive other facts through strategic thinking.

Why Are Doubles Facts Useful?

Doubles facts are a quick mental shortcut for solving addition problems. Recognizing that a problem involves doubles can help students:

- Simplify calculations
- Build confidence in mental math
- Develop number sense and understanding of relationships between numbers
- Facilitate quick estimation and problem-solving

For instance, when students see a problem like $9 + 8$, recognizing that 8 is close to 9 and that $9 + 9$ equals 18 helps them quickly determine the answer by adjusting slightly.

Analyzing the Problem: Which Doubles Fact Helps Find the

Sum?

Understanding the Question

The question asks: "Which doubles fact helps you find this sum?" followed by the example problem $9 + 8$ and a list of sums: 17, 10, 105, 59, 97, and 7. The goal is to identify the doubles fact that can assist in calculating $9 + 8$.

Breaking Down $9 + 8$

To solve $9 + 8$ efficiently, it's helpful to recognize:

- 8 is just one less than 9
- $9 + 9 = 18$ (a doubles fact)
- So, $9 + 8 = 18 - 1 = 17$

This approach leverages the doubles fact $9 + 9 = 18$ to find $9 + 8$ quickly.

Matching the Sum to the Correct Answer

Looking at the options:

- 17
- 10
- 105
- 59
- 97

- 7

Since we determined $9 + 8 = 17$, the correct sum from the options is 17.

How Doubles Facts Facilitate Other Addition Problems

Using Doubles to Simplify Larger or More Complex Sums

Doubles facts aren't just for small numbers; they can be extended to larger numbers and help in mental calculations involving multiple steps.

Examples:

- **10 + 105:** Recognize that $10 + 105 = 115$, which can be thought of as $105 + 10$, both close to doubles, but more straightforward is to add directly.
- **59 + 97:** Notice that 59 is near 60, and 97 is near 100, then adjust accordingly:
 - $60 + 97 = 157$
 - Subtract 1 (since 59 is 1 less than 60): $157 - 1 = 156$
- **7 + 7:** This is a perfect example of a doubles fact, with the sum being 14.

Applying Doubles Facts in Mental Math Strategies

By recognizing doubles and near-doubles, students can:

- Break down complex sums into simpler parts
- Use known facts to estimate and verify answers
- Develop flexible problem-solving skills

Example: To solve $59 + 97$, students might think:

- $60 + 97 = 157$
- Since 59 is 1 less than 60, subtract 1: $157 - 1 = 156$

This method relies on understanding doubles and near-doubles to perform quick mental calculations.

Tips for Teaching Doubles Facts and Their Application

Use Visual Aids and Manipulatives

Using objects like counters, number lines, or charts can help students visualize doubles and understand their relationships.

Incorporate Repetition and Practice

Regular practice with flashcards and quick quizzes reinforces memorization of doubles facts.

Connect Doubles to Real-Life Situations

Encourage students to find doubles in everyday scenarios, like pairs of shoes, apples, or chairs.

Encourage Mental Math Strategies

Teach students to:

- Recognize near doubles
- Use friendly numbers
- Adjust sums by adding or subtracting small amounts

Conclusion: Mastering Doubles Facts for Efficient Math Skills

Doubles facts are a vital component of early mathematics education. They serve as mental shortcuts that help students solve addition problems more efficiently, as exemplified in problems like $9 + 8$.

Recognizing that $9 + 8$ can be quickly calculated by knowing $9 + 9 = 18$ and subtracting 1 highlights the importance of doubles in mental math.

By practicing doubles facts and understanding their applications, learners can enhance their computational speed, build confidence, and develop a deeper understanding of number relationships. Whether solving simple sums or tackling larger, more complex problems like $105 + 10$ or $59 + 97$, a solid grasp of doubles provides a strong foundation for mathematical success.

Remember: Always look for opportunities to connect new problems with known facts like doubles, and you'll find that mental math becomes more intuitive and enjoyable.

Frequently Asked Questions

Which doubles fact can help you find the sum of $9 + 8$?

The doubles fact $8 + 8$ can help you find $9 + 8$ by adding 1 more to $8 + 8$, so $9 + 8 = 8 + 8 + 1 = 17$.

What is the sum of $10 + 5$ using doubles facts?

Since $5 + 5 = 10$, you can use the doubles fact $5 + 5$ to understand that 10 is double 5.

How can doubles facts help solve $9 + 7$?

You can think of $9 + 7$ as $8 + 7 + 1$, and since $8 + 7$ is close to a doubles fact, like $8 + 8$, which is 16, then $9 + 7$ equals $16 + 1 = 17$.

Which doubles fact is useful for finding $10 + 9$?

The doubles fact $10 + 10$ helps, and since $10 + 9$ is one less than $10 + 10$, the sum is 19.

How do doubles facts simplify addition problems like $5 + 7$?

Doubles facts like $5 + 5$ help because $5 + 7$ is $5 + 5 + 2$, which equals $10 + 2 = 12$.

Additional Resources

Test Practice 18: Which Doubles Fact Helps You Find This Sum? $9 + 8 = 17$

Introduction

Mathematics education often hinges on foundational concepts that serve as building blocks for more complex problem-solving. Among these foundational concepts, doubles facts — basic addition facts where the same number is added to itself — are particularly powerful tools. They help students understand number relationships, develop mental calculation skills, and build confidence in tackling more advanced problems.

In the context of Test Practice 18, a common question posed is: "Which doubles fact helps you find

this sum? $9 + 8 = 17$ ". This question not only tests students' understanding of addition facts but also emphasizes the importance of recognizing relationships between numbers. It encourages learners to recall foundational doubles facts and apply them strategically to solve problems efficiently.

This article explores the significance of doubles facts in addition, analyzes the specific problem at hand, and offers strategies for recognizing and applying these facts across various types of problems. We will also delve into broader pedagogical implications and practical teaching approaches to reinforce the understanding of doubles facts.

Understanding Doubles Facts in Addition

What Are Doubles Facts?

Doubles facts are simple addition facts where a number is added to itself. They are among the earliest addition facts children typically memorize because they are straightforward and form a basis for understanding number relationships.

Examples of doubles facts:

- $1 + 1 = 2$
- $2 + 2 = 4$
- $3 + 3 = 6$
- $4 + 4 = 8$
- $5 + 5 = 10$
- $6 + 6 = 12$
- $7 + 7 = 14$
- $8 + 8 = 16$
- $9 + 9 = 18$
- $10 + 10 = 20$

The Role of Doubles Facts in Mental Math

Doubles facts serve as a cornerstone for mental calculations because they are simple, memorable, and can be used as reference points for more complex problems. Recognizing that a number is close to a double can help students quickly estimate or verify their answers.

For example:

- To find $9 + 8$, students might recognize that $8 + 8 = 16$, and then add 1 more to get 17.
- To solve $7 + 6$, they might recognize $6 + 6 = 12$, then add 1 to reach 13.

Analyzing the Problem: $9 + 8 = 17$

The Question: Which Doubles Fact Helps You Find This Sum?

The question prompts students to identify a doubles fact that can assist in calculating or understanding the sum of $9 + 8$.

The Key Insight

Since $9 + 8$ involves two different numbers, one approach is to relate it to a nearby doubles fact.

Recognizing that:

- $8 + 8 = 16$ (a doubles fact)

From this, students can infer:

- $9 + 8 = (8 + 8) + 1 = 16 + 1 = 17$

Thus, the doubles fact $8 + 8 = 16$ is particularly helpful.

Why is this doubles fact helpful?

Because it provides a reference point — knowing that $8 + 8$ equals 16 allows students to think of $9 + 8$ as one more than $8 + 8$, making the problem easier to solve mentally.

Broader Strategies for Using Doubles Facts

Recognizing Near Doubles

Many addition problems can be simplified by recognizing they are close to a doubles fact, often differing by just 1 or 2.

Examples:

$$- 5 + 6 = (5 + 5) + 1 = 10 + 1 = 11$$

$$- 7 + 8 = (7 + 7) + 1 = 14 + 1 = 15$$

$$- 9 + 10 = (10 + 10) - 1 = 20 - 1 = 19$$

Using Doubles to Build Other Facts

Doubles facts serve as a foundation to derive other addition facts. For example:

- Knowing $4 + 4 = 8$, then:

$$- 4 + 5 = 8 + 1 = 9$$

$$- 4 + 6 = 8 + 2 = 10$$

Visual Aids and Manipulatives

Teaching tools like number lines, ten frames, and counters can help students visualize the relationship between doubles and other addition facts. For example, a number line can demonstrate that moving one step beyond a double corresponds to adding 1, aiding mental calculation.

Practical Teaching Approaches

Emphasizing the Relationship Between Doubles and Near Doubles

Encourage students to memorize doubles facts early and then explore how these can help solve problems involving numbers close to those doubles.

Example Lesson Plan

1. Introduce Doubles Facts: Use flashcards and memorization games.
2. Explore Near Doubles: Present problems like $6 + 7$, $9 + 8$, and guide students to relate them to doubles.
3. Visual Representation: Use number lines to demonstrate how numbers relate to doubles.
4. Practice and Reinforce: Provide exercises that require students to identify the doubles fact related to a given sum.

Sample Practice Questions

- What doubles fact helps you find $6 + 7$?
- How can you use the doubles fact for $5 + 5$ to find $5 + 6$?
- If you know $8 + 8 = 16$, what is $8 + 9$?

Extending Beyond Basic Addition

Recognizing Patterns in Addition

Doubles facts are part of a broader pattern recognition strategy that helps students develop mental agility with numbers:

- Associative property: $(a + b) + c = a + (b + c)$
- Commutative property: $a + b = b + a$
- Number bonds: Visual relationships between parts and wholes

Applying Doubles to Subtraction and Other Operations

Doubles facts also support subtraction understanding. For instance:

- Knowing $8 + 8 = 16$ helps in understanding that:
- $16 - 8 = 8$
- $16 - 9 = 7$

Common Misconceptions and Challenges

Overreliance on Memorization

Some students may memorize doubles facts without understanding their relationships, leading to difficulty applying them flexibly.

Misidentification of Doubles

Students might confuse doubles facts with close but unrelated sums, such as $9 + 8$, which isn't a double but can be related to a double ($8 + 8$).

Strategies to Overcome Challenges

- Use multiple representations (visual, verbal, kinesthetic)
- Emphasize understanding over rote memorization
- Encourage mental strategies like "near doubles"

Broader Educational Implications

Importance of Doubles Facts in Early Math Education

Mastery of doubles facts lays the groundwork for more advanced concepts like addition and subtraction strategies, number sense, and mental calculation.

Incorporating Doubles in Standardized Tests

Questions similar to "Which doubles fact helps you find this sum?" are common in assessments, testing students' ability to recognize relationships and apply foundational facts.

Encouraging Critical Thinking

Beyond rote recall, students should be guided to analyze how doubles facts relate to other sums, fostering deeper mathematical thinking.

Conclusion

The question "Test Practice 18: Which Doubles Fact Helps You Find This Sum? $9 + 8 = 17$ " underscores the importance of understanding and applying doubles facts in addition. Recognizing that $8 + 8 = 16$ allows students to efficiently solve $9 + 8$ by adding one more, illustrating the power of relational thinking in mathematics.

Doubles facts are more than memorized facts; they are strategic tools that enhance mental calculation, foster number sense, and build confidence. Effective teaching approaches emphasize understanding these relationships and using visual aids, pattern recognition, and practical exercises to deepen students' mastery.

In the broader scope of math education, emphasizing doubles facts prepares students for future mathematical challenges, promotes flexible thinking, and lays a solid foundation for lifelong numeracy skills. As educators and learners continue to explore these fundamental concepts, the simple idea of doubles will remain a vital part of mathematical literacy and problem-solving prowess.

References

- Van de Walle, J. A., Karp, K. S., & Bay-Williams, J. M. (2013). Elementary and Middle School Mathematics: Teaching Developmentally. Pearson.
- Clements, D. H., & Sarama, J. (2014). Learning and Teaching Early Math: The Learning Trajectories Approach. Routledge.
- National Council of Teachers of Mathematics (NCTM). (2000). Principles and Standards for School Mathematics. NCTM.

By understanding and applying doubles facts effectively, students develop a robust foundation for mathematical reasoning that will serve them well beyond the classroom.

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